SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES UNIVERSITY OF GHANA

FACTORS INFLUENCING RETENTION IN PREVENTION OF MOTHER-TO- CHILD TRANSMISSION SERVICES DURING THE POST-NATAL PERIOD AMONG WOMEN LIVING WITH HIV IN THE SHAI-OSUDOKU DISTRICT HOSPITAL.

BY
RUTH AFFUL

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DECLARATION

I, **Ruth Afful** hereby declare that; this research work "Factors influencing retention in prevention mother-to-child transmission services during the post-natal period among women living with HIV in the Shai-Osudoku District of the Greater Accra, Region" is my original work except for referencesduly acknowledged. This research work was done under the supervision of **Dr. Emefa Modey** at the Department of Population, Family and Reproductive Health in the School of Public Health of the College of Health Sciences at the University of Ghana. This work has not been presented for any other degree in the University or elsewhere in whole or part. I am fully responsible for theviews expressed and the content accuracy of this dissertation.

Signed: …  …… Date: …4/03/2022…….

Ruth Afful

(Student/ Principal Researcher)

Signed: …… …… Date: ……4/03/2022……

Dr. Emefa Modey

(Supervisor)

DEDICATION

This dissertation is dedicated to my dearest parents, Peter and Comfort Afful for the constant support throughout the MPH program.

I also dedicate this thesis to all mothers living with HIV and their children.

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ABSTRACT

Background: Globally, the burden of HIV/AIDS on maternal and child health calls for a global collaborative response to the Prevention of Mother- to- Child Transmission of HIV. Prevention of Mother- To -Child Transmission (PMTCT) program coverage has been scaled up globally to eliminate new pediatric HIV infections by 2020. Despite the scale-up in plans, there is growing evidence of high new pediatric infections in Sub-Saharan Africa countries including Ghana.

Aim: The purpose of this study was to estimate the retention rate in PMTCT services and explore the factorsinfluencing retention in PMTCT services during the post-natal period among women living with HIV in the Shai- Osudoku District Hospital.

Methods: The study employed both quantitative and qualitative designs to reflect research objectives. A sample of 51 women enrolled into the PMTCT programme from January 2019 to December 2020 and in 12- 18 months postpartum secondary data was extracted from the ART database. Data was imported into STATA version 16 software and analyzed using descriptive statistics and results were presented in frequency distribution and tables. The retention rate was determined using univariate analysis in the form of descriptive statistics. Thirteen (13) respondents were then recruited for in-depth interviews using an interview guide. Data was translated and transcribed. Transcribed data was imported into ATLAS.ti9 and analyzed for emerging themes.

Results: In this study, the sample had a mean age of 34 years with a standard deviation of 4.75. Thirty-six (70.5%) of them had basic level of education, 11(21.6%) had secondary level education, 1 (2.0%) had tertiary level of education and 3(5.9%) of them had no formal education. Approximately, 25 (49.0%) were involved in informal work such as farming, hairdressing, tailoring, trading, whilst 21 (41%) were involved in formal works such as teaching, nursing. Out

of the 51participants 44 (86.3%) of them were Christians and were either married or cohabiting and 7 (13.7%) were Muslims. All (100%) of the sample completed all the schedules for ANC PMTCT. 90.2% of the sample reported for first Postnatal PMTCT visit, 58.2% reported for second Postnatal PMTCT visit and 49% reported for third Post-natal PMTCT visit. Thirty-eight (38) out of the fifty-one participants reported at the facility for infant PCR test at 6 weeks after zidovudine/Nevirapine prophylaxis had been given. For retention rate analysis, 29 (56.9%) were of active status, 17 (33.3%) had defaulted/lost to follow up following birth, 3 (5.9%) had been transferred to other facilities for continuity of care and 2 (3.9%) died during the programme period.

Maternal factors likely to influence PMTCT retention includes; PMTCT literacy.

Service provider factors identified to influence retention include; supportive working environment, supportive counselling role of health professionals, privacy and confidentiality.

Socio-cultural factors identified to influence PMTCT service include; male partner support, HIV status disclosure, family and peer support and stigma.

Conclusion: The level of retention in PMTCT during the post-natal phase in the Shai-Osudoku District Hospital was lower compared to other low -resource settings reviewed in literature.

Good knowledge and understanding of PMTCT programme, supportive working environment, supportive counselling role, assurance of privacy and confidentiality, partner, family and peer support/acceptance are some of the factors that influence retention rate in PMTCT at the study site. It therefore critical for service providers to tailor activities of the programme with a high sense of empathy and a system of tracking women in the programme to achieve higher retention rate in the programme.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

AIDS- Acquired Immune Deficiency Syndrome

ANC- Antenatal clinic

ART- Antiretroviral therapy

AZT- Zidovudine

DBS- Dried Blood Spot

DNA- Deoxyribonucleic acid

EID- Early Infant diagnosis

EMTCT- Elimination of mother-to-child transmission

GAC- Ghana Aids Commission

GSS- Ghana Statistical Service

GHS- Ghana Health Service

HIV- Human Immune Deficiency Virus

LFU – Loss to follow-up

MTCT- Mother-to-child transmission

NVP - Nevirapine

PCR - Polymerase Chain Reaction

PMTCT- Prevention of Mother to Child Transmission

PNC- Post-Natal Clinic

SSA-Sub-Saharan Africa

TDF/3TC/DTG - Tenofovir/Lamiduvine/Dolutegravir

TDF/FTC/EFV - Tenofovir/ Emtricitabine/Efavirenz

TDF/3TC/EFV - Tenofovir/Lamiduvine/Efavirenz

UNAIDS- United States Agency for International Development

UNICEF- United Nations International Children's Fund

WHO- World Health Organization

DEFINITION OF CONCEPTS

Attrition: a situation where women enrolled in PMTCT program are no more in the program as a result of death or lost to follow up.

Early Infant Diagnosis: an age –specific protocol used in virologic testing to identify infant exposed to HIV Infections prior to development of clinical disease.

Loss to Follow-up: when an individual enrolled into a programme misses successive scheduled Visits usually for 3 consecutive follow-up period.

PMTCT (prevention of mother-to-child transmission) **services:** are a range of interventions initiated to reduce the risk of HIV transmission from women of reproductive age (15-49years) to the infant during pregnancy, childbirth, and breastfeeding period. The PMTCT programs also provide linkages for women to long-term HIV care and treatment services, including initiation of antiretroviral therapy.

Post-partum period or postnatal period: is the period beginning immediately after the birth of a child and extending for about six weeks. This period is a crucial phase accounting for most maternal and child death in Africa. Post-partum women living with HIV are to be retained in PMTCT programs especially on ART and given much support to ensure the child is at a reduced risk of HIV transmission.

Retention in PMTCT service: is consistent engagement in the services especially in ART usually for the first 18months of the infant's life to reduce the risk of HIV transmission to the child.

Stigma: a mark of disgrace and low social acceptance associated with positive HIV-status

CHAPTER ONE

INTRODUCTION

1.1 Background

Globally, the burden of HIV/AIDS on maternal and child health calls for a global collaborative response to the Prevention of Mother- to- Child Transmission of HIV (PMTCT) (WHO, 2016). Efforts have been made at country levels over the past two decades to prevent vertical transmission of HIV to the newborn with a reduction of over 400,000 new infections in 2000 to 160000 infections in 2018 (UNICEF, 2018). Much commitment and collaborative approaches have been implemented at national levels to scale up PMTCT services globally and eliminate new HIV infections among children 0-14year by 2020. However, the prevalence of mother-to-child transmission (MTCT) is approximately 15–40% in Sub- Saharan Africa Countries (SSA) (Yah & Tambo, 2018). In Ghana, the rate of mother-to-child transmission of HIV is about 19.04% (12.43-25.83) (USAID, 2019). A major intervention to eliminate vertical transmission of HIV is a continued approach of multifactorial discipline termed as Prevention of Mother-to-child Transmission (PMTCT). Thus, it is a comprehensive package employed globally to prevent transmission of HIV from mother to child (Adenomon et. al., 2019).

Generally, PMTCT services are a range of programs initiated to reduce the risk of HIV transmission from women of reproductive age (15-49 years) to the infant during pregnancy, childbirth, and breastfeeding period; which is known as "vertical transmission". These services are introduced before pregnancy, during pregnancy, labour, and the breastfeeding period.

It is estimated that the likelihood of vertical transmission without any intervention is 15-45%. However, with the initiation of antiretroviral therapy (ART) and required intervention, there is a reduction in the transmission rate (WHO, 2010). The PMTCT approach covers varying

interventions at Antenatal care (ANC); HIV testing and counseling (HTC); antiretroviral medications (ARVs); safe labour and delivery; safe infant feeding; and follow-up in HIV care (Yah & Tambo, 2019).

The PMTCT services also provide linkages for women to long-term HIV care and treatment services, including initiation of antiretroviral therapy (ART) under Option B+ where pregnant women living with HIV are put on lifelong ART regardless of the CD4 count (Woelk et al., 2016). Ghana has made remarkable improvements in PMTCT over the past years with 74.92 % PMTCT coverage and the establishment of over 4056 health facilities providing PMTCT service in 2018 compared to 3750 in 2017(GAC, 2019). Despite the scale-up in plans to increase PMTCT coverage across the country, there is a rise in new pediatric HIV infections. About 3317 new HIV infections were recorded in children aged 0-14 and 2769 annual AIDS deaths were recorded in 2018 (Ghana AIDS Commission,2019).

The four-item strategy (prongs) of PMTCT implementation in Ghana as stated in the "National Guidelines for preventing mother-to-child transmission" (2014) include; (1) prevention of HIV infection in women, (2) Prevention of unintended pregnancies among women infected with HIV, (3) Prevention of HIV transmission from women infected with HIV to the infants and (4) Provision of treatment, care and support to women infected with HIV, the HIV exposed infants and their families.

The WHO emphasized the third approach recommending initiation of lifelong ART for HIV-positive women to ensure elimination of new HIV infection among children aged 0-14years (WHO, 2016). Ghana adopted the Treat all policy according to the WHO guidelines on ART by providing eligible people living with HIV with antiretroviral drugs (Ghana AIDS Commission, 2019; Dako-Gyeke et.al, 2016). For HIV-positive pregnant women, antiretroviral treatment is

initiated as early at 14 weeks conception, throughout pregnancy and after delivery. Early infant diagnosis is also determined from birth, through testing of newborns to determine HIV exposure (Ghana Health Service, 2014).

The post-natal period is the stage that begins immediately after a mother delivers her baby. This period starts from the first hour to usually six (6) weeks following birth and is a crucial phase accounting for most maternal and child death in Africa (WHO, 2013). Post-partum women living with HIV are supposed to be retained in PMTCT programs especially on ART to ensure the child is at a reduced risk of HIV transmission and this is the phase where there is a challenge in retention in PMTCT services resulting from maternal attrition or loss to follow up in care and non-adherence to treatment (Sakyi et al., 2020; Giséle & Mogale, 2018). Post-partum retention in PMTCT programs is consistent engagement in the services especially in ART usually for the first 18months of the infant's life (UNAIDS, 2010). However, several studies have documented challenges in ART retention in the first year of birth usually referred to as the Post-partum year (Sakyi et.al, 2020; Dako-Gyeke et.al, 2016 & Hodgson et.al, 2014).

The overall contribution of antiretroviral therapy (ART) to combat mother-to-child transmission of HIV (MTCT) will only be realized if eligible individuals access care, remain in care, and adhere to treatment regimens (Wanyenze et al., 2018). However, there is growing evidence of loss to follow up (LUF) or potential attrition in HIV care among women living with HIV during the post- natal period in the Sub Saharan Africa countries where there is an HIV/AIDS epidemic (Clouse k. et al., 2018; Myer et al., 2018 & Philips TK et al., 2020).

This calls for consistent engagement and retention of mothers living with HIV in PMTCT programmes as well as scaling up quality and effective PMTCT services.

A study conducted by Reece et.al (2015) revealed that in Ghana 66% of post-partum women are retained in care, compared to 75% in pregnant women and 86% among the adult population living with HIV. Poor post-partum retention in PMTCT programs is attributed to structural and socio-cultural factors such as access to service, loss to follow-up, non-adherence to treatment, stigma, low PMTCT knowledge, and other maternal factors (Sakyi et al., 2020; Giséle & Mogale, 2018 & Dako- Gyeke, 2016). This poor post-partum retention rate in PMTCT services acts as a barrier in preventing late transmission of HIV to infants through breastfeeding (Giséle & Mogale, 2018). Although breastfeeding potentially transmits HIV from mother to infant, the substantial benefits of exclusive breastfeeding override the risk of HIV transmission in low-resource settings. Post-partum women who intend to breastfeed the infant engage in exclusive breastfeeding for 6 months before initiating any complementary feed (GHS, 2014). The risk of MTCT can be reduced to 2% as long as mothers are on ART (GHS, 2014; Dako-Gyeke et al., 2016).

A systematic review by Ouedraogo et al (2015) disclosed that Mother- to Child-Transmission of HIV is reduced by 0.1% during breastfeeding when the mother is continuing antiretroviral therapy. It is therefore expedient for breastfeeding mothers to have consistent engagement in PMTCT programs after birth to eliminate new infections in children during the post-natal phase (Singer, Fink & Angelova, 2019). There has been immense progress of PMTCT over the past years in eliminating MTCT with about 53% decline rate in MTCT. Approximately, 150,000 [94,000-240,000] new HIV infections among children under five occurred in 2019, as against the declining rate of 310,000 [200,000-500,000] in 2010. The number of HIV infections and deaths avoided among children under five from 2000– 2019 were due to the prevention of mother-to-child transmission services (UNICEF, 2020).

Despite the scale-up in PMTCT interventions to achieve zero new HIV infection among children (0-14) years by 2020 (UNAIDS, 2016), there has been a slow pace of achieving this target globally and in Ghana. This is hampering the success of PMTCT implementation and the global target of eliminating new pediatric HIV infections among children aged 0-14years (WHO, 2020).

Mayhew et al (2017) also that thepost-natal phase is a neglected period and accounts for about 34 percent of maternal deaths in Africa. This period has also been marked as a vulnerable period to a loss of follow-up in HIV care and a more crucial point for the PMTCT services continuum (Meade et al., 2019; Reece et al., 2016 & Dionne-Odom et al., 2016). Momplaisir et al. (2018) examined the retention state in HIV care of women living with HIV in the United States and proposed ways to improve post-partum retention in HIV care after research studies have consistently illustrated decline and low uptake inHIV care, particularly after child-birth. This is supported by another study conducted by Philips Tk et al. (2017) which highlighted a loss to follow up in care and decline in retention rate in HIV care during the postnatal period. Determining the factors influencing post-partum retention in PMTCT programs in Ghana will help in the scale-up of its implementation strategies

1.2 Problem statement

Although comprehensive approaches have been implemented by World Health Organization to eliminate MTCT of HIV through PMTCT programs, there has been a rise in new HIV infections in children of women living with HIV during the breastfeeding period. This is because much follow-up and retention of care are not done (UNAIDS, 2020).

This corroborates with the findings of Mnyani et al. (2017) suggesting that there is the need for strategies to increase retention of care especially in the post-partum period where there is mostly

loss of follow-up.

Ghana has the fourth-highest rate of MTCT of HIV which is at 20%, among the 23 high burden countries identified by UNAIDS and the second highest in West Africa (UNAIDS, 2019). Globally, there is a growing challenge in the postnatal phase which is noted to contribute to the rise in new infections among children aged 0-14years (Clouse et al., 2018; Myer et al., 2018 & Philips et al., 2020). Although Ghana has made remarkable progress in PMTCT coverage over the years with 74.92% nationwide coverage recorded in 2019 and also reported to be one of the countries in Sub-Saharan Africa to have had 50% decline in new HIV infection among children from 2009 since the inception of PMTCT programme (UNAIDS, 2013) there exists a rise in new HIV infections among children born to HIV positive mothers. In 2013, out of the 2,986 babies tested via DNA-PCR testing, 7% tested positive with is higher compared to less than 2% mother-to-child transmission which is reported in developed countries (Ghana Health Service, 2014). In addition, approximately 2,972 new HIV infections were recorded in children 0-14 years and about 2,441 AIDS death in 2019 (Ghana AIDS Commission, 2019). This gap represents a double-barreled challenge as it is hampering comprehensive PMTCT program achievement and the global target of elimination of zero new infections among children aged 0-14years in Ghana.

Research studies in Ghana on PMTCT have focused primarily on its effectiveness, challenges, and barriers during the prenatal phase and much has not been done to evaluate retention in these services during the post-natal period. Although a recent study in Kumasi (Ghana) illustrated that retention rates are low among HIV-infected women during the post-natal period, the factors influencing this rate have not been explored. Also, few studies in the literature try to explain the barriers to continuous engagement in PMTCT services among women living with HIV in the post-natal period (Reece et al., 2016) however the reason for the low retention rate in the post-

partum year remains unclear (Hodgson et al., 2016; Sakyi et al., 2020).

Under PMTCT in Shai-Osudoku District, a total of 3,402 people were registered in the various health facilities across the district in 2014, 66 women tested positive and were enrolled at the Shai-Osudoku District for treatment. The prevalence of HIV in the district is 2.00% (GSS, 2014) which is higher than the national prevalence rate of 1.6% (Ali et al., 2019). Since the inception of PMTCT in this district, no study has been conducted to examine the retention state in PMTCT services and explore the factors influencing the retention in PMTCT services during the post-natal period.

1.3 Justification of the study

The median ANC HIV prevalence among pregnant women aged 15-45 years in Ghana was estimated at 2.0% with the Greater Accra Region recording a 3.2% HIV prevalence rate (GHSS, 2019). HIV in Ghana is mostly transmitted through sexual means and Mother-to-child transmission (MTCT) likewise most countries.

It is crucial to ensure consistent engagement (retention) in PMTCT services among post-partum women living with HIV to achieve the zero new infection target among children 0-14years. Findings from this study will inform health policy makers on the need to develop strategies to improve post-partum retention in PMTCT programs across all the PMTCT sites in Ghana.

Also, the findings from this work will address missed appointments and opportunities in PMTCT services among post-partum women living with HIV in the district, which will subsequently inform service providers to adopt strategies to combat them. Furthermore, published work from this study will help educate the general public with evidence-based literature on the retention rate of PMTCT services among the population under study and multiple factors influencing the rate. This might further influence behavioral modification towards PMTCT programs among the

populace.

1.4 General objective

This study intends to examine the factors influencing retention in PMTCT services during the post- natal period among women living with HIV in the Shai-Osudoku District.

1.4.1 Specific objectives

i. To estimate the retention rate in PMTCT services among post-partum women living with HIV at the Shai-Osudoku District hospital.

ii. To explore the factors influencing retention of PMTCT services among post- partum women living with HIV at the Shai-Osudoku District hospital.

1.5 Research questions

i. What is the retention rate of PMTCT services among post-partum women living with HIV at the Shai-Osudoku District Hospital?

ii. What maternal factors influence retention of PMTCT Services among post- partum women living with HIV at the Shai-Osudoku District hospital?

iii. What service provider factors influence with retention of PMTCT services among post-partum women living with HIV at the Shai-Osudoku District hospital?

iv. What socio-cultural factors influence retention of PMTCT Services among post- partum women living with HIV at the Shai-Osudoku District hospital?

1.6 Conceptual framework

The Andersen behavioral theory for healthcare utilization was used as the conceptual framework for this study. Andersen developed this framework to be used to measure the use of healthcare services (Ng'eno et al., 2020). The framework is also be used to examine the factors associated with the use of healthcare services (Ng'eno et al., 2020). The framework is suitable for this study because it is widely used in research regarding the utilization of healthcare services (Muyunda, Musonda, Mee, Todd, & Michelo, 2020; Ng'eno et al., 2020; Nwaneri, Mbagwu, Adeyemo, & Ndubuisi, 2018). In addition, the theory has been used to investigate the use of healthcare services by vulnerable populations such as pregnant women, and people living with HIV/AIDS (Muyunda et al., 2020; Ng'eno et al., 2020).

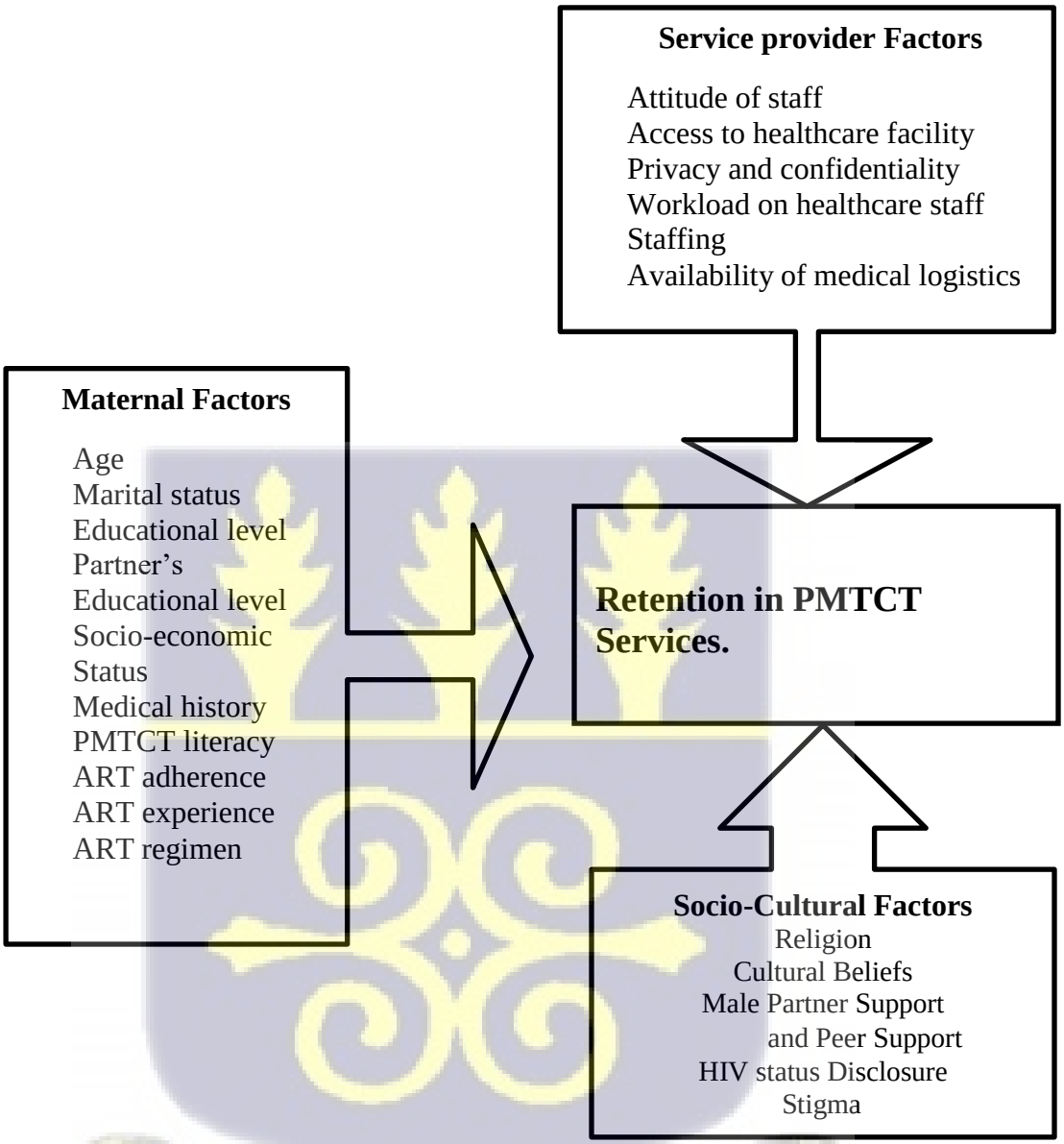
Andersen postulates that four broad factors influence the use of healthcare services. These include health system factors; individual factors; socio-cultural factors; and policies and legal issues (Ng'eno et al., 2020). The individual factors are those issues that relate to postnatal women (Ng'eno et al., 2020). Examples are age, marital status, level of education, religion, and occupation. Whilst these are the primary individual factors, other factors such as the partner's level of education may count as individual factors.

The health system factors are those issues that operate within the healthcare system. These issues have the potential to influence the use of PMTCT services during the postnatal period because the availability and access to the PMTCT services are contingent on these services (Ng'eno et al., 2020). Common healthcare systems factors include health workers' attitudes towards postnatal women, shortage of qualified health care providers, and availability of medical logistics.

Policies and legislation are closely related to health systems factors. They refer to those decisions

that policymakers make which could either promote or hinder access to PMTCT services (Ng'eno et al., 2020). Policies such as free ARV care helps in promoting the utilization of PMTCT services. Researches have established that socio-cultural factors which include male partner support, and gender roles tend to influence the utilization of PMTCT services during the postnatal period (Nhampossa et al., 2020; Olakunde et al., 2019; Olopha, Fasoranbaku, & Gayawan, 2021).

Figure 1.0: Conceptual Framework on retention of PMTCT services and its associated factors.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter entails the literature review. The literature review was conducted by retrieving literature from various academic databases and periodic publications from health governing bodies. The databases that were used for the literature search for this study included Google Scholar, PubMed, Scopus, Science Direct, and Web of Science. Other publications included reports from the World Health Organization, UNICEF, and the Ghana Health Service. Keywords that were used in the search process were “prevention”, “mother to child transmission”, “HIV”, “factors”, “determinants”, “postnatal”, and “post-partum.”

The chapter includes the following sub-headings: prevention of mother to child transmission of HIV/AIDS; rate of retention of PMTCT services among postnatal women living with HIV; maternal factors associated with retention of PMTCT services among postnatal women living with HIV; and health systems factors associated with retention of PMTCT services among postnatal women living with HIV.

2.1 Prevention of mother to child transmission of HIV/AIDS

Human immunodeficiency virus (HIV) can be transmitted from a pregnant mother who is carrying the virus to the foetus when bloodcrosses the placenta from the mother to the unborn child (Yitayew, Bekele, Wondimeneh, & Menji, 2019). The risk of transmission of HIV during pregnancy is 5% to 10% (Yitayew et al., 2019). Therisk of transmission is greater when the viral load of the mother is higher. Also, during the event of the ruptured membrane, early labour, or the performance of episiotomy, the risk of transmission of HIV from the mother to the foetus is

higher (Zegeye, Mbonigaba, & Dimbuene, 2018).

The HIV infection could also be passed from the mother to the baby during the process of breastfeeding(UNICEF, 2019).

At the international level, the global plan, which seeks to prevent the transmission of HIV/AIDS from mothers to children is based on four thematic areas (Adetokunboh & Oluwasanu, 2016). Firstly, the plan places perinatal women who are suffering from HIV/AIDS, and their children at the centre of the plan (Adetokunboh & Oluwasanu, 2016). As such, all the objectives of the plan are geared towards ensuring that children of perinatal women with HIV/AIDS are protected against the virus during pregnancy, labour, and afterward. Secondly, the global plan operates around the principle that every country should own its local PMTCT plans (Adetokunboh & Oluwasanu, 2016). This way, attention will be paid to context-specific issues in the design and implementation of the various national PMTCT services. In addition, countries will tend to be more committed to the plan when they play the principal role in developing it.

Thirdly, the global agenda on PMTCT dictates that nations integrate PMTCT services into already existing healthcare infrastructure and programs (Adetokunboh & Oluwasanu, 2016). The typical programs that are the target point of integration are HIV prevention programs, maternal andchild health services, and family planning services. The ultimate rationale behind integrating PMTCT into already existing programs and infrastructure is to ensure the sustainability of PMTCT programs and services. The fourth and final principle of the global agenda on PMTCT is the shared responsibilities of various countries across the globe (Adetokunboh & Oluwasanu, 2016). The shared responsibility is to encourage countries, especially developed countries, to contribute

resources towards rolling out PMTCT services and programs in a less developed country. If shared responsibility is adhered to, no country will be left behind in global efforts towards PMTCT. Thus, inequalities regarding PMTCT will be abridged.

Efforts towards PMTCT services and programs have not been without their challenges (Chi, 2012). Poor patient retention is high on the list of challenges that confront PMTCT services in Ghana and sub- Saharan Africa as a whole. Typically, patients tend to drop out of PMTCT (Adetokunboh & Oluwasanu, 2016). Additionally, the low rate of HIV/AIDS testing is another challenge confronting PMTCT in the sub-Saharan Africa sub- region (Ubesie, 2012). When HIV/AIDS infections are not detected, it becomes impossible to carry out PMTCT intervention (Derebe et al., 2014). Another challenge attributed to PMTCT in Ghana and sub-Saharan Africa is the low coverage of healthcare services (Mutabazi et al., 2017). Because there is no universal access to healthcare, women in certain parts of the country where access to healthcare is poor are denied the opportunity to participate in the prevention of mother-to-child transmission programs and services (Flax et al., 2017).

Other studies pointed to the weak integration of PMTCT services into already existing healthcare programs such as ART services, and the lack of skilled health human resources are key challenges confronting the promotion and utilization of PMTCT services (Dirisu et al., 2020). Some socio-cultural practices also tend to hinder the use of PMTCT services (Adedimeji et al., 2012). Gender roles; promote a paternalistic attitude in Ghana and sub-Saharan African, which means that a woman may only seek PMTCT services with the permissionof the husband (Ganle et al., 2016). So, when the husband does not approve, the woman is denied access to PMTCT services. Also, pressure from family members on the mother to breastfeed the infant may compromise PMTCT services (Madiba & Letsoalo, 2013).

Prevention of mother-to-child (PMTCT) services in Ghana first started in 2003 (Sakyi et al., 2020). Under the protocol that was used in 2003, a single dose of tablet Nevirapine was administered to a pregnant woman who tested positive upon the onset of labour. After delivery, the baby was also given Syrup Nevirapine for one (1) month (Reece, Norman, Kwara, Flanigan, & Rana, 2016). In 2007, the protocol was revised and Zidovudine and Lamivudine (Combivir) was administered to HIV-positive pregnant women from 28 weeks of pregnancy as well as antiretroviral prophylaxis for the baby for one (1) week (Reece et al., 2016).

In 2010, the World Health Organization made another change to PMTCT protocols. Under this new protocol, the preventive measures started at about 14 weeks and then continued throughout the entire duration of the pregnancy (Reece et al., 2016). The treatment does not end after delivery but continues to one (1) year after delivery to reduce transmission substantially to the child. The current protocol on PMTCT in Ghana dictates that every pregnant woman who tests positive for HIV is placed on antiretroviral therapy. This treatment is intended to last a lifetime. The offspring of a woman who was pregnant whilst testing positive for HIV is also given antiviral therapy for 6 weeks (Reeceet al., 2016). The offspring may be breastfed by their mothers from birth until their first birthday where breastfeeding is expected to end (Reece et al., 2016).

2.2 The retention rate in PMTCT services among post-partum women living with HIV

The national retention rate of PMTCT services among post-partum women living with HIV in China increased from 22.3% in 2003 to 90.5% in 2011. This finding was revealed in a systematic review and meta-analysis by Huan et al., (2016). Another systematic review that sought to determine the rate of retention of PMTCT services in SSA showed that pooled estimates of retention were 72.9% (95% CI: 66.4%, 78.9%) at 6 months for studies reporting <12 months of follow up and 76.4% (95% CI: 69.0%, 83.1%) at 12 months for studies reporting 12 months of

follow up (Singer et al., 2019).

Merga, Woldemichael, and Dube (2016) carried out an analysis of retrospective data including over 3000post-natal women in Central Ethiopia to determine the retention rate of PMTCT services. The findings showed that, 86.5% of the women retained in PMTCT services in the postnatal period which was however lower as compared to other parts of Ethiopia, such as Addis Ababa, Hawassa and South Omo Zone which recorded (94%), (96.1%), (96.5%) retention rate respectively (Merga et al., 2016).

In Uganda, a very low retention rate of PMTCT services was discovered among postnatal womenliving with HIV. According to the study, which sampled 365 postnatal women from the age of 25to 35 years living with HIV on the optimal retention of PMTCT services, it was shown that only 30.2% of the participants retained PMTCT services (Mustapha, Musiime, Bakeera-Kitaka, Rujumba, & Nabukeera-Barungi, 2018). The authors concluded that the level of retention of PMTC was extremely poor. Similarly, low retention was found in Mozambique. In the Manhiça District Hospital (MDH), Southern Mozambique, it was discovered that the retention rate of PMTCT services among women living with HIV was 39% (Nhampossa et al., 2020).

On the contrary, higher PMTCT retention rates were observed among the postnatal living with HIV in Kenya, and then South Africa (Ng'eno et al., 2020). In Kenya, the retention rate of PMTCT was 86.4%, and in South Africa, the retention rate of PMTCT services among postnatal women was 96.2% (Ng'eno et al., 2020). This retention rate meant that South Africa had one of the highest retention rates of PMTCT among postnatal women living with HIV in the African continent (Ng'eno et al., 2020). Another Kenyan study, in the rural region of Kiberia, showed that the retention rate of PMTCT among post-partum women was 54% (Thomson et al., 2018).

A mixed-methods study among 356 post-partum women in the Kilimanjaro region of Tanzania revealed that the retention rate of PMTCT services among post-partum women living with HIV was 85% (Falnes, Tylleskär, De Paoli, Manongi, & Engebretsen, 2010). The common services that were rendered to the women included ART care, counseling services, and infant breastfeeding support (Falnes et al., 2010). However, a retrospective analysis of data of 1497 post-partum women living with HIV in the Kisesa area of Tanzania revealed a lower retention rate of PMTCT services (Gourlay, 2015). The study showed that 74% of the women retained PMTCT services (Gourlay, 2015).

In the Enugu Teaching Hospital, Nigeria, majority (93.4%) of the one hundred and twenty-seven postnatal women living with HIV, utilize PMTCT services (Nwaneri et al., 2018). As such, the rate of retention of PMTCT services was high (Nwaneri et al., 2018). A national study in Burkina Faso established that from the 10 years of 2009 to 2018, there was a remarkable increment in the retention rate of PMTCT services among post-partum women living with HIV (Linguissi et al., 2019). Linguissi et al., (2019) reported that the retention rate of PMTCT services among post-partum women in Burkina Faso in 2009 was 22.3%. The authors also reported that in 2018, the retention rate of PMTCT services was 89.2% (Linguissi et al., 2019).

In an analysis of retrospective data in the Komfo Anokye Teaching Hospital, Kumasi, Ghana, the record of 207 postnatal women living with HIV was retrieved to calculate the retention rate of PMTCT services among the women (Reece et al., 2016). The results showed that the optimal retention rate of PMTCT services among the women was 66% (Reece et al., 2016).

2.3 The maternal factors influencing with retention of PMTCT services among post-partum women living with HIV

In Uganda, the maternal level of education was associated with the retention of PMTCT services (Bavuga, 2011). It was found out that women who had higher education were more likely to continue the usage of PMTCT services than women who were less educated. Higher education referred to the level of education above second cycle education (Bavuga, 2011). Another Ugandan study showed that higher education was a significant predictor of the usage of PMTCT services among postnatal women living with HIV (Milly, 2013).

In furtherance, the husband's educational status (lack of formal education (AOR (95% CI) = 3.3 (1.1, 9.9) was associated with the use of PMTCT services among postnatal women living with HIV in the Sebeta Town, Central Ethiopia (Merga et al., 2016). On the other hand, a study in the Anambra State, Nigeria, discovered that there was no statistically significant relationship between the husband's educational status and the retention of PMTCT services among postnatal women living HIV (Onalu, Agha, Adewoyin, Ebimgbo, & Okoye, 2019).

According to women in Mulago, Uganda, support from their male partners increased retention of PMTCT services (Bavuga, 2011). A study in the Southern Central part of Ethiopia supported the findings that male partner involvement improves retention of PMTCT services (Belato, Mekiso, & Begashaw, 2017).

In the thematic content analysis, the authors found out that male partner involvement promotes the use of PMTCT services among post-natal women (Belato et al., 2017). Post-partum women living with HIV in Bwaila Hospital in Lilongwe, Malawi, indicated that malepartner support was crucial towards the retention of PMTCT services because male partner supportwas a major source

of emotional, and financial support which spurred the women on to continue participating in the preventive programs and services (Gugsa et al., 2017). Post-natal women living with HIV in 68 Nigerian Army Reference Hospital Yaba, Nigeria, also agreed that male partner support was an important facilitator of retention of the usage of PMTCT services (Harrisonet al., 2020).

Age was another maternal factor that was found to be associated with the retention of PMTCT services among maternal women. According to a study that was conducted in rural parts of Tanzania, increasing age leads to an increased retention rate of PMTCT services (aOR 1.1 [95%CI 1.0-1.2]) (Gourlay, 2015). In Central Ethiopia, PMTCT service utilization among postnatal women was associated with age (25–34) of respondents (AOR (95% CI) = 0.46 (0.22, 0.97)) (Merga et al., 2016). The study of Milly (2013) confirmed that age was associated with the utilization of PMTCT services. In a study that utilized the National Demographic Health Survey of Uganda as a data source, it was shown that age was significantly associated with the retention of PMTCT services (Milly, 2013). Among all the age groups, those participants who were 25 to 29 years old were the most likely to retain the usage of PMTCT services during the postnatal period (Milly, 2013).

The economic status of women was closely found to be related to the utilization of PMTCT services among postnatal mothers in a study involving multiple countries in sub-Sahara Africa (Grede, de Pee, & Bloem, 2014). A higher proportion of postnatal women with higher household income utilized PMTCT services than women with lower household income, and the difference was statistically significant (Grede et al., 2014). In addition, higher economic status was revealed as a significant predictor or retention of PMTCT services among postnatal women living with HIV in a nationwide study in Uganda (Milly, 2013). Economic difficulties limited the ability of post-partum women in Accra, Ghana, to seek PMTCT services (Sakyi et al., 2020).

The religion of the mother was not found to be associated with the retention of PMTCT services

in Mulago Referral Centre, Uganda (Bavuga, 2011). A similar finding from Central Ethiopia showed that religion was not associated with the use of PMTCT services during the postnatal period among women living with HIV (Merga et al., 2016).

Place of residence is another variable that proved to be associated with the retention of PMTCT services among postnatal women living with HIV. In the Anambra State, Nigeria, it was revealed that the postnatal women living with HIV who were resident in urban areas were more likely to utilize PMTCT services during the postnatal stage than the women who were resident in rural areas (Onalu et al., 2019). Also, in the Lodwar County Referral Hospital, Turkana County, Kenya, postnatal women who were resident in urban areas were 2.8 times more likely to record retention of PMTCT services than postnatal women who were resident in rural areas (Ongaki, Obonyo, Nyanga, & Ransom, 2019).

A systematic study that focused on the factors influencing retention of PMTCT services among postnatal women in SSA revealed that illness during the postnatal period was associated with retention of PMTCT services (Grede et al., 2014). It was revealed that women who got sick, on multiple occasions, during the postnatal period were less likely to utilize PMTCT services. As such, multiple illnesses during the postnatal period was negatively associated with retention of PMTCT services (Grede et al., 2014). Poor maternal health was also associated with a low retention rate of PMTCT services among post-partum mothers in Accra, Ghana (Sakyi et al., 2020).

The marital status of the woman was not associated with retention of PMTCT services among postnatal women in a southern suburb of Uganda (Bavuga, 2011). Similarly, a study in rural parts of Tanzania showed that marital status was not associated with retention of PMTCT

services among post-partum women (Gourlay, 2015). In furtherance, a study in the Anambra State, Nigeria, showed that married postnatal women living with HIV were more likely to retain PMTCT services than those postnatal women who were not married (Onalu et al., 2019). On the contrary, a study in a suburb of Zambia discovered a significant relationship between marital status, and retention of PMTCT services among postnatal women living with HIV (Muyunda et al., 2020). Women who were married were 1.5 times more likely to use PMTCT services than those who were not married (Muyunda et al., 2020).

2.4 The Service provider factors influencing retention of PMTCT services among post-partum women living with HIV

Hodgson et al., (2014) discovered a systematic review, which included literature from across the globe that; geographical access to health services was positively associated with retention of PMTCT services among postnatal women living with HIV. Women who lived closer to health facilities with PMTCT services had a higher retention rate of PMTCT services than women who lived farther from health facilities that render PMTCT services (Hodgson et al., 2014). Similarly, a study in Amaha State, Ethiopia, concluded that the distance to the health facility was a factor that influenced retention of PMTCT services among mothers during the post-partum period (Abebe, Mengistu, Gete, & Worku, 2019). According to the authors, women who lived closer to a health facility were likely to record a good retention rate as opposed to mothers who live far away from a health facility (Abebe et al., 2019).

The attitude of healthcare workers was another factor that was associated with the retention of PMTCT among post-partum mothers. A study in the Amaha State, Ethiopia, established that mothers who consider the attitude of healthcare workers, particularly nurses and midwives,

recorded a higher retention rate of PMTCT than mothers who complained about the attitude of the healthcare team (Abebe et al., 2019). Similar findings on the relationship between the positive attitude of healthcare workers and retention of PMTCT services among postnatal women living with HIV in Eastern Cape, South Africa (Peltzer et al., 2005). The women felt that the positive attitude of the healthcare workers made them feel welcomed and valued (Peltzer et al., 2005).

In Uganda, an initiative in which healthcare personnel was assigned to a postnatal woman living with HIV as a "mentor" was piloted (Igumbor et al., 2019). Preliminary findings from the study showed that retention in the PMTCT cascade was significantly higher for mother-baby pairs in the intervention arm compared to those in the control arm across all measured time points (96.7% vs 65.8% at 6 weeks after birth, $p<0.001$; 81.5% vs 42% at 6 weeks after cessation of breastfeeding, $p<0.001$; and 71.2% vs 20.6% at 18 months after birth, $p<0.001$) (Igumbor et al., 2019). Relative to the control group, women in the intervention group were less likely to be lost to follow-up following treatment initiation (AOR 0.05, 95% CI: 0.02, 0.15). As such, the mother-healthcare mentor program improved retention of PMTCT services (Igumbor et al., 2019).

Postnatal women living with HIV in Rivers State, Nigeria, indicated that inadequate health human resource negatively impacted their use of PMTCT services at the postnatal stage (Jumare, 2015). According to the women, they stopped going for PMTCT services when they noticed that there were not enough healthcare personnel to embrace the demand of the healthcare services (Jumare, 2015). Similarly, in the Lusaka District, Zambia, postnatal women felt that the inadequate number of healthcare workers was a discouraging factor in using PMTCT services during the postnatal period. According to the women, healthcare workers appear to be occurred with attending to antenatal care women at the expense of postnatal women who go for PMTCT services. The women attributed this attitude of the nurses and midwives to the shortage of staff (Kapasa, 2020).

The shortage of staff in the health facility may lead to a high workload on the healthcare workers. This in turn leads to the dissatisfaction of the women on the care rendered to them as observed in the Rundu district of Namibia (Said, 2014). The dissatisfaction then discourages the women from seeking PMTCT services. Eventually, the retention rate of PMTCT service is hindered (Said, 2014). This situation was exactly what unraveled in Rundu district of Namibia where the researcher discovered that high workload on the healthcare workers leads to dissatisfaction among postnatal women seeking PMTCT service. The dissatisfaction, consequently, led to the low retention rate of PMTCT services (Said, 2014).

In addition to inadequate health human resources, inadequate medical logistics was another factor that negatively impacted the retention of PMTCT among postnatal women. The finding of a study in the Bolgatanga Regional Hospital in Ghana concluded that a frequent shortage of medical supply frustrated women who were seeking PMTCT services (Osei, Fosu, & Der, 2016). Thus, the women were discouraged from further seeking PMTCT services. Therefore, the shortage of medical logistics negatively affected the retention of PMTCT services in the facility (Osei et al., 2016).

2.5 The socio-cultural factors influencing retention of PMTCT services among post-partum women living with HIV.

The confidentiality of postpartum HIV care, emerging from persistent stigma of HIV and fear of disclosure, is a major deterrent in the retention of PMTCT service (Knettel et al., 2018). In South Africa, when mothers were asked after delivery to point out reasons why other HIV-infected women may not return for postpartum PMTCT care, among the most commonly-cited barrier for retention of PMTCT service was stigma that comes with the disclosure of the mother's HIV

status (10.4% each, 5/48). (Clouse et al., 2014). In Kenya, study show that 24.7% of the three hundred and eighty-five mothers indicated that stigma and discrimination as an obstacle to PMTCT services. (Otieno, karaja & Kagira, 2017). According to women in the Greater Accra Region of Ghana, they prefer to choose a distant HIV care center during pregnancy and postpartum period to avoid accidental HIV disclosure stigma. (Sakyi et al., 2020). Stigma and fear of status disclosure to partners, family or community members are the most commonly reported factors influencing PMTCT procedures among post- partum women living with HIV in sub-Saharan Africa (Atanga et al., 2016). Mothers knew the seriousness of HIV infection. Nevertheless, stigma, fears of HIV and of disclosure keep many women from returning to clinic for postpartum visits. (Odeny et al., 2014). Further investigation revealed that many mothers link the clinic with learning their HIV status, or even death. The women who are yet to communicate their status to their partners fear they will have to disclose they are HIV-positive if they visit the clinic for PMTCT services. (Odeny et al., 2014). However, in 2015 (52.6%) of 65 women post-partum women living with HIV in south west region of Cameroon who stopped PMTCT service because of stigma and discrimination accepted to return to care. (Atanga et al., 2016).

In furtherance, religious influences may explain some of the differences of PMTCT services among post- partum women living with HIV within or between some populations. In 2015, a study shows that among the reasons given for discontinuing PMTCT service for postpartum women living with HIV are attributed to religion (Atanga et al., 2016). All the women in the PMTCT service who had stopped treatment on religious grounds did not see any reason to go back and simply stated that their faith was going to heal them, thus reducing religious beliefs may improve retention of PMTCT services among post- partum women living with HIV (Atanga et al., 2016).

Male partner support was another factor that was found to be associated with the retention of PMTCT services among maternal women. In Kenya, majority (60%) of the three hundred and eighty-five mothers did not seek permission from their male partners to undertake HIV testing, while (30%) of the three hundred and eighty-five mothers sought the permission from the male spouses whereas 9.9% had no knowledge at all on what was expected of them. (Otieno, karaja & Kagira, 2017). This study indicates that there is significant positive relationship between the male partner support and the retention of PMTCT services among postnatal women living HIV in rachuonyo north sub-county-homa-bay county, Kenya. (Otieno et al., 2017)

In addition, study shows cultural/religion beliefs hinders the use of PMTCT services among postnatal women living with HIV in the Rachuonyo North Sub-County-Homa-Bay County, Kenya (Otieno et al., 2017). Among the three hundred and eighty-five mothers, (26.8%) of them stated that cultural practices such as women inheritance hindered women participation in PMTCT services (Otieno et al., 2017). In Ghana, a study shows that there is a belief that trekking to a far place for PMTCT services with a newborn baby put the infant at risk to diseases from evil eyes, leading to poor retention of PMTCT services (Sakyi et al., 2020). Some mothers in South Africa belief they are cured after childbirth, thus being the reason why they will forego PMTCT services. (Clouse et al., 2014).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter expounds on the approaches employed to determine the post-partum retention rate in PMTCT services and also assessed the factors that are likely to influence the retention rate.

This chapter also described the study design, study setting, study population, sample size determination, sampling technique, inclusion criteria, exclusion criteria, data collection instrument and method and ethical concerns. The strategies used for data analysis was also presented in the chapter.

3.1 Study design and approach

The study employed both descriptive cross-sectional and exploratory design. Retrospective secondary data of HIV-positive mothers in 6-18 months post-natal phase enrolled in PMTCT programs was retrieved to estimate the retention rate and in-depth interview was also employed to explore the factors likely to influence the retention rate.

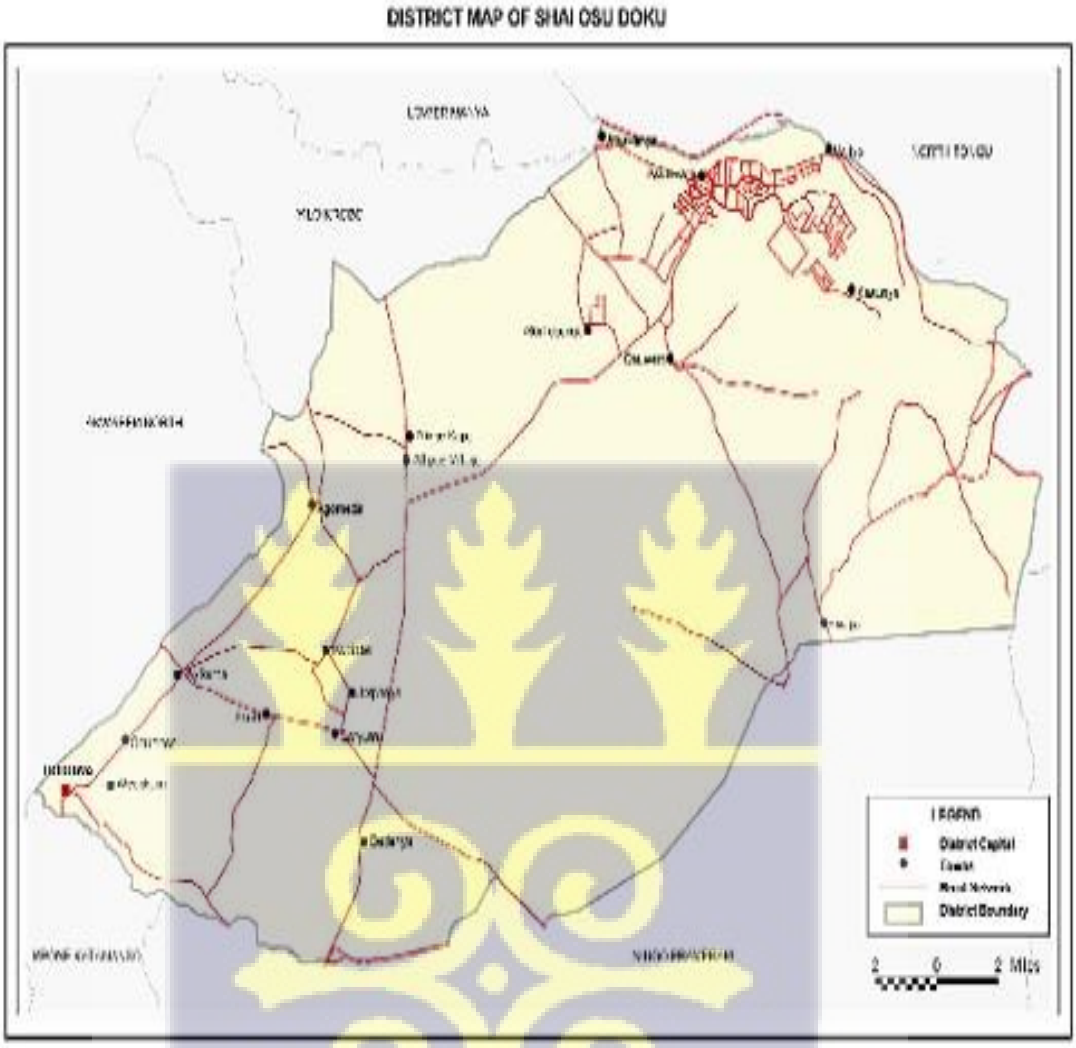
3.2 Study Setting

This study was carried out at the Shai-Osudoku District Hospital popularly known as the Dodowa Hospital in the Shai Osudoku District of the Greater Accra Region. It was established in 1970 as a health post and later upgraded to a district hospital in 2009. The facility is located in the Shai-Osudoku District of the Greater Accra region in Ghana. The Shai-Osudoku District is located in the South-Eastern part of Ghana in the Greater Accra region. It shares boundaries with Yilo, Lower Manya Districts at the north-west and North Tongu District to the north-east. It is also bordered at the West by Akwapim North District, south-west by Kpone Kantamanso

District, the south by Ningo Prampram District, and the East by the Ada West District (Ghana Statistical Survey, 2014). The district covers a total land area of 968.361 square kilometers and has Dodowa as the capital of the district (see map in figure 1).

According to the 2010 population and housing census (PHC), the district has a total population of 51,913 with 25,272 (48.7%) males and 26,621 (51.3%) females. The district is predominantly Rural locality with 29, 843 (76.7%) in rural areas while 12,070 (23.3%) are among urban locality.Three thousand five hundred and eighty-six (3,586) people were tested for HIV and 68 out of thetotal tested positive. Fifteen out of the people who tested positive were started on Anti-Retroviraltherapy (ART) at the Dodowa District Hospital (Ghana AIDS Commission, 2014). 28 health facilities have been recorded in the district. These comprise an ultra-modern District Hospital at Dodowa, 10Chip Zones, and 12 Chip compounds. The district hospital, Shai-Osudoku District Hospital serves as areferral point for all the health facilities across the district. It is a 125-bed capacity hospital with ultra-modern medical facilities. The facility has over 12 specialized departments which provide specialized care including Maternity, ART, ANC, and Post-natal services (District Health Service, 2016).

Figure 1.1: A Map of Shai-Osudoku District



Source: Ghana Statistical Service, GSS

2

3.3 Study Population

The study population was HIV positive post-partum women enrolled in PMTCT program from January 2019 to December 2020 and the study sample was a proportion of these women in 12-18months post-partum period.

3.3.1 Inclusion Criteria

i. All HIV positive post-partum women who have been enrolled in PMTCT program longer than 12 months period.

ii. HIV- positive post-partum women with babies that have died after12 months post-partum period.

Exclusion Criteria

i. HIV-positive postpartum women that were not enrolled in PMTCT program at district hospital during the antenatal period.

ii. HIV-positive post-partum women enrolled in PMTCT program before 1st January 2019.

3.4 Sample Size Determination

3.4.1 Quantitative sample size

The sample size for the study was calculated using the formula

$$N = \frac{Z^2 p\,(1-p)}{d^2}$$

Where: **N**= sample size;

z = z-score, **1.96**;

p = The median ANC HIV prevalence among pregnant women aged 15-45 years in Ghana =**2.00% (0.02) (**GHSS, 2019)

q = 1-p,

Calculated as follows

$$N = \frac{1.96^2 * 0.02\ (1 - 0.02)}{0.05^2}$$

N= 30 Participants

Total number of post-partum women who were enrolled in PMTCT program from January 2019 to December 2020 and satisfying the inclusion criteria = **51 participants**

Total number of post-partum women sampled for retention analysis = **51 participants**

This approach was used because the study population is a special group of post-partum women who were enrolled into a specialized programme for a period under study. Similar study reviewed (Folitse, 2017) used similar method. The quantitative data analyzed in the study did not involve respondent response but a retrospective records review. The available data was then retrieved for analysis.

3.4.2 Qualitative sample size

The number of respondents satisfying the inclusion criteria were sampled for structured in-depth interviews. Qualitative data was gathered from respondent until saturation point was reached and emerging themes identified. A number of thirteen (N=13) respondents were selected from post-partum women enrolled in PMTCT program from January 2019 to December 2020

3.5 Sampling Technique

3.5.1 Quantitative sampling technique

A convenience (non-probability) sampling method was used to retrieve data of post- partum women enrolled in PMTCT program from January 2019 to December 2020 from the Post-natal and ART data manager. Data of Post-partum women satisfying the inclusion criteria were retrieved for the study.

3.5.2 Qualitative sampling technique

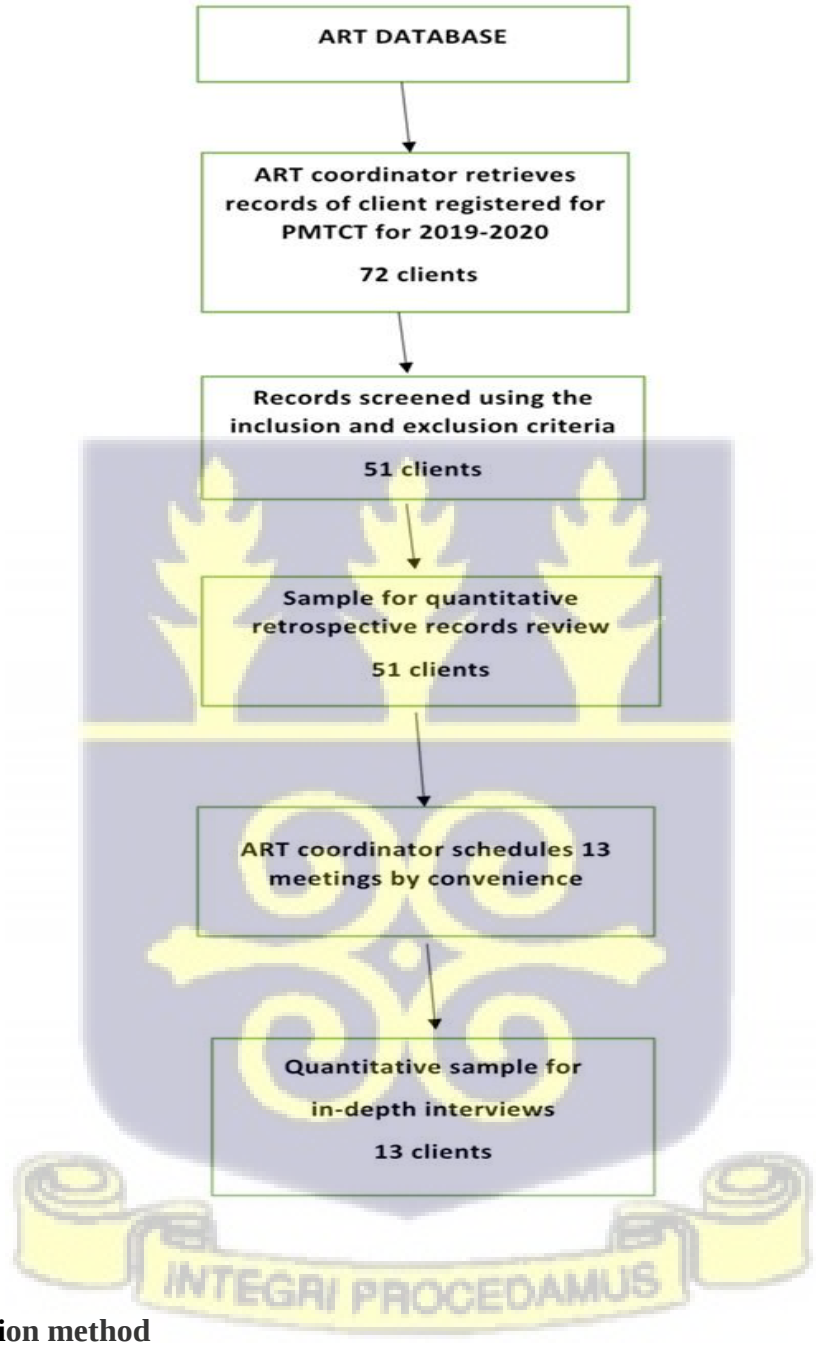
A convenient sampling approach was used to select participants for structured in-depth interviews. The sample of participants satisfying the inclusion criteria were given the opportunity to enroll in the in-depth interviews. Qualitative data was obtained from respondents until saturation point was reached. A total of 13 respondents participated in the in-depth interviews.

A review was done to ensure data collected reflected the inclusion and exclusion criteria of the study.

A number of 30 patients were selected from ART data base and given to the ART coordinator to make phone calls and schedule meetings for consent form administration and in-depth interviews. 13 meetings were scheduled for the interviews.

This was presented in the diagram below.

Figure 2.0: Sampling Technique



3.6 Data collection method

3.6.1 Quantitative Data collection method

The PNC and PMTCT registers were retrieved from the unit head and the number of post-partum

women who went through HIV testing and counseling services (HTS), tested positive and were enrolled in PMTCT program from January 2019 – December 2020 was retrieved. Meetings were scheduled with ART data manager to access client's data in order not to obstruct clinic hours.70 clients were retrieved from the PNC and PMTCT register for the period and after background review, 50 clients satisfied the inclusion criteria. ART coordinator granted access to patient's folders and retrospective data of clients satisfying the inclusion criteria was extracted with data extraction tool developed by the researcher. Variables such as; Age, Marital status, Educational level, Religion, Occupation, Antenatal attendance, HIV disclosure, Male support, ART adherence, ART experience & ART regimen, WHO clinical stage, gestational age of pregnancy at registration Postnatal ART attendance, Information on infant ARV prophylaxis and dried blood spot (DBS) for Early infant diagnosis were retrieved for data analysis.

3.6.2 Qualitative Data Collection method

Out of the 30 eligible clients selected from the ART database, 13 clients volunteered to partake in the study after calls were made with the assistance of the ART coordinator. The time and site of meeting for the interview was decided by researcher and participants. All the 13 respondents preferred the hospital site and none agreed to home interviews. 13 face-to-face meetings were scheduled between the researcher and the participants. At the interview site, participants were welcomed and researcher introduced herself to each participant. Participant information sheet was read to each participant and both oral and written consent was obtained before the interview commenced. The interview was conducted in one of the ART consulting rooms. The researcher sat facing participant with a table in between them. Participant was made comfortable and door closed to enhance privacy. The interview lasted for about 30 minutes maximum and 15 Minutes

minimum.

3.7 Data Collection Technique

Quantitative data was collected from secondary record by the use of a designed data extraction tool by researcher to capture study variables. Qualitative data was obtained via face-to-face in-depth interviews in a hospital facility setting.

Interview guide was used to direct the conversations. Note-taking and audio recording was also used to capture information for data analysis after consent was obtained. The information recorded from respondents was password encrypted and kept safe. It will be finally destroyed after findings from work are published.

3.7.1 In-depth Interview with participants

The interviews were conducted at the Shai-Osudoku District Hospital's ART clinic consulting room. Consent was obtained from hospital authorities after participants expressed as their preferred interview site. 13 meetings were scheduled for the interview and all the respondents participated in the interview till all the relevant themes were captured. The researcher repeated questions and responds from the participant consistently to confirm and affirm emerging themes.

3.8 Data Collection Tools

3.8.1 Quantitative Data Extraction Tool

A form with predetermined fields capturing study variables was designed by the research to retrieve retrospective secondary data on study participants. The extraction tool was developed

with assistance from the ART data manager and pretested at kordiabe Hospital. The data Extraction tool is attached to the document at Appendix 1.

3.8.2 Qualitative Data Collection Tools

3.8.2.1 Interview Guide

This tool encompasses set of questions used to conduct interviews. It was employed to help track conversations during the in-depth interviews. The interview guide is attached to the document at Appendix 2.

3.8.2.2 Audio Recording

An electronic audio device was used to record in-depth interviews between researcher and respondents. Both oral and written consent was obtained from them before recording commenced. The recordings were duplicated unto cloud and password encrypted. It was then deleted from the main electronic recording device. The recordings will be kept safe and destroyed after the study has been published or discarded after two years if the research study will not be published.

3.8.2.3 Note Taking

During the interview, information was also written into a note book by the interviewer and compared with recordings to create themes. Information was also transcribed verbatim into another note book and both notebooks were compared to extract emerging themes.

3.9 Study Variables

The following factors have been shown in Literature to be related to PMTCT programs. They were explored to determine how they influence the research objectives

Table 1: Study Variables

Variable	Type of variable	Scale of measurement	Measurement
Service Provider factors			
Retention in PMTCT	Dependent	Categorical	Active in care, Defaulted/ Lost-follow-up, Transferred to another facility, Dead
Access to PMTCT facility	Independent	Categorical	Very good, good, poor
Privacy, confidentiality	Independent	Categorical	High, low, moderate, No
Supportive counselling role	Independent	Categorical	Excellent, Very good, good, poor
Attitude of staffs	Independent	Categorical	Excellent, Very good, good, poor
PMTCT delivery	Independent	Categorical	Excellent, Very good, good, poor
Maternal factors			
Age of patient	Independent	Continuous	Age at last birthday
Marital status	Independent	Categorical	Married, single, Divorced, Cohabiting
Educational status	Independent	Categorical	No formal education, Primary level of education, Secondary level of education, Tertiary level of education
Occupation	Independent	Categorical	Employed, Unemployed
Religion	Independent	Categorical	Christian, Muslim, Traditionalist, No formal religion
Residence	Independent	Categorical	Urban, Rural
HIV clinical stage	Independent	Categorical	Stage I, II,III,IV
PMTCT Literacy	Independent	Categorical	Very good, good, poor
Type of Delivery	Independent	Categorical	Hospital Delivery, Home Delivery
ARV Regimen	Independent	Categorical	TDF/3TC/EFV, TDF/3TC/DTG, TDF/FTC/EFV

Infant feeding practices	Independent	Categorical	Exclusive breast feeding for 6months, breastfed for 6months-1 year, no breastfeeding, other option.
Socio-cultural Factors			
Family/Peer support	Independent	Categorical	Good support, little support, no support,
Cultural beliefs/Religion	Independent	Categorical	Support PMTCT, Against PMTCT, Neutral
Partner status disclosure	Independent	Categorical	Yes, No
Male partner support	Independent	Categorical	Good support, little support, no Support
Stigma	Independent	Categorical	Ashamed, not ashamed

3.10 Data Analysis

Quantitative data retrieved from the retrospective records of respondents was managed and coded by the researcher using a Microsoft Excel spreadsheet. Data was then imported into STATA 16.0 software for analysis. Categorical variables were analyzed using descriptive statistics. Age as a continuous variable was presented as a mean and standard deviation for interpretation of results. Retention status was calculated following review of participants' records to determine the proportion of women under status and the attrition rate in the PMTCT program.

Qualitative data was analyzed using the thematic content analysis technique. The data from audio recordings was transcribed from Twi to English and reviewed by an independent body. Transcribed data was entered into ATLAS.ti 9. Coding was done and interpretation was made by researcher using the ATLAS.

The content analysis was done using the six-step approach by Braun and Clarke (2016). The first stage included transcription of data verbatim. At this stage, the researcher listened to the recorded audios and wrote them out word-for-word (Kawulich, 2015). This was reviewed by an independent body. Afterwards, initial codes were generated. Themes were then searched for, reviewed, defined and reported for analysis (Braun & Clarke, 2016). The views in the transcript that expressed the quality of life of the interviewees were highlighted. This process was repeated for all the transcripts (Braun & Clarke, 2016) and the highlighted sections of all the transcripts were then compared for similarities. The codes that were similar were grouped into themes.

3.11 Methodological Rigor

To ensure credibility of this research, the researcher pretested the data collection tool at Kordiabe district hospital. Data was collected from ART folders, ANC records, DBS report, PNC records

and compared with data from the ART database to access credible data.

Data obtained from in-depth interviews was transcribed verbatim into English language by an independent body and the primary local language used was Twi language. Transcribed data was reviewed by two independent persons and the researcher and any inconsistencies were addressed before data was analyzed.

3.12 Ethical Considerations

Ethical clearance was obtained from the Ghana Health Service Ethics Review committee before commencing the research. The ethical reference number is GHS-ERC 035/08/21. Permission was also sought at the Shai –Osudoku District Hospital to access the ART database and medical records of respondents to start the study.

3.13.1 Consent

Participants were given consent forms which contained relevant information about the study to fill and oral consent was also sought before audio recording was done. Information was explained to patient in local dialect (Twi) and that was the only language used to collect qualitative data. Participation in the study was solely voluntary and participants were aware that, even after consenting to participate in the study they can withdraw from the study at any time without any consequence. Consent forms have been attached at Appendices

3.13.2 Privacy, confidentiality,and anonymity

Privacy, confidentiality, and anonymity were ensured and maintained throughout the data collection processes. Participants' identity or names were hidden from the study by the use of pseudonyms. Data obtained from the study were password encrypted, kept safe, and will be discarded after results from thestudy are published. Where work is not published, data obtained from the study will be destroyed after two years. Interviews were conducted in an enclosed room to ensure privacy.

3.13.3 Compensation

An amount of 30 GH (4.77 USD) was provided as a compensation package of transportation from their residence to study site. This amount was agreed between participants and researcher based on their location.

3.13.4 Potential Risk and Benefits

The possible risk related arises from the ongoing Covid-19 pandemic with regards to face-to-face interviews. The WHO and national Covid-19 safety protocols were ensured and adhered to during data collection process. Facemasks, sanitizers, running water and soap were provided at free cost at data collection site. Participants were taught how to wear mask appropriately and social distancing were enforced.

Benefits from the research are not directly related to the participants; however, data obtained from their participation will inform healthcare authorities, program leaders and other stakeholders to develop strategies to improve PMTCT programs among women living with HIV

in the post-natal phase.

3.13.5 Conflict of Interest

The Researcher hereby declares that there is no conflict of interest in the approach, data collection, analysis and report of findings from this study.

3.13.6 Research Funding Information

The Principal Investigator fully funded this research study and there was no funding from any other person or institution.

CHAPTER FOUR

PRESENTATION OF FINDINGS/ RESULTS

4.0 Introduction

This section presents the findings from the data analysis and the researcher's interpretation of the generated data from the study. The first section presents respondents socio-demographic, clinical and treatment data as well as information on infant follow up. The second section presents post-partum retention analysis results of retrospective secondary data of participants. The last section also presents results of analysis of qualitative in-depth-interviews.

Key findings from quantitative and qualitative analysis are presented below.

4.1 Socio-demographic characteristics of participants

Summary of socio-demographic characteristics and retention status description of sample for the study have been presented in Tables 2 and Figure 4.1.

The sample had a mean age of 34 years with a standard deviation of 4.75, 36 (70.5%) of them had basic level of education, 11 (21.6%) had secondary level education, 1 (2.0%) had tertiary level of education and 3 (5.9%) of them had no formal education. 25 (49.0%) were involved in informal work such as farming, hairdressing, tailoring, trading whilst 21 (41.2%) were involved in formal works such as teaching, nursing. Out of the 51participants 44 (86.3) of them were Christians and were either married or cohabiting and 7 (13.7%) were Muslims. 1 (2.0%) out 51 of the participants was divorced and 7 (13.7%) were single.

50 (98.0%) out of the 51 participants delivered in hospital setting whilst only 1 (2.0%) delivered at home.

Zidovudine plus Nevirapine was the predominant antiretroviral prophylaxis for infant after birth.

All (100%) of the sample completed all the schedules for ANC PMTCT. 46 (90.2%) of the sample reported for first Postnatal PMTCT visit, 30 (58.8%) reported for second Postnatal PMTCT visit and 25 (49%) reported for third Post-natal PMTCT visit.

Thirty-eight (74.5%) out of 51 participants reported at the facility for infant PCR test at 6 weeks after zidovudine/Nevirapine prophylaxis had been given.

Information on Antibody testing at 18 months for most participants were not available at the time of data collection.

Results have been presented in Table 2.

Table 2: Socio-Demographic Data, Clinical and Treatment Characteristics

Variable	Frequency N=51	Percentage
Age-years; mean (SD)	34 (4.75)	
Educational level		
No formal education	3	5.9
Basic level	36	70.5
Secondary level	11	21.6
Tertiary level	1	2.0
Religion		
Christian	44	86.3
Muslim	7	13.7
Occupation		
Employed (Informal).	25	49.0
Employed (formal work)	21	41.2
Unemployed	5	9.8

Marital Status		
Married	29	56.9
Divorced	1	2.0
co-habiting	14	27.4
single	7	13.7
Residence		
Urban	42	82.4
Rural	9	17.7
WHO HIV clinical stage		
Stage I	41	80.4
Stage II	10	19.6
Stage III	-	-
Stage IV	-	-
Completed ANC PMTCT:		
Yes	51	100
No	-	-
Partner Disclosure:		
Yes	16	31.4
No	35	68.6
Type of ART initiated:		
TDF/3TC/DTG	33	64.7
TDF/FTC/EFV	4	7.8
TDF/3TC/EFV	14	27.5
PCR- DNA results:		
Positive	-	-
Negative	2	3.9
undetected	16	31.3
not done	12	23.5
not received	21	41.2
Type of delivery		
Home delivery	1	2.0
Hospital	50	98.0

Prophylaxis ARV for baby:		
AZT		
NVP	17	33.3
AZT/NVP	5	9.8
Not given	27	52.9
	2	3.9
Postnatal PMTCT		
First visit	46	90.2
Second visit	30	58.8
Third visit	25	49.0
Missed ARV		
0pills	29	56.9
1-2 pills	2	3.9
3-4 pills	2	3.9
3 or more pills	18	35.3
4		
PCR at 6 weeks		
Yes	38	74.5
No	13	25.5
Gestational age at first PMTCT visit		
Mean =	24weeks	
	SD= 8	
Range =	8 – 38 weeks	
Retention status		
Active in care	29	56.9
Defaulted and lost to follow-up	17	33.3
	3	5.9
Transferred to another facility	2	3.9
Dead		

Keys

AZT- Zidovudine

NVP - Nevirapine

PCR - Polymerase Chain Reaction

TDF/3TC/DTG - Tenofovir/Lamiduvine/Dolutegravir

TDF/FTC/EFV - Tenofovir/ Emtricitabine/Efavirenz

TDF/3TC/EFV - Tenofovir/Lamiduvine/Efavirenz

4.2 12 months Post-Natal PMTCT Retention Analysis

Figure 4.1 reports the proportion of women who are retained in PMTCT program after their birthing phase. The percentages were determined after tracing and following up retrospective data of the sample under study from the time of delivery to their present status in the PMTCT program as well as excluding their infants' diagnosis. After review of their ART folders, ART database, post-natal records and DBS report book, 29 (56.9%) out of the 51 sample were of active status, 17(33.3%) of the sample had defaulted/lost to follow-up in the program period following birth, 3 (5.9%) of the sample had been transferred to other facilities for continuity of care and 2 (3.9%) of the sample died during the programme period.

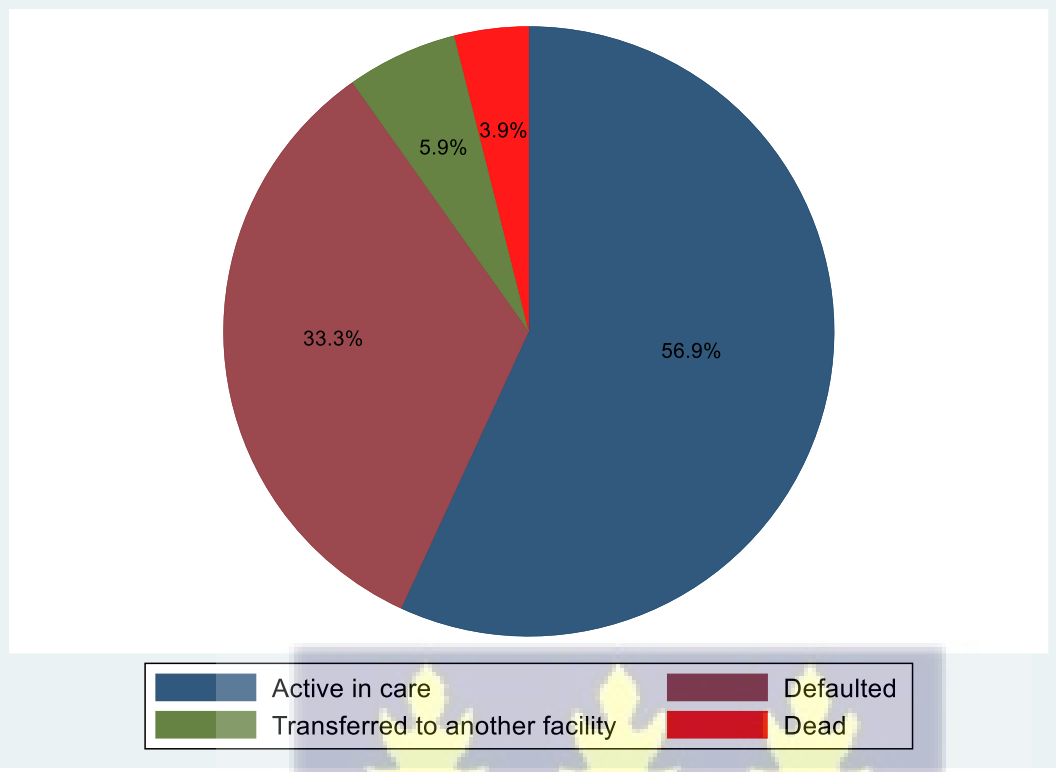


Figure 3.0: Post-natal PMTCT retention status of HIV positive women under study.

Active status- the number of women who were retained in the PMTCT programme at 12months post-partum period.

Defaulted/lost to follow-up- The number of women who were defaulted in treatment and lost to follow-up in the PMTCT programme at 12 months post-partum period.

Transferred to another facility-the number of women who were transferred to other facility for continuity of care.

Dead- the number of women who died at 12 months post-partum period.

4.3 Presentation of Qualitative Results

Qualitative data was retrieved from in-depth interviews of 13 respondents after background characteristics and understanding of the program was determined. The background characteristics of the respondent have been displayed below.

4.3.1 Background of Participants

Table 3: Age of Respondents: All the participants were adults aged between 28 and 41 years.

Participants' ID	Age
P1	36
P2	34
P3	34
P4	34
P5	28
P6	41
P7	34
P8	33
P9	30
P10	35
P11	30
P12	28
P13	32

Where they live

Most of the respondents live in Dodowa and Adenta, with others living in nearby towns of Dodowa who come to take their medications at the hospital (Table 1).

Education

Participants had received basic education from primary up to junior high school.

Marital status

Most of the respondents were married or cohabiting with their partner. Another had three children for her man but was not married to him.

While most participants were in their first marriage, few were in their second marriage after getting infected with HIV from their first marriage partners. Some quotes are below:
''I was married before this current one. The man was not good, so I divorced and married again.
''No, I have been married before this one. I had two children with him, and when I was pregnant with the child, I got ill, and they found out I had HIV, so we had some argument because I insisted he gave the illness to me because he was the only man I was with and we did not resolve the issue well till it resulted in divorce. Then when I started treatment, I recovered and got married to this second man."

Living with a spouse

The majority of the participants lived with their husbands (Figure 2.2). Other participants had husbands living in towns close to them while one had a husband living outside Accra, in the Eastern region of Ghana.

''No please he does not stay here. He lives in Osino.''

''No please he lives in Ashaiman and I am in Afienya.''

''No, we did not live together; he has always lived in Dodowa here.''

History of HIV infection

Some of the participants could not tell exactly when they got infected with HIV.

''I found out I was having HIV when I had my other child before this one and now my husband has left me and married another woman.''

''Please when I was pregnant with my first female child I went to Lister hospital but they did not say anything like that until I came to Dodowa hospital when I was about 8 months that I tested positive to HIV but I can't remember the exact year.''
''It was when I had my first child that I tested positive to HIV. It was in Kasoa and when I moved here I continued taking my medication here and I delivered the other children here.''

''It was during my antenatal routine that it was discovered I had HIV.''

All the participants had children. However, one participant stated that she had lost a child as quoted below:
''I have four children, one died so now I have 3.''

Majority of the participants stated that their children belonged to their current husbands.
''Yes all the children are for him.''

A few had children from previous marriages.

''No the two children are for my 1st husband and this child is for my current husband.''

Almost all the children of the participants were HIV negative, aside from one woman who stated that all her children had not been tested.

''No they have all not been tested.''

Another participant stated that she had come to the hospital that day to test her child.
''No she has not done the test that is why I have come today.''

Tested for HIV

Most of the participants first noticed they had HIV during their antenatal pregnancy.

''It was during my antenatal period when I was about 8 months old that I tested positive to HIV. The test was done in the hospital and I was put on medications.''

''It was during my second pregnancy that I realized I had HIV. When I came for the antenatal I was about 20 weeks and they did the test and I was positive I felt bad but the nurse assured me that all is not lost and there is a medication that can help manage it but does not cure it so if I take it well my baby will not get some of the infection.''

Some also found out when their child fell ill and tested positive and hence were also checked and tested positive.
''My other child was sick so I brought him here for check-up, he was 1 month two weeks old and they did a test and found out it was HIV so they did test on me and found out I was also positive.''

''So one of my child was ill and tested positive that was when they made me do the test and realized I had HIV but my child is passed about 5 years now. She was put on medications after that but died last year.''

''I was not feeling well, I had some rashes on my body so I went to the hospital and I was told I had HIV.''

Most of the participants stated that they attended their antenatal clinic at Dodowa where the study was conducted.

''I attended antenatal and delivered my child in this hospital.''

Some stated that they started in a different clinic but were referred due to the long distance they had to commute to the place.

'' It was in St Joseph hospital, Koforidua. So I started the treatment there but when I was pregnant they said the distance is long so they referred me to this hospital and I have been taken my medications here.''

Another participant shared that she attended her antenatal clinic at another hospital but delivered at the hospital where the study was conducted.

''No as for this present child, I went for antennal clinic at St. Andrews clinic but delivered the child in this facility.''

4.3.2 Maternal factors influencing Retention in PMTCT service

4.3.2.1 PMTCT Knowledge

All the participants had heard of PMTCT drugs and were first told about it at the hospital by a nurse. Outside the hospital, they had not heard about it

''Yes please. I came for antenatal here and it's was in this hospital I heard of it.''

''The nurse told me that there is medication that doesn't cure the illness but help reduce the virus so I should make sure I take my medication every month and regularly so that my baby does not get infected with the virus.''

''Oh yes I was told that when I take the medication it will prevent your child from getting it when you are pregnant and its my prayer every day that this illness will stay on me and not go to my children.''

''I was told here that I should take the medicine before I eat and that because of the infection I have, when I take the medication the child I have will not contact the infection. That is all I can remember.''

''Oh yes I see it to be useful because they told me if I focus on taking the medication regularly I would not get ill frequently and its true when i started taking my medications I feel good and strong.''

Others mentioned that it prevented their new born children from getting infected with HIV.

''Oh yes because when I was not on the medication I used to feel weak, dizzy and got ill easily but when I started taking the medication I have not felt the symptoms again till am pregnant and also I have given birth to two children and both of them tested negative because of the medication.''

''Yes because the medication they give us we were told it prevents the baby from getting some of the infection if you take it regularly and I have been taking it and my baby is fine.''

''Yes I think it's important because it prevents the baby from getting infected by the virus so we have to take our medications well.''

However, one participant complained about it making her lose weight and is now taking some blood tonics to gain weight.

''It is good but the medication I don't know if it's the family planning I did or just the medication. I used to be thick but when I started using the medication I lost some weight so I reported to the nurse and the prescribed some blood tonics to me.''

The majority of the participants shared that the health care providers informed them that PMTCT medication helps prevent their children from getting infected with HIV provided they take them regularly as prescribed to them and not wait till all the medicine finishes before refilling.

''They told me that the medication helps prevent the baby from getting infected by the virus so if I am consistent with the treatment the baby might not get some of the disease.''

''They told me to be taking the medications so the baby does not get the virus and also to be coming for clinic when the medication is almost getting finished.''

''Oh so they told me to be taking the medication regularly and not to be skipping doses to prevent my baby from getting the infection.''

Other participants explained that they were informed that although the medication does not cure HIV, it helps to reduce the virus in them and also help prevent their child from getting infected with the virus.

''The nurse told me not to be scared because the disease is not scary as how its first used to be and that there is medication that doesn't cure the illness but help reduce the virus so I should make sure I take my medication every month and regularly so that my baby does not get infected with the virus."

Some also shared that they were advised not to share their personal items such as razor blades and tooth brushes with their children.

''I was told not to be sharing personal items such as toothbrush and my towel with the baby. I should also use any razor blade I had use for cutting my nails on the baby.''

Another participant mentioned that she was advised to not to do mix feeding and was told to either opt for only breast feeding or formula feeding their child.

''They advised me not to be doing mixed feeding but to either breastfeed or do formula feeding and also to be taking my medications and give the baby's own to her.''

4.3.2.2 Infant feeding practices

All but one of the respondents breastfed their children.

''Yes I did and I am still breastfeeding.''

''Immediately after birth I breastfed my child and she is still breastfeeding. It's been 1 year and 4 months now.''

''Yes I did the breastfeeding for 6 months before introducing other foods.''

The respondent who did not breast feed indicated that she did so to ensure her child does not get any chance of getting infected with the virus.

''No please I did not breastfeed my children. Though they educated me on it and gave me options but because the other one passed I was scared and did solely formula feeding for them and introduced solids foods gradually. But constantly coming for clinic and seeing other positive mothers breastfeeding their children and test results coming out negative has given me some hope.''

The majority of the respondents indicated that they exclusively breastfed their child for six months.

''For 6 months before introducing other foods. At first I did not want to breastfeed the baby because of the disease but later they encouraged me to give because I am on the medication.''

''I did exclusive breastfeeding for 6 months before introducing other foods. And I think it's the best infant feeding method because after birth you have to give the breast milk to the baby.''

Those who did not breast feed their children at all was due to fear of infecting their child with the virus.

''I did not breastfeed my baby because I was scared of passing the infection to her though they educated me on it I still felt like giving her formula feed.''

4.3.3 Service provider factors influencing Retention in PMTCT service

4.3.3.1 PMTCT service delivery

There was a consensus that they had all gone through antenatal care.

''Yes when I was pregnant I came for Antenatal services here.''

''I started antenatal clinic in oyibi and continued in this hospital but I did not deliver the baby here but attended postnatal clinic in this facility.''

Generally, the participants indicated that they took their medications regularly once they had been given to them.

''Oh I come for all my visits and sometimes they give me 3 months medication so it lasts me for a while.''

''When I used to come for medications when I was pregnant I also take the medications once they have been to me.''

However, one indicated that her patronage of the PMTCT services depended on whether she had money to transport her from her house to the hospital. She further explained that she delivered her child at home with the help of her sister.

''Since I gave birth to her I have not come for medications because I did not have money to board a car to come.''

''I was not feeling well, it felt like the baby was coming so I called my sister to come, immediately she came home my water broke and she delivered the baby at home.''

Again due to being hard up, she indicated that she had not been able to take the medication since she gave birth to her child who was nine months old.

''Yes I have not taken medications.''

There was a consensus that the treatment at the PMTCT programme facility was the same as what they received at antenatal clinics. One participant added that the only difference was that they prayed before educating them while they said no prayers at the PMTCT facility.

''It's more like the same thing, there we pray before they talk to us but here they do not do prayers before.''

4.3.3.2 Supportive Counselling role

All the respondents strongly agreed that despite the busy nature of the work of the health care professionals, they made them feel good and treated them like humans. They added that they encouraged them to take their medications since HIV is no scarier due to the availability of antiretroviral drugs.

''I think they make me feel good. They always tell me that this illness is not scary and am not the only one having it and a lot of people are having it, pauses hmmm so if I take my medications well I will be fine.''

''At times I used to ask them that will this sickness ever leave me and they will tell me that the medications if I take it consistently, it will help reduce the viral load and I come become healthy.''

''They treat me very fine here. When I come they take my antenatal record book and me questions.''

''I always feel free to share anything with them especially when I came with my baby boy they asked me a lot of questions and I answered them.''

Others indicated that the health care practitioners were patient with them and always followed up on how they were faring.

''Oh they are patient with me and do not say anything to dampen my spirit. Their words are uplifting and full of love.''

''They have patience, sometimes they call us to find out how we are and advise us to be taking the medications.''

''They listen to everything we want to tell them and are very patient with us.''

They also mentioned that the health care practitioners made them feel free to share what bothered them.

''I always feel free to share anything with them especially when I came with my baby boy they asked me a lot of questions and I answered them.''

''They are nice to us and whatever you tell them, they have a way of making you feel calm about it.''

''You see when you have this illness people treat you someway but when you come here they treat you like there is nothing wrong with you and you feel good.''

4.3.3.3 Privacy/Confidentiality

All the participants indicated that they felt free to share their views at the clinic.

''When we come here they receive us fine and when my child passed they asked a lot of questions because they wanted to know why he was on the medications and still died and I openly told them everything.''

''Yes when I am troubled or worried about something, when I come here and complain they respond accordingly.''

''I feel free to tell them because their dealing with us in this unit is not bad at all. Anytime I come for medication I feel okay to tell them anything and when they ask me question I willingly tell them.''

All the participants indicated that they felt safe to share their views with the health care workers whenever they visited the clinic.

''Yes, even when my husband got to know of my status, he never had sexual intercourse with me for 1 year. I informed one of the nurses and she was the one who explained and educated my husband on it and told him that going outside of the marriage for sex may expose him to getting infected and talked to him about condom use.''

''Yes, I had the illness when I had my first child so the second time I came they asked me about it and I told them everything.''

''When I was transferred here they related with me nicely and collected my number. They were persistent and call me to come for my medications and when at first I was apprehensive about it they educated me on the benefit for my child and I agreed to come for treatment and ever since I tell them everything.''

''Whatever I share with them I believe they will not use it against me because they understand us better.''

4.3.3.4 Good Treatment Outcomes

All the respondents indicated that they did not face any challenges when taking their medications and the medications improved their wellbeing.

''When I was pregnant I did not face any problem and I have not been to the clinic after birth until now.''

''No since I started taking the medication regularly I can say I feel better than when I used not to because I used to cough a lot previously but when I thought about my child who passed I did not want anything to happen to any more children so I started taking the medication regularly.''

''oh yes because when I was not on the medication I used to feel weak, dizzy and got ill easily but when I started taking the medication I have not felt the symptoms again till am pregnant and also I have given birth to two children and both of them tested negative because of the medication. ''

They also underscored that they always got a re-fill of the medication whenever they needed and are doing well on medication.

''Yes anytime when I come here.''

4.3.3.5 Access to PMTCT Facility.

Majority of the respondents indicated that the distance from their homes to the PMTCT facility did not affect them.

''Please I do not see it as a worry because I do not want the medication to get finished at home before I come so I try to always come for my scheduled visits.''

Others complained about the distance and the money they required for transportation.

''It is somehow far, I have to pick a car from Doyimu to Ayikuma, then from there to hospital Junction before I pick a taxi to the hospital. But because of the treatment scheduled so it does not really bother me because sometimes they give the drug for 3 or 6 months then when it's getting finished, I come for refill. But sometimes too when am due for my appointment I miss it because financial difficulties but I inform the ART counselors that this is the issue so I will come the next week and they agree to it and I come the following week.''

4.3.4 Socio-cultural factors influencing retention in PMTCT service

4.3.4.1 Male partner support and disclosure

''Yes, when I tested positive I was informed to bring him to also do the test.
However, those who had not told their partners yet held back because they feared losing them and how they may react.
''No I have not informed him about my status. I have tried telling him but its not easy, I am scared he will leave me if I do so.''

''No I have not informed him about my status. It's not easy opening up to your partner about things like this and I am also scared of how he will react.''

A respondent suspected her husband infected her with HIV and was aware he was positive but never told her until he decided to take her to be tested at the hospital one day.
''The day I came here when I was with the child, he came to do the test first and he did not tell me that was the reason why he brought me to the nurses. I was there and the came to talk to me for long and did the test and said I have the diseases. He came with me but he did not tell me that was why he brought me to the nurses.''

Partners did not say anything upon learning their status. Some wanted confirmations of their test but others generally did not react to their status disclosure.

''He did not say anything. He sent me to 37 hospital to repeat the test after I informed about my status and it was confirmed there too.''

''He did not say anything. I do not know how to put it but he did not express any shock or reaction to my status.''

For many, partner support was evident after their results were disclosed. Others however, did indicate behavioural changes upon disclosure

''Oh no it has not changed because he does not joke with my medications, when I have to come to the hospital he supports me to go.''
''No it has not and he is supportive. Most of the times he gives me money to come for my medication at the clinic.''

''He helps in reminding me take my medications and when I come for clinic too.''

Others indicated that although their partners had been supportive, their behavior had changed.

''Yes, though he is supportive, there has been some changes in his attitude towards me. ''

On the other hand, others shared that their partners had not been supportive.

''No he is not supportive, if you tell him to come to the hospital if he likes it fine, if he does not like it then he would not go.''
''He did not say anything, even about the medications I come for if I tell him to come, he does not want to come. If he likes he will come if not, he will not come. So sometimes when I talk to my sister then he talks to him before he will give money for the child's up keep."

4.3.4.2 Family and peer support/ disclosure

More than half of the respondents indicated that they had not informed any of their family members about their status.

''No I have not told them about it.''

''I have not informed any of them about my status.''

Some also indicated that they had informed their family members and they had been supportive.

''I have informed my sister about me she has been supportive.''

''Yes my mom knows about it. But I have not told anybody apart from them.''

Others expressed a change in the behaviour of their family members after telling them about their status.

''I have told my sister about it and she has changed since that time at first, we used to

together but now she does not eat with me in the same plate.''

None of the participants had ever disclosed their status to their friends. Instead, they trusted their close family relatives more and opened up to them rather than their peers or friends.

Majority of the respondents stated that they did not inform their family about their status because they did not want their children to experience the stigma attached with HIV.

''I worry about my children you see sometimes when people get to know they can tag them that this child's mother has HIV and it can affect the children.''

Because its not easy opening up things like that and I do not want them to worry.''

''Its nothing much but a human being is a human being so when they get to know of your status, they are going to tag you in a way and they may change how they previously used to relate with you.''

4.3.4.3 Stigma

Most participants expressed a fear of being stigmatized by society because of their status and hance prefer to keep their status hidden.

''May be if I tell them they will not allow me to be near them again. ''

''its nothing much but a human being is a human being so when they get to know of your status they are going to tag you in a way and they may change how they previously used to relate with you. ''

''I worry about my children you see sometimes when people get to know they can tag them that this child's mother has HIV and it can affect the children. ''

4.3.4.4 Culture/Religion

The majority of the participants were Christians.

There was a consensus that their religious leaders did not have an influence on how they take their medication.

''No when I take the medications, I always pray to God that he should heal me through the medication.''

CHAPTER FIVE

DISCUSSIONS

5.0 Introduction

This chapter presents discussions of findings from the results sections and as it relates with the research objectives and questions.

Findings from the 12-month post-partum PMTCT analysis revealed that, 29 (56.9%) out of the 51 sample were of active status, 17(33.3%) of the sample had defaulted/lost to follow-up in the program period following birth, 3 (5.9%) of the sample had been transferred to other facilities for continuity of care and 2 (3.9%) of the sample died during the programme period.

Results from qualitative analysis showed that Maternal factors likely to influence PMTCT retention includes; PMTCT literacy.

Service provider factors identified to influence retention include; supportive working environment, supportive counselling role of health professionals, privacy and confidentiality.

Socio-cultural factors identified to influence PMTCT service include; male partner support, HIV status disclosure, family and peer support and stigma.

5.1 Background Characteristics of the sample

After review of the background characteristics of the sample, 70.5% of them were of basic level of education (primary and JHS) and 49.2 % were involved in informal employment such as trading, farming, caretaker etc. This informs that majority of the women were from lower socioeconomic status.

A study in Uganda revealed that women who had higher education were more likely to continue the usage of PMTCT services than women who were less educated. Higher education referred to

the level of education above second cycle education (Bavuga, 2011). Another Ugandan study showed that higher education and economic status are significant predictors of the usage of PMTCT services among postnatal women living with HIV (Milly, 2013).

Thus, critical examination of socioeconomic and sociocultural factors of women enrolled in PMTCT program is necessary in designing effective programs to increase retention of PMTCT program especially in the postnatal phase.

5.2 Retention in PMTCT

Determination of retention rate in the PMTCT program is necessary to estimate the proportion of women active in care and those who drop-off the program.

The 12 month post-partum retention analysis of women enrolled into PMTCT program from January 2019 to December 2020 at the Shai-Osudoku District Hospital was 56.9%, which is lower than retention rate estimate in the Sub-Sharan Africa (76.4%) and in Komfo Anokye Teaching Hospital, Ghana (66%) (Singer et al., 2019; Reece et al., 2016). Another study involving mixed-methods study among 356 post-partum women in the Kilimanjaro region of Tanzania revealed that the retention rate of PMTCT services among post-partum women living with HIV was 85% (Falnes, Tylleskär, De Paoli, Manongi, & Engebretsen, 2010).

Conversely, in Uganda, a very low retention rate of PMTCT services was discovered among postnatal women living with HIV. The study involved sample of 365 postnatal women from the age of 25 to 35 years living with HIV on the optimal retention of PMTCT services, it was shown that only 30.2% of the participants retained PMTCT services (Mustapha, Musiime, Bakeera-Kitaka, Rujumba, & Nabukeera-Barungi, 2018).

From this study results, 33.3% of these women were lost-to follow up or defaulted during the

post-natal phase, 5.9% were transferred to other facility for continuity of care and 3.9% died along the PMTCT cascade.

For postnatal PMTCT visits, 90.2% of the women enrolled into the programme attended first ART and postnatal clinic after birth, 58.2% were present for second ART visit after birth and 49.0% were present at third visit after birth.

The trend from the findings are however similar to those reviewed in literature.

A study conducted in Ho municipal hospital revealed similar findings where 30% of the women enrolled into PMTCT programme were lost to follow-up, 8.0% of them were transferred to another facility (Folitse, 2017).

This study also reported a higher proportion of babies who presented for Dried Blood Spots (DBS) at six weeks which was 74.5% as seen in other study which reported a lower proportion of 51% (Folitse, 2017).

From the discussions above, there is a lower retention rate in PMTCT programme during the post-natal phase at the Shai-Osudoku District Hospital and the reasons for the lower rate were assessed through in-depth interviews with the women enrolled in the programme.

5.3 Maternal factors influencing retention in PMTCT

Maternal factors evolved from the in-depth interviews depict that good understanding and knowledge of the PMTCT programme is necessary for higher retention rates. Thus, if service providers equip mothers with in-depth information about the programme coupled with good support, maternal attrition from PMTCT program particularly during the post-natal period would be elimination. While mothers with good understanding of the programme tend to retain in care because they know PMTCT is a continuum of care. Others with low knowledge about the

programme believe that once the baby is out of my womb and I am not breastfeeding, then there is no need to continue the treatment.

Almost all the women interviewed made mention of the treatment as the sole aim of preventing mother to child transmission and so the overall concern was for her infant and once the infant is well and not sick then there is no need to continue treatment. One participant who had defaulted in the program for a year, only reported to the facility for treatment when the baby was experiencing frequent high temperature.

Other maternal factors reviewed in literature include maternal educational, socioeconomic status, marital status and poor maternal health during the postnatal period was also associated with retention of PMTCT services (Grede et al., 2014; Sakyi et al., 2020). One of the participant indicated that she fell ill and had some rashes on her body; so she found out she was positive after going to the hospital and testing for HIV. A study revealed that mothers who have poor health tends to report to the facility and as such have the tendency of remaining in care than those who mostly feel healthy (Miedzinsk, 1992).

5.4 Service provider factors influencing retention in PMTCT

Service provider factors that emerged from the in-depth interviews with participants suggest that supportive working environment and supportive counselling roles influences retention of mothers in the PMTCT programme.

Supportive working environment such as good attitudes of health workers, good work infrastructure, quality PMTCT service delivery and availability of medicines were expressed through the interviews with the participants.

Supportive counselling roles of health professionals through the continuum of care were highly

identified as a crucial service provider factor to influence retention in PMTCT. Most women expressed a feeling of acceptance and gained strength to continue the treatment based on how counsellors from the ART unit treated them. This is highly reported in literature.

A study in the Amaha State, Ethiopia, established that mothers who consider the attitude of healthcare workers, particularly nurses and midwives, recorded a higher retention rate of PMTCT than mothers who complained about the attitude of the healthcare team (Abebe et al., 2019). Similar findings on the relationship between the positive attitude of healthcare workers and retention of PMTCT services among postnatal women living with HIV in Eastern Cape, South Africa (Peltzer et al., 2005). The women felt that the positive attitude of the healthcare workers made them feel welcomed and valued (Peltzer et al., 2005).

Privacy and confidentiality was also mentioned as a key strategy to foster positive outlook of these women in the programme. Most of the participants made mentioned that they feel free and save to air their issues to the health professionals than their partners or families because they believe whatever they tell them would not be exposed to the public. People living with HIV are very sensitive because of the stigma that trickles from the infection, hence it is critical to enforce the highest form of privacy and confidentiality at all PMTCT site to ensure these women remain in care.

Distance to the PMTCT site was however not identified to be a factor likely to influence retention in PMTCT in this study as identified in the literature.

Hodgson et al., (2014) discovered that; geographical access to health services was positively associated with retention of PMTCT services among postnatal women living with HIV. Women who lived closer to health facilities with PMTCT services had a higher retention rate of PMTCT services than women who lived farther from health facilities that render PMTCT services

(Hodgson et al., 2014). Similarly, a study in Amaha State, Ethiopia, concluded that the distance to the health facility was a factor that influenced retention of PMTCT services among mothers during the post-partum period (Abebe, Mengistu, Gete, & Worku, 2019). According to the authors, women who lived closer to a health facility were likely to record a good retention rate as opposed to mothers who live far away from a health facility (Abebe et al., 2019).

Good treatment Outcomes was highly mentioned among the participants that they felt better on the medications rather than when they were not or missed doses hence would prefer coming for medications and remaining in care rather than defaulted. In addition, those who experienced certain side effects from medications also stated that they were given other medications to wax that effect hence preferred coming for treatment.

There was a consensus about the usefulness of the PMTCT drug in making them feel strong and healthy. A study by Kim et al (2012) confirms that having a good PMTCT programme in place helps to prevent a lot of pediatric infections of HIV.

Other service provider factors found in the literature include; inadequate health staff, shortage of medical logistics and lack of financial support to sustain the programme.

5.5 Socio-cultural factors influencing retention in PMTCT service.

A background review revealed that 68.6% of the women had not disclosed their status to their partners. Literature is replete with the role of Male partner support in PMTCT success. The question is to ask whether partner support and non-disclosure of HIV status to partner influence retention in PMTCT at the post-natal phase. A study conducted in Mulago, Uganda, reported that male partners support increased retention of PMTCT services (Bavuga, 2011). A study in the Southern Central part of Ethiopia supported the findings that male partner involvement improves retention of PMTCT services (Belato, Mekiso, & Begashaw, 2017). In the thematic content

analysis, the authors found out that male partner involvement promotes the use of PMTCT services among post-natal women (Belato et al., 2017). Post-partum women living with HIV in Bwaila Hospital in Lilongwe, Malawi, indicated that male partner support was crucial towards the retention of PMTCT services because male partner support was a major source of emotional, and financial support which spurred the women on to continue participating in the preventive programs and services (Gugsa et al., 2017). This was also identified in this study mothers who had disclosed their status and were retained in care said their partners encouraged them and contribute financially throughout the programme cascade and one who had defaulted in treatment mentioned that their partners were not supportive and did not receive financial support to continue treatment. Those who had not disclosed their status to their partner were indifferent with regards to male involvement in PMTCT.

Family/peer support and non-disclosure also emerged as a contributing factor to improved self-image and overall acceptance of HIV status. Most of the women had fears and insecurity in disclosing their status to family members and other peers. Most of them reported good family support because their statuses are not known. However, one who had disclosed her status to a family member mentioned a change in behavior towards her.

This generally informs that the issue of stigma and discrimination with regards to people living with HIV/AIDS is not dealt with and for the success rate of retention in PMTCT program, mass sensitization on HIV/AIDS must be continued priority of health organization.

In this study, majority of the women were reluctant in disclosing their status to their partners, peers and family members because of the fear of being stigmatized. In Kenya, study show that 24.7% of the three hundred and eighty five mothers indicated that stigma and discrimination as an obstacle to PMTCT services. (Otieno, karaja & Kagira, 2017). According to women in the

Greater Accra Region of Ghana, they prefer to choose a distant HIV care center during pregnancy and postpartum period to avoid accidental HIV disclosure stigma. (Sakyi et al., 2020). A study showed cultural/religion beliefs hinders the use of PMTCT services among postnatal women living with HIV in the Rachuonyo North Sub-County-Homa-Bay County, Kenya (Otieno et al., 2017). However, in this study, the women disclosed that religion does not hinder their engagement in PMTCT service during the post-natal period but rather serves as a system of support.

5.6 Strength of the study

The methodology of the study employed both quantitative and qualitative components to help understand the low retention rate in PMTCT service and the reasons behind the level.

5.7 Limitation of the study

The method of sampling and the sample size for the retention analysis were limiting factors which make the findings of this research impossible to generalize among the population under study. In addition, the study focused on one PMTCT site and results from other PMTCT sites may be different.

More so, qualitative research has personal biases as method of sampling participants was through convenient sampling.

CHAPTER SIX

CONCLUSION

6.0 Introduction

The level of retention in PMTCT during the post-natal phase in the Shai-Osudoku District Hospital was lower compared to other low -resource settings reviewed in literature.

Good knowledge and understanding of PMTCT programme, supportive working environment, supportive counselling role, assurance of privacy and confidentiality, partner, family and communal support/acceptance as well as infant wellbeing are key in PMTCT retention among women enrolled into the PMTCT programme in the Shai-Osudoku District Hospital.

Findings from the study demand that; for higher retention rate in PMTCT programme, there needs to be a constant and consistent relationship between service providers and beneficiaries of the program. When one system malfunctions, the lag is seen in the outcome. As such, while service providers put in collective efforts to deliver the best care to clients, these clients need to be highly motivated, supported and equipped with in-depth knowledge about HIV and the PMTCT cascade to achieve desirable retention rates and avoid possible drop-offs in the program.

6.1 RECOMMENDATIONS

1. Advance study is recommended to assess partner HIV status disclosure and support in the success rate of PMTCT programme.
2. There should be continuous training of staff, especially ART counsellors on empathy during counselling sessions with the beneficiaries of the program.
3. There should be increased sensitization of the general public on the retention rate in PMTCT programme and the need for social acceptance of these marginalized group to reduce all forms of stigma associated with positive HIV-status

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APPENDICES

APPENDIX 1: DATA COLLECTION TOOLS

Interview guide for In-depth interviews with respondents.

PROJECT NAME: POSTPARTUM PMTCT RETENTION ANALYSIS

RESEARCHER'S NAME: RUTH AFFUL

RESEARCH ASSISTANT: ART COUNSELOR

METHODOLOGY: NARRATIVE

STUDY POPULATION: POST-PARTUM PMTCT

BENEFICIARIESSTUDY SITE: SHAI-OSUDOKU DISTRICT HOSPITAL

INTERVIEW LOCATION: ART CONSULTING ROOM

INTERVIEW DURATION: 40-60 MINUTES

DISCUSSION GUIDE

Ice breaker Question

1. Can you tell me how old you are? When is your birth date?
2. Where do you live?
3. Have you attended formal education? Probe: Up to what stage?
4. Can you share your current marital status?
   Probe: If single, were you married before?

PMTCT knowledge

5. Can you tell me about PMTCT? Probe: What is it? Is it necessary?

6. How long have you been living with HIV?
7. How many children do you have?
8. How did you get to know about PMTCT?
9. Do you find PMTCT useful?
10. What are some of the information health care providers gave you on PMTCT?

PMTCT service delivery

11. Have you gone through the usual Antenatal care? Probe: Is the care given you here same as the usual Antenatal care?
12. Can you share the things that influence your use of PMTCT service? Probe if omitted: Does the distance from your home to the health facility influence your utilization ofPMTCT services? How so?
13. Can you describe the attitude of health workers towards you? Probe: Do the attitude of healthcare workers towards you influence your utilization of PMTCTservices?
14. What in your opinion influences the attitude of health workers towards you?
15. Can you share your views about the services? Tell me more?
16. Do you feel free to share your views to health care workers when you come for clinic? [probe for more information on privacy and confidentiality]
17. Do you feel safe to share your views to health care workers when you come for clinic?

Male partner support and disclosure

18. Do you have a partner?
19. Have you told your partner about your status? If yes, what was his reaction to your status?

    If no, Probe: Can you share why you have not told him?
20. Does your partner play a role in your use of PMTCT services? Probe: How?

ARV shortage / regimen/experience

21. What has been your experience with the clinic services?
22. What is your experience with the different levels of staff at the clinic? Doctors, nurses, lab technicians etc…
23. What happens when you come to the clinic?
24. Have you ever left the clinic without medication when you came for a re-fill? Has your medication combination ever changed? Do you always get medication when you come fora re-fill?

ART Adherence

25. Kindly score on a scale of 1 to 10 how regularly you take your medication? Do you have some challenges when taking the medications? Please share them.

Infant feeding practices

26. What was the best infant feeding method suitable for you? Did you agree with this method and why?
27. Are you breastfeeding? Probe: were you breastfeeding? If yes, why did you stop? If No, do you intend to continue and why?
28. Can you tell memore about how you safely breastfeed your child? What are some challenges you face whenbreastfeeding?

Family support

29. How does your family feel about the PMTCT clinic services?
30. Does your immediate family have any challenge with you coming for clinic every month? Please share these challenges.
31. Does your family have any challenge with you feeding your child? Please share these challenges and why?
32. Is your family aware of your status? If yes what was their reaction? If No, is there any reason why you have not share it with them?

Culture/Religion

33. What religious denomination do you belong to? Have you always been from that denomination/group? If no, where are your previously from? And why the change?
34. Have you faced any challenges continuing the treatment because of what your pastor/ community / peer/ herbalist has said?

Other Information

If you have other information you want to share with me apart from what I have asked, you can share with me.

THANK YOU AND WE APPRECIATE YOU FOR YOURTIME AND COOPERATION

APPENDIX 2: Data extraction tool

(RETROSPECTIVE DATA REVIEW)
PROJECT NAME: POSTPARTUM PMTCT RETENTION ANALYSIS

RESEARCHER'S NAME: RUTH AFFUL

STUDY SITE: SHAI-OSUDOKU DISTRICT

HOSPITALRECORDS/ DATABASE TO BE REVIEWED: [ ] ANC REGISTER

[ ] PNC REGISTER

[ ] ART DATABASE

[ ] PATIENT FOLDER

MATERNAL SOCIO-DEMOGRAPHIC CHARACTERISTICS	
Age	
Educational status	No formal education Basic level of education Secondary level of education Tertiary level of education
Religion	Christian Muslim Traditionalist Other
Occupation	Employed (trader, seamstress, self-employed etc). Employed (formal work) Unemployed
Marital Status	Married not married co-habiting widowed single
Residence	Urban Rural

BASELINE HIV SCREENING & ART INITIATION	
Date of HIV 1st Diagnosis: WHO HIV clinical stage: Type of HIV : completed ANC PMTCT: Partner Disclosure:	 I, II, III, IV HIV I, HIV II, Yes, No Yes, No
Gestational age (at ARV initiation) (in weeks)	
Type of ART initiated: Type of delivery:	a. TDF/3TC/DTG b. TDF/FTC/EFV c. TDF/3TC/EFV Home delivery Hospital
Prophylaxis ARV for baby:	a. AZT b. NVP c. AZT/NVP d. Not given
DBS at 6 weeks: PCR- DNA results: ANTIBODY TEST AT 18 MONTHS:	Yes, No, No record. a. Positive b. Negative c. undetected d. not done e. not received a. Positive b. Negative c. undetected d. not done
POSTNATAL PMTCT	
first visit	Yes, No, Not due
second visit	Yes, No, Not due
third visit	Yes, No, Not due

12 months Post-Partum Retention status	Dead Defaulted/ Loss to follow up Transferred to another facility Active in care.

APPENDIX 3: PARTICIPANT INFORMATION SHEET

Title of study: Factors influencing retention in PMTCT services during the post-natal period among women living with HIV in the Shai-Osudoku District.

Introduction: The principal investigator is Ruth Afful, a Master of Public Health student of the University ofGhana, School of Public health.

My telephone number is 0546150448 and email is affulruth.93@gmail.com.

Background and purpose of Research: For a successful program involving the use of medicine to prevent HIV infection in the baby, it is expected that mothers remain in this program even after birth. Many women encounter challenges with continuing the program after birth. Participating in this study will help to unravel various reasons mothers have in participating in the program in this area and help to put local plans in place to ensure mothers and babies remain in care. Your name will be kept hidden in the study and no one will know what information you give out. The information you give out will also be destroyed after analysis is completed.

Nature of Research: I will ask you series of questions and will require that you genuinely tell me what you have experienced. A true story is necessary to understand what is happening**. I will be recording all the information you give with an audio device to help me remember the discussions and be ableto do the analysis.** The hospital will not know what you have said and your name will not be written on the transcribed information. There will be other trained personnel to assist me in collecting the information so feel free to tell her anything you are unable to tell me.

Study Participant: All mothers who receive medication to prevent infecting the baby and are registered in the PMTCT program are part of the research. Your name will not be revealed in the work and all information you give out will be protected. You are not forced to partake in this work andare free to stop participating if you feel so. Your decision to opt-out of the discussion at any point will not affect services rendered to you in the hospital. However, I will be glad if you can assist to the end of the study.

Benefits of the study: Participants will gain more knowledge on Prevention of mother to child transmission of HIV because education will be give after data collection and in addition, the findings of this study may be used to inform policy making which would enhance the retention of PMTCT services during the postnatal period towards improving maternal and infant health outcome of other mothers.

Potential risks of the study: The on-going Covid-19 pandemic presents a potential risk with regards to face to face interviews. The researcher and assistant will be in face masks and facemasks, sanitizers, running water and soap will be provided to you at free cost at the data collection site. You will be taught how to wear mask appropriately and social distancing will be enforced.

To minimize overcrowding, meetings will be scheduled with you before the exact date. Where face to face interviews may still pose a challenge, telephone interviews will be used for infection prevention. Also, participation in this study may pose certain psychological and social strain to you. Firstly, you may feel uncomfortable responding to some questions that may involve revealing personal information. If this occurs, you have the right to refuse to answer such a question. Secondly, this study may take up time from your busy schedule**.**

Cost: There will be no monetary cost involved in participating in this research.

Compensation: To compensate for your time and money spent on transportation, the researcher will provide with an amount that is equivalent to your transportation fare if you have to come to the data collection site for research purposes. This amount will be determined by you and the researcher using the applicable fares. Facemask and hand sanitizer will also be given to you as a form of compensation. No other compensation will be given to you by virtue of the nature of the research because the study does not involve any clinical procedure, so I do not anticipate any other adverse effects on you due to your participation in the study.

Confidentiality: All the information I will obtain from you is strictly confidential. **Your identity or name will be hidden from the study by the use of pseudonyms so no one can trace the data to you**. Audio recordings will be password encrypted and kept safely. It will be destroyed after data analysis.

Voluntary participation/withdrawal: Participation in this study is entirely on a voluntary basis. You do not need to take part in this research if you do not wish to do so, and this will not affect you in anyway. You will not be denied health care in any form in this health facility or any other

facility if you decline to participate in the study. In addition, you may withdraw from this study at any point when you wish to do so without any consequences. If during the interview, you decide to withdraw your consent, the data collection process will be halted immediately, and all information that has been collected from you thus far will be destroyed in your presence.

Outcome and feedback: I will inform the hospital of the final findings from the study to help them improve service delivery and your name will not be revealed. This will only be done if the hospital is interested in the findings.

Feedback to Participants: A report will be shared with the Ministry of health, Ghana Health Service and Ghana Aids Commission on emerging issues. This report will also be published in Journals.

Funding Information: This study is funded by the Principal Investigator.

Provision of Information and Consent for Participation: A copy of the information sheet and consent form will be given to you to sign or thumb print before starting the interview.

Covid-19 Protocols: All Covid-19 protocols will be observed accordingly. The researcher and assistants will be in facemask. Veronica bucket with soap and water, facemask, and hand sanitizer will be provided at free cost for participants at the data collection site. Participants will be taught how to wear mask appropriately and social distancing will be enforced. Meetings will be scheduled with participants to avoid overcrowding and where face to face interviews may still pose a challenge, telephone interviews will be used where possible.

For further clarification concerning this research, kindly contact Ruth Afful on 0546150448 or by email at raffu1002@st.ug.edu.gh / affulruth.93@gmail.com. For further clarification on ethical issues kindly contact the Ghana Health Service Ethics review Committee Administrator, Nana Abena Apatu on 0503539896.

APPENDIX 4: CONSENT FORM

STUDY TITLE: Factors influencing retention in PMTCT services during the post-natal period among women living with HIV in the Shai-Osudoku District.

PARTICIPANTS' STATEMENT

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

I voluntarily agree to be part of this research. Name of Participant……..

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

Date:……

INTERPRETERS' STATEMENT

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

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

Name of Interpreter……

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

Date:……

Contact Details:…….

STATEMENT OF WITNESS

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

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

Name:……

Signature…….. OR Thumb Print ……

Date:……

INVESTIGATOR STATEMENT AND SIGNATURE

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

Researcher's name…….

Signature …….

Date…….

APPENDIX 5: Consent Form: Hospital Authorities

Introduction: My name is Ruth Afful, a Masters of Public Health student of the University of Ghana, School of Public health. I humbly seek your approval and permission to conduct my research work in youresteemed facility. This is a requirement in partial fulfillment of the ward of Masters of Public Health degree. Kindly find details below.

Project Topic: Factors influencing retention in PMTCT service during the post-natal period among women living with HIV in the Shai-Osudoku District.

Objectives of the Study: Successful scale-up and retention of Post-partum women in PMTCT services are necessary for the elimination of new pediatric HIV infection and effective PMTCT coverage. Assessing health system and maternal factors influencing retention in PMTCT services will inform health policymakers on the need to develop strategies to improve post-partum retention in PMTCT programs across all the sites in the nation.

It will also help address missed appointments and opportunities in PMTCT services among post-partum women living with HIV in the district. The facility will not be affected negatively in any way by the study.

Study Methods: I will be collecting information on HIV mothers registered for Post-natal clinics, ART, and PMTCT. I would require ART data, maternal records, and Antenatal records for this study. I would also require ART prophylaxis for HIV-exposed babies and data on early infant diagnosis. Iwill conduct interviews for these women enrolled in PMTCT and on regular ART. I will like to use an **electronic audio recording device** to gather all the information for data analysis. This study is for academic purposes and information retrieved will be password encrypted and protected until analysis and destroyed after two years of completing the research study or publication.

Study Participants: PMTCT mothers will be enrolled in the study voluntarily. T\he anonymity, confidentiality, and privacy of these women will be ensured. Participants will also be compensated.

Benefits of the study: The findings of the study will inform hospital authorities to identify potential attrition of these women in the program to be able to adopt local strategies to ensure successful uptake of PMTCT programs.

Potential Risk of the Study: Participants will have to travel to the study site. In the midst of COVID-19, their exposure during transportation, emotional and psychological stress at the recollection of the questions may be experienced by some participants. Active working hours of trained staff from the ART unit might be disrupted during study time however staffs are free to excuse themselves from the study to attend to work duties.

Confidentiality: Confidentiality and Anonymity will be ensured throughout the study. Pseudonyms will be used in place of individual names.

Covid-19 Protocols: All Covid-19 protocols will be ensured accordingly. Veronica buckets with soap and water, facemasks, and hand sanitizer will be provided at the data collection site. Social distancing will also be ensured and meetings will be scheduled at intervals to avoid overcrowding at the site.

Consent Declaration:

I (name and position in the facility):

would like to introduce the above researcher to your unit. Kindly assist her with the necessary support for her work. I have read the details of her activities and have considered all the implications and benefits of the study.

Signature .... …… Date:…….

……(Researcher) (0546150448; rafful002@st.ug.edu.gh)

For further clarification on ethical issues kindly contact the Ghana Health Service Ethics review Committee Administrator, Nana Abena Apatu on **0503539896.**

APPENDIX 6: ETHICAL CLEARANCE

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

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

My Ref: GHS/ROM/ERC/Ahmad/App/ 121409
Your Ref: No.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Digital Address: GA-050-3305
Mob: +233-50-3539896
Tel: 233-302-681109
Fax + 233-302-685424
Email: ethics.research@ghsmail.org
20th September, 2021

Ruth Afful
P.O Box LG 396, Legon-Accra.

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

GHS-ERC Number	**GHS-ERC 035/08/21**
Study Title	Factors Influencing Retention in Prevention Mother-To-Child Transmission (PMTCT) Services During the Post-Natal Period among Women Living with Hiv in the Shai-Osudoku District.
Approval Date	20th September, 2021
Expiry Date	19th September, 2022.
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

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

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

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

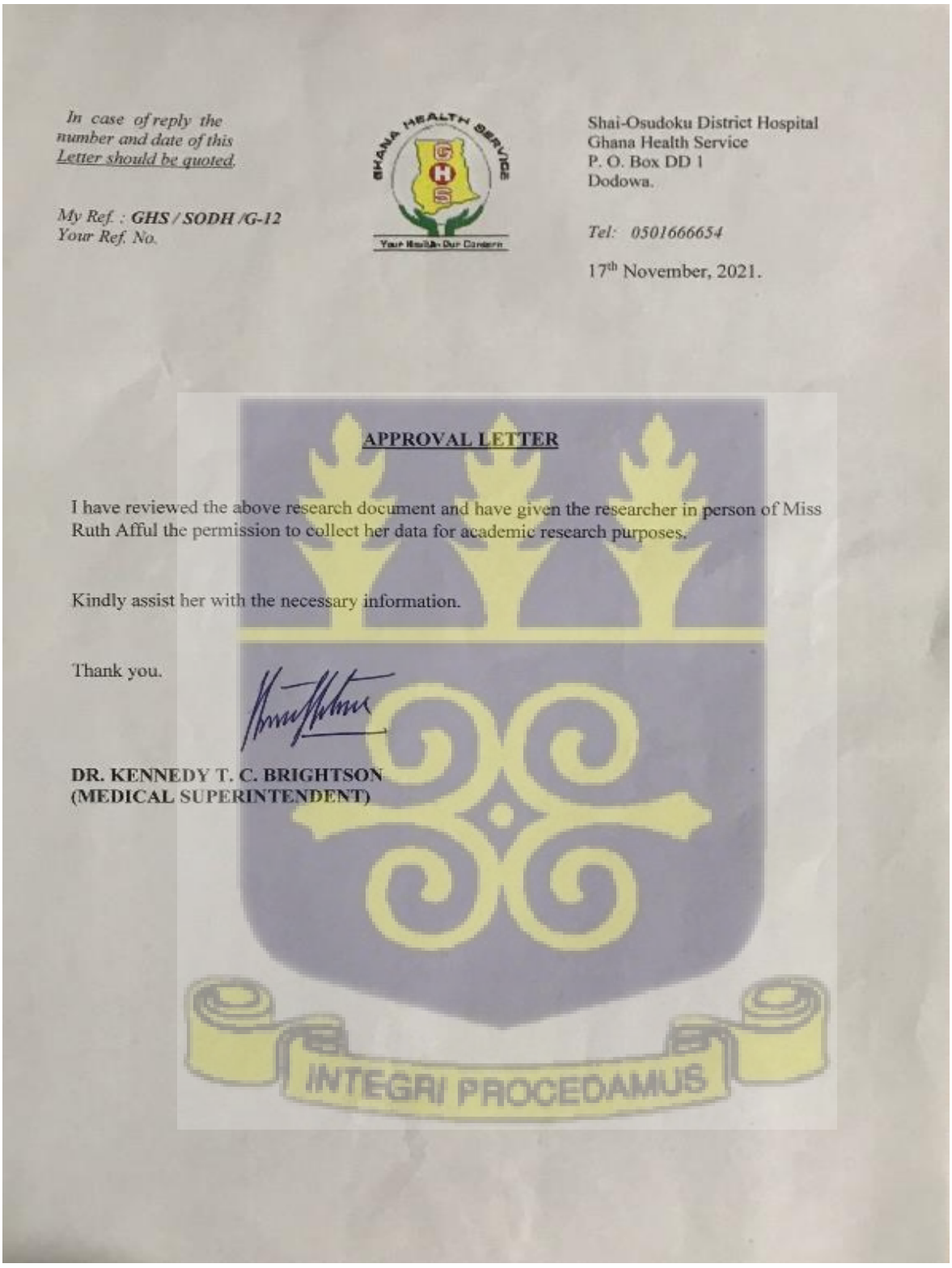
The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

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

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

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

APPENDIX 7: APPROVAL LETTER TO CONDUCT RESEARCH AT STUDY SITE



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

My Ref. : GHS / SODH /G-12
Your Ref. No.

Shai-Osudoku District Hospital
Ghana Health Service
P. O. Box DD 1
Dodowa.

Tel: 0501666654

17th November, 2021.

APPROVAL LETTER

I have reviewed the above research document and have given the researcher in person of Miss Ruth Afful the permission to collect her data for academic research purposes.

Kindly assist her with the necessary information.

Thank you.

DR. KENNEDY T. C. BRIGHTSON
(MEDICAL SUPERINTENDENT)