

**DETERMINANTS OF UNMET NEED FOR CONTRACEPTION USE
AMONG HIV-POSITIVE WOMEN IN KWALE COUNTY, KENYA**

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**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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DECLARATION

This thesis is my original work and has not been presented for an award of a degree in any university for consideration of any certification.

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DEDICATION

I devote this paper to my wife, Mercy Wambugha, and my children Justin Mwadena and Leroy Mumbo who had to stay without my company during the research period.

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ABBREVIATIONS AND ACRONYMS

AIDS	:	Acquired Immune Deficiency Syndrome
ART	:	Antiretroviral therapy
ARV	:	Antiretroviral
CCC	:	Comprehensive Care Center
CI	:	Confidence Interval
DHIS	:	District Health Information system
FP	:	Family Planning
HAART	:	Highly Active Antiretroviral Therapy
HIV	:	Human immune Virus
IEC	:	Information Education Communication
IUD	:	Intrauterine Device
IQR	:	Interquartile Range
KARPR	:	Kenya Aids Response Report
KDHS	:	Kenya Demographic and Health Survey
KII	:	Key Informant Interviews
KP	:	Known Positive
LARC	:	Long-acting and Reversible Contraceptive
MDG	:	Millennium Development Goal
MEC	:	Medical Eligibility Criteria
MTCT	:	Maternal To Child Transmission
NASCOP	:	National Aids Control Program
OR	:	Odds Ratio
PMTCT	:	Prevention of Mother-to-Child Transmission

- SRH : Sexual Reproductive Health
- SSS : Sub-Saharan Africa
- STATA: Statistics and data software
- UBOS: Uganda Bureau of Statistics
- UNFPA: United Nationals Population Fund
- VCT : Voluntary Counseling and Testing
- WHO: World Health Organization

OPERATIONAL DEFINITIONS OF TERMS

Unmet need for family planning: Designates the number or percent of women currently married or in a consensual union of reproductive age and who desire to either terminate or postpone childbearing, but who are not currently using a contraceptive method (*Nzokirishaka & Itua, 2018*).

Unmet need for limiting Childbirth: A state of women who have no desire to have additional children who are currently not using any FP method (*Nzokirishaka & Itua, 2018*).

Unmet need for spacing children: This means those women who have the desire to have additional children at a later date and who are currently not using any FP method (*Nzokirishaka & Itua, 2018*).

Women of Childbearing age: These are women aged between 15 and 49 years (*World Health Organization, 2015*).

Health care provider: This means either a doctor, nurse, clinical officer, Community health worker, hospital manager, or supply chain manager (*World Health Organization, 2015*).

Availability of FP services: This means that the Contraceptives are stocked in the facilities where the clients go for services (*Daly et al., 2014*).

Accessibility of FP services: This means that the clients can reach out to the services based on distance and can afford to pay for the services (*Daly et al., 2014*).

Utilization of FP services: This means that the clients demand and consume contraceptives (*Belda et al., 2017*).

ABSTRACT

Prevention of unplanned pregnancies is one of the four approaches in the prevention of MTCT of HIV. Even with the constant availability of modern contraceptives in the health facilities, 352 known HIV-positive women attending Comprehensive Care Clinics (CCC) services in Kwale County conceived in 2018, risking an increased rate of vertical transmission of HIV. The main objective of the study was to understand the use of contraception by HIV-Positive clients of childbearing age and find out the possible factors for their unmet need for contraception in Kwale County. The study aimed to determine the contraceptive prevalence among HIV-positive, to establish the socio-demographic, socioeconomic, health facility, and sociocultural factors that are associated with the unmet need for contraception use among HIV-positive women of childbearing age in Kwale County. The study targeted all HIV-positive women of childbearing age attending comprehensive care clinic services in Kwale County and officers in charge of CCCs. The study had 347 clients that were sampled using a systematic random sampling technique, while thirty-three (33) in charge of CCCs were purposefully selected as KIIs. An analytical cross-sectional research design was used. Trained research assistants were used to collect data in the selected CCCs using semi-structured questionnaires. Further information was obtained by reviewing the clients' notes in the health facilities. To take care of any inconsistent entries, pre-analysis data cleaning was done and wrongly captured data, missing information, outliers, and repetition were checked. Microsoft Excel was used for data cleaning. STATA 16 was used for the data analysis. The descriptive analysis involved frequency distribution tables, and calculations for mean, middle, and prevalence estimates. Inferential statistics were both bivariate and multivariate. Fisher's exact test was used to test for the relationship between independent variables and unmet FP needs. The statistically significant variables (p -value < 0.05) during bivariate analysis were then subjected to a multivariate logistic regression model to identify the independent variables associated with the unmet need for family planning. The outcome variable was coded "0" for "FP need met" and "1" for "unmet FP need". Odds Ratios (OR) were computed. Qualitative data from the KIIs were synthesized and emerging themes were grouped according to their similarities and differences. The study revealed a 78.9% Contraceptive prevalence rate (95% CI 74.3; 82.9), while the unmet need for contraception use among HIV-positive women in the County was 21% with 18% and 3% with unmet need for limiting and spacing respectively. In the multivariate analysis, sociodemographic, health facility, and socio-cultural factors were found to be independently associated with the unmet need for family planning among women of reproductive age living with HIV in Kwale County. Among the demographic characteristics that independently influenced FP use are age, marital status, and the clients' parity. Demographic factors: Age 45-49 years OR=9.95, 95% CI [1.4-63.2, $P= 0.014$] was found to be 10 times more likely to have unmet FP need as compared to age 25 to 34 years OR 0.569, 95% CI [0.165-1.964, $P=0.372$]. Being widowed increased the probability of unmet FP needs, OR 6.5, 95% CI [2.003-21.415, $P=0.002$]. Being a grand multipara was associated with a reduced unmet need for contraception, $X^2=, 7.9921$ $p=0.018$. Sociocultural attributes:- Intimate partner disclosure of HIV state, OR 0.262, 95% CI [0.01-6.686, $P= 0.006$], awareness of FP methods OR 0.02, 95% CI [0.052-0.773, $P= 0.02$] and independence to use Fp were associated with reduction in unmet need for contraceptive use. Health facility characteristics that have influenced the unmet demand for contraception among HIV-Positive women were lack of integration of FP services in CCCs, no stocking of FP commodities in the CCCs, Lack of FP services reporting and documentation tools, and inadequate space in the CCCs. The study concludes that HIV-Positive women of reproductive age in Kwale County had an unmet need for contraception use. The study recommends that the department of health services should invest in clients and community education on the importance of FP use, raise more awareness of FP services among HIV-positive women, promote male involvement and partners disclosure, Promote programs to empower women in FP decision-making, & facilitate the integration of FP in all the CCCs.

1.0 CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter, looks at the study background, statement of the problem, justification, guiding research questions, and specific objectives. The section will also highlight the study's significance its delimitation and limitations and the theoretical/conceptual framework.

1.2 Background of the Study

In recent history, the emergence of the HIV epidemic has been seen as one of the biggest challenges in public health across the world. The WHO report in 2017, states that 50% of adults surviving with HIV/AIDS by the end of 2016 were women in a total global population of 36.7 million infected with HIV/AIDS. The HIV pandemic is still a challenge among Sub-Saharan African countries with approximately 25.6 million people living with HIV infection (*Bakibinga et al., 2016*). The persons surviving with HIV have a prolonged life expectancy as an outcome of antiretroviral therapy (ART) thus HIV-positive women must be empowered in fertility decision-making. Lowering unintentional pregnancies among HIV-positive female clients by use of contraception contributes to the reduction of the number of exposed infants by 19.7%, and reduced morbidity and mortality among HVI-Positive mothers (*Damian et al., 2018*). Literature shows a marked reduction in HIV prevalence between 2000 and 2005, however, the HIV pandemic is still a challenge among Sub-Saharan African countries with approximately 25.6 million people living with HIV infection (*Bakibinga et al., 2016*).

The reduced HIV prevalence is attributed to various interventions aimed at curbing HIV transmission among heterosexual couples, especially through vertical

transmission. (*Bakibinga et al., 2016*). Almost 33% of all maternal deaths could be reduced by ensuring the unmet need for family planning is satisfied. (United nations, 2015). Studies have presented on the prevalence of contraceptives, the levels that show the unmet need for FP, and even fertility rates among the general population however there is inadequate information on contraceptive use among reproductive-aged HIV-positive female clients in Sub-Saharan Africa (*Damian et al., 2018*). Maternal health is among the key investment areas as described in the third sustainable development goal which aims at reducing the maternal mortality ratio globally to not more than 70 per 100,000 live births by 2030. The unmet need for contraception use is a contributor to high unintended pregnancies that are associated with poor maternal and child outcomes. 50% of pregnancies are unintended globally and it leads to an increased maternal mortality ratio (*Wemakor et al., 2020*). The most cost-effective approach used to prevent vertical transmission of HIV among HIV-positive women is preventing unintended pregnancy, (*Damian et al., 2018*). Lowering unintentional pregnancies among HIV-positive female clients by use of contraception contributes to the reduction of the number of exposed infants. Contraception is known to avert 19.7% of vertical transmission of HIV therefore strategies that lead to an increase in the uptake of contraception among HIV-positive women need to be looked into (*Damian et al., 2018*).

The prevalence rate for modern contraceptives in Kenya was estimated at 53% and an unmet need of 25% among married women while Kwale County had a contraceptive prevalence among women of childbearing age estimated at 32.5% with an unmet need of 35% (*DHS, 2015*). According to KAIS 2012, approximately 68.7% of known HIV-infected women of childbearing age in Kenya were on modern contraception.

Family planning use by HIV-positive women in Kwale County is however not documented, the vertical transmission of HIV in Kwale country is estimated at 11% way above the National target of less than 5%. (Bakibinga, Pauline, Mutombo, Mukira, Kamande, Ezeh, 2016).

1.3 Scope of the Study

The study was about establishing the determinants of the unmet need for contraception use among HIV-positive women of childbearing age in kwale county. The study was conducted in 33 out of the 89 CCCs in Kwale county as conducting the study in all the 89 CCCs would have been too costly for the researcher. A total of 347 clients and 33 officers in charge of the CCCs were recruited for the study. The Clients and officers in charge of the CCCs agreed to participate in the study while those who stayed in the CCCs for less than three months or declined to participate in the study were excluded from the study. Data collection was done between March and April 2021. The study did not explore the relationship between the client's educational level and their unmet need for contraception use. The study did not have any financial or geographical constraints. The purpose of the study was to establish the degree of the Unmet need for contraception use and its determinants among the HIV –positive clients in Kwale county and suggest to the Department of health services in Kwale county what needs to be done to reduce the unmet need beyond zero and contribute to the reduction of the vertical transmission of HIV.

1.4 Study Assumptions

The study made the following assumption, that the study participants would provide honest responses to the questions in the research tool by clearly framing the questions

and respecting the respondents' will during the study. It assumed that client anonymity would be observed throughout the study by numbering the questionnaires and not putting any clients' identifiers. The study assumed that the study assistants will be willing to visit the selected CCCs and correctly administer the questions to the study participants to facilitate the collection of the correct responses. This was assured through training the study assistants on the research tools, and having them use the tools during the pretest sessions. The study also assumed that the unmet need for contraception use and its determinants would be clearly stated in the study findings. This was to be assured by analyzing the dependent and independent variables and establishing the association between them. Another assumption the study made was that the cost of the data collection will be affordable for the principal investigator. This was to be assured by negotiating with the study assistants on how much they would need to be paid for the data collection exercise and agreeing on a reasonable figure for all of them.

1.5 Problem Statement

Vertical transmission of HIV is one of the major problems of public health importance in the fight against the spread of HIV in the country. This could be reduced with effective use of contraception by HIV-positive women of childbearing age thus HIV-positive women of childbearing age need to embrace the use of contraception as one of the ways of reducing mother-to-child transmission of HIV in society. The low use of contraceptives by this cohort has led to increased rate of vertical transmission of HIV. In Kenya Children 0-14 years account for 9% (6,613) of the total new HIV infections as reported in the Kenya AIDS Response Progress Report of 2016 (Bakibinga *et al.*, 2016). An aversion to a bigger proportion of these infections

could have been made possible by ART during pregnancy and even more by the use of contraceptives among women infected with HIV.

Significant resources have been used in Kwale County towards building the capacity of health workers in the provision of modern methods of family planning yet the uptake rates of the same are still low at 32.5 % while 35% of women who are married having an unmet need for family planning(DHS, 2015).

Contraceptive use can help women positive for HIV have controlled births and prevent unwanted pregnancies. Kwale County had 352 Known HIV-positive women that were recorded to be pregnant in 2018 with a Mother-Child transmission of HIV recorded at 11% which is way above the national target of less than 5% transmission rate. This could have been avoided if the HIV-positive women were using family planning (*Bakibinga et al., 2016*). The prevalence of contraceptive use and the determinants of unmet need for contraception use among HIV-infected women in HIV/AIDS care in Kwale County is not well documented thus it was very important to conduct this study to inform the county on the determinants of contraception use among the HIV positive women of child bearing age for the necessary public health intervention to be put in place .

1.6 Justification of the Study

Today Kwale County has at least one health worker in each health facility trained in Long-Acting Reversible Contraception yet family planning utilization by HIV-positive female clients of ages 15-49 years is still low.

Contraceptive use can help HIV-positive female clients have controlled births and avoid unintended births. Today HIV-positive individuals have a higher survival rate due to the availability of ART. HIV-positive ladies of reproductive age have the

option of deciding whether or not, and when to have children. A key strategy in reducing the transmission of HIV to children and infants is by making sure unintended pregnancies, especially in women infected with HIV are prevented, (Mdns 2015, 2015).

Even with the significant investment that the County has made in strengthening the institutional capacity to provide LARC services to women that have started bearing children including those that are HIV-infected Kwale County still has a significant (35%) need for FP that has not been met among the married, (DHS, 2015). The County is among the users of DHIS with routine family planning data collected thus with these, it is likely to illustrate the rate at which women of childbearing age utilize the family planning services. However, there is a challenge in the documentation of the data on the use of modern FP methods by women of childbearing age living with HIV. The county had 352 HIV – positive women conceiving in 2018, an incidence that could contribute to the increase of new HIV infections among the children in the county while we are struggling to reduce the mother-to-child transmission of HIV from the estimated 11% in 2018 to less than 5% based on the national target. This could have been reduced with reduced conception by the HIV-Positive women. The study, therefore, sought to establish the determinants of the unmet contraceptive use among HIV-positive women of childbearing age in Kwale County and use the information to inform the County what would need to be done to reduce the unfulfilled need for contraception by the HIV-positive women. If the unmet need for contraception use is not addressed in the County, the number of vertical transmission of HIV is likely going to increase thus negating the global and country efforts of

reducing new HIV infections among their children less than five years to less than five percent.

1.7 Hypotheses

Null Hypothesis: There is no relationship between the unmet need for contraception use among HIV-positive women of childbearing age and socio-demographic, socio-cultural, socio-economic, and health facility factors in Kwale county. Alternative Hypothesis: HIV-positive women of childbearing age in Kwale county have an unmet need for contraception use that is associated with socio-demographic, socio-cultural, socio-economic, and health facility factors. The study worked based on the alternative hypothesis aimed at proving that there is an unmet need for contraception use among HIV-Positive women of childbearing age in Kwale county associated with socio-demographic, socio-cultural, socio-economic, and health facility factors

1.8 Research Questions

- a) What is the unmet need for contraceptive use among HIV-positive women of reproductive age in Kwale County?
- b) What are the socio-demographic factors that are associated with the unmet need for contraception among HIV-positive women of reproductive-aged in Kwale County?
- c) What are the Socio-Economic factors that are associated with the unmet need for contraception among HIV-positive women of reproductive age in Kwale County?
- d) What are the health facility-based characteristics that are associated with the unmet need for contraception among HIV-positive women of reproductive-aged in Kwale County?

- e) What are the Socio-Cultural factors that are associated with the unmet need for contraception among HIV-positive ladies of childbearing age in Kwale County?

1.9 Main Objective

The main objective of the study was to establish whether the unmet need for Contraception use exists and its determinants among HIV-positive women of childbearing age in Kwale County

1.10 Specific Objectives

- a) To determine if the unmet need for contraception use by HIV-Positive women of reproductive age in Kwale County is either met or not.
- b) To establish the socio-demographic factors associated with the unmet need for family planning among HIV-positive women of childbearing age in Kwale County.
- c) To determine Socio-Economic factors associated with the unmet need for contraception use among HIV-positive women of childbearing age in Kwale County.
- d) To determine the Socio-Cultural factors that are associated with the unmet need for contraception use among HIV-positive women of childbearing age in Kwale County.
- e) To determine health facility-based factors associated with the unmet need for contraception use among HIV-positive women of childbearing age in Kwale County.

1.11 Significance of the Study

The study will inform the researcher and the County Government of Kwale on the existing contraceptive use prevalence for female HIV-positive clients of the age of reproduction and also understand the factors that influence the unmet need for contraception use among Known HIV Positive (KPs) women of the same age in Kwale County. The Study findings will contribute to the development of country-specific guidelines for promoting the utilization of contraception among HIV-positive women of childbearing age. The pregnant mother who will have conceived due to the unmet need for contraception and who might be suffering psychologically will be linked to psychosocial counselors for support and help to start immediate post-partum contraception after delivery.

1.12 Limitations

The study had some limitations within which the study findings needed to be interpreted carefully. One of the limitations of the study was the nonrandomized selection of the study sites which introduced an element of uncertainty when extrapolating the results in the County. Another limitation was that the research assistants used a standardized questionnaire for data collection in all the study sites however the quality and completeness of the data were not uniform in all the sites. Another limitation was that the responses to some of the questions were based on the perception of the clients about contraception thus the results needed good interpretation to facilitate generalization in the County. The cost of data collection and time set for data collection was another limitation that hampered the research from covering all the CCCs in the county which made the study assume that the responses from the clients were representative of all the CCC clients in the County. Another

limitation was that clients could only be reached from the CCCs since it would have been very costly to look for the clients in the community.

1.13 Delimitations

To aid the generalization of the research findings, the study was conducted in 33 CCC sites (>30% of all the CCCs) that are spread across all four Sub Counties in the County. The research assistants were well-trained and the data was thoroughly cleaned to ensure that the quality of the data is upheld. To cope with the cost of data collection the clients agreed on a fixed figure per client interviewed irrespective of how far the CCC was from where the research assistant stayed. The respondents that were included in the study were those clients that had been attending CCC services for at least three months as these were believed to have had a good interaction with the health system thus they were able to give honest and informed responses to the questions.

Access to the study participants from the community and all the health facilities would have been a very expensive undertaking requiring a lot of time and financial investment currently not available, therefore study focused on clients that were receiving services from the CCCs with at least 30 active CCC clients.

1.14 Theoretical framework and Conceptual Framework

The framework identifies four interconnected components that influence contraceptive use among reproductive-age women. The components include Socio-demographic factors, Socioeconomic factors, health facilities, and Socio-cultural factors. The socio-demographic component includes the client's age, marital status, education level, religion, and parity of the clients. The socioeconomic component

includes employment status and other sources of income as well as exposure to media. The study also seeks to study the health facility factors. Health facility factors will include the level of integration of HIV/FP services, availability of contraceptives in the CCCs, and health workers' capacity to provide a method mix of family planning in CCCs. Socio-cultural factors include FP beliefs, personal and community attitudes, gender norms, and wanted fertility. The study also aimed at taking care of access, quality, availability, acceptability, and FP knowledge /awareness as among the determinants which can have an impact on the unmet need for contraception among female HIV-positive clients of reproductive age.

The health behavior model theory (Hanz 2002) indicates that individuals will take action to prevent illness if they perceive themselves to be at risk, if the consequences of the disease are severe and if the benefits of taking action outweigh the cost of taking the particular action. The Social cognitive theory (Bandura 1986: Baranowski 2002)states that current thoughts, emotions, and the environment interact to affect new behavior. The research adopted the Social cognitive theory that states that awareness of the family planning methods, the capacity of the client to make an independent decision, and the health facility environment will inform whether the HIV-positive clients will use contraception or not.

INDEPENDENT VARIABLES

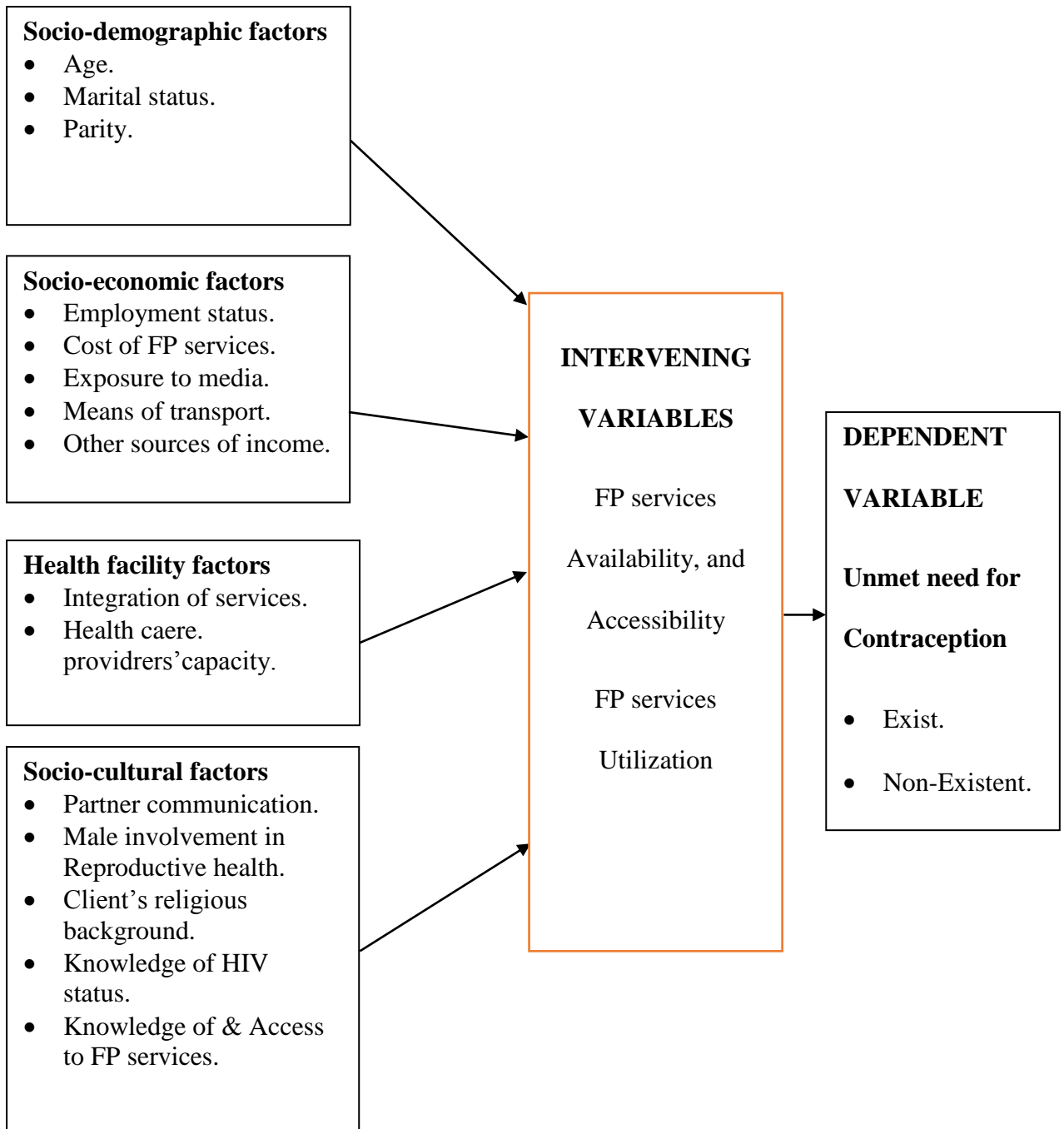


Figure 1: A figure showing the conceptual framework source; the principal investigator.

2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

There is a wide range of FP methods available to women of childbearing age. These methods include the Lactation amenorrhea method, hormonal oral contraceptives, injectable contraceptives, Implants, IUDs, barrier methods like condoms & diaphragms, and Voluntary surgical contraception. Hormonal contraceptives are very effective in the prevention of unintended pregnancies among child-bearing-aged women while the barrier methods of family planning provide dual protection i.e. for pregnancy and infection with sexually transmitted infections. The family planning program is faced with a variety of challenges in ensuring that child-bearing-aged women access and use FP methods for contraception. Among the challenges include inadequate information on the FP methods, the need for consent by the husband before a client starts FP services, fear of side effects, myths and misconceptions in the community about FP, and inadequate institutional capacity in the provision of a method mix of FP services (Belda et al., 2017).

Persons surviving HIV and AIDS need FP services in the same measure as non-infected persons. FP service providers need to make it possible for HIV-positive female clients to access effective and safe contraception not only to plan their future childbearing but also to decrease the likelihood of HIV maternal-to-child transmission. To facilitate the prescription of FP methods, Kenya has the MEC that outlines the suitable methods of family planning for use by HIV-positive women of childbearing age (Secor & Stendig-Raskin, 2019).

This proposal reviewed the literature on FP use among women 15-49 years from different sources as indicated in the below thematic areas. This chapter describes the

significance of FP to HIV-positive women and various factors that influence family planning use and unmet needs for FP by 15-19 years women including those that are living with HIV and AIDS.

2.2 Level of Contraceptive Use

In the developing countries at the present times, there has been improved health of women and children in this era and generation compared to the past due to the rise in contraception use where now couples have smaller-sized families. Despite this, there is evidence to state that women still face obstacles in the control of their fertility as noted in the incidence of unplanned births, some were mistimed and unwanted births are looked into, (Sedgh *et al.*, 2016). Vertical transmission of HIV especially in developing countries in the African region is still a major public health concern. Cases of unmet FP needs and high numbers of unplanned pregnancies especially among HIV-infected women are still high in the region. HIV-positive pregnant women and their exposed children are offered ARV drugs as a third-prong intervention focused on the prevention of vertical transmission. This is even though a more effective way to reduce HIV MTCT is the fruitful use of contraceptives to curb unplanned pregnancies (Haddad *et al.*, 2018)

54% of HIV-positive women were on modern FP based on a study conducted in Tanzania. The unfulfilled need for FP in most countries of sub-Saharan Africa is still high despite its benefits across the population whether HIV-infected women or not. To date individuals living with HIV/ AIDS live longer than previously due to improved access to and utilization of quality health services. This has led to some HIV-positive women's desire to conceive and give birth (Wanyenze *et al.*, 2015). Studies reiterate

that a key strategy to prevent infants and children from getting HIV is curbing not wanted pregnancies among HIV-positive female clients,(Haddad et al., 2018).

Although HIV prevalence has significantly reduced, HIV infection continues to be a challenge in developing countries with childbearing-aged women accounting for a third of the burden.

No use of contraception in developing countries is majorly attributed to side effects, and irregular or no sexual relation at all (Belda et al., 2017). Reynolds et al. estimated that the utilization of modern methods of FP among female HIV-positive clients could avert 173000 unplanned HIV-infected births each year in Sub-Saharan Africa. A study conducted in 2012 in Ghana in the Komfo Anokye Teaching Hospital revealed that of the women infected with HIV only 42.6% of them were on a modern method of contraception.

For women of childbearing age, including those who are not in advanced stages of the disease and are on ARV, the available methods of FP such as those orally taken, injected, implants, barrier methods, and even intrauterine devices (IUD) are a great choice to be explored yet the use of the same is still low in the developing countries. As reported in KDHS 2014, the modern contraceptive prevalence in Kenya was estimated at 53% and an unmet need of 25% among married women while Kwale County had a contraceptive prevalence among women of childbearing age estimated at 32.5% with an unmet need for contraception estimated at 35%. For Kwale County, however, there is poor or no documentation on the data on the prevalence of the use of contraceptives among female clients who are HIV-positive.

Findings from Ethiopian Demographic & Health survey 2019 revealed an unmet need for FP among married women to be 59%. In the same country in the North East, a

study done in Dossie town to assess the demand for contraception in the VCT Centers for childbearing-aged women, the demand was 86%. The study further revealed that the positive women presented a 62% demand compared to 53% among the negative female clients. A study conducted in Lesotho showed a lower (21.6%) unsatisfied need for contraception among female clients who were HIV-positive compared to HIV-negative female clients (52.5%). According to research done in Eastern Sudan in July 2012, among those women who stated to have ever been married, there was a 44.8% unmet need for contraception.

2.3 Socio-demographic Characteristics That Influence Unmet Need for Contraception

In this section, the researcher will examine the demographic factors that impact the utilization of FP services by women of childbearing age. Some of the critical demographic factors include; the age of the clients, one's marital status, any involvement of the male intimate partners, the number of children surviving of the woman as well as the education level of the clients.

2.3.1 Client's Age, Marital status, and Number of Children

The rate at which women decide on how many children they should have is influenced by many factors including their age, their marital status, and the number of surviving children (Asif & Pervaiz, 2019). Married women or in-union women have a lower contraceptive use in Sub-Saharan Africa than in any other region in the world while unmarried women tend to have higher utilization of modern contraceptives since they would want to avoid becoming pregnant (*Wang et al., 2017*). The elderliness of the client is one of the outstanding factors for contraceptive use in underdeveloped and

developing countries in the world. Some studies have found that elderly women have a lower unmet need for FP compared to their younger counterparts thus a client's age contributes to unmet needs levels (Asif & Pervaiz, 2019).

The woman's gravidity and how many children a woman has alive affect their utilization of contraception. The women who have at least 1-4 children alive had a higher of using a modern family planning method compared to those without any surviving children (Asif & Pervaiz, 2019).

The unfulfilled need for FP is higher among adolescent women than in adults and it tends to decline with advancement in age especially in Latin America and Caribbean countries while Sub-Saharan African countries have, an unmet need for family planning information and services distributed equally at a higher level across all age cohorts of women except for those aged between 45 and 49 years who report having the least unmet need for contraception knowledge and services (*Oyebode et al., 2017*).

2.4 Socio-Economic Factors That Influence Family Planning Use and Unmet Needs for FP

Geographical and economical access to FP services influence the prevalence of contraceptive use with low prevalence seen among low and middle-income countries. The long-distance some women cover to access family planning services, employment status, and monthly earnings determine if a woman will utilize family planning services or not. The family poverty index also affects the utilization of contraceptives with poorer families being less likely to use FP services than those with a stable monthly income (Nzokirishaka & Itua, 2018). Poor geographical access compounded with the high cost of modern methods of contraception contributes to the high unmet need for contraception (Asif & Pervaiz, 2019).

Some other out-of-pocket expenses like travel cost that the client bear to access health posts have a reasonable influence on the client's probability to continue using short-term contraceptive methods compared to long-acting and reversible contraception methods. The subsidized cost of contraception services contributes to an improved prevalence of contraceptive use (*Al-Attar et al., 2017*).

2.5 Socio-Cultural Factors

This section will explore the socio-cultural factors that influence the use of FP in Kwale County. Among the determinants that the research will explore are Couple Communication, Male involvement in reproductive health, and the Religious background of the targeted clients.

2.5.1 Partner Communication

Partner communication is an important influencer of modern contraceptive utilization in society. Women including those that are living with HIV/AIDS and that discuss reproductive issues including family planning with their partners have a higher chance of taking up a modern method of contraception in contrast with their counterparts. It is therefore important that partner communication is enhanced especially on matters of reproductive health. Couple communication has proved to be among the factors that contribute to improved use of contraceptives among other services relating to maternal sexual and reproductive health (*Guure et al., 2019*)

2.5.2 Male Involvement

As identified in the national FP guidelines for service providers (6th Edition), men are very instrumental in making critical decisions on matters of sexual and reproductive health thus involving men can foster a conducive environment that will facilitate

improved access and use of RH services including FP. Mwenye factor” (the husbands’ approval) which is crucial in determining if the client will take up any method of contraception or not is a point-K to note. This has been shown in a study in Malindi – Kilifi County, Kenya which indicated that involving the males in reproductive health planning is key to using skilled birth attendants, (*Lilian et al.*) Partner opposition to the use of modern contraceptives is known to contribute to low family planning service uptake with a relatively high unmet need for family planning information and services (*Machiyama et al., 2017*).

Actively having the males get involved in RH services is paramount in reducing the unmet need for contraception services and other services related to reproductive health (Nzokirishaka & Itua, 2018). Husbands’ approval and participation in making decisions on FP services utilization in the family play an important role in influencing women in utilizing modern family planning methods(Nzokirishaka & Itua, 2018).

2.5.3 Religious Background

The influence of sociocultural factors like faith and ethnicity in facilitating or hindering contraception use uptake in parts with increased fertility rates is not well established. The influence of religion on contraception use cannot be underscored in many regions of Kenya despite the theory that religion does not support modern contraception. (*Bakibinga et al., 2016*).

The role of religion in sexuality and family planning use has been evidenced in various surveys.

The position of some of the catholic denomination followers on modern family planning use influences the women’s contraception perception and eventually their use of modern contraception.

Roman Catholicism mobilizes her followers to believe that sexual relationship in marriage is only for reproduction. However, we find that other denominations of the Christian faith do not have restrictions on married couples using any modern methods of contraceptives that are available.

A large proportion of women have a strong conviction that the number of children that one gets is by God's will and not determined by the uptake of methods of family planning. In Western parts of Kenya from some surveys conducted, findings stated that religion does not determine what an individual used as a form of contraception but the educational background of the community and appreciation of the importance of modern family planning. (*Bakibinga et al., 2016*). The fertility level among Muslim communities is higher with a low prevalence of contraceptive use than in other non-Muslim communities (*Westoff & Bietsch, 2015*).

2.5.4 Knowledge of HIV Status

Knowing one's HIV status is known to determine whether one will use any modern contraception or not. HIV-positive women who have accepted their status have a high chance of using modern contraception as a way of getting fewer children than those who appreciate their HIV status as negative (*Habte & Namasasu, 2015*). Knowledge of their HIV-positive status as women is an important determinant of their contraception practices. The health sector management teams should invest in strategies that will promote people to appreciate their HIV status, among them reproductive-aged women as an opportunity of encouraging contraception among female clients who are HIV-positive and of reproductive age (*Habte & Namasasu, 2015*).

2.5.5 Knowledge of & Access to FP Services

A proportion of HIV-positive female clients may or may not want to be pregnant due to the consequences and outcomes of pregnancy among PLWHIV. Modern methods of contraception are handy in preventing unintended pregnancies. Preventing vertical transmission of HIV and meeting the contraception need of reproductive-aged HIV-positive female clients plays a significant role in the reduction of illnesses and deaths relating to pregnancy and childbirth among HIV-positive female clients of childbearing age in the community. Both HIV-positive and negative women of child-bearing age share common factors that contribute to the unmet need for contraception. Inadequate or inappropriate information and knowledge about family planning methods, and poor utilization of contraception information and services are among the key determinants of contraception unmet needs among reproductive-aged HIV-positive female clients (Feyssa, 2015). Some of the childbearing-aged HIV-positive female clients that are not using contraceptives site lack family planning counseling and limited access to different options for family planning methods (Macquarrie, 2015)

2.6 Health Facility Factors That Influence Family Planning Use And Unmet Needs For Contraception.

There is a wide range of health facility factors that determine whether a client who is HIV positive will use any form of contraception or not. The literature review will focus on individual client status, infrastructural capacity, and technical capacity of the providers of services in the CCCs as well as the availability of the different methods of modern family planning commodities in the clinics and the nature of communication that is made about contraception to the clients in the Comprehensive Care Clinics.

2.6.1 Integration of FP into HIV Services

The provision of contraception together with HIV services gives the HIV clients seeking care in the CCCs more opportunities of accessing family planning information. Increasing access to health services is known to promote the utilization of such health services thus bridging the existing gap in many essential health services utilization in the community. Determinants of utilizing the modern FP options among childbearing-aged women include if the methods are available, the challenges associated with side effects, clients thinking that they are less likely going to get pregnant, and minimal partner support for the modern methods(Wanyenze et al., 2015).

As a method of cost-effectively minimizing the vertical transmission of HIV infection, contraception is the way to do so as FP utilization minimizes HIV. Therefore, lowering the unmet need for contraception among childbearing-aged HIV-positive clients is critical in achieving this goal. Incorporation of contraception services into HIV care has not received the weight that it deserves yet it is documented to be an avenue for bringing down the unsatisfied need for family planning among individuals that live with HIV/AIDS (Bakibinga, Pauline, Mutombo, Mukira, Kamande, Ezeh, 2016).

The fertility desires, as well as the unmet need for contraception among childbearing-aged HIV-positive clients, are high in areas where contraceptives are not available in the HIV care clinics. For the unmet gap to be reduced it is critical that Contraception counseling and access to contraception information for people living with HIV be enhanced through the integration of contraception information and services in HIV clinics (Wanyenze et al., 2015).

According to literature in the African Journal of Reproductive Health June 2014; 18 (2):134, integration of contraception information and services into HIV care is crucial

to facilitating an improved utilization of modern contraception among childbearing-aged HIV-positive clients. Lack of integration of HIV services and contraception is among the reasons that contribute to the high unmet need for contraception, multiple pregnancies, and low prevalence of long-lasting and reversible contraception in a large proportion of people that live with HIV/AIDS (*Oyebode et al., 2017*).

The contraceptive prevalence rate in Kenya has improved in the recent past following the integration of Maternal Child Health and FP with HIV information and services. On the other hand, the shortage of providers trained in long-acting and reversible contraceptive methods poses a challenge to accessing several FP methods for childbearing-aged women including HIV-positive women in health facilities (*Fleischman & Peck, 2015*).

2.6.2 Health Care Providers' Capacity

Training and deployment of well-trained and motivated health workers in the provision of long-acting and reversible contraception contribute to improved uptake of contraception services in the health care setup. Equitable distribution and appropriate placement of family planning technically competent staff in the CCCs is crucial in promoting the utilization of FP services by HIV-positive women of childbearing age, however, most institutions concentrate more on equality at the expense of equity in the delivery of health services including FP services which plays a big role in the existing disparities in hard to reach areas and among marginalized populations. Inadequately trained Health care workers in the provision of contraception services are among the contributors to poor access and utilization of Contraception services in Kenya (*Komasawa et al., 2020*).

Most modern methods of contraception need the services of a well-trained and empowered healthcare worker. Healthcare workers remain to be the most trusted source of health information in the community. A well-trained, qualified, and motivated healthcare provider is needed to provide FP counseling, prescription, and dispensing of FP commodities in health facilities (Nzokirishaka & Itua, 2018). Healthcare providers are essential to helping countries in increasing contraceptive prevalence rates, reducing unmet needs for FP, and meeting their FP 2020 commitment and other global goals. Expanding the roles of healthcare providers like nurses and clinical officers to offer some clinical methods traditionally offered by physicians can increase the availability of the methods (Komasawa et al., 2020)

2.7 Summary of the Literature Review

There are many methods of modern contraception that women of childbearing age could use to either space or limit their births however the utilization of the same in developing countries is still low. Among the methods that are recommended for use by both the general population and HIV-positive women include oral contraceptives, injectables, IUCDs, implants, voluntary surgical contraception, and barrier methods. The contraceptive prevalence rate in the general population is well documented with some level of documentation of the same among HIV-positive women in developing countries including Kenya however the utilization prevalence rate among HIV-positive women in Kwale county is not documented.

The utilization of contraception services by both the general population and HIV-positive women is influenced by several factors. Among the factors that influence the unmet need for contraception, use is socio-demographic characteristics of the clients e.g. age, marital status, parity, and the desire to get more children. On the side, socio-

cultural factors that determine the utilization of contraception, one's religion, knowledge of FP methods by the clients, decision-making power, intimate partner disclosure of one's HIV status, and male involvement in the reproductive space are among the major influencers to contraception use. On the side of socio-economic factors, direct and indirect costs incurred by women while seeking health services including contraception are among the key factors that influence the utilization of contraception services. This is made worse by the level of poverty in the community and among the individual household. Health facility characteristics key in the subject include administrative arrangements on where the FP services are provided, level of integration of the CCC services and FP services, and the health care workers' capacity in the provision of the FP services.

Gaps: From the literature review, the following gaps were picked; the degree of met or unmet need for contraception use among Hiv positive women in Kwale county is not known. On the other hand, no study has been conducted in kwale county to establish the contraception prevalence use among Hiv-positive women of childbearing age alongside its determinants. The study is aimed at bridging the identified gaps.

3.0 CHAPTER THREE: METHODOLOGY

3.1 Introduction

In this chapter, details on the research design, the place where the study was conducted, the population targeted, the procedures for sampling, employed instruments for data collection and analysis of the data, reliability, and validity including the ethical considerations are covered.

3.2 Research Design

The researcher utilized an analytical cross-sectional research design where the various factors that affect the unmet need for FP among HIV-positive female clients of childbearing age attending Comprehensive Care Clinics services in Kwale County were described. The analytical cross-sectional research design was employed because the study aimed at gathering data from Hiv-positive women of childbearing age and the officers in charge of CCCs at only one point in time to measure the association between the determinants of unmet need for contraception use and the existence of unmet need o non-existence of the unmet need for contraception use among HIV-positive women of childbearing age.

3.3 Target population

The study targeted all HIV -positive women of childbearing age attending CCC services and the officers in charge of the CCC as Key Informants.

3.4 Variables

The dependent variable is the unmet need for Contraception (whether it exists or is non-existent), while the independent variables were factors that influence the unfulfilled need for family planning as outlined in the literature review. The

independent variables include Socio-demographic factors (age, marital status, Religion, and parity of the respondent), Socio-economic factors (Exposure to media, Employment status, Cost of Fp services, Means of transport, and other means of income), Socio-cultural factors (FP beliefs, Personal and community attitudes, Independence to use FP, Fp awareness, Gender & norms and wanted fertility, and Disclosure of HIV status to intimate partner) and health facility factors (Service integration, Commodity availability and healthcare provider's capacity to provide FP services).

3.5 Study area

The study was conducted in 33 Comprehensive Care Clinics (CCCs) that had at least 30 registered clients purposely selected from among the 89 CCCs in Kwale County.

The county shares boundaries with Taita Taveta County, Mombasa County, and the Republic of Tanzania. The County is found in the South part of Kenya, positioned in the middle of latitudes 30.05° to 40.75° south and Longitudes 38.52° to 39.51° east. The County covers an area of about 8,270.2 Square Kilometres, of which 62 are covered by water-covered surfaces. A bigger proportion of the County is in the hinterland with 200 miles that form part of the coastal strip.

3.6 Study Population

The participants that participated in the study were postpartum, pregnant, or non-pregnant reproductive-aged women utilizing services in the selected CCCs. To capture the facility-based factors that influence the dependent variable, the researcher conducted interviews with all the in-charges of the health facilities where the CCC sites are situated.

3.7 Inclusion Criteria

The researcher worked with all the HIV-positive female clients of ages 15 to 49 years who had attended Comprehensive Care Clinic services from the selected CCCs for at least three months before the time of the study. Only clients who agreed to be in the study were picked for participation in the study as well as all the Health facilities in charge of the 33 selected CCCs that agreed to participate in the study.

3.8 Exclusion Criteria

Female clients of reproductive age that had not finished three months receiving services in the CCCs were excluded from the study as well as childbearing-aged HIV-positive women that did not agree to participate in the research. Officers in charge of health facilities where the CCCs are that did not agree to take part in the research were not included in the study and were replaced with officers that were willing to participate in the study.

3.9 Sampling Technique

The study prioritized CCCs that had at least thirty active clients and above as study sites. This was purposefully done to enable get CCCs that could have provided a reasonable number of clients that would provide a reasonable sample frame. All the facilities that had thirty clients and above were picked as study sites. The number of research participants was equitable and determined based on the percentage contribution of the number of clients per CCC within the 33 CCC sites. A systematic random sampling technique was used to select the CCC clients that responded to the questionnaire. The officers in charge of health facilities where the comprehensive care clinics are were purposefully selected for the key informant interviews.

3.10 Sample Size Determination

Kwale County was estimated to have at least 208405 women of reproductive age based on projections from the 1999 census. The adult HIV prevalence in the adult women population in Kwale County was estimated at 5.4%, a proportion that is more than the 5.2%, reported as the national average based on the Kenya HIV estimates 2018 making the county have at least 11,254 HIV-positive women. Based on the records from the CCCs in the County there were 6252 reproductive-aged women currently receiving care in the Comprehensive Care Clinics.

According to the KAIS 2012, 68.7% of HIV clients on ART were recorded to be on modern contraception.

The researcher used Andrew Fisher's exact formula to get the sample size to be used for the study. Since the population of women of childbearing age living with HIV was more than 10,000, the following formula was used;

$$n = \frac{(z^2 pq)}{d^2}$$

n = the desired sample size

Z = standard normal deviation (set at 1.96, 95% Confidence Interval)

P = Proportion of the target population (women of childbearing age) that are HIV positive using contraceptives in Kenya.

q = % of those that are HIV Positive women not using modern contraception

d = level of accuracy set at 0.05%

$$n = \frac{1.96^2 \times 0.687 \times 0.313}{0.05^2}$$

$$n = 331$$

Since the population was less than 10,000

The sample size, nf , was determined as;

$$nf = n|1 + (n - 1)|+1$$

$$nf = \frac{331}{\left(1 + \frac{330}{6250}\right)}$$

$$= \frac{331}{1 + 0.053}$$

$$= \frac{331}{1.053}$$

$$= 314$$

Therefore $nf = 314$

10% of the sample (314) was factored into the determined sample size to cover up for non-responses during data collection.

In this respect, the study sample size was 346

The data was collected from 33 sites that had out of the 89 Comprehensive Care Sites that had at least 30 clients on ART. The 33 sites were selected as they were the only ones with thirty clients and above, therefore all CCCs with 30 clients and above were selected for the study as sites with lower than thirty clients were taken not active in the ART services.

The study interviewed 33 officers in charge of health facilities, one from each of the 33 ART sites with at least 30 clients on ART in the County as Key Informants. The interviews with the facility in-charges were aimed at responding to the health facility factors that affect the utilization of FP services by HIV-positive female clients in the County.

The study subjects were picked from the CCC sites as illustrated in the table in Appendix 1.

3.11 Research Tool Development

Semi-structured questionnaires for the clients and interview guides for the KIIs for the officers in charge of the CCCs were carefully developed and pretested to test their objectivity in the study. The clients' research tool focussed on socio-demographic characteristics, socio-economic profile, socio-cultural factors, health facility-based characteristics, and clients' profiles that influenced the unmet need for contraception use among the female clients who are HIV-positive receiving care in the CCCs in Kwale County. The researcher made the necessary review of the tools before employing them for the actual data collection.

3.12 Pretesting of Data Collection Tools

To test the validity and reliability of the study tools to be used for data collection in this study, a pilot study was carried out in Kilifi County. The pretested community had similar characteristics as the community where the study was conducted. The sample size for the pre-test was 34 respondents (CCC clients) (approximately 10%) of the study sample size (Mugenda and Mugenda, 2003). The data collected was analyzed using the split-half method and Pearson product-moment correlation. A threshold of 0.73 was obtained which is within the recommended score of 0.70 and above for validity (Kothari, 1r 991). To check for reliability, a Test and retest measure of reliability was used where the same questions were given to the same clients twice and the score was the same in both instances. Ambiguous questions were reframed to make them friendly to the respondents. The research instruments were submitted to experts (supervisors) for

review, and their comments were incorporated into the final tools. Research assistants were trained on the research tool, and how to administer the tool to make sure that they all had the same understanding of the research tool to get quality responses.

3.13 Data Collection Techniques

The trained research assistants interviewed the HIV-positive clients from the 33 CCCs who had attended their scheduled clinics during the study period. The clients were selected using a systematic random sampling technique while the in-charges of the thirty-three health facilities were purposely sampled and interviewed in their respective health facilities to provide insights on the health facility factors that influence unmet contraception use among clients in the CCCs. A record review of the files of the interviewed HIV-positive clients' was done to get the viral load status of the clients and verify when they started the services in the respective CCCs. Data collection was done between March and April 2021.

3.14 Data Analysis

Pre-analysis data cleaning was done to eliminate inconsistent entries where we checked for wrongly captured data, missing information, outliers, and repetition. Microsoft Excel was used for data cleaning. Thereafter, STATA 16 was used for the analysis. The descriptive analysis involved frequency distribution tables, and calculations for mean, median, and prevalence estimates. Inferential statistics were both bivariate and multivariate. X^2 test and Fisher's exact test were used to test for association between independent variables and unmet FP needs. The statistically significant variables (Probability value < 0.05) during bivariate analysis were then

included in a binary logistic regression model to quantify both directions of effect and effect size. The outcome variable was coded “0” for “FP need met” and “1” for “unmet FP need”. Odds Ratios were computed. Data were conveyed in tables, graphs, and charts.

Qualitative data from the KIIs were synthesized and analyzed based on themes. Emerging themes were grouped based on similarities and differences.

3.15 Ethical Consideration

The researcher obtained ethical approval for the study from the Kenyatta University Ethics Review Committee while permission to conduct the research was obtained from the National Council for Science and Technology. Procedural approval was requested and granted by the County Government of Kwale department of health services leadership and the facility in charge of the facilities where the research data was collected. Informed consent was obtained from the CCC clients and the in-charges who took part in the study. The study was limited to CCCs with at least thirty clients registered in the CCC to limit the cost of running the study as it would not have been very cost-effective to travel long distances to look for only one client from the CCCs with less than thirty clients.

4.0 CHAPTER FOUR: RESULTS

4.1 Introduction

The section presents the data analysis results. It provides an overview of the respondent's socio-demographic characteristics and presents prevalence estimates for unmet FP needs. Further, we present findings from bivariate and multivariate analyses on the determinants of contraceptive use.

4.2 Demographic profile

A total of 347 eligible HIV-positive women and 33 key informants (healthcare workers) were reached. The study recorded a 100.28% response rate for the CCC clients and a 100% response rate for the officer in charge. The age was normally distributed with a mean of 32 years and stretched from a minimum of 17 years to a maximum of 49 years. Parity was skewed, with a median of 3 (IQR 0-9), and distributed from a minimum of 0 to a maximum of 11. Figure 2 illustrates the distributions for age and parity.

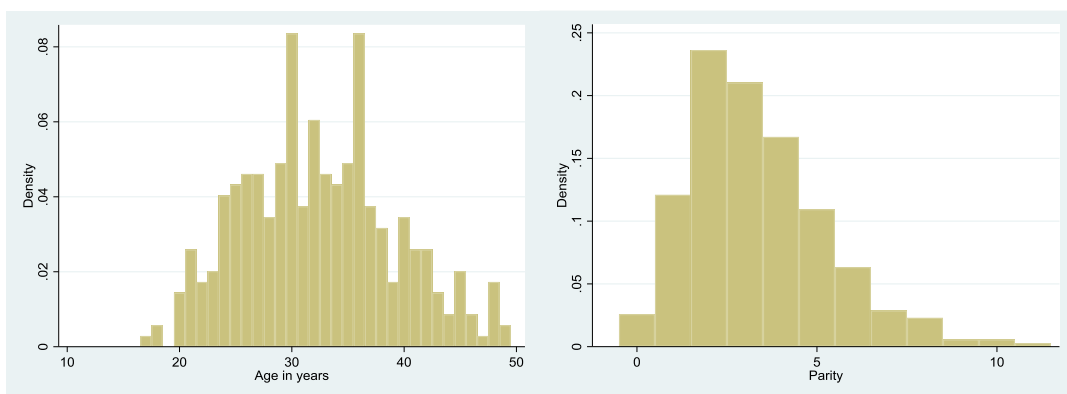


Figure 2: A figure showing frequency distribution for age, and parity.

VARIABLE	FREQUENCY	%
AGE (In Years) OF RESPONDENTS		
15-20	8	2
21-25	51	15
26-30	90	26
31-35	82	24
36-40	71	20
Above 40	45	13
Total	347	100

Table 1: A table showing the age distribution of the respondents.

VARIABLE	FREQUENCY	%
PARITY OF RESPONDENTS		
Nulliparous (0)	9	2
Low multiparty (1-3)	197	57
Grand multipara (≥ 4)	141	41
Total	347	100

Table 2: A table showing the parity of the respondents.

The majority (212) of the respondents were married, representing 61% of the sampled women. Marital status for the rest of the respondents was as follows: separated (17%), single (11%), widowed (9%), and cohabiting (2%). Islam was the dominant religion with 192 (56%) of the women being Muslims, followed by Christianity at 152 (44%).

The Christians belonged to four different denominations i.e. Full gospel churches (54%), Anglican (18%), Catholic (18%), and Sabbath Adventist (9%).

Formal employment was low at (30%) thirty percent. Other important sources of livelihood were farming (29%) and small-scale businesses (30%). Eleven percent of the women reported being fully dependent on either spouse or parent whereas less than one respondent was a commercial sex worker. Figure 3 summarizes the sources of livelihood.

VARIABLE	FREQUENCY	%
MARITAL STATUS OF RESPONDENTS		
Single	38	11
Married	212	61
Widowed	31	9
Co-habiting	6	2
Separated	60	17
Total	347	100

Table 3: A table showing the marital status of the respondents.

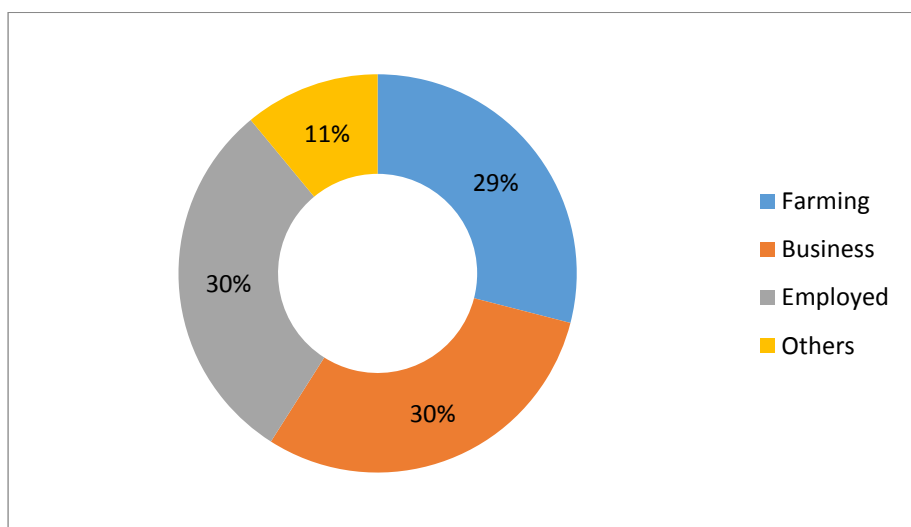


Figure 3: A figure showing the Sources of livelihoods.

4.3 Prevalence of Unmet Need for Contraception

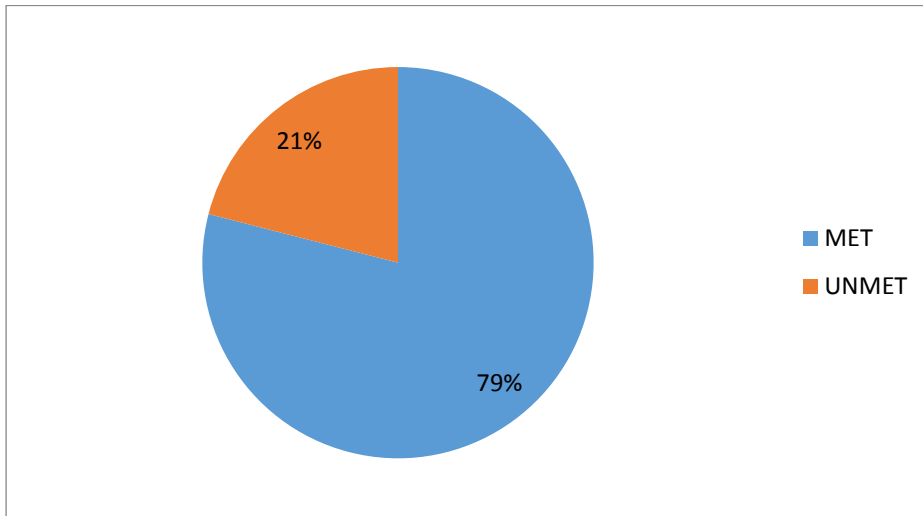


Figure 4: A figure showing the Contraception Met & Unmet needs.

Among the 347 clients that were recruited in the study, 274 reported having been on modern contraception at the time of the data collection. The contraceptive prevalence rate among HIV-Positive women of reproductive age in Kwale County based on the finding in this study stands at 79 %. The clients with an unsatisfied need for contraception comprise two groups: (i) those with an unmet need for limiting, herein denoted as U_L , and (ii) those with an unfulfilled need for spacing herein denoted as the U_S . We define women with an unsatisfied need for limitation as those who are not using any method of family planning and do not feel the need to have any more children. In this context, we define women with an unfulfilled need for spacing as those who are also currently not using a modern method of contraception but on the other hand, feel the need to have additional children in the future. The unmet FP need (U_T) is, therefore, $U_L + U_S$. The unsatisfied need for FP among HIV-positive women in Kwale County is approximately 21% with about 18% and 3% being the unfulfilled need for limiting and spacing respectively. Table 4 presents the prevalence estimates at 95% confidence intervals.

Unmet FP need	Prevalence estimate	OR	
		Lower	Upper
U _L	18.2	14.4	22.6
U _S	2.9	1.6	5.3
U _T	21.1	17.1	25.7

Table 4: A table showing the prevalence of unmet need for contraception use.

4.4 Contraception method most preferred by clients

Most respondents were aware of injectables, implants, oral pills, condoms, and IUCD as the methods of FP. The main source of this awareness were health workers within health facilities and the media. Among the women currently on a modern family planning method, 48% were on injectables, 36% were on implants, 8% were using condoms, and 4% were on the pill. Women who were not on FP highlighted sexual inactivity as the main reason. Other reasons were the wish to have more children coupled with the fear of side effects resulting from FP. The contraception methods currently used are illustrated in figure 5 below.

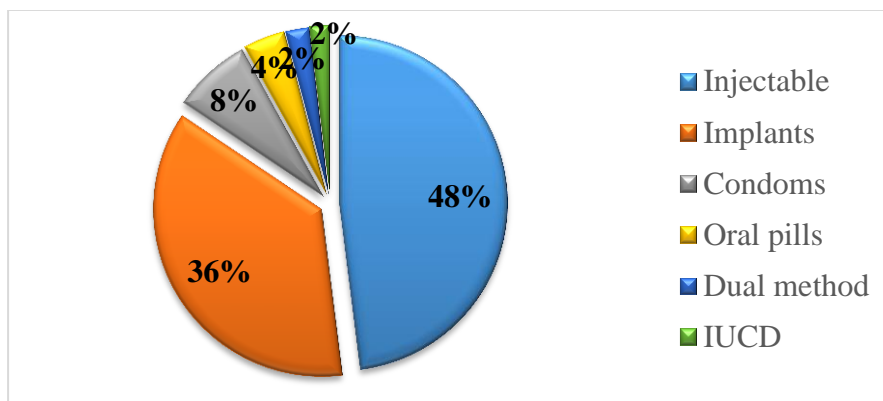


Figure 5: A figure showing the FP methods currently in use.

4.5 Factors Associated with Contraceptive unmet Need (Bivariate analysis)

The potential determinants are classified and analyzed in five categories namely demographic, socio-economic, socio-cultural, patient level, and health facility level factors. The study sought to describe the association between age, marital status, parity, religion, employment status, Source of income, exposure to media, health service integration, commodity availability in CCCs, health providers' technical capacity, FP beliefs, community norms, and wanted fertility as well as the unfulfilled need for Family planning.

4.6 Bivariate analysis

There was a statistically significant ($p < 0.05$) association between contraceptive use and several socio-demographic characteristics like age, marital status, parity, and religion. The Christian denomination one belonged to did not affect the use of contraceptives. Socio-economic factors were not significant while socio-cultural norms like HIV status disclosure to intimate partners, and awareness of FP methods, impact the decision-making power of women, and were shown to be associated with the utilization of contraceptives. Significant patient-level factors like duration of HIV-positive status, and viral load did not have a significant influence on contraception use.

4.7 Socio-demographic factors

Some socio-demographic factors had an influence on contraception use by the HIV-Positive women attending CCC services in Kwale County. Among the factors that had some association with contraception use are the client's age, Marital status, Parity, religion, and level of FP methods awareness.

The results show that most of the women 148 (42.6%) on FP were aged between 25-34 years) while most 22(6.3%) and 28 (8.06%) of those with unmet FP needs were between ages 22-34 and 35-44 respectively. among the women between 45 and 49, most 16(4.6%) had an unmet need for FP. These findings were statistically significant at ($X^2=53.9031, p=0.000$)

In regards to marital status, most of the women on FP were married women (191) while most of those with unmet needs were separated (23) widowed (21), and married (21). All those cohabitating (6) were on FP. Marital status was statistically significant at ($X^2=68.7855, p=0.000$).

Most of those who were on FP were low multiparity (165) and grand multipara (104) while most of those with unmet FP needs were also from the same group where 32 (16.2%) were low multiparity and 37 were grand multipara. The parity status was likely to influence the women's contraceptive use a ($t X^2=, 7.9921 p=0.018.$)

Family planning awareness was statistically significant at ($X^2=34.61424, p=0.000$) where the majority of the women on FP were aware of FP. Lastly, the majority of those on FP (198) had no history of unplanned pregnancy even though most of those with a history of unplanned pregnancy (58) had an unmet need for contraceptives ($X^2=1.9183, p=0.166$).

Most of the women on contraceptives (152) agreed that sociocultural factors influence contraceptive use while most of those with an unmet need (32) strongly agreed that sociocultural factors influence contraceptive use (at $X^2=13.9031, p=0.003$).

The majority of the women who had informed their partners of their status (225) were on FP while most (44) of those with an unmet need had mentioned to their partners

their status (at $X^2=52.7994$, $p=0.000$). A summary of the findings is shown in the tables below;

Table 5 outlines the association of the various socio-demographic factors with contraception use among HIV –Positive women.

Fisher's exact test

Age in Years				
Variable	N 347(100%)		X² – Value	P-Value
	On FP	Unmet Need		
15-24	37 (10.6)	7(2.02)	53.9031	0.000*
25-34	148 (42.6)	22 (6.3)		
35-44	86 (24.7)	28 (8.06)		
45-49	3 (0.86)	16 (4.6)		
Total	274	73		
Marital Status				
Cohabiting	6 (2.0)	0 (0.0)	68.7855	0.000*
Married	191 (90.1)	21 (9.99)		
Separated	37 (61.7)	23 (38.3)		
Single	30 (78.4)	8 (21.6)		
Widowed	10(32.3)	21 (67.7)		
Total	274	73		
Parity				
Nulliparous	5 (55.6)	4 (44.4)	-	0.018*
Low multiparity	165 (83.8)	32 (16.2)		
Grand multipara	104 (73.8)	37 (26.2)		
Total	274	73		
Religion				

Christian	110 (72.4)	43 (27.6)	-	0.003*
Muslim	163 (84.9)	29 (15.1)		
Other	1 (100)	0 (0.0)		
Traditional	0 (0.0)	1 (100.0)		
Total	274	73		
Christian Denominations N 152 (100%)				
Anglican	22 (78.6)	6 (21.4)	-	-
Catholic	20 (71.4)	8 (28.6)		
Full gospel churches	54 (65.9)	28 (34.1)		
Sabbath Adventist	14 (100)	0 (0.0)		
Total	110	42		
Duration of HIV Status N 347 (100%)				
< 1 year	30 (75.0)	10 (25.0)	3.8116	0.149
1-3 years	105 (84.7)	19 (15.3)		
> 3 years	139 (76.0)	44 (24.0)		
Total	274	73		
Duration on ARVs				
< 1 year	30 (75.0)	10 (25.0)	3.8116	0.149
1-3 years	109 (83.6)	21 (16.4)		
> 3 years	135 (50)	42 (23.7)		

Total	274	73		
Viral Load				
Unsuppressed (\geq 1000 copies/ml)	6 (85.7)	1 (14.29)	-	1.000
Low-level viremia (401- 999 copies/ml)	7 (87.5)	1 (12.5)		
Suppressed (\leq 400 copies/ml)	261 (78.6)	71 (21.4)		
Total	274	73		
FP Awareness				
No	8 (30.4)	16 (69.6)	34.6124	0.000*
Yes	266 (82.3)	57 (17.7)		
Total	274	73		
History of Unintended Pregnancies				
No	198 (77.3)	59 (22.7)	1.9183	0.166
Yes	76 (84.3)	14 (15.7)		
Total	274	73		

Table 5: A table showing the socio-demographic and patient-related Factors influencing the unmet need for contraception use.

4.8 Socio-Economic Factors

The research sought to find out the relationship between socioeconomic factors associated with contraceptive use by HIV-positive clients. The results did not show any significant association between the dependent and independent variables as shown in the table below;

Fisher's exact test

Variables	N 347 (100%)		X² – Value	P-Value
Employment Status	On FP	Unmet Need		
Employment Status				
No	189 (78.1)	53 (21.9)	0.2671	0.605
Yes	85 (80.6)	20 (19.4)		
Total	274	73		
Means of Transport				
Boda Boda (motorcycle)	124 (82.7)	26 (17.3)	-	0.421
On foot	82 (4.6)	28 (25.4)		
Personal bicycle	1 (100)	0 (0.0)		
Public vehicle	67 (77.9)	19 (22.1)		
Total	274	73		
Incur Cost for FP Services				
Yes	131 (80.9)	31 (19.1)	0.6615	0.416
No	143 (46.4)	42 (22.7)		
Total	274	73		

Fare N 374 (100%)				
0	77 (72.0)	30 (28.0)	-	0.134
> 0-100	60 (87.0)	9 (13.0)		
101-200	68 (80.0)	17 (20.0)		
201-300	35 (72.9)	13 (27.1)		
301-400	17 (89.5)	2 (10.5)		
401-500	4 (80)	1 (20.0)		
> 500	13 (92.9)	1 (7.1)		
Total	274	73		

Table 6: A table showing social economic factors influencing the unmet need for contraceptive use

4.9 Socio-Cultural Characteristics

The study sought to establish the influence that sociocultural factors have on the use of contraception by clients. The results showed some significant influence by the sociocultural factors associated with contraception use by HIV-Positive. The majority of the clients, 52.45% (N 182) that were on Contraception strongly agreed that independence of consent has a significant influence on contraception use (at $X^2 = 13.9031$, $P = 0.003$). The results showed that patients' sharing of their HIV status with their intimate partners has a significant influence on contraception use (at $X^2 = 52.7994$, $P = 0.000$). Table 4 shows the degree to which Socio-Cultural factors influence the unmet need for contraception use among women of reproductive age that live with HIV/AIDS in Kwale County.

Fisher's exact test

Variables	N 347 (100%)		X ² – Value	P-Value
	On FP	Unmet Need		
Independence of Consent				
Strongly agree	103 (76.3)	32 (23.7)	13.9031	0.003*
Agree	152 (83.5)	30 (16.5)		
Disagree	17 (73.9)	6 (26.1)		
Strongly disagree	2 (28.6)	5 (71.4)		
Total	274	73		
Patient disclosure				
Yes	49(52.7)	44 (47.3)	52.7994	0.000*
No	225 (88.6)	29 11.4)		
Total	274	73		

Table 7: A table showing social-cultural factors influencing the unmet need for contraceptive use.

4.9 Predictors of Contraceptive Unmet Need (Multivariate analysis)

Independent variables that were significant during bivariate analysis were included in a logistic regression model and odds ratios were calculated. Age, marital status, decision-making power, partner disclosure, and FP awareness remained significant determinants of contraceptive use. HIV-positive women whose ages range from 45 to 49 years had ten (10) times more probability of having unmet FP need as compared to women aged 15 to 24 years ($p=0.014$). Additionally, being widowed increases the odds of unmet FP needs by 6.5 times as compared to being married at a p-value of 0.002.

Women who strongly disagreed with the idea that they could independently make decisions regarding their reproductive health were about sixteen folds more likely to not meet their family planning needs as compared to those who agreed. The ability to independently make decisions regarding contraceptive use was statistically significant ($p=0.006$). Partner disclosure and FP awareness were found to positively contribute to the utilization of FP at $p=0.006$. Having informed their partner of their status HIV reduced the odds of unmet FP needs by 74% while the awareness of the available FP methods reduced the odds of unmet FP needs by 80% at a statistically significant p-value of 0.02. Table 8 summarizes the odds ratios as well as the confidence interval.

**Significant at $p < 0.05$*

Socio-demographic factors	Odds Ratio(OR)	95% CI for OR		P-value
		Lower	Upper	
Variable				
Age in years				
15-24 (Ref)				
25-34	0.569	0.165	1.964	0.372
35-44	0.722	0.192	2.722	0.631
45-49	9.954	1.587	62.43	0.014*
Marital status				
Married	(Ref.)			
Separated	1.934	0.667	5.604	0.225
Widowed	6.549	2.003	21.415	0.002*

Single	0.807	0.199	3.277	0.765
Variable	Odds Ratio(OR)	95% CI for OR		P-value
Parity		Lower	Upper	
Nulliparous	(Ref.)			
Low parity	0.625	0.087	4.504	0.641
Grand multipara	1.251	0.156	10.046	0.833
Sociocultural factors	Odds Ratio(OR)	95% CI for OR		P-value
Variable		Lower	Upper	
Independence to use Contraceptives				
Agree (Ref.)				
Disagree	2.921	0.762	11.20	0.118
Strongly agree	1.96	0.892	4.307	0.094
Strongly disagree	16.351	2.246	119.02	0.006*
Intimate Partner disclosure				
Agree to disclose HIV				

status to intimate partners (Ref.)				
Yes				
Yes	0.262	0.01	0.686	0.006*
FP Awareness				
Agree (Ref.)				
Yes	0.20	0.052	0.773	0.02*

Table 8: A table showing multivariate analysis (logistic regression) of determinants of contraception use.

4.10 Key Informant Interviews responses

The in charge of the Comprehensive care clinics were interviewed as key informants to capture their perception about the determinants of unmet need for contraceptive use among HIV –positive women of childbearing age in their respective CCCs. The KKI interviewees’ responses were analyzed by theme and the responses were as follows;

The number of years of experience of the officer in charge: Six of the officers had served for between one and three years, fifteen for between four and six years, and six for between seven and nine years while the remaining six had been in service for ten years and above

The number of staff working in the CCCs: One hundred and sixty-four staff were working in the 33 CCCs. Among them, sixty-seven were clinical staff (30 Registered Clinical Officers, and 37 Nurses), thirty-seven (37) counselors, and forty-three (43) peer educators while the remaining seventeen (17) were either health records officers, nutritionists, data clerks, or support staff.

Training of the clinical staff in LARC and stocking of FP commodities in the CCCs: 85% (N 57) of the clinical staff trained in LARC and deployed in the CCCs

and all said they were competent in delivering all the methods of LARC except the IUCD, only three (3) out of thirty-three (33) CCCs had stocked contraceptives. The contraceptives that were stocked in the three CCCs were oral contraceptive pills, injectable depo Provera, implants, and condoms. Among the reasons for not providing family planning services in the CCCs were facility protocol, inadequate space, and a lack of family planning documentation and reporting tools. Needy clients from the thirty CCCs that did not stock FP commodities were referred to the MCH/FP clinic for contraception services

Direct charges for services: Among the thirty-three, CCCs one was reported to be charging for the services the clients receive. The charges were ranging from Ksh 100 - 300 based on the services the client receives.

Reasons that clients give for not using contraception: Some of the reasons that the CCC in charge said that the clients give for not using contraceptives were fear of side effects (22), Religious beliefs(13), Want more children (8), Refusal by intimate partners (7), not sexually active(3), and traditional /cultural beliefs (5).

Reasons for not giving contraception services in the CCCs: The reasons why the CCCs were not providing contraception services were the lack of FP documentation tools in the CCCs, directives from the hospital management team, and limited space at the CCC. The majority of the staff were however trained in LARC and 24 out of 33 key informants said that they were confident in providing most LARC methods of family planning. Based on the KII interviews, trained Health care workers, and the availability of FP commodities in CCCs influenced the use of modern contraception among HIV-positive clients. Non-integration of CCC with FP services, lack of FP

services' documentation and reporting tools in CCCs, and inadequate space contributed to the unmet need for FP in Kwale County.

5.0 CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter will have the findings of the study compared with other studies and draw a conclusion and recommendations on the finds.

5.2 Discussion

The discussion in this section is focused on the significant findings in the various themes of the research objectives.

5.2.1 Contraceptive Prevalence and Unmet Need for Contraception Use

Generally, there is a high (79%) contraceptive prevalence rate among HIV-Positive. Female clients who are HIV-Positive and are of childbearing age had a relatively low (21%) unmet need for contraception in Kwale county as compared to the prevalence rate of contraceptive use by female clients HIV-Positive in Kenya. The high prevalence of contraception use is attributed to FP services being free of charge, awareness of FP services by the clients, disclosure of the HIV status by the clients, and deployment of LARC trained health care workers in the CCCs that are competent in counseling for FP services with a very good referral system of the needy clients to the Maternal Child welfare clinic where FP services are dispensed.

Findings in this study show that the religious background of the clients did not negatively affect the contraceptive need among female clients who HIV-Positive in Kwale County contrary to a study that was done in the western part of Kenya (Bakibinga et al., 2016).

In this study, it was found that the unmet need for FP among female clients who are HIV-positive in Kwale County is 21% with 18% and 3% being the unmet need for

limiting and spacing respectively. These findings are similar to those found in research conducted in Lesotho which revealed that HIV-positive women had an unmet need for FP of 21.6%, and the Kilimanjaro region, northern Tanzania, and KAIS 2012, which showed a high FP prevalence rate by HIV-Positive women of 68.7%.

Most women (48%) who were on contraceptives were mainly on injectables followed by 36% who were using implants, IUCD was the least used FP method. According to the findings in this study, the majority of HIV-Positive women prefer using either the implants or the injectable Depo Provera. The multivariate analysis revealed that women who strongly disagreed with the idea that they could independently make decisions regarding their reproductive health were about 16 folds more likely to not meet their family planning needs as compared to those who agreed. The ability to independently make decisions regarding contraceptive use was statistically significant ($p=0.006$). The majority of the clients that were not on modern family planning methods indicated fear of the side effects of FP as their major hindrance. These findings are comparable to those by *Sedgh et al., (2016)* who found that non-use of contraception in developing countries is majorly attributed to side effects, and irregular or no sexual relationship at all.

5.2.2 Socio-Demographic Characteristics Associated With Unmet Need For Contraceptive Use

The descriptive analysis of the respondent's demographic factors revealed that most of the respondents were between 25 and 35 years with the majority of women being Para three(3) with some having up to eleven children. The majority of women were also married while Islam was the most dominant religion followed by Christianity.

Among the Christians, those from the Full Gospel denomination were the majority. In regards to employment, the majority were doing farming or small-scale farming with only thirty percent informal employment and eleven percent depending on either their parents or spouses.

The bivariate analysis was done using chi-square and the findings showed that age had a statistically significant association with contraceptive use among women at ($X^2=53.9031, p=0.000$). Most of the women on contraceptives were below thirty-five years of age even though most women in the age group also had a high unmet need for contraceptives. These findings are similar to those by Asimwe, Ndugga, and Mushomi (2014) who also found that the elderliness of the client is one of the outstanding characteristics of contraceptive use in underdeveloped and developing countries in the world. These findings imply that older women of reproductive age have a reduced probability of having contraception unmet needs. Therefore, it can be stated that age has a significant influence on the contraceptive needs of women where one's contraceptive needs are met at one age.

The multivariate analysis showed that HIV-positive women whose ages range from 45 to 49 years were 10 times more probable to have unsatisfied FP needs as compared to those aged 15 to 24 years ($p=0.014$). these findings contradict those by (Oyebode *et al.*, 2017) who found that the unfulfilled need for FP is more among adolescent women than among adults and it tends to decline as one advance in age for clients in Latin America and Caribbean countries however the situation in Sub Saharan Africa show that the unmet need for family planning information and services is distributed at a high level across all age cohorts with an exception of women aged between 45 and 49 years who report having the least unmet need for contraception information and services.

These findings are contradictory to existing ones, but they suggest that in Kwale County, the elderly HIV-positive female clients of childbearing age have an unsatisfied needs for family planning which may be due to the lack of information and awareness of contraceptives.

The women's marital status was observed to have a statistically significant influence on the HIV-positive women ($X^2=68.7855$, $p=0.000$). The majority of married women were on contraceptives while those separated from their spouses or husbands had the highest unmet contraceptive needs. The multivariate analysis further revealed that being widowed increases the odds of unmet FP needs by 6.5 times as compared to being married at a P-value of 0.002. The findings in this research are similar to those by *Assimwe et al (2014)* which showed that having males actively involved in Reproductive Health services greatly contributes to the reduction of the unmet need for contraception. Furthermore, *Wulifan et al., (2016)* found that husbands' approval and participation in decision-making in FP services utilization in the family play an important role in influencing women in utilizing modern family planning methods. These findings imply that HIV-positive women who are married have a higher likelihood of using contraceptives while those who have separated from their husbands or are widowed are likely to have unmet needs because men are key decision-makers in matters of reproductive health including the use of contraceptives for family planning purposes. Moreover, among the widowed women, there are no husbands to participate in the decision-making for FP services which is reflected in the widow's unmet FP needs.

Parity status was statistically significantly associated with the women's contraceptive use ($X^2=, 7.9921$ $p=0.018$). These findings further showed that most women with low

multiparity had low unmet contraceptive needs while most of the grand multipara had an unmet need for contraception. These findings imply that women's parity influences their contraceptive use, conclusions reached by *Asiimwe et al.*, (2014) who found that gravidity and the number of surviving children women had affected their utilization of contraception. The women who have at least 1-4 children alive had a higher likelihood of using modern family planning in comparison to those without any surviving children. Therefore, these findings suggest that among female clients who have a positive HIV status, their gravidity influences their contraceptive use.

5.2.3 Socio-Cultural Factors Associated with Unmet Need for Contraceptive Use

The research then explored the socio-cultural influence on contraceptive use among women and The finding revealed that most women agreed that socio-cultural factors influence contraceptive use as supported by the ($X^2=13.9031$, $p=0.003$). These findings suggest that sociocultural factors influence HIV-positive women's use of contraception. Similarly, when it came to specific socio-cultural factors such as the disclosure of status to one's intimate partner, ($X^2=52.7994$, $p=0.000$) was found where the majority of clients who shared their HIV status with their intimate partners were on family planning contraceptives. The multivariate analysis showed that awareness of the available family planning services has a statistically significant influence on the use of contraceptives among HIV-positive females in Kwale County ($X^2=34.61424$, $p=0.000$). The findings show that knowledge and awareness of family planning services influence the use of contraceptives. The multivariate analysis revealed that being aware of FP methods reduced the odds of unmet FP needs by 80% at a statistically significant (p -value of 0.02). These findings are similar to those by Feyssa (2015) who found that a proportion of HIV-positive female clients may or

may not want to be pregnant due to the consequences and outcomes of pregnancy among PLWHIV. It is handy to use the available modern methods of contraception in preventing unintended pregnancies. Therefore, creating awareness of these methods of contraception can offer a myriad of advantages for women.

Intimate partner disclosure was found to positively contribute to the utilization of FP at $p=0.006$. Having disclosed the HIV status to the intimate partner reduced the odds of unmet FP needs by 74%. The findings revealed that the main reasons for non-disclosure to one's partner were mainly due to being single, separated, or if the partner is dead. These findings are similar to those by (Wulifan et al., 2016) who reported that partner communication is an important influencer of modern contraceptive utilization in society. Therefore, from these studies and the findings in the current study, it can be deduced that women including those that are living with HIV/AIDS that discuss reproductive health issues including family planning with their intimate partners have a higher chance of using modern ways of contraception than their counterparts.

The findings imply that religion has a likely effect on HIV-positive women's contraceptive use as validated by the statically significant p-value ($X^2=, 7.9921$ $p=0.018$). These findings were contrary to other studies which found that in parts of Western Kenya, religion does not influence the individual's use of contraception but the educational background of the community and appreciation of the importance of modern family planning (*Bakibinga et al., 2016*). Further, this study found that Muslims have a higher probability of using contraceptives as compared to Christians and other religions. This is contrary to the findings which revealed that the fertility level among Muslim communities is higher with a low prevalence of contraceptive use

than in other non-Muslim communities (Westoff & Bietsch, 2015). The study's findings show that religion significantly influences contraception use among HIV-positive women and the previous findings may contradict those in this study because of differences in the study's target population.

The study findings suggest that knowledge of one's HIV status did not have a statistically significant influence on women's contraceptive use at ($X^2=3.8116$, $p=0.149$). However, these findings are contrary to other studies such as those (Habte & Namasasu, 2015) that have found that knowing one's HIV status is known to determine whether one will use any modern contraception or not. Women who are HIV positive and have accepted their status have a high chance of using modern contraception as a way of getting fewer children than those who appreciate their HIV status as negative (Habte & Namasasu, 2015). Therefore, these findings imply that despite knowing their HIV status, women in Kwale County do not necessarily take measures like the use of contraceptives to space and limit the number of births.

The study further established that most women on FP had been on ARVs for more than three years ($X^2=2.7876$, $p=0.248$) showing that the period one has been on ARVs does not have a significant impact on whether or not they will utilize contraceptives. Similarly, the viral load did not determine the women's use of contraception at ($X^2=$, $p=0.1.000$). These findings suggest that being on ARVs or having suppressed viral load does not influence HIV-positive women's use of contraceptives. These claims are similar to those made by (Feyssa, 2015) who indicated that determinants of unsatisfied need for contraception among HIV-positive female clients include inadequate or inappropriate information and knowledge about family planning methods, poor appreciation of contraception information and services are among the key determinants

of contraception unmet need among childbearing aged HIV positive female clients (Feyssa, 2015). Moreover, (Macquarrie, 2015) found that some of the childbearing-aged HIV-positive female clients that are not using contraceptives lack family planning counseling and limited access to different options of family planning methods. Therefore, it can be argued that the lack of a statistically significant influence impact of Kwale County HIV-positive women on viral load and period of using ARVs can be attributed to inappropriate information, poor knowledge of FP methods, and inadequate access to information

5.2.4 Socio-Economic Factors Associated with Unmet Need for Contraceptive Use

The women's employment status was found to not influence their contraceptive needs whereas most of the women on contraceptives were not employed. The chi-square results ($\chi^2=0.2671$, $p=0.605$) show that the HIV-positive women's contraceptive needs were not influenced by their employment status. These findings contradict earlier studies such as (Sachin et al., 2016) who found that women in formal employment and wealthier have a higher chance of utilizing modern family planning services than those who have no formal employment. Other findings also showed that women who use family planning services have better living standards and are self-reliant with better control over reproductive health (Nzokirishaka & Itua, 2018). The current study established that women's employment does not affect their contraceptive use; hence HIV- positive women who do not have any employment utilize contraceptives in Kwale County.

Neither the type of transport used nor the transport costs had a statistically significant association with the HIV-positive clients' utilization of family planning services in Kwale county at ($\chi^2=$, $p=0.421$, and $p=0.134$) respectively. These findings suggest

that geographical and economical access to FP services does not influence contraceptive use among HIV-positive women. These findings contradict those by (Sinai et al., 2020) who found that some other out-of-pocket expenses like travel cost that the client bear to access health posts has a reasonable influence on the client's probability to continue using the short-term contraceptive methods compared to long-acting and reversible contraception methods. It can, therefore, be deduced that travel costs and the mode of transport such as walking or taking a motorcycle and the costs of these modes of transport do not control the utilization of contraceptives by HIV-positive women in Kwale County.

Next, the cost of FP services was examined and it was revealed that most of the women on FP did not have any costs where ($\chi^2=0.6615$, $p=0.416$). Similarly, in regards to cost rating, most of the women on FP rated the FP services as cheap, ($\chi^2=3.5716$, $p=0.312$). These findings show that the cost of contraceptives despite being cheap did not statistically influence contraceptive use by HIV-positive female clients in Kwale County. The findings were, contrary to other studies which established that poor geographical access and the high cost of modern methods of contraceptives contributed to the high unmet need for contraception (*Okigbo et al., 2014*). However, the findings were in tandem with the studies that found that the subsidized cost of contraception services contributes to an improved prevalence of contraceptive use (*Al-Attar et al., 2017*). Therefore, these findings suggest that the cost of contraceptives even among those who rate them as cheap does not have a statistically significant influence on whether they use contraceptives or not, implying that the cost of contraceptives does not affect their utilization among HIV-positive women.

5.2.5 Health-Facility Characteristics Associated with Unmet Need for Contraceptive Use

Concerning the health-facility-level factors, it was found that lack of FP stock, lack of FP documentation in CCC, limited CCC space, and directives from the hospital management team constrained FP use even though the majority of nurses and COs working on the CCC were trained on LARC.

5.3 Conclusion

The research concluded that HIV-Positive women of childbearing age in Kwale County had an unmet need for contraception use.

The conclusion will only focus on the three objectives that had a statistically significant influence on the dependent variable.

The first objective of the study purposed to establish the socio-demographic factors associated with the unmet need for contraception among HIV-positive women of childbearing age in Kwale County. The study concludes that age (45-49 years), marital status (widowed), and parity status were associated with unmet needs for contraception among HIV-positive women of childbearing age in Kwale County.

The third objective purposed to determine health facility-based characteristics associated with the unmet need for contraception among HIV-positive women of childbearing age in Kwale County. The study concludes lack of integration of FP services in the CCCs had a significant influence on the unmet need for contraception use among HIV-Positive women of childbearing age in Kwale County.

The fourth objective aimed to determine the Socio-Cultural factors that are associated with the unsatisfied need for contraception among HIV-positive women of childbearing age in Kwale County. The study concludes that the women's awareness

of contraceptives and intimate partner disclosure of their HIV status were associated with the use or non-use of modern family planning services among HIV-positive women of childbearing age in Kwale County.

5.4 Recommendations

The research makes the following recommendations;

- a) In regards to the socio-demographic factors, policies should be developed and enforced to Promote public health education focussing on women with HIV-Positive status who are over 40 years old to increase their awareness of contraceptive use and to dispense the negative perceptions on the effects of contraceptives.
- b) Widowed and separated or cohabitating women should be targeted in public health education and awareness creation programs to promote their use of contraceptives and to increase their ability to make independent choices regarding FP services.
- c) On the side of the sociocultural factors, the study recommends that Public education should focus on educating the public, especially targeting religious arguments on the need for contraceptives among those who are HIV-positive in Kwale County.
- d) Women should be supported to disclose their status to their partners to get support in making informed choices on contraceptive use. Male involvement in reproductive health matters should be promoted.
- e) The study recommends that regarding health facility-based factors CCCs should stock enough FP commodities, documentation, and reporting tools to facilitate the integration of FP services in the CCCs thus promoting the

utilization of contraceptives by women of childbearing age living with HIV/AIDS in Kwale County. The administration in the county should ensure that CCCs have adequate space to cater to both the CCC needs and the FP needs of its clients.

REFERENCES

- Al-Attar, G. S. T., Bishai, D., & El-Gibaly, O. (2017). Cost-Effectiveness Analysis of Family Planning Services Offered by Mobile Clinics versus Static Clinics in Assiut, Egypt. *African Journal of Reproductive Health*, 21(1), 30–38. <https://doi.org/10.29063/ajrh2017/v21i1.2>
- Asante, F. (2013). *COST OF FAMILY PLANNING SERVICES IN This publication was prepared by Felix Ankomah Asante for the Health Policy Project.* (Issue September).
- Asif, M. F., & Pervaiz, Z. (2019). Socio-demographic determinants of unmet need for family planning among married women in Pakistan. *BMC Public Health*, 19(1). <https://doi.org/10.1186/s12889-019-7487-5>
- Asiimwe, J. B., Ndugga, P., & Mushomi, J. (2014). with Older Women in Uganda. *Determinants of Contraceptive Use in Uganda*, 67(February), 23–36. <https://doi.org/10.1111/j.1469-7998.2006.00152.x>
- Bakibinga, Pauline, Mutombo, Mukira, Kamande, Ezech, M. (2016). *Kenya AIDS response progress report 2016.* <https://link.springer.com/article/10.1007%2Fs10943-015-0030-9>
- Bakibinga, P., Mutombo, N., Mukiira, C., Kamande, E., Ezech, A., & Muga, R. (2016). The Influence of Religion and Ethnicity on Family Planning Approval: A Case for Women in Rural Western Kenya. *Journal of Religion and Health*, 55(1), 192–205. <https://doi.org/10.1007/s10943-015-0030-9>
- Belda, S. S., Haile, M. T., Melku, A. T., & Tololu, A. K. (2017). Modern contraceptive utilization and associated factors among married pastoralist women in Bale eco-region, Bale Zone, South East Ethiopia. *BMC Health*

- Daly, C., Wickstrom, J., Jarvis, L., & Schmitt, M. (2014). *Increasing family planning capacity, access, and quality: results from EngenderHealth's ExpandFP Project in Tanzania*. 8. <https://www.engenderhealth.org/files/pubs/project/expandfp/Expand-FP-Tanzania-Brief.pdf>
- Damian, D. J., George, J. M., Martin, E., Temba, B., & Msuya, S. E. (2018). *Prevalence and factors influencing modern contraceptive use among HIV-positive women in Kilimanjaro region, northern Tanzania*. 1–9.
- DHS. (2015). The 2014 Kenya Demographic and Health Survey. *Kenya National Bureau of Statistics*, 603. <https://doi.org/10.3109/03014460.2013.775344>
- Feyssa, M. D. (2015). Unmet Need for Family Planning Among Women in HIV/AIDS Care at Antiretroviral Treatment Clinic in South Ethiopia: A Challenge to Prevention of Mother to Child Transmission. *Journal of AIDS & Clinical Research*, 06(06). <https://doi.org/10.4172/2155-6113.1000469>
- Fleischman, J., & Peck, K. (2015). *Family Planning and Women's Health in Kenya: The impacts of US investments*. December.
- Guure, C., Maya, E. T., Dery, S., Da-Costa Vrom, B., Alotaibi, R. M., Rezk, H. R., & Yawson, A. (2019). Factors influencing the unmet need for family planning among Ghanaian married/union women: A multinomial mixed effects logistic regression modeling approach. *Archives of Public Health*, 77(1). <https://doi.org/10.1186/s13690-019-0340-6>
- Habte, D., & Namasasu, J. (2015). Family planning use among women living with HIV: Knowing HIV positive status helps - Results from a national survey.

Reproductive Health, 12(1), 1–11. <https://doi.org/10.1186/s12978-015-0035-6>

Haddad, L. B., Tang, J. H., Krashin, J., Ng'Ambi, W., Tweya, H., Samala, B., Chiwoko, J., Chaweza, T., Hosseinipour, M. C., Lathrop, E., Jamieson, D. J., & Phiri, S. (2018). Factors associated with condom use among men and women living with HIV in Lilongwe, Malawi: A cross-sectional study. *BMJ Sexual and Reproductive Health*, 44(1). <https://doi.org/10.1136/bmjsex-2017-101825>

Komasawa, M., Yuasa, M., Shirayama, Y., Sato, M., Komasawa, Y., & Alouri, M. (2020). Demand for family planning satisfied with modern methods and its associated factors among married women of reproductive age in rural Jordan: A cross-sectional study. *PLoS ONE*, 15(3). <https://doi.org/10.1371/journal.pone.0230421>

Machiyama, K., Cleland, J., Casterline, J. B., Mumah, J. N., Kabiru, C. W., Huda, F. A., Yeasmin, S., Obare, F., & Odwe, G. (2017). Reasons for unmet need for family planning, with attention to the measurement of fertility preferences: protocol for a multi-site cohort study. *Reproductive Health*, 14(1). <https://doi.org/10.1186/s12978-016-0268-z>

Macquarrie, K. L. D. (2015). *HIV / AIDS and Unmet Need*. 122. *mdgs 2015* (Vol. 1). (2015). https://www.who.int/gho/publications/world_health_statistics/2013/en/

Nzokirishaka, A., & Itua, I. (2018). Determinants of unmet need for family planning among married women of reproductive age in Burundi: a cross-sectional study. *Contraception and Reproductive Medicine*, 3(1), 1–13. <https://doi.org/10.1186/s40834-018-0062-0>

- Okigbo, C. C., McCarraher, D. R., Gwarzo, U., Vance, G., & Chabikuli, O. (2014). Unmet need for contraception among clients of FP/HIV integrated services in Nigeria: the role of partner opposition. *African Journal of Reproductive Health, 18*(2), 134–143.
- Oyebode, T., Sagay, A., Musa, J., Ekwempu, C., Agaba, P., Idoko, J., Okonkwo, P., & Kanki, P. (2017). Unmet need for contraception among human immunodeficiency virus-positive women in Jos, Nigeria: A call to integrate family planning and human immunodeficiency virus services. *Journal of HIV and Human Reproduction, 4*(1), 13. <https://doi.org/10.4103/2321-9157.210594>
- Sachin, P., Dhruve, S., Badgaiyan, Y. D., & Pandey, S. (2016). *Medical Science A Study of Socio-Economic Factors Affecting Family Planning Services in An Urban Area Expert of Communicable Diseases, Non-Communicable Diseases, Epidemiology View project Medical Science A Study of Socio-Economic Factors Affecting Family Pl. July 2016.* <https://www.researchgate.net/publication/316941142>
- Secor, R. M., & Stendig-Raskin, I. (2019). Medical Eligibility Criteria for Contraceptive Use. *Advanced Health Assessment of Women.* <https://doi.org/10.1891/9780826124623.0026>
- Sedgh, G., Ashford, L. S., & Hussain, R. (2016). Unmet Need for Contraception in Developing Countries: Examining Women’s Reasons for Not Using a Method. *Guttmacher Institute, June*, 2–48.
- Sinai, I., Omoluabi, E., Jimoh, A., & Jurczynska, K. (2020). Unmet need for family planning and barriers to contraceptive use in Kaduna, Nigeria: culture, myths, and perceptions. *Culture, Health, and Sexuality, 22*(11), 1253–1268.

<https://doi.org/10.1080/13691058.2019.1672894>

United Nations. (2015). The Millennium Development Goals Report. In *United Nations*. <https://doi.org/978-92-1-101320-7>

Wang, W., Staveteig, S., Winter, R., & Allen, C. (2017). Women's marital status, contraceptive use, and unmet need in Sub-Saharan Africa, Latin America, and the Caribbean. *DHS Comparative Report No. 44, July*. <http://dhsprogram.com/pubs/pdf/CR44/CR44.pdf>

Wanyenze, R. K., Matovu, J. K. B., Kanya, M. R., Tumwesigye, N. M., Nannyonga, M., & Wagner, G. J. (2015). Fertility desires and unmet need for family planning among HIV-infected individuals in two HIV clinics with differing models of family planning service delivery. *BMC Women's Health, 15*(1), 1–12. <https://doi.org/10.1186/s12905-014-0158-x>

Wemakor, A., Garti, H., Saeed, N., Asumadu, O., & Anyoka, B. (2020). Prevalence and determinants of unmet need for contraception in North Gonja District, Ghana. *BMC Women's Health, 20*(1), 1–9. <https://doi.org/10.1186/s12905-020-01077-4>

Westoff, C. F., & Bietsch, K. (2015). Religion and reproductive behavior in sub-Saharan Africa. *DHS Analytical Studies, 48*, xi-pp. <http://dhsprogram.com/pubs/pdf/AS48/AS48.pdf>

World Health Organization. (2015). *Strengthening the capacity of community health workers to deliver care for sexual reproductive, maternal, newborn, child, and adolescent health.* 20. http://www.who.int/workforcealliance/knowledge/resources/who_2015_h4_ch_ws_srmncah.pdf?ua=1

Wulifan, J. K., Brenner, S., Jahn, A., & De Allegri, M. (2016). A scoping review on determinants of unmet need for family planning among women of reproductive age in low and middle-income countries. *BMC Women's Health*, *16*(1). <https://doi.org/10.1186/s12905-015-0281-3>

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APPENDICES

Appendix 1: Distribution of Clients By CCC Site

SNO	HEALTH FACILITY	TOTAL CLIENT	PROPORTION ATE CLIENTS
1	Alwalidyn Dispensary	300	19
2	Diani Health Centre	546	34
3	Godo Dispensary	40	2
4	Gombato Dispensary (CDF)	76	5
5	Kafuduni Dispensary	30	2
6	Kikoneni Health Centre	238	15
7	Kilimanjaro Dispensary	75	5
8	Kinango Hospital	466	29
9	Kinondo Kwetu Community Dispensary	527	33
10	Kizibe Dispensary	75	5
11	Kwale District Hospital	329	20
12	Lungalunga Sub County Hospital	265	16
13	MacKinnon Road Dispensary	67	4
14	Magodzoni Dispensary	57	4
15	Mazeras Health Centre	203	13
16	Mkongani Health Centre	143	9
17	Mnyenzeni Health Centre	41	3
18	Msambweni County Referral Hospital	525	32

SNO	HEALTH FACILITY	TOTAL CLIENT	PROPORTION ATE CLIENTS
19	Mwaluphamba Dispensary	107	7
20	Mwangulu Community Dispensary	55	3
21	Ndavaya Health Centre	87	5
22	Ng'ombeni Dispensary	75	5
23	Perani Private Clinic	51	3
24	Samburu Health Centre	208	13
25	Shimba Hills Health Centre	98	6
26	Shimoni Dispensary	68	4
27	Taru Dispensary	62	4
28	Tiwi RHTC	267	16
29	Ukunda Diani Catholic Dispensary	91	6
30	Vanga Health Centre	119	7
31	Vigurungani Dispensary	50	3
32	Vitsangalaweni Dispensary	180	11
33	Waa Dispensary	69	4
TOTAL		5590	347

Appendix 2: Participant's Informed Consent Form

I am Edward Mumbo, a student from Kenyatta University pursuing a masters degree course in Public health, and reproductive health options.

I'm carrying out research aimed at establishing the contraceptive prevalence, and the factors influencing the use and non-use of modern family planning services by Hiv-Positive women of childbearing age in Kwale County, Kenya''.

The Study findings will contribute to the development of country-specific guidelines for promoting the utilization of modern methods of family planning among women of childbearing age living with HIV in Kwale County.

Processes to be adhered to.

While taking part in this research I will need to ask you some questions, and I will record your responses in a research tool for ease of reference.

Volition

You will be at liberty to withdraw your involvement from the research. Neither your refusal nor acceptance to participate in this study will affect the way you have been receiving services from this facility. Note that you are not forced to participate in this research. You are free to ask any question related to this research.

You are free to decline to answer any questions, and you may stop an interview at any point in the course of the interview. You can also withdraw your participation in the study, and the services you have been receiving at this facility or elsewhere will not be affected in any way.

Displeasures and Uncertainties

Some of the questions in this interview will be about your intimate aspects, and they may be uncomfortable to respond to or may make you feel ashamed. Should this occur, you may choose not to respond to such questions, and you may opt not to continue with the interview at any point in the course of the interview. The session will last for around forty-five minutes on top of the usual time you take while receiving services.

Benefits

You are not going to be incentivized for having participated in the study however the information you will give will help in improving the health system in the county and facilitate HIV- positive women to receive quality contraception services in the health facilities in the County.

Remuneration

There is no reward, incentive, or payment that you will get for having participated in the research.

Privacy

Privacy and confidentiality will be observed during the interview. None of your identifiers will be recorded on the questionnaire. The information you will give will not be shared with any other person and for any person or any reason apart from the study team and the purpose of this research.

Contact information

If you have any questions about the study call Edward Mumbo on the Telephone at 0720815579 or supervisor Dr. Redempta Mutisya at 0724563316 or Professor Alice Ondigi, by telephone at 0711966258. If you have any questions regarding this research concerning your rights as a research participant, you are free to contact Kenyatta University Ethical Review Committee Secretariat or chairman.kuerc@ku.ac.ke

Participant’s statement

I have clearly explained the contents of the research and provided an opportunity to seek clarifications on areas of concern. I have also been explained my role in this research and shall voluntarily take part in the research. I understand that the information I shall give including my identifiers will be confidentially handled and I can opt-out of the research at any point.

I understand that the services I have been receiving at this facility or any other facility will not be affected by whether I decide to participate in this research or not.

Name of the study participant: _____

Signature or Thumbprint

Date

Investigators Statement

I have explained to the research participant in a language she understands, the procedures to be followed, and the consequences of the study.

Name of Interviewer

Signature

Date

Appendix 3: Client's Questionnaire

Socio-demographic Profile

1. Age of client_____
2. Clients' civil status
 - a) Single { }
 - b) Married { }
 - c) Cohabiting { }
 - d) Separated { }
 - e) Widowed { }
3. How many children have you had?_____
4. How many surviving children do you have?_____
5. How many children would you want to have?_____
6. What is your religion?
 - a) Christian { }
 - b) Muslim { }
 - c) Hindu { }
 - d) Traditional { }
 - e) Others (specify)_____

If Christianity specifies denomination.

- a) Anglican { }
- b) Catholic { }
- c) Sabbath Adventist { }
- d) Full gospel Churches { }

7. For how many years have you known your positive HIV status
(Record incomplete Months)_____
8. Have you disclosed your HIV status to your partner?
- a) Yes { }
- b) No { }
- If not, Why? _____
9. Are you on ART? (Check from the patient's file)
- a) Yes { }
- b) No { }
10. For how long have you been on ARVs? (Record in complete months)_____
11. What is the viral load level of the client? (Check from the patient's file)_____
12. Are you sexually active?
- a) Yes { }
- b) No { }
13. Are you aware of Modern FP?
- a) Yes { }
- b) No { }
14. Which ones are you aware of?
- (a) Injectable { }
- (b) Oral pills { }
- (c) Implants { }
- (d) IUCD { }
- (e) Condoms { }
- (f) Cervical cap { }

(g) BTL { }

(h) Dual method (condoms plus any of the other methods) { }

(i) Others (specify)_____

If yes, How did you get to know of the FP methods_____

a) From health workers in the clinic { }

b) From health workers not in the clinic { }

c) Through media { }

d) Through a friend { }

e) Others (specify)_____

15. Have you been on any FP method before?

a) Yes { }

b) No { }

16. Are you currently on any modern FP method?

a) Yes { }

b) No { }

17. Are you currently on any Family planning method?

a) Yes { }

b) No { }

If yes, which method?

(a) Injectable { }

(b) Oral pills { }

(c) Implants { }

(d) IUCD { }

(e) Condoms { }

- (f) Cervical cap { }
- (g) BTL { }
- (h) Dual method (condoms plus any of the other methods { }
- (i) Others (specify)_____

If not on any FP method, Why?

- a) Fear of side effects { }
- b) My husband/spouse does not want { }
- c) Want more children { }
- d) Want to be like other HIV-negative women { }
- e) Do not have any information about FP { }
- f) Not been given any { }
- g) My religion prohibits { }
- h) Rude staff { }
- i) Others (specify)_____

18. Have you had Unintended pregnancy after the HIV diagnosis?

- a) Yes { }
- b) No { }

19. Are you employed?

- a) Yes { }
- b) No { }

If yes, how much do you earn per month (Ksh) ?

- a) 2000 - 4000 { }
- b) 4001 - 7000 { }
- c) 7001 - 9000 { }

d) 9001 - 11000 { }

e) Above 11000 { }

If not employed, how do you earn your living?

(a) Business { }

(b) Farming { }

(c) Commercial sex work { }

(d) Others (specify)_____

20. How do you get to the health facility for your clinic appointments?

a) On foot { }

b) Public vehicle { }

c) Personal bicycle { }

d) Bodaboda (Motorcycle) { }

e) Others (specify)_____

21. Do you incur any cost to access FP services?

a) Yes { }

b) No { }

If yes what, and in what form?

a) Transport { }

b) Cost of service { }

c) Others (Specify)_____

22. How much do you pay for a two-way fare to reach the clinic for your appointment?

a) 0/= { }

b) 100 -200/= { }

- c) 201-300/= { }
- d) 301- 400/= { }
- e) 4001-500/= { }
- f) Above 500/= { }

23. How would you rate the cost of accessing FP services from the clinic?

- a) Cheap { }
- b) Average/ affordable { }
- c) Costly { }
- d) Very costly { }

24. Would you approve FP methods for anyone?

- a) Yes { }
- b) No { }

If yes, Why?

- a) The cost is affordable { }
- b) Good information from health workers { }
- c) Makes one stay healthier { }
- d) Prevents one from getting unintended pregnancies { }
- e) Help prevent PMTCT of HIV { }
- f) Others (specify)_____

If not, Why?

- a) Very costly { }
- b) No privacy at the facility { }
- c) Make one infertile { }
- d) Make one lose shape by either growing too fat or too thin { }
- e) Encourage promiscuity { }
- f) Religious reasons { }
- g) Others (specify)_____

25. Women can consent to take up FP services on their own.

- (a) Strongly agree { }
- (b) Agree { }
- (c) Strongly disagree { }
- (d) Disagree { }

If you disagree, who consents for you to use or seek health services?

- (a) Husband { }
- (b) Parents { }
- (c) Others (specify)_____

26. Do you want to conceive?

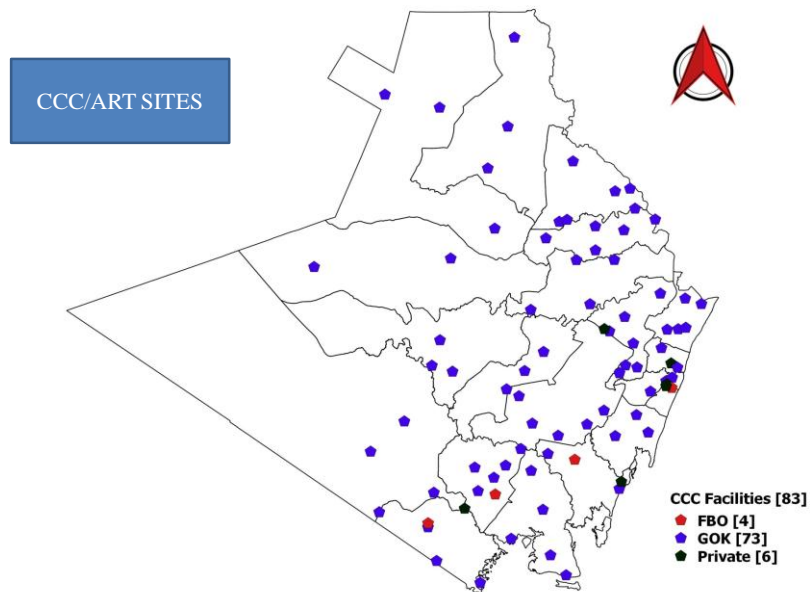
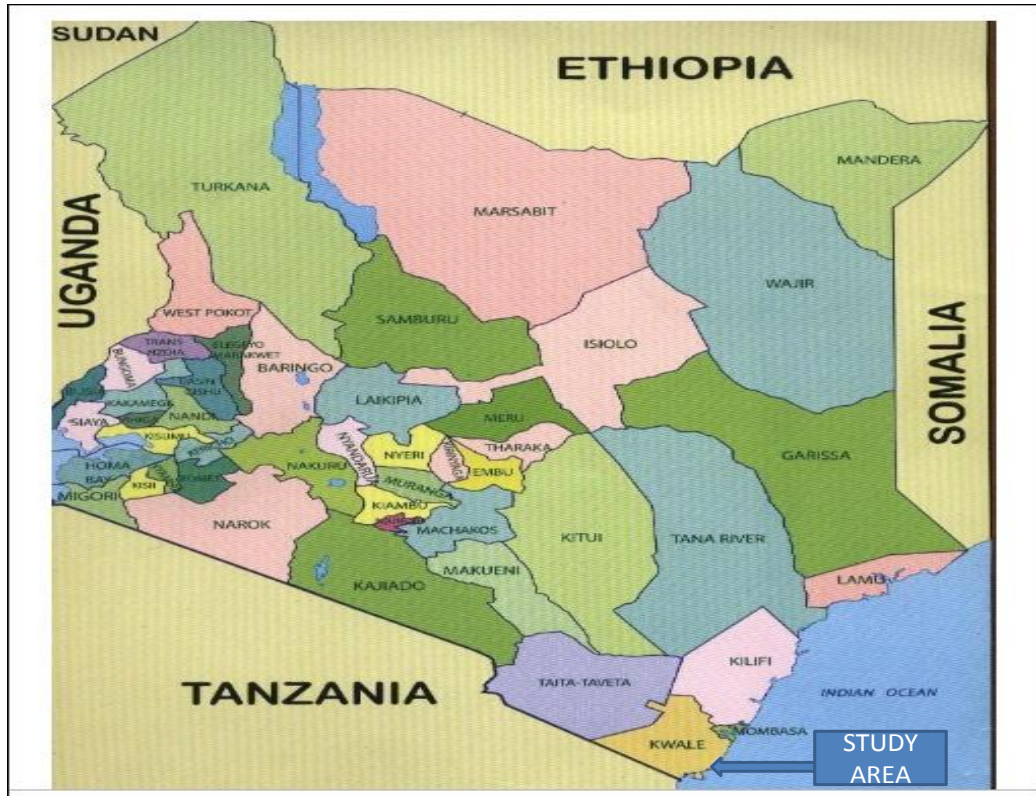
- a) Yes { }
- b) No { }

27. How many children would you like to have?_____

Appendix 4: Interview Guide For Key Informants

- a) How long have you been in service?
- b) How many staff work in the Comprehensive Care Clinic?
- c) Please tell me the number of staff by cadre. (Explore to get to find out the number of staff by sex)
- d) Do you stock any FP commodities in the CCC?
- e) Which methods of FP do you stock in the clinic?
- f) If you do not stock FP methods in the CCC, why?
- g) Where do needy clients of FP get the service from?
- h) How many of the staff in the CCC are trained in LARC? (specify by cadre)
- i) Are the staff competent in providing all the LARC in the CCC? (Explore reasons why they are not competent)
- j) Do clients pay any fee for services? What do they pay for?
- k) What do the clients give as the reasons for the non-use of FP methods

Appendix 5: Map of the Study Area



Appendix 6: Research Authorization from Kenyatta University

**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: Q139/CE/34102/2016

DATE: 6th October, 2020

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION FOR MR. EDWARD M. MUMBO REG.
NO. Q139/CE/34102/16**

I write to introduce Mr. Edward M. Mumbo who is a Postgraduate Student of this University. He is registered for M.P.H. degree programme in the **Department of Population, Reproductive Health & Community Resource Management**.

Mr. Mumbo intends to conduct research for a M.P.H. thesis Proposal entitled, **“Unmet Need for Contraception Use among HIV Positive Women of Child Bearing Age in Kwale County.”**

Any assistance given will be highly appreciated.

Yours faithfully,

**PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL**