

**UNMET NEEDS FOR FAMILY PLANNING AND ATTITUDES TOWARDS PREGNANCY
AMONG WOMEN WITH MENTAL ILLNESS IN MATHARI NATIONAL TEACHING AND
REFERRAL HOSPITAL IN NAIROBI, KENYA.**

BY

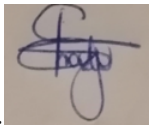
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**A THESIS SUBMITTED TO THE UNIVERSITY OF NAIROBI IN PARTIAL FULFILLMENT
OF REQUIREMENTS FOR MASTER OF MEDICINE DEGREE IN PSYCHIATRY**

August 2022

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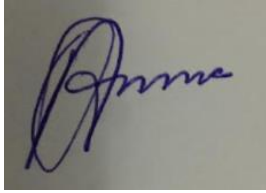
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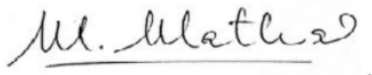


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DEDICATION

I dedicate this thesis to my family for their unwavering support and confidence in me. It is their sacrifices that have made it possible to complete this work.

TABLE OF CONTENTS

Contents

| | |
|---|----|
| DEDICATION | 5 |
| LIST OF ABBREVIATIONS | 9 |
| ABSTRACT | 11 |
| CHAPTER ONE | 13 |
| 1.1 Introduction..... | 13 |
| 1.2 Background..... | 13 |
| 1.3 Statement of the problem | 15 |
| CHAPTER TWO: LITERATURE REVIEW | 17 |
| 2.1 Introduction..... | 17 |
| 2.1.1 Family Planning in the general population | 17 |
| 2.1.2 Unmet needs of family planning in patients with mental illness | 18 |
| 2.1.3 Consequences of unmet need of family planning in women with mental illness | 19 |
| 2.1.4 Attitude towards pregnancy in mental health | 21 |
| 2.1.5 Issues of research among individuals with mental illness and how to ensure research is conducted within ethical principles | 23 |
| 2.2 Conceptual Framework..... | 24 |
| 2.3 Study justification | 24 |
| 2.4 Significance of the study..... | 25 |
| 2.5 Study Objectives | 25 |
| 2.5.1 Broad Objective | 25 |
| 2.5.2 Specific Objectives | 25 |
| CHAPTER THREE: METHODOLOGY | 27 |
| 3.1 Study Design..... | 27 |
| 3.2 Study Area | 27 |
| 3.3 Study Population..... | 27 |
| 3.3.1 Inclusion Criteria | 27 |
| 3.3.2 Exclusion Criteria | 28 |
| 3.4 Sampling | 28 |
| 3.4.1 Sample Size Determination | 28 |
| 3.4.2 Sampling Method | 28 |
| 3.5 Variables | 29 |

| | |
|--|----|
| 3.5.1 Independent Variables | 29 |
| 3.5.2 Moderators | 29 |
| 3.5.3 Dependent Variables | 29 |
| 3.6 Study Procedure | 29 |
| 3.6.1 Instruments | 29 |
| 3.6.2 Data Recruitment and Consenting Procedures | 29 |
| 3.6.3 Data collection procedure | 31 |
| 3.7 Data Quality Assurance | 31 |
| 3.8 Data Management | 32 |
| 3.8.1 Data Protection and Security | 32 |
| 3.8.2 Data Analysis | 32 |
| 3.9 Ethical Considerations and Approval | 33 |
| 3.10 Potential risks of the study | 34 |
| 3.11 Study Results Dissemination Plan | 34 |
| CHAPTER FOUR: RESULTS | 35 |
| 4.1 Characteristics of population | 35 |
| Table 4.1.1 Characteristics of population | 35 |
| 4.2 Clinical characteristics of the population..... | 37 |
| Table 4.2.1 Clinical characteristics of the population | 37 |
| 4.3 Fertility preferences | 38 |
| Table 4.3.1: Number of living children among study population | 38 |
| Table 4.3.2: Desire for a/another child | 38 |
| Table 4.3.3: Current pregnancy status among study population | 38 |
| Table 4.3.4: Time before birth of a/next child | 39 |
| 4.4 Family planning | 39 |
| Table 4.4.1: Number of women using contraceptives and specific method used | 39 |
| Table 4.4.2: Reason for not currently using a contraceptive method | 40 |
| Table 4.4.3: Specific reason for not currently using a contraceptive method | 41 |
| Table 4.4.4: Desire for future contraceptive use among study population | 42 |
| Table 4.4.6: History of family planning education at MPOPC by staff | 42 |
| 4.5 Objective 1: To determine the prevalence of unmet need for family planning among women with mental illness | 43 |
| Table 4.5.1: Prevalence of unmet need for family planning in women with mental illness | 43 |

| | |
|---|-----|
| Table 4.5.2: Distribution of unmet need for family planning and mental illness | 43 |
| 4.6 Objective 2: To explore the attitude towards pregnancy among women with mental illness | 44 |
| Table 4.6.2: Attitude towards pregnancy among women with mental illness (MINI Diagnosis) | 45 |
| 4.7 Objective 3: To determine the association between mental illness and unmet need for family planning and attitude towards pregnancy among women with mental illness | 49 |
| Table 4.7.1: Association between mental illness and unmet need for family planning | 50 |
| Table 4.7.2: Association between mental illness and attitude towards pregnancy | 50 |
| 4.8 Objective 4: To describe the correlation between unmet need for family planning and attitude towards pregnancy among women with mental illness..... | 51 |
| Table 4.8.1: Correlation between unmet need for family planning and attitude towards pregnancy | 51 |
| 4.9 Objective 5: To determine the association between sociodemographic factors and unmet need for family planning and attitude towards pregnancy. | 51 |
| CHAPTER SIX: STRENGTHS AND LIMITATIONS | 60 |
| 6.1: Strengths | 60 |
| 6.2: Limitations | 60 |
| CHAPTER 7: CONCLUSION AND RECOMMENDATIONS | 60 |
| 7.1 Conclusion | 60 |
| 7.2 Recommendations..... | 61 |
| REFERENCES | 63 |
| APPENDIX 1: PARTICIPANT INFORMATION AND CONSENT FORM FOR ENROLLMENT IN THE STUDY | 74 |
| APPENDIX 2: QUESTIONNAIRE | 82 |
| APPENDIX 3. MINI-MENTAL STATE EXAMINATION | 100 |

LIST OF ABBREVIATIONS

FP Family Planning

MNTRH Mathari National Teaching and Referral Hospital

KNH Kenyatta National Hospital

KDHS Kenya Demographic and Health Survey

UN United Nations

WHO World Health Organization

SPSS Statistical Package for Social Sciences

DSM-V Diagnostic and Statistical Manual of Mental Disorders

LAM Lactation Amenorrhea Method

MDD Major Depressive Disorder

BMD Bipolar Mood Disorder

KNCHR Kenya National Commission on Human Rights

UON University of Nairobi

MPOPC Mathari Psychiatric Outpatient Patient Clinic

DEFINITION OF TERMS

Contraceptive Prevalence Rate: The percentage of women of reproductive age who use (or whose partners use) a contraceptive method at a given point in time.

Women 'of reproductive age': Females aged between 15 to 49 years (WHO, 2006)

Fertility: Number of children one has

High Risk sexual behavior: sexual activities which expose the person to risk of contracting sexually transmitted infections (STIs) e.g. unprotected intercourse, multiple partners, sex trade and illicit drug use.

Mental disorder/ Mental Illness: A clinically significant disturbance in an individual's cognition, emotional regulation and behaviour that reflects a dysfunction in the psychological, biological or developmental processes underlying mental functioning. (DSM 5). In this study, these are Schizophrenia, Bipolar Mood Disorder, Major Depressive Disorder and Anxiety disorders.

Sociodemographic factors: Characteristics that describe a person's position in society and define a person according to age, sex, income level, culture, education, ethnicity and marital status.

Fecund: Fertile or capable of bearing children.

Foetal alcohol syndrome: Neurodevelopmental Disorder Associated with Prenatal Alcohol Exposure (ND-PAE)' which describes the range of neuro-disabilities associated with prenatal alcohol exposure (PAE). (DSM5)

Prenatal: Occurring or existing before birth in relation to pregnancy

Post-natal: Relates to period after child-birth

Psychotropics: Drugs used in psychiatry that affect behavior, mood, thoughts or perception.

Reproductive health: A state of complete physical, mental and social wellbeing in all matters relating to the reproductive system and to its functions and processes.

ABSTRACT

Introduction: In spite of widespread gain in contraceptive coverage, unmet need for family planning in Kenya still remains high. Mental and behavioral health disorders are increasing globally contributing to 7.4% of the global burden of disease. Women with mental health disorders are at an increased risk of unplanned pregnancy which carries risks such as foetal exposure to psychotropics in first trimester, unsafe abortions and contracting sexually transmitted infections. Pregnancy and the postpartum period can also exacerbate an already preexisting mental illness. Mental illness herein referring to mental disorder. Despite above challenges, there are few studies in Kenya regarding unmet needs for family planning and attitudes towards pregnancy among women with concurrent mental illness.

Significance of the study: Unplanned pregnancy in mentally ill not only poses a risk to maternal health but also places an extra burden on public funding of governments hence the drive to increase contraceptive prevalence in view of long-term economic efficiency. This study provides information about contraceptive behavior and attitude towards pregnancy that can guide health care workers in providing more specific or suitable family planning services to women with mental illness.

Objective: The study objective was to determine the prevalence of unmet need for family planning and attitudes towards pregnancy among women with mental illness as well as explore associated socio-demographic variables.

Methodology: This was a cross sectional descriptive study conducted among female outpatients with mental disorders aged between 18 and 49 years on follow up at the weekly psychiatric outpatient clinics in Mathari National Teaching and Referral Hospital and who met the inclusion criteria. Systematic random sampling was done to achieve a sample size of 250 patients. The Mini Mental State examination was done to assess for suitability into the study. Data was collected using a MINI international neuropsychiatric interview version 7.0.0, a researcher designed socio demographic questionnaire, a semi structured questionnaire drawn from the short version of the Kenya Demographic Health Survey Female Questionnaire 2014 and an Attitude to Pregnancy questionnaire. COVID-19 guidelines on prevention were adhered to throughout the process.

Data analysis and Presentation: Data collected was cleaned, entered and stored in MS Excel then transferred to SPSS version 26 for analysis. Univariate analysis was done to describe the prevalence of unmet need for family planning, attitude and socio demographic characteristics. Bivariate analysis was used to describe the association between the mental illness and dependent variables. Multivariate regression was used to determine the effect of the dependent variables on unmet need for family planning. Pierson Chi

squared was used to test for association with p value set at less than 0.05 and confidence interval of ninety five percent. Unmet need for family planning was expressed as a percentage calculated from adding up the total number of women in the study who were not using contraceptives despite having a need for spacing or limiting births. Attitude was measured on a five-point Likert scale. Positive statements yielded a high score while negative statements a low score. Results were expressed as percentages, mean and median and diagrammatically displayed via graphs and tables.

Results: The mean age of the 250 participants was 32.4 years. The total unmet need for family planning was 31.2% with unmet need for spacing births being 20.4% and unmet need for limiting births being 10.8%. The overall attitude towards pregnancy was positive at 97.2% with 7 people reporting a negative attitude (2.8%). There was no significant association between mental illness and both unmet need for family planning which was $p=0.452$ and attitude towards pregnancy as shown by chi square test of $p=0.949$. There was also no association between unmet need for family planning and attitude towards pregnancy which had a p value of 0.500. The participant's marital status, level of education, main source of income and religion were found to be significantly associated with unmet needs for family planning. There was no significant association between sociodemographic factors and attitudes towards pregnancy. Majority of the patients (73.2%) had never received any information regarding family planning from staff at Mathari Hospital during their clinic reviews.

Conclusion: There was a high prevalence of unmet need for family planning among women with mental illness which was higher than the general population at 31.2% irrespective of their high level of education, knowledge of contraceptives and easier access to family planning methods. Socioeconomic factors have a significant role in unmet need for family planning. This reflects the importance of empowering and enhancing stability of female psychiatric patients. Regardless of the unmet need, attitude towards pregnancy was positive and not confounded by the mental illness or sociodemographic status of the patients. Attitude remains a complex thing to explore and its implication towards contraceptive use, behaviour and intention may have other underlying factors involved.

CHAPTER ONE

1.1 Introduction

The Kenyan government has made great progress in increasing contraceptive prevalence rate while reducing fertility rate. Despite this endeavor, there still remains a high level of unmet need for family planning in Kenya. According to the Ministry of Health, Division of Family Health, major restrictive barriers to provision of family planning information and services disproportionately affect certain populations. These include the youth, the unmarried, people living with disabilities, the poor and hard to reach groups such as refugees. Reproductive health issues concerning women with mental illness are matters that are seldom discussed. Distinct differences are seen between them and healthy women such as higher unplanned pregnancy rate and poorer contraceptive prevalence rate. The aim of this study was determine the prevalence of unmet need of family planning and attitudes towards pregnancy among women with mental illness. It is my hope that information gathered will inform policy that will further bridge the gap in reproductive psychiatry.

1.2 Background

Mental illnesses are serious health conditions that affect a person's mood, thoughts, and behaviour. They are emotionally distressing and associated with impaired functioning in social, work or family activities. Mental illness is a term synonymous with mental health disorders and includes those specifically outlined in the Diagnostic and Statistical Manual for Mental Disorders 5th Edition (DSM-5). According to the World Health Organization (WHO), approximately twenty five percent (25%) of the world's population suffers from mental health disorders. Locally, an estimated 25% of outpatients and up to 40% of inpatients in Kenyan health facilities suffer from mental disorders (KNCHR, 2011). A cross sectional prevalence study of mental disorders in different levels of medical facilities in Kenya, found that forty two percent (42%) of the 2770 patients recruited in the study had symptoms of mild and severe depression. Another four point one percent (4.1%) had a working diagnosis of bipolar mood disorder, schizophrenia, psychosis and depression (Ndeti et al., 2009).

Family planning as defined by the United Nations (UN) and World Health Organisation (WHO) encompasses services leading up to pre-conception. These include family planning methods and practises of spacing child births, prevention and management of sexually transmitted diseases, sex education, pre-conception management and counselling and infertility management. The various types of family planning or contraception methods used to prevent pregnancy can be broadly categorised as follows: Hormonal methods such as the oral contraceptive pill, emergency contraception pill, contraceptive ring,

contraceptive implant and contraceptive injection. Barrier methods such as a diaphragm, male and female condoms. Implants and surgical methods such as intrauterine devices (IUD), male and female sterilisation. Lastly, there are natural methods such as periodic abstinence, coitus interruptus (withdrawal or pulling out) and breastfeeding or lactation amenorrhoea method (LAM). Family planning enables couples to choose the number of children they desire or determine the appropriate timing between pregnancies.

People with unmet needs for family planning are the ones who want to postpone their birth for more than two years or not have additional children, but they are not using any method of contraception to avoid conceiving. The problem of unmet needs for family planning is consistent with the general public and worse among certain high-risk groups. One of the main high-risk groups are people with mental illnesses.

Over the years, psychiatric care has slowly moved from asylum-based model and hospital-centred approach to encouraging resocialisation of mentally ill patients. This has led to a major shift in the sexual and reproductive lives of people with mental illness. In the past, when people with mental illness were institutionalized, they were often prohibited or discouraged from having relationships that were sexual in nature thus decreasing their sexual activity (Miller, 1997). Sexual relations could only be heard in the context of marriage which was not accessible for institutionalised people with mental illness (Hilger, 1983). With the introduction and availability of oral contraceptive pills, many psychiatric institutions adopted a different stand to allow more sexually mixed social events and home visits (Wignall & Meredith, 1968). Afterwards, deinstitutionalisation of patients with chronic mental illness increased. This meant that reintroduction of women with mental illness into society offered more chances for sexual interactions and thus increased their relative fertility (Nicholson, 1996). Following deinstitutionalisation, healthcare delivery systems were unprepared to deal with problems arising from resocialisation and had shortcomings in areas such as pregnancy screening, pharmacological management while pregnant, family planning and rehabilitation (Bachrach, 1984).

However, increased opportunities for sexual encounters does not mean that it is always consensual. Studies from the west suggests that women with mental illness are especially vulnerable to sexual assault or sexual violence in comparison to women without mental illness. A study done in an Indian psychiatric hospital assessed female psychiatric inpatients for sexual coercion and abuse. Thirty percent (30%) of the one hundred and forty six women reported sexual coercion and at least fourteen percent (14%) had engaged in sexual intercourse with the threat or actual use of physical force at some point in their lives. Majority of these cases were perpetrated by the woman's husband or partner (15%) or an individual in a position of power in their community (10%) (Chandra et al., 2003). There are no local studies on prevalence of sexual violence among persons with mental illness.

Despite having a high rate of sexual partners throughout their lives, women with mental illness have been found to infrequently use contraception (Seeman & Ross, 2011). The above and exposure to sexual violence means they are prone to unplanned pregnancies and sexually transmitted infections. Unplanned pregnancy in fecund women with schizophrenia are higher than in the general population despite the fact that the overall rate of pregnancy is lower in women with schizophrenia (Seeman & Ross, 2011). In general, female chronic psychiatric patients are more likely than those without mental illness to have more induced abortions and to have given up their children for other to raise (Coverdale et al., 1997).

Even when used correctly, there are different rates of effectiveness of contraceptive methods. The use of less effective methods is associated with pregnancy ambivalence (Schwarz et al., 2007). Information on women's attitude and emotions towards pregnancy would be useful in clinical care as clinicians can be better positioned to give culturally competent care especially when providing contraceptive counselling services (Paterno & Han, 2014).

Contraceptive counselling would be beneficial to women with mental illness to enable them choose family planning methods suitable to them and reduce prevalence of unwanted and unplanned pregnancy. Family planning would also help prevent the number of unsafely performed abortions hence reducing maternal deaths and disabilities.

This study seeks to determine the extent of unmet family planning needs among women with mental illness and their attitudes towards pregnancy in Mathari National Teaching and Referral Hospital.

1.3 Statement of the problem

According to the World Health Organization, in 2019, 270 million of the 1.9 billion women in the world within the reproductive age bracket of 15 to 49 years have unmet family planning needs. In Kenya, data from Kenya Demographic Health Survey 2014 showed that one out of four women in this same age bracket has an unmet need for family planning. One of the tenets within the WHO human rights framework includes ensuring equity and quality in provision of sexual and reproductive health services, one of which is contraceptive services. Most healthcare professionals and members of the society do not recognize the similarities of the sexuality of people considered to be 'normal' and those with mental health problems. There is less attention given to mentally ill patients in regards to their sexual and reproductive health (Özcan et al., 2014). Studies on family planning among people who are mentally ill have shown that in comparison to the normal population, women who are mentally ill tend to have higher rates of unplanned pregnancy (Judge-Golden et al., 2018., Matevosyan, 2009). Majority of the reasons for this finding are attributed to high risk sexual behavior (Miller, 1997., Hariri et al., 2011., Obo et al., 2019) and poor use of contraceptives amongst women with mental illness (Matevosyan, 2009). Consequently, they not only have higher number

of unplanned pregnancies but also more abortions in comparison to healthy women (Özcan et al., 2014). Those with unwanted pregnancies may pass on the risks associated with mental disorders to their infants. Especially if the women have depression, psychosis or have histories of trauma or addiction (Hartz et al., 2014). Aside from poor utilization of family planning methods, a study in Ethiopia found that women with mental illness have less awareness of the various methods available due to inadequate access to information on family planning and systematic exclusion from current providers (Kebede, 2017).

None of the studies have assessed the attitude of the women with mental illness towards pregnancy. In Kenya, there is limited information about the sexual and reproductive health of women with mental illness in particular the family planning methods used or lack thereof. In response to this problem, this study seeks to determine the level of unmet need for family planning and attitude towards pregnancy among women with mental illness at Mathari National Teaching and Referral Hospital in Nairobi, Kenya.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section looks at the research that has so far been done on mental illness regarding family planning and pregnancy.

2.1.1 Family Planning in the general population

Family planning services support people's decision on when or if they would like to have children. These services include education, counselling and contraceptive methods. There have been extensive efforts by governments worldwide to reduce unmet need of family planning. A drop from 15.4% in 1990 to 12.3 in 2010 in the global unmet need for family planning is evidence of this (Alkema et al., 2013). According to the UN, as at 2019, a need for family planning that isn't being satisfied for women of reproductive age was at 10%.

High income countries in Europe have an unmet need as low as 3% due to high contraceptive prevalence rates. It has also been associated with an increase in the woman's level of education, age and her desire to limit rather than space the children (Klijzing, 2000). Among middle and low income countries, unmet needs remain high due to common socio economic and cultural factors. These are low level of education and house hold income. Other factors are opposition from husband and fear of side effects related to contraceptive methods (Wulifan et al., 2015). Interventions that tackle unmet needs should therefore start early in a woman's life by advocating attainment of higher levels of education and focus on education of not only the woman but her partner.

In Kenya, the first FP program was launched in 1967 and has since made great strides in expanding the use of modern contraceptives across the country (Ogola, S., Ngatia, K., Marsden, S., 1999). However current unmet need for FP stands at 18%, nine percent (9%) for spacing births and eight percent (8%) for limiting births (KDHS, 2014). The associated factors are similar to those of other low income countries, particularly the woman's level of education, age at first sexual encounter and income. Kenyan studies on unmet need of FP have been focussed on married women, those living in rural areas and those with HIV (Nyauchi, 2011., Obul, 2013., Omwago, 2002). The determinants of unmet need were similar across all cohorts. However, the women in rural areas have a greater need to space their births and their partners have greater say in FP uptake while those in urban areas desire to limit their births (Mushira, 2012). They have less access to contraceptives and less exposure to messages on family planning for them and their partners. This may explain why unmet need stands at 20% in rural areas compared to urban areas at 13% (KDHS, 2014).

2.1.2 Unmet needs of family planning in patients with mental illness

Stigma is key among the reasons why issues pertaining to reproductive health in mentally ill women is neglected. It needs to be addressed given the increasing prevalence of mental disorders among women of reproductive age, especially since a large percentage of them go untreated (Farr et al., 2010., Fisher et al., 2012). When compared to healthy women, mentally ill women have higher rates of unplanned pregnancy and abortion, low contraceptive usage, more lifetime sex partners and greater risk for sexually transmitted infections (Matevosyan, 2009). They also receive less antenatal care and family planning (Özcan et al., 2014).

Research on unmet need of family planning has mainly focussed on sociodemographic and sociocultural determinants with few seeking to understand how mental health affects behaviours relating to reproduction, including contraceptive use. A longitudinal cohort study of 1026 pregnant ladies in rural Ethiopia discovered that symptoms of common mental health disorders such as depression and anxiety at one year postnatal, were linked to a greater unmet contraceptive demand at 2.5 years postnatal (Catalao et al., 2020). Findings from another study on women with moderate to severe symptoms of stress and baseline depression concluded that they were more likely to not use contraception consistently, each week, over the course of a year, than women without stress and depression symptoms (Hall et al., 2013a). Therefore, depression is not just linked to reduced use of contraception and choosing less effective methods but also riskier contraceptive behaviour (Garbers et al., 2010).

In sub-Saharan Africa, suffering sexual violence raises the likelihood for unmet family planning needs particularly among married and cohabiting women (Ahinkorah et al., 2020). Any effort to acquire a sexual act, or any act aimed against a person's sexuality using coercion, by anyone, regardless of their connection to the victim, in any environment, is classified as sexual violence (WHO). Some abusers utilize a mental health condition to manipulate a sexual connection, making women with mental illness vulnerable to sexual assault even within intimate relationships (Bonomi et al., 2018). The woman's husband or intimate partner or a person in a position of power in their community, were often the most recognised perpetrators (Chandra et al., 2003). There are no local studies on sexual violence against women with mental illness.

Despite being cognizant of contraceptives and how they are used, poor contraceptive adherence is significantly greater among mentally ill women with a concurrent substance use disorder (Callegari et al., 2015). Some women with opioid use problem presume they are unable to conceive particularly if they experience amenorrhoea brought about by opioid use (Stone et al., 2020). However, research needs to be done on whether the sociodemographic factors have a greater role in contraceptive uptake. This is because

substance use has also been linked to unemployment (Henkel, 2011) and lower educational achievement (Grant et al., 2012). The two of which are associated with poor contraceptive adherence (Muhindo et al., 2015)

Since opposition by male partner is a barrier to FP use, partner participation aids not just in the acceptance of a contraceptive, but also in its efficient usage and maintenance (Vouking et al., 2014). While women with mental illness report effects of the illness on their sexual and intimate relationships, knowledge on male partner involvement in FP is scarce. This is an avenue for research.

Overall, mental illness can alter behaviour and affect the usage of FP methods that require personal control. In addition, psychiatric hospitalization can interrupt the contraceptive practice (Guedes et al., 2009). A lack of awareness of FP methods relevant to mental illness still remains a barrier to contraceptive use in African setting (Zerihun et al., 2019., Kebede, 2017). This is why contraceptive choices need to be suitable to the individual needs. Having motivational interviews that are based on scientific research, for contraception counselling, has been demonstrated to encourage women with mental illness to transition to more effective contraceptive options that don't require daily compliance (Lozano et al., 2020).

There is no data on family planning utilisation among psychiatric patients in Kenya. Results of this study are essential for medical practitioners in bringing attention to or raising awareness of the reproductive health issues which women with mental illness face and how to address them.

2.1.3 Consequences of unmet need of family planning in women with mental illness

Unmet need for FP has implications for women and their families. Unplanned pregnancy is one of them. Worldwide, between 2015 -2019 there were 121million unintended pregnancies a year, equal to 64 in every 1000 women of reproductive age fifteen to forty-nine years. In sub-Saharan Africa, the prevalence was 91 in every 1000 women in the same time period. Unplanned pregnancy is still high in developing or low income countries since sexual and reproductive health care is not equally available to all (Eaton, 2020).

According to KDHS 2009, in Kenya, 43% of married women said their current pregnancies were unplanned. Lack of awareness and access to contraceptives was associated with this finding. Mental illness is linked to a higher rate of unplanned pregnancies. A prospective study assessing the notion that there is a greater chance of unintended pregnancy among women who have mental health issues, found that those exhibiting symptoms of stress and depression had a higher rate of pregnancy at one year (Hall et al., 2013b). Another study by (Golden et al., 2018) established that women veterans with mental illness had more unintended pregnancies in comparison to those without mental illness.

There is a high rate of concurrent substance use and mental disorders (Regier et al., 1990., Kessler et al., 1996., Morisano et al., 2014). A possible explanation for this is that these psychotropic substances are used by mentally ill persons to self-medicate unpleasant or distressing psychiatric symptoms (Strakowski et al., 2000., Harris & Edlund, 2005). Other studies propose that disorders arising from chronic substance use cause mental illness or that both have predisposing genetic and environmental causative factors (Chilcoat & Breslau, 1998). Unplanned pregnancy is associated with a high frequency of health related risk matters like smoking, illegal drug use and depression (Wellings et al., 2013., Paquette et al., 2017) . Pregnant women with mental illness and comorbid substance use are likely to continue abusing substances more so if the pregnancy is unplanned. This can pose great risks for the mother such as preterm delivery and subsequent low birth weight not to mention foetal effects like foetal alcohol syndrome (Kelly et al., 2002).

While there are differing perspectives on abortion and mental health, there is a consensus on various facts. One is that experiencing abortion can contribute to mental health issues for some women and another is that it can worsen the mental state of the women with an already pre-existing mental illness (Fergusson et al., 2008., Reardon, 2018). From 2010 to 2014, the number of unintended pregnancies that resulted in abortion was fifty nine percent (59%) in developed regions and 55% in developing regions (Eaton, 2020). A case control study of FP needs of female psychiatric outpatients found that the patients with mental illness were more likely to have a history of induced abortions than the healthy women (Fergusson et al., 2008).

Due to a high number of pregnancies in mental illness being unplanned, there is a risk of foetal exposure to psychotropic drugs in the first trimester. Not all psychotropic drugs have been declared safe for pregnancy with some linked to affecting the overall health of the baby in future (Patton et al., 2002., Johnson et al., 2012). This stresses the need for close follow up for a woman with mental illness who intends to conceive. Fear of teratogenicity may cause the woman to abruptly stop medication putting her at risk for a relapse of mental illness while pregnant.

In comparison to women with planned pregnancy, women with unplanned pregnancy are more likely to have fewer than recommended antenatal care visits irrespective of other moderating factors (Erol et al., 2010; Tekelab et al., 2019). Mentally ill women have a high possibility of receiving poor antenatal care that results in poor pregnancy outcomes. They have increased rates of neonatal and obstetric complications in comparison to the general population. Even worse is the likely poor clinic attendance if the pregnancy is unplanned. Preterm births, low birth weight and small for gestational age (SGA) babies, were more common among women with schizophrenia who got insufficient antenatal care compared to schizophrenic women who received good treatment (Lin et al., 2009). However, factors such as substance use and psychotropic exposure in first trimester may contribute to this irrespective of good antenatal care (Nguyen et al., 2013).

Comprehensive care that includes regular and appropriate antenatal clinic visits and psychosocial support can mitigate these outcomes (Frayne et al., 2019)

Consequences of unmet need are also evident in the postpartum period. In Nigeria, a high risk of under 5 mortality was associated with unmet need for family planning (Adedini et al., 2015). Infanticide is described as the criminal act of a mother killing her own child. It is associated both with unwanted pregnancies and mental illness especially if occurring in first month post-natal (Dobson & Sales, 2000., Marks, 2009).

Many women don't start using contraception immediately after birth due to amenorrhoea while breastfeeding, which makes them assume they will not get pregnant. The chance of a rapidly repeating pregnancy in women with and without schizophrenia was investigated in a study conducted in Ontario, Canada. A rapid repeat pregnancy was described as one that occurred within 12 months of another live birth. Despite using non barrier contraception at similar rates, the women with schizophrenia had a greater chance of rapid repeat pregnancy (Gupta et al., 2019). They did not, however, mention adherence and when contraception was started. More research is needed to determine whether people with mental illness are more susceptible to rapid repeat pregnancies. If so, starting contraceptives at 6 weeks postpartum would be beneficial regardless of amenorrhoea from breastfeeding.

An ideal setting involves providing family planning services for mentally ill patients in psychiatric hospitals. In the wake of deinstitutionalization of mentally ill, a program in Massachusetts (Abernethy & Grunebaum, 1972) which addressed the above, concluded that many women with mental illness wanted to learn about contraception and were relieved at the thought of not worrying about unwanted pregnancy. These same women in the study were put on contraceptives and followed up 9 months later. Results showed that only one of the 94 participants conceived. Unlike prior to being put on contraceptives where a third of the participants had a history of unwanted pregnancy and had experienced more spontaneous or induced abortions (Abernethy et al., 1975). Decades later, the reproductive and sexual health of women with mental illness needs to be re-emphasized. The National Institute for Health and Care Excellence guidance (NICE) 2014 advises that all women of childbearing potential with a new, existing or previously diagnosed mental illness should be educated about contraception and pregnancy planning.

2.1.4 Attitude towards pregnancy in mental health

Attitude is a notional concept and although it cannot be observed directly, its impact on behaviour is well documented. There is no such thing as naturally or genetically acquired attitudes. They are integrated into society as a result of socialisation and the experiences that come with it. As a result of our environs, habits and expectations, attitudes can be transformed into actions (Tutumlar et al., 1983). This means that women's beliefs and awareness about pregnancy will affect their attitude and behaviour. Their perspectives on

pregnancy may change occasionally, throughout their lives, which may affect contraceptive use. A woman is not just deciding about whether or not to become a parent, but also whether to do so with a specific partner and in a specific setting (Zabin et al., 2000., Paterno & Han, 2014).

Understanding the attitudes and actions of women with schizophrenia regarding family planning is critical to preventing unintended pregnancies (Rozensky and Bermann., 1984). Studying how the attitude of women towards pregnancy affects their use of contraceptives, has been spurred by the noted disparity between the women's pregnancy planning intention and their actual use of contraceptives (Aiken et al., 2016). When looking at the relationship between pregnancy intention, attitudes and contraceptive use among female veterans, one study discovered that attitudes towards pregnancy influences contraceptive use irrespective of pregnancy intendedness (Wolgemuth et al., 2018).

According to findings of a recent study, the autonomy of mentally ill women regarding decisions on pregnancy is complex and influenced by stigma and sociocultural expectations (Bagadia et al., 2020). In the study, over 80% of the 42 women with mental illness who were pregnant or trying to become pregnant said they didn't use contraception because they had little control over the decisions about contraception. Moreover, half of these women thought that using psychotropic medication while pregnant would be harmful to the new-born. Another 50% believed that if they stopped taking their medication while pregnant, their illness would not reoccur. Such beliefs would probably influence their choices and attitudes regarding future pregnancies.

In spite of extensive research into psychiatric drugs, their effect on immediate and long-term outcomes in infants is still not clear. Many pregnant women who suffer from mental illness are concerned about the effects of psychotropic medication to their unborn child. A lack of or inconsistent evidence leads to patients and health care providers being hesitant in using the medications due to fears in their safety profile ((UK, 2014). The risks and benefits should be weighed individually since withholding medication in some pregnant women with mental illness can trigger severe relapses.

The attitude of mentally ill women towards pregnancy is also shaped by the complexity of the process of planning pregnancy. Pregnancy and bringing up a child may be a demanding and exciting time for women. Failure to consider this when planning pregnancy may cause women with mood disorders to abruptly cease taking their psychiatric medication on discovering that they are pregnant (Wieck & Abel, 2016., Roca, 2013., Viguera, 2007). While they may be considering the baby's wellbeing, stopping medication in this manner puts them at risk of high recurrence especially if their illness is severe. A lack of pregnancy intentions among women who smoke, drink alcohol or use drugs increases the chances of continued substance use in the first trimester and are unlikely to take their folic acid and prenatal vitamins. Parenting

is terrifying, as evidenced by the overwhelming number of women with schizophrenia who express tremendous anxiety about the thought of becoming a mother (McNeil et al 1983).

A study presented by (Jones et al., 2016) indicates that parents with mental illness are hesitant about having children for fear of passing the illness to the babies. The negative attitude towards pregnancy may result from social and physical barriers. These factors include infertility and finding a partner who is willing to raise a child without fear of mental illness, fear of judgement and stigma. However, the major issue which causes the negative attitude towards pregnancy is the possibility of passing the mental illness problems to a child (Thomas, 2018). Especially since major mental disorders are conventionally thought to be genetically transmitted.

Understanding women's attitude and feelings towards pregnancy may yield clinically relevant information (Sable & Libbus, 2000). Results of this research will aid policy makers in family planning programs by providing more information in efforts to reduce barriers to accessing high quality voluntary family planning services for all.

2.1.5 Issues of research among individuals with mental illness and how to ensure research is conducted within ethical principles

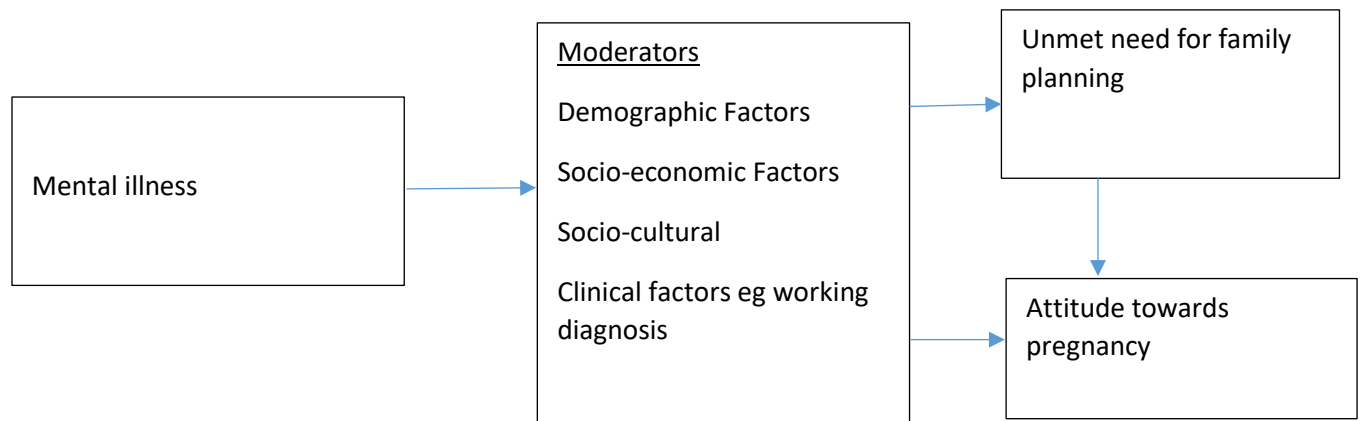
Research among individuals with mental disorders faces various challenges. They are considered a vulnerable population because of the illness effects on their daily life (De Chesnay, 2008). Due to the mental disorder affecting their behaviour, very sick patients may have problems with cognition which will affect their ability to concentrate and pay attention during interviews. Their thoughts and perceptions can also lead to misinterpretation of external stimuli thus giving inaccurate information. As a result, they may have compromised autonomy. To mitigate this, research is best done among individuals who have insight. This means that the patients are aware of their mental disorders including their symptoms and resultant consequences or deficits, their treatment and are compliant on their medication. A Mini Mental exam is done to check their comprehension and ability to answer questions objectively before assenting. In addition, psychiatric patients admitted involuntarily and still hospitalized would likely require informed consent signed by their next of kin if the patients assent to participating in a study. Outpatient psychiatric patients on follow up are more stable, likely to have insight and therefore not requiring a next of kin to assent unless they are underage. Ethical principles considered when carrying out research among this group therefore involves carrying out a mini mental state exam, obtaining consent from the potential research participant or legal guardian if available, maintaining patient anonymity and reducing risk of harm. Patients recruited into the study should also be given ample time during interviews and be able to withdraw whenever they choose.

2.2 Conceptual Framework

Figure 2.1 conceptual framework

Independent Variables

Dependent Variables



2.3 Study justification

In an effort to decrease the level of unmet need for FP, the Kenya National Reproductive Health Strategy 2009-2015 aspires to offer quality and just FP services to all who need them. While studies in Kenya on unmet need of family planning have been on women in rural areas, women living with HIV and married couples, (Omwago, 2002., Nyauchi, 2011., Obul, 2013), none has studied women with mental illness. Increasing contraceptive use among these women would be beneficial in decreasing the rate of unplanned pregnancy and contribute to decreasing the country's fertility rate. The purpose of this study is to determine the prevalence of unmet need of family planning among women with mental illness and their attitude towards pregnancy. Understanding characteristics of women with unmet need among this cohort in addition

to their attitudes towards pregnancy is important for Kenya's population policy and monitoring of FP programs. There is a gap in research on the sexual and reproductive health of women with mental illness. This study aims to increase knowledge in this field in an attempt to bridge the gap. Lastly, it can improve standards of care by providing information that highlights the importance of providing integrated family planning services in mental health.

2.4 Significance of the study

Forty three percent (43%) of all pregnancies in the country are unplanned, according to the Kenya Demographic and Health Survey 2009. Majority of these pregnancies occur because women are not using an effective type of contraceptive to avoid getting pregnant. Unplanned pregnancy in mentally ill increases the risk of maternal depression and parenting distress further exacerbating an already preexisting mental illness. Other risks include induced abortions which may affect maternal health. It also places an extra burden on public funding of governments hence the drive to increase contraceptive prevalence in view of long-term economic efficiency. This study will provide information about contraceptive behavior and attitude towards pregnancy that can guide health care workers in providing more specific or suitable family planning services to women with mental illness. Increasing the rate of contraceptive use results in decreased total fertility rate. According to Kenya's Vision 2030, this would be in line with the country's population policy of 2012, which calls for a reduction in the average number of children a woman has in her lifetime from 5 in 2009 to 3 in 2030.

2.5 Study Objectives

2.5.1 Broad Objective

To assess the unmet need for family planning and attitude towards pregnancy among women with mental illness at Mathari National Teaching and Referral Hospital in Nairobi.

2.5.2 Specific Objectives

1. To determine the prevalence of unmet need for family planning among women with mental illness.
2. To explore the attitude towards pregnancy among women with mental illness.

3. To determine the association between mental illness and unmet need for family planning and attitude towards pregnancy among women with mental illness.
4. To describe the correlation between unmet need for family planning and attitude towards pregnancy among women with mental illness.
5. To determine the association between sociodemographic factors and unmet need for family planning and attitude towards pregnancy among women with mental illness.

CHAPTER THREE: METHODOLOGY

3.1 Study Design

This was cross-sectional descriptive study design.

3.2 Study Area

The study area was Mathari National Teaching and Referral Hospital (MNTRH) in Nairobi, Kenya. It is the national referral hospital for psychiatric patients and the main teaching psychiatric hospital in the country. It was founded in 1910 by the colonial authorities of British Kenya. Located in Mathari North constituency of Nairobi County, its catchment area is mainly the Nairobi urban area and the close rural and urban environs to the city. However, being a national hospital managed by the Ministry of Health, it receives patients from all over the country. It has an inpatient bed capacity of 600 with two female general wards and four male wards, two semi-amenity and one amenity wards. Other services available in the hospital are outpatient services (psychiatric and general medical services), maternal and child health clinic (MCH), a comprehensive care centre (CCC), methadone clinic, forensic unit and rehabilitation unit. On average, there are about 80 patients attending the female consultant psychiatric outpatient clinic which runs on Tuesdays on a weekly basis.

3.3 Study Population

The study population was women with mental illness attending outpatient psychiatric clinics. The specific disorders focussed on were based on the MINI screening tool. The population sampled were female outpatients of reproductive age (18-49 years) attending psychiatric follow up clinics at Mathari National Teaching and Referral Hospital. Certain characteristics or criteria were picked out among the study population as a means of measuring their eligibility or ineligibility for the study. These criteria aided in objectively identifying the study population in a more consistent and reliable manner.

3.3.1 Inclusion Criteria

- i. Women who have a mental disorder, are on treatment and have attended at least one visit to the outpatient psychiatric clinic in Mathari National Teaching and Referral Hospital.
- ii. Female patients who are currently attending the outpatient psychiatric clinics at the hospital.
- iii. Participants willing to give an informed consent in writing or thumbprint on the consent form.
- iv. Female outpatients of reproductive age which is between 18 to 49 years.

3.3.2 Exclusion Criteria

- i. Female outpatients who decline to participate or give informed consent appropriately.
- ii. Female outpatients without cognitive function as assessed during the mini mental state exam before interview or very sick and thus not able to respond objectively.

3.4 Sampling

3.4.1 Sample Size Determination

The sample size will be calculated using the Fisher's formula (Heinisch, 1963)

$$n = \frac{Z_{\alpha/2}^2 pq}{d^2}$$

n=minimum sample size required

z=confidence interval at 95% (standard value of 1.96)

p=estimated prevalence of unmet need based on KDHS 2014 - 18% (0.18)

q=1-p (1-0.18=0.82)

d=margin of error (0.05)

$$\frac{1.96^2 * 0.18 * 0.82}{(0.05)^2} = 225 \text{ patients}$$

Correction for missing or incomplete data = $225 \div 0.9 = 250$ participants

3.4.2 Sampling Method

Systematic random sampling procedure was obtained by the formula $k = N \div n$ where N is the size of the population and n is the sample size. On average, there are 4648 female patient reviews done annually at the outpatient psychiatric follow up clinics. Accounting for 4 clinic reviews per patient annually brings N to 1162. This number divided by the sample size of 250 gives a value of 5 for k. Every fifth eligible patient, based on order of clinic registration, was voluntarily signed up for the study over the 2 month study duration after obtaining an informed consent.

N=1162, n=250 k=5

3.5 Variables

3.5.1 Independent Variables

Mental illness

3.5.2 Moderators

Socio-demographic characteristics: Age, Residence, Education Level, Occupation, Ethnicity, Economic Status (Household income)

3.5.3 Dependent Variables

Unmet need for family planning

Attitude towards pregnancy

3.6 Study Procedure

3.6.1 Instruments

The study utilized researcher assisted structured hardcopy questionnaires drawn from the Reproduction and Contraception segments of the short version of the Kenya Demographic Health Survey Woman Questionnaire 2014. Other sources will be the Attitude to Pregnancy segment of an original questionnaire adapted from literature (Łepecka-Klusek & Jakiel, 2007., Bałanda-Bałdyga et al., 2019) to measure attitude on a five-point Likert scale. The questionnaire was used in a study on attitude of teenage mothers towards pregnancy and childbirth (Bałanda-Bałdyga et al., 2020). The first part of the questionnaire captured the patient's sociodemographic and economic characteristics such as age, residence and income, including the diagnosis was derived after conducting a MINI neuropsychiatric interview version 7.0.0. for DSM-5.

3.6.2 Data Recruitment and Consenting Procedures

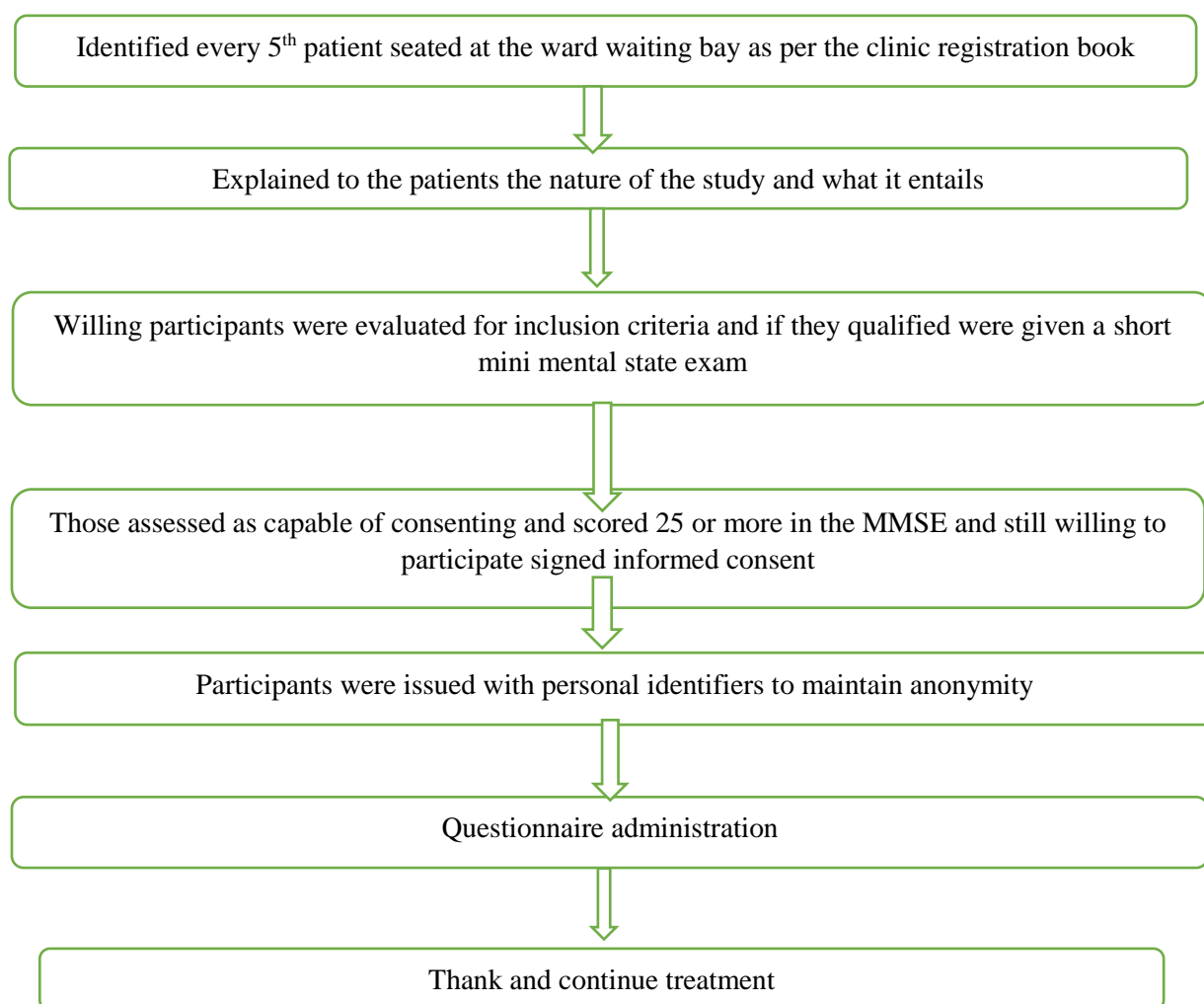
After obtaining assent to perform this study, the researcher held an introductory meeting with the nurse in charge manning female wards 5 and 6, to inform them of the intent to carry out the study. The process of participant recruitment was discussed and any potential concerns raised by the clinic staff were identified and addressed.

Data was collected between April 2022 to May 2022 at Mathari National Teaching and Referral Hospital female outpatient psychiatric clinic by the researcher from the outpatient clinics. There were no research assistants involved in the study. The researcher recruited patients from female ward 5 and 6 during their Tuesday consultant psychiatric outpatient clinics visits. The researcher would approach the patients at the

ward waiting bay and select every fifth patient in line in accordance with the clinic registration. After proper introductions, the researcher would explain the study and what it entails, its target participants, its intended benefits, right to opt out and confidentiality. Those who wished to participate were taken to a private room. If the patients met inclusion criteria, they were subjected to a Mini Mental State exam (MMSE) to assess their comprehension and ability to answer questions objectively. Those who scored less than 25 were thanked and excluded. Those who scored above 25, had capacity to consent and were willing to participate were consented by writing or fingerprint.

Patients were allowed to attend the clinic for review based on their preference to either finish with their review first then continue with data collection afterwards or be excused for review while in the middle of filling the questionnaire and resume afterwards.

Figure 3.1: Summary of study recruitment procedure



3.6.3 Data collection procedure

Once eligible participants were identified and consented, they were led to comfortably sit in a private room ensuring a distance of at least 2 metres between the researcher and participant as part of COVID 19 safety guidelines. The data collection tool was an interviewer administered questionnaire with a unique identifier for each participant. The questionnaire was read to the participant by the researcher and the responses recorded. Once the questionnaire was completely filled, the researcher thanked the participant and ushered them back to the waiting area. The questionnaires were stored in a secure cabinet awaiting analysis. The researcher would sanitize before and after every contact with a participant.

3.7 Data Quality Assurance

The researcher conducted a pre-test of the tool with patients from the outpatient clinic of the General Psychiatric Services outpatient clinic in Kenyatta National Hospital. It is one of the services offered at KNH'S department of mental health. Other services include Child Psychiatry, Adolescent (Youth) Friendly Psychiatric and Psychosocial services, Psychosocial and Occupational therapy, Clinical and Counselling Psychology and Liaison Psychiatry. The clinic is run by doctors, nurses and psychologists from KNH including Registrars from MNTRH. It runs from 8am every Wednesday. After explaining the study to the patients, the researcher will collect data and analyse it to detect any possible problems in flow and gauge the length of time required for the interview. Any ambiguity or errors detected during the pre-test were corrected before the start of actual data collection. The MINI international neuropsychiatric interview version 7.0.0 is a short structured diagnostic interview used to diagnose psychiatric patients according to DSM IV and ICD 10 criteria. It has been used in other postgraduate studies locally. It was developed jointly by American and European psychiatrists for use in research setting as it has a shorter time of administration compared to other diagnostic tools (Sheehan et al., 1998). It was shown to be both valid and reliable in a study that tested it against the Structured Clinical Interview for DSM-III-R Patients (SCID-P) and Composite International Diagnostic Interview (CIDI) for ICD10 for validity while also assessing its inter-rater and test-retest reliability (Lecrubier et al., 1997). The results showed that it is both valid and reliable for diagnosing the 17 common mental disorders.

KDHS Short Female Questionnaire is used by the Ministry of Health to collect data on countrywide unmet need for family planning. It is part of the Kenya Demographic Health Survey Questionnaires that were implemented by the Kenya National Bureau of Statistics from May 2014 to October 2014 in partnership with the Ministry of Health, the National AIDS Control Council (NACC), the National Council for

Population and Development (NCPD), and the Kenya Medical Research Institute (KEMRI). The 2014 KDHS is the sixth Demographic and Health Survey conducted in Kenya since 1989. Its objective is to provide reliable estimates of fertility levels, marriage, sexual activity, fertility preferences, family planning methods, breastfeeding practices, nutrition, childhood and maternal mortality, maternal and child health, HIV/AIDS and other sexually transmitted infections (STIs) and domestic violence that can be used by program managers and policy makers to evaluate and improve existing programs. The questionnaires have been used in local studies (Ontiri et al., 2020) and postgraduate studies in psychiatry (Lamwenya, 2021).

The attitude to pregnancy scale has been used in a study by (Łepecka-Klusek & Jakiel, 2007., Bałanda-Bałdyga et al., 2019). It is part of an original questionnaire that was adapted from literature and used in a study in Poland in 2019. It is yet to be used locally as it is a fairly new scale.

3.8 Data Management

3.8.1 Data Protection and Security

Paper records were kept in a lockable cabinet only accessible to the researcher. Data entry was done in MS excel on a computer that was password protected, with up-to-date Kaspersky antivirus, internet firewall protected and with a backup. Data validation was done through the same application. Thereafter the data was converted into a database and exported to SPSS version 26.0 for analysis.

3.8.2 Data Analysis

The questionnaires yielded quantitative data. Univariate analysis was done to describe the prevalence of unmet need, attitude and socio-demographic characteristics of the participants. Bivariate analysis was done to indicate the association between the variables. Multivariate analysis was used to determine the effect of the independent variable which is mental illness in this study, on attitude to pregnancy and unmet need for family planning. The relationship between the unmet need, attitude and socio-demographic characteristics was analyzed using the Chi squared test and yield the odds ratio with the corresponding 95% confidence interval, P value of significance set at 0.05. Odds ratio was provided at multivariate regression analysis after controlling for factors that were found to be significantly linked with outcome variable at a bivariate level. Unmet need for family planning was expressed as a percentage and was calculated from adding up the total number of women in the study who were not using contraceptives despite having a need for spacing or limiting births. Data was obtained from the attitude test through use of the typical Likert scale with 5 possible answers: I strongly agree, I agree, I neither agree nor disagree, I disagree, I strongly disagree. Positive statements will be assessed as: I strongly agree - 5 points, I agree - 4 points, I neither agree nor disagree - 3 points, I disagree - 2 points, I strongly disagree - 1 points. The negative statements will be assigned reverse scores such as: I strongly agree 1 point and so on. Total points is 40. Less than 16 points

equated to a negative attitude while above 16 was a positive attitude. Data was expressed in form of graphs and tables.

3.9 Ethical Considerations and Approval

Once departmental approval was obtained, the proposal was submitted to the Kenyatta National Hospital-University of Nairobi Ethics Review Committee (KNH-UON ERC) for review and approval to determine if the study complied with ethical principles of respect, justice and beneficence whilst also safeguarding participants from undue harm. The National Commission for Science, Technology and Innovation (NACOSTI) was approached for a research permit once ethical clearance had been granted. In addition, permission was sought from MNTRH administration before collecting data. The study only recruited adult outpatients who gave consent in writing or thumbprint after being informed of the study's purpose and scope.

Consent was obtained in a language familiar or understandable to the participants. The consent form was in English but was read out in translation to Kiswahili if the participant choose so. Everything in the consent form was explained to the participant and whatever she didn't understand was clarified and questions answered. Once a participant gave consent, they were required to fill a consent form. All this including data collection was conducted in a private room reserved for the study.

In accordance with COVID-19 safety guidelines, all participants were screened for symptoms of respiratory illness and other key defining symptoms of COVID-19 such as fever, cough, shortness of breath and recent possible exposure to individuals with the disease. Participants with possible exposure or symptoms suggestive of a respiratory disease were excluded from participating in the study until COVID-19 had been ruled out. They were immediately referred to the Ministry of Health for further diagnostic procedures and possible isolation, as necessary. As the researcher, I was also screened daily for COVID-19 exposure and symptoms including daily temperature checks and when found well would proceed to conduct interviews. In the event that the researcher screened positive for respiratory symptoms or history of exposure, containment measures such as isolation would have been undertaken until COVID-19 had been ruled out for safety of hospital staff and participants. If diagnosed with COVID-19, the researcher would have commenced self-isolation and temporarily halted research activities until complete resolution of symptoms and a repeat COVID-19 test was negative. As data was collected at one point in time without continued contact with the participants after the interview, temporarily halting research activities would have had no foreseeable short or long term effects on their safety or welfare. Should this have occurred it would have been reported as a notification to ERC. Other prevention measures beforehand included temperature checks for all participants using a non-contact thermometer, hand washing and sanitizer stations were availed for

their use and the participants were also given 3 ply masks. I maintained a social distance of at least 1.5 metres from the participant at all times during face to face contact and interviewed them in a well ventilated room.

All participants were at will to terminate the study at any time if they felt uncomfortable and this did not hinder their access to hospital services. There were no financial gains from the study and the identity of the participants was kept anonymous by issuing code numbers that separated the questionnaires from the actual participants. Documented responses were kept private and only used for the study's aim.

3.10 Potential risks of the study

Being a pen and paper study, there were no physical or offensive procedures to be conducted and as such only posed psychological risks. However, some of the questions elicited discomfort and emotional reactions such as sadness, anger or regret over past or present choices. This was mitigated by allowing pauses for the participant to recover, reassuring them and counselling them during and after the interview. This proved to be sufficient for this study. In the event that the distress persisted, in spite of above measures, the participant would have been referred to a psychologist and/or psychiatrist in the outpatient clinic within MNTRH for review and management.

3.11 Study Results Dissemination Plan

The findings of the study were circulated through presentation at the Department of Psychiatry in the Faculty of Health Sciences at the University of Nairobi. Other modes of dissemination will be through scientific online publications in peer reviewed journals. A written report will be presented to MNTRH research committee for onward transmission to the Ministry.

CHAPTER FOUR: RESULTS

A total of 250 female patients aged between 18 and 49 years who met the inclusion criteria were recruited.

4.1 Characteristics of population

The mean age of the participants was 32.4 (SD 7.8) years, where the minimum age was 18.0 years, and the maximum was 49.0 years. The median age was 32.5 (IQR 26.0 – 39.0) years. Majority of the participants had attended school (95.2%) while 4.8% had not attended school with the highest level of education attained being university at 12.4%. Majority had above high school level of education at 76.4%. The percentage of women who were single was 35.2% with married being 34.0% and the rest were separated/divorced and widowed at 23.6% and 7.2%. Roughly more than a third were unemployed at 35.6% with many who were employed citing their work being their main source of income 60.4%. The highest monthly household income range recorded was above Ksh 30,000 for 8.8% of the women and the lowest was less than Ksh 10,000 at 42%. Ninety point eight percent (90.8%) were Christians and majority (90.4%) lived in urban areas.

Table 4.1.1 Characteristics of population

| | Frequency | Percent |
|---------------------------|-----------|---------|
| Age | | |
| 18 – 25 | 60 | 24.0 |
| 26 – 30 | 44 | 17.6 |
| 31 – 35 | 64 | 25.6 |
| 36 – 40 | 37 | 14.8 |
| 41 – 45 | 31 | 12.4 |
| >45 | 14 | 5.6 |
| School attendance | | |
| Yes | 238 | 95.2 |
| No | 12 | 4.8 |
| Level of education | | |
| None | 12 | 4.8 |
| Primary | 47 | 18.8 |
| High school | 91 | 36.4 |

| | | |
|-------------------------------|-----|------|
| College | 69 | 27.6 |
| University | 31 | 12.4 |
| Marital status | | |
| Single | 88 | 35.2 |
| Married | 85 | 34.0 |
| Separated | 59 | 23.6 |
| Widowed | 18 | 7.2 |
| Employment status | | |
| Unemployed | 89 | 35.6 |
| Formal occupation | 45 | 18.0 |
| Informal | 116 | 46.4 |
| Main source of income | | |
| Work | 151 | 60.4 |
| Spouse/Partner | 38 | 15.2 |
| Relative | 57 | 22.8 |
| Social benefit | 4 | 1.6 |
| Household income range | | |
| <10000 | 105 | 42.0 |
| 10000-20000 | 109 | 43.6 |
| 20000-30000 | 14 | 5.6 |
| >30000 | 22 | 8.8 |
| Religion | | |
| Christian | 227 | 90.8 |
| Muslim | 4 | 1.6 |
| SDA | 17 | 6.8 |
| Other/None | 2 | 0.8 |
| Residence | | |
| Urban | 207 | 82.8 |
| Rural | 43 | 17.2 |

4.2 Clinical characteristics of the population

Majority of the women had bipolar mood disorders (32.4%) and depression at 29.2% with the least being social anxiety (0.8%) and Suicidality at 0.4%. there were no cases of anorexia nervosa, bulimia nervosa, agoraphobia, binge eating disorder, obsessive compulsive disorder and antisocial personality disorder.

Table 4.2.1 Clinical characteristics of the population

| MINI Diagnosis | Frequency | Percent |
|--|------------------|----------------|
| Psychotic disorder | 44 | 17.6 |
| SUD | 3 | 1.2 |
| Alcohol use disorder | 3 | 1.2 |
| Bipolar | 81 | 32.4 |
| Suicidality | 1 | 0.4 |
| PTSD | 3 | 1.2 |
| Depression | 73 | 29.2 |
| GAD | 27 | 10.8 |
| Panic disorder | 13 | 5.2 |
| Social anxiety disorder | 2 | 0.8 |
| Others (Agoraphobia, Antisocial personality disorder, Anorexia nervosa, Bulimia Nervosa, Binge eating disorder, OCD) | 0 | 0.0 |

4.3 Fertility preferences

54% of women had between one and three children

Almost half (47.2%) of the women desire to have another child and of these, about 76 (30.4%) would desire another child after 2 years. Twenty nine point two percentage (29.2%) of the women did not want to have more children and the rest were either undecided (18%) or reported that they can't get pregnant (5.2%). Five (5) of the participants were pregnant and 9 were unsure of their pregnancy status while 236 were not pregnant. Of the pregnant women, only 3 had planned for their current pregnancy. The other 2 had unplanned pregnancies. When asked whether their last or current pregnancy was mistimed, 37.6% of the women agreed to having unplanned pregnancy.

Table 4.3.1: Number of living children among study population

| | Frequency | Percent |
|----|-----------|---------|
| 0 | 78 | 31.2 |
| 1 | 46 | 18.4 |
| 2 | 60 | 24.0 |
| 3 | 31 | 12.4 |
| 4 | 21 | 8.4 |
| 5 | 9 | 3.6 |
| 6 | 4 | 1.6 |
| 11 | 1 | 0.4 |

Table 4.3.2: Desire for a/another child

| | Frequency | Percent |
|----------------------|-----------|---------|
| Have a/another child | 118 | 47.2 |
| No/No more children | 73 | 29.2 |
| Can't get pregnant | 13 | 5.2 |
| Undecided | 46 | 18.0 |

Table 4.3.3: Current pregnancy status among study population

| | Frequency | Percent |
|----------|-----------|---------|
| Pregnant | 5 | 2.0 |

| | | |
|--------------|-----|------|
| Not pregnant | 236 | 94.4 |
| Unsure | 9 | 3.6 |

Table 4.3.4: Time before birth of a/next child

| | Frequency | Percent |
|--|-----------|---------|
| Not applicable (no\ no more children, undecided, can't get pregnant) | 132 | 52.4 |
| Less than 2 years | 20 | 8.0 |
| After 2 years | 76 | 30.4 |
| After marriage | 12 | 4.8 |
| Don't know | 10 | 4.0 |

4.4 Family planning

Of the 176(70.4%) who had ever used a contraceptive method to delay or avoid getting pregnant, only 84(33.6%) reported to be currently using a contraceptive method. The most popular modern contraceptive methods used are implants (9.6%), injectables (7.6%) and the pill at 4.8%. The most popular traditional contraceptive method was lactation amenorrhoea method (1.2%) and monitoring standard days (0.8%).

Table 4.4.1: Number of women using contraceptives and specific method used

| Currently using contraceptives | | |
|---------------------------------------|----|------|
| N/A - Never used | 74 | 29.6 |
| Yes | 84 | 33.6 |
| No | 92 | 36.8 |
| If yes, current method used | | |
| Female sterilisation | 1 | 0.4 |
| IUD | 6 | 2.4 |

| | | |
|---------------------------|----|------|
| Injectable | 19 | 7.6 |
| Implant | 24 | 9.6 |
| Pill | 12 | 4.8 |
| Emergency contraceptive | 7 | 2.8 |
| Male condom | 7 | 2.8 |
| LAM | 3 | 1.2 |
| Standard days/cycle beads | 2 | 0.8 |
| Rhythm | 2 | 0.8 |
| Withdrawal method | 1 | 0.4 |
| N/A - Never used | 74 | 29.6 |
| N/A - Not using | 92 | 36.8 |

Of those who had never used or weren't currently using a contraceptive method, when asked why they were not on any contraceptive method, majority of the women answered due to fertility reasons (46.8%). Seven point six percent cited method related reasons, 4.4% said either they or their partner was opposed to it and 5.6% said they were not married. The rest were unsure (1.6%).

Table 4.4.2: Reason for not currently using a contraceptive method

| | Frequency | Percent of respondents (<i>n=250</i>) |
|-----------------------------|-----------|--|
| N/A - Still currently using | 84 | 33.6% |
| Not married | 14 | 5.6% |
| Fertility related reasons | 117 | 46.8% |
| Opposition to use | 11 | 4.4% |
| Method related reasons | 19 | 7.6% |
| Unsure | 5 | 2.0% |

When broken down further, the most common fertility related reasons were the women saying they were not having sex (20.4%) or it was infrequent (13.2%). Ten women (4.0%) reported being menopausal as they had not seen their monthly menses in many months and were older than 40 years. Under method related reasons, the commonest reason given was a fear of side effects related to the contraceptives which was at 6.8%. Despite the above results, many patients still expressed a desire to use a contraceptive method in future (56.8%) and the most desired method to use in the future was the implant (20.4%) and injectable (15.2%).

Table 4.4.3: Specific reason for not currently using a contraceptive method

| | Frequency | Percent of respondents (n=250) |
|--------------------------------|-----------|-----------------------------------|
| N\A (Currently using) | 84 | 33.6% |
| Infrequent sex | 33 | 13.2% |
| Not having sex | 51 | 20.4% |
| Became pregnant while using it | 2 | 0.8% |
| Wanted to become pregnant | 13 | 5.2% |
| Can't get pregnant | 2 | 0.8% |
| Menopausal | 10 | 4.0% |
| Partner disapproved | 7 | 2.8% |
| Health concerns | 1 | 0.4% |
| Wanted more effective method | 1 | 0.4% |
| Fear of side effects | 17 | 6.8% |
| Up to God/fatalistic | 7 | 2.8% |
| Inconvenient to use | 5 | 2.0% |
| Interferes with body processes | 4 | 1.6% |
| Religion prohibits | 1 | 0.4% |
| Lack of knowledge | 2 | 0.8% |
| Unsure\I don't know | 4 | 1.6% |
| Not married | 6 | 2.4% |
| Respondent opposed | 2 | 0.8% |

Table 4.4.4: Desire for future contraceptive use among study population

| | Frequency | Percent |
|------------|-----------|---------|
| Yes | 142 | 56.8 |
| No | 84 | 33.6 |
| Don't know | 24 | 9.6 |

Table 4.4.5: Desired contraceptive method to use in future

| | Frequency | Percent |
|-----------------------------------|-----------|---------|
| Don't desire future contraceptive | 84 | 33.6 |
| Female sterilisation | 3 | 1.2 |
| IUD | 28 | 11.2 |
| Injectable | 38 | 15.2 |
| Implant | 51 | 20.4 |
| Pill | 10 | 4.0 |
| Male condom | 7 | 2.8 |
| Standard days/cycle beads | 2 | 0.8 |
| Rhythm | 2 | 0.8 |
| Unsure | 25 | 10.0 |

Excluding the information given during administration of the questionnaire, majority of the participants had never received any information on family planning while on their visits to the clinic or outpatient facility including any inpatient admissions.

Table 4.4.6: History of family planning education at MPOPC by staff

| | Frequency | Percent |
|-----|-----------|---------|
| Yes | 67 | 26.8 |
| No | 183 | 73.2 |

4.5 Objective 1: To determine the prevalence of unmet need for family planning among women with mental illness

Unmet need for family planning took into account all married women who didn't want any more children or wanted to delay their next birth for more than two years but weren't using any contraceptive method. Also included were single, separated, divorced or widowed women who were sexually active, not using contraceptives in spite of not wanting any more children or wanting to delay birth and had been sexually active in the month prior to administering the questionnaire.

The prevalence for unmet needs for family planning was 31.2 % with 20.4% of the women having unmet need for spacing and 10.8% having unmet need for limiting.

Table 4.5.1: Prevalence of unmet need for family planning in women with mental illness

| Need for family planning | Frequency | Percent |
|---------------------------------|------------------|----------------|
| Unmet | 78 | 31.2 |
| Met | 172 | 68.8 |

Table 4.5.2: Distribution of unmet need for family planning and mental illness

| Mental illness | Number of women | Unmet need for family planning | | | |
|-----------------------|------------------------|---------------------------------------|--------------------|-------------------------|----------------|
| | | For limiting | For spacing | Total unmet need | Percent |
| Bipolar disorder | 81 | 9 | 17 | 26 | 10.4 |
| Psychotic disorder | 44 | 4 | 7 | 11 | 4.4 |
| Depression | 73 | 13 | 12 | 25 | 10 |
| GAD | 27 | 1 | 11 | 12 | 4.8 |
| Panic disorder | 13 | 0 | 2 | 2 | 0.8 |

| | | | | | |
|---------------------------------|---|---|---|---|-----|
| SUD | 3 | 0 | 0 | 0 | 0 |
| Alcohol use disorder | 3 | 0 | 0 | 0 | 0 |
| PTSD | 3 | 0 | 1 | 1 | 0.4 |
| Social anxiety | 2 | 0 | 1 | 1 | 0.4 |
| Suicidality | 1 | 0 | 0 | 0 | 0 |
| Antisocial personality disorder | 0 | 0 | 0 | 0 | 0 |
| Agoraphobia | 0 | 0 | 0 | 0 | 0 |
| Anorexia Nervosa | 0 | 0 | 0 | 0 | 0 |
| Bulimia Nervosa | 0 | 0 | 0 | 0 | 0 |
| Binge eating | 0 | 0 | 0 | 0 | 0 |
| OCD | 0 | 0 | 0 | 0 | 0 |

4.6 Objective 2: To explore the attitude towards pregnancy among women with mental illness

Scores from a likert scale were used to measure the attitude, and those that scored a total of 16 points and below were considered as having negative attitude, whereas those having a score of 17 and above were considered to have positive attitude. The results are as shown on 4.6.1 below where majority of the participants has a positive attitude at 97.2%.

Table 4.6.1: Attitude towards pregnancy among women with mental illness

| | Frequency | Percent |
|----------|------------------|----------------|
| Negative | 7 | 2.8 |
| Positive | 243 | 97.2 |

When broken down further into the individual psychiatric disorders from the MINI screening tool, the results were as shown in the table 4.6.2 below.

Table 4.6.2: Attitude towards pregnancy among women with mental illness (MINI Diagnosis)

| Mini diagnosis | Positive attitude | Percent | Negative attitude | Percent |
|-----------------------|------------------------------|----------------|------------------------------|----------------|
| Bipolar disorders | 79 | 31.6 | 2 | 0.8 |
| Depression | 71 | 28.4 | 2 | 0.8 |
| Psychotic disorder | 42 | 16.8 | 2 | 0.8 |
| GAD | 26 | 10.4 | 1 | 0.4 |
| Panic disorder | 13 | 5.2 | 0 | 0.0 |
| SUD | 3 | 1.2 | 0 | 0.0 |
| Alcohol use disorder | 3 | 1.2 | 0 | 0.0 |
| PTSD | 3 | 1.2 | 0 | 0.0 |
| Suicidality | 1 | 0.4 | 0 | 0.0 |
| Social anxiety | 2 | 0.8 | 0 | 0.0 |

The participants were first asked if pregnancy is a time for a woman to happily await the birth of a child, and a total of 228 (91.2%) had either agreed or strongly agreed. On being asked if pregnancy is a time of fear and anxiety for a woman, and a total of 175 (70.%) had agreed or strongly agreed. The results are as shown on Figure 1.

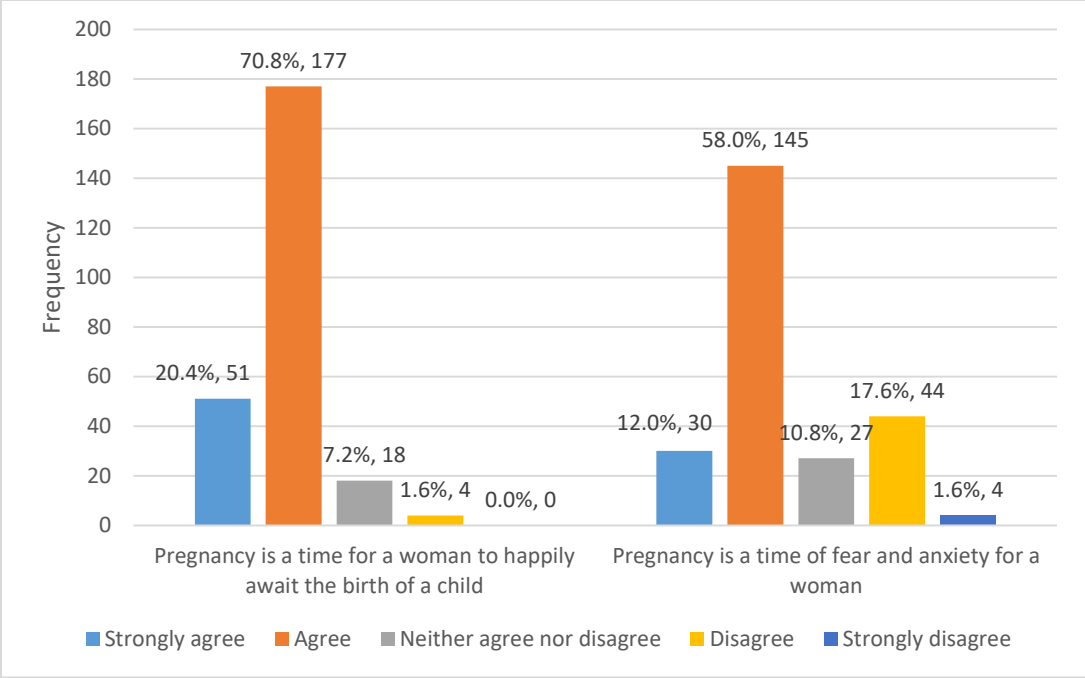


Figure 1: attitude towards pregnancy

The participants were then asked if pregnancy is a time of good relations in a partnership and in the family, and a total of 198 (79.2%) had either agreed or strongly agreed. On being asked if pregnancy is a time of disorganisation of a woman’s personal life, and only a total of 97 (38.8%) had agreed or strongly agreed. The results are as shown on Figure 2.

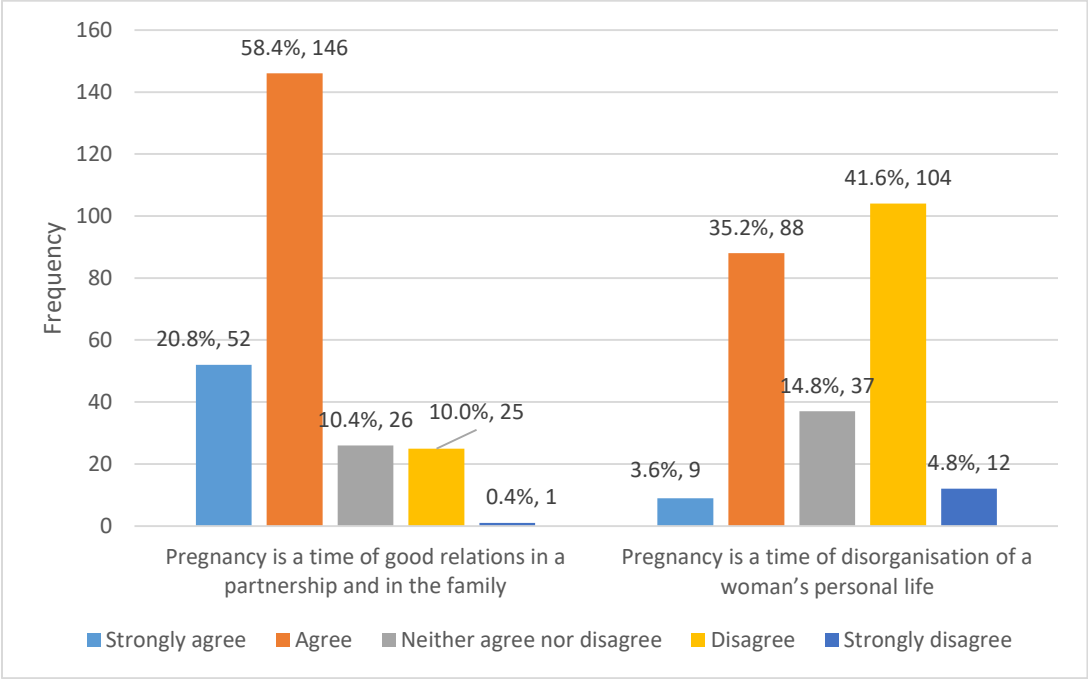


Figure 2: Attitude towards pregnancy

The participants were then asked if during pregnancy, a woman experiences many interesting maternal experiences, and a total of 206 (82.4%) had either agreed or strongly agreed. On being asked if pregnancy requires a great deal of sacrifice from a woman, and a total of 216 (86.4%) had agreed or strongly agreed. The results are as shown on Figure 3.

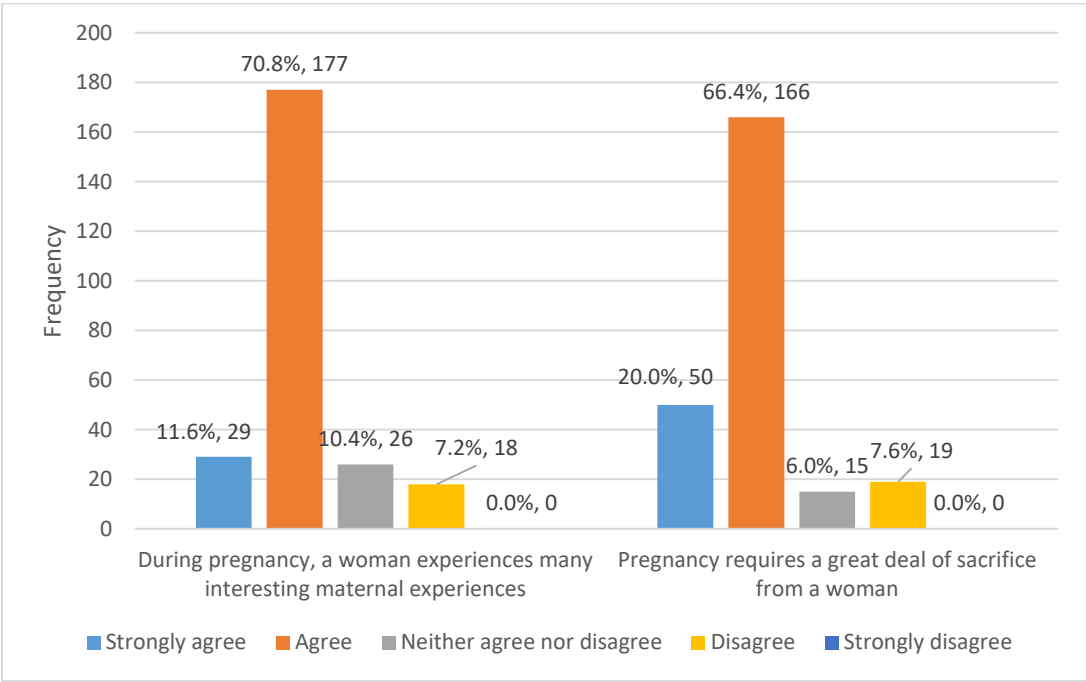


Figure 3: attitude towards pregnancy

The participants were then asked if pregnancy is a time when a woman feels more valued than ever before, and a total of 169 (67.6%) had either agreed or strongly agreed. On being asked if pregnancy is a difficult time for a woman-full of sacrifices, a total of 214 (85.6%) had agreed or strongly agreed. The results are as shown on Figure 4.

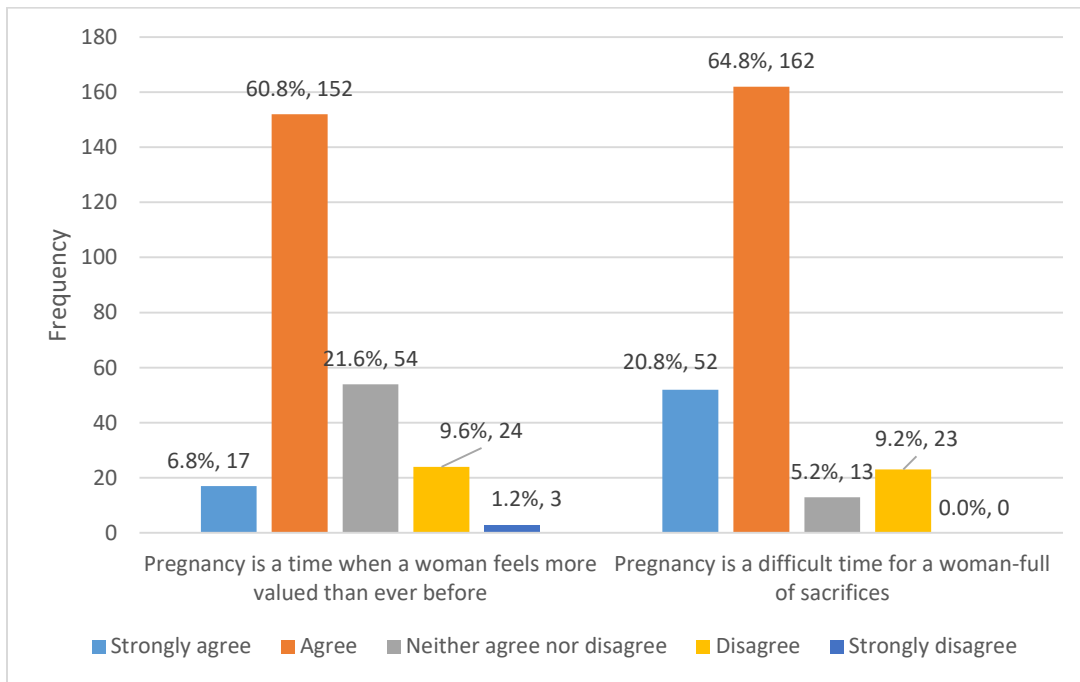


Figure 4: attitude towards pregnancy

4.7 Objective 3: To determine the association between mental illness and unmet need for family planning and attitude towards pregnancy among women with mental illness.

The results of the association between mental illness and unmet need for family planning was assessed with the use of Pearson Chi-square test, and the result is as shown on Table 4.7.1 which indicates that there was no statistical association (p=0.452).

Table 4.7.1: Association between mental illness and unmet need for family planning

| MINI diagnosis | Unmet | Met | p-value |
|---------------------------------|--------------|------------|----------------|
| Bipolar | 26 | 55 | 0.832 |
| Depression | 25 | 48 | 0.504 |
| Psychotic disorders | 11 | 33 | 0.328 |
| GAD | 12 | 15 | 0.116 |
| Panic disorder | 2 | 11 | 0.206 |
| SUD | 0 | 3 | 0.241 |
| Alcohol Use Disorder | 0 | 3 | 0.241 |
| PTSD | 1 | 2 | 0.936 |
| Social Anxiety | 1 | 1 | 0.565 |
| Suicidality | 0 | 1 | 0.500 |
| Antisocial personality disorder | 0 | 0 | - |
| Anorexia nervosa | 0 | 0 | |
| Bulimia nervosa | 0 | 0 | |
| Binge eating | 0 | 0 | |

The results of the association between mental illness and attitude towards pregnancy was assessed with the use of Pearson Chi-square test, and the result is as shown on Table 4.7.2 which indicate that there was no statistical association ($p=0.949$).

Table 4.7.2: Association between mental illness and attitude towards pregnancy

| | Negative | Positive | p-value |
|----------------------|-----------------|-----------------|----------------|
| Bipolar | 2 | 79 | 0.862 |
| Depression | 2 | 71 | 0.970 |
| Psychotic disorders | 2 | 42 | 0.439 |
| GAD | 1 | 26 | 0.736 |
| Panic disorder | 0 | 13 | 0.530 |
| SUD | 0 | 3 | 0.767 |
| Alcohol use disorder | 0 | 3 | 0.767 |
| PTSD | 0 | 3 | 0.767 |

| | | | |
|--|---|---|-------|
| Social anxiety | 0 | 2 | 0.810 |
| Suicidality | 0 | 1 | 0.865 |
| Others (Antisocial personality disorder Anorexia nervosa) | 0 | 0 | |

4.8 Objective 4: To describe the correlation between unmet need for family planning and attitude towards pregnancy among women with mental illness

The results of the correlation between unmet need for family planning and attitude towards pregnancy was assessed with the use of Pearson Chi-square test, and the result is as shown on Table 4.8.1 which indicate that there was no statistical association ($p=0.500$).

Table 4.8.1: Correlation between unmet need for family planning and attitude towards pregnancy

| Attitude | Unmet | Met | p-value |
|-----------------|--------------|------------|----------------|
| Negative | 3 (3.8) | 4 (2.3) | 0.500 |
| Positive | 75 (96.2) | 168 (97.7) | |

4.9 Objective 5: To determine the association between sociodemographic factors and unmet need for family planning and attitude towards pregnancy.

The results indicate that marital status, main source of income, and religion were the only factors that were found to be significantly associated with unmet needs for family planning

Table 5.1: Association between sociodemographic factors and unmet need for family planning

| Age | Unmet | Met | p-value |
|------------|--------------|------------|----------------|
| 18 – 25 | 12 (15.4) | 48 (27.9) | 0.077 |
| 26 – 30 | 12 (15.4) | 32 (18.6) | |
| 31 – 35 | 21 (26.9) | 43 (25.0) | |

| | | | |
|-------------------------------|-----------|------------|--------------|
| 36 – 40 | 17 (21.8) | 20 (11.6) | |
| 41 – 45 | 13 (16.7) | 18 (10.5) | |
| >45 | 3 (3.8) | 11 (6.4) | |
| School attendance | | | |
| Yes | 72 (92.3) | 166 (96.5) | 0.150 |
| No | 6 (7.7) | 6 (3.5) | |
| Level of education | | | |
| None | 6 (7.7) | 6 (3.5) | 0.109 |
| Primary | 19 (24.4) | 28 (16.3) | |
| High school | 29 (37.2) | 62 (36.0) | |
| College | 19 (24.4) | 50 (29.1) | |
| University | 5 (6.4) | 26 (15.1) | |
| Marital status | | | |
| Single | 23 (29.5) | 65 (37.8) | 0.015 |
| Married | 35 (44.9) | 50 (29.1) | |
| Separated | 19 (24.4) | 40 (23.3) | |
| Widowed | 1 (1.3) | 17 (9.9) | |
| Employment status | | | |
| Unemployed | 28 (35.9) | 61 (35.5) | 0.321 |
| Formal occupation | 10 (12.8) | 35 (20.3) | |
| Informal | 40 (51.3) | 76 (44.2) | |
| Main source of income | | | |
| Work | 44 (56.4) | 107 (62.2) | 0.028 |
| Spouse/Partner | 19 (24.4) | 19 (11.0) | |
| Relative | 13 (16.7) | 44 (25.6) | |
| Social benefit | 2 (2.6) | 2 (1.2) | |
| Household income range | | | |
| <10000 | 40 (51.3) | 65 (37.8) | 0.107 |
| 10000-20000 | 32 (41.0) | 77 (44.8) | |
| 20000-30000 | 2 (2.6) | 12 (7.0) | |
| >30000 | 4 (5.1) | 18 (10.5) | |
| Religion | | | |
| Christian | 65 (83.3) | 162 (94.2) | 0.039 |

| | | | |
|------------------|-----------|------------|-------|
| Muslim | 3 (3.8) | 1 (0.6) | |
| SDA | 9 (11.5) | 8 (4.7) | |
| Other/None | 1 (1.3) | 1 (0.6) | |
| Residence | | | |
| Urban | 62 (79.5) | 145 (84.3) | 0.350 |
| Rural | 16 (20.5) | 27 (15.7) | |

When multivariate regression analysis was done on the individual sociodemographic variables in relation to unmet need for family planning, there was also an associated risk with level of education. The odds for those that had no education, primary, high school and college education were 5.1, 3.5, 2.4 and 2.0 times more likely to have unmet need for family planning when compared to the reference group of those with university education. However, the respondents with no education, and those with primary education were statistically different with the reference group of those with university education.

Table 5.2: Association between sociodemographic factors and unmet need for family planning

| Age | Unmet | Met | OR (95% CI) | p-value |
|---------------------------|--------------|------------|--------------------|----------------|
| 18 – 25 | 12 (15.4) | 48 (27.9) | 0.9 (0.2 – 3.8) | 0.905 |
| 26 – 30 | 12 (15.4) | 32 (18.6) | 1.4 (0.3 – 5.8) | 0.664 |
| 31 – 35 | 21 (26.9) | 43 (25.0) | 1.8 (0.5 – 7.1) | 0.408 |
| 36 – 40 | 17 (21.8) | 20 (11.6) | 3.1 (0.7 – 13.0) | 0.119 |
| 41 – 45 | 13 (16.7) | 18 (10.5) | 2.6 (0.6 – 11.4) | 0.192 |
| >45 | 3 (3.8) | 11 (6.4) | Reference | |
| School attendance | | | | |
| Yes | 72 (92.3) | 166 (96.5) | Reference | 0.160 |
| No | 6 (7.7) | 6 (3.5) | 2.3 (0.7 – 7.4) | |
| Level of education | | | | |
| None | 6 (7.7) | 6 (3.5) | 5.1 (1.2 – 22.9) | 0.029 |
| Primary | 19 (24.4) | 28 (16.3) | 3.5 (1.2 – 10.8) | 0.027 |
| High school | 29 (37.2) | 62 (36.0) | 2.4 (0.8 – 7.0) | 0.098 |
| College | 19 (24.4) | 50 (29.1) | 2.0 (0.7 – 5.9) | 0.222 |
| University | 5 (6.4) | 26 (15.1) | Reference | |
| Marital status | | | | |
| Single | 23 (29.5) | 65 (37.8) | 6.0 (0.8 – 47.8) | 0.090 |

| | | | | |
|-------------------------------|-----------|------------|-------------------|--------------|
| Married | 35 (44.9) | 50 (29.1) | 11.9 (1.5 – 93.6) | 0.019 |
| Separated | 19 (24.4) | 40 (23.3) | 8.1 (1.0 – 65.2) | 0.050 |
| Widowed | 1 (1.3) | 17 (9.9) | Reference | |
| Employment status | | | | |
| Unemployed | 28 (35.9) | 61 (35.5) | 0.9 (0.5 – 1.6) | 0.649 |
| Formal occupation | 10 (12.8) | 35 (20.3) | 0.5 (0.2 – 1.2) | 0.135 |
| Informal | 40 (51.3) | 76 (44.2) | Reference | |
| Main source of income | | | | |
| Work | 44 (56.4) | 107 (62.2) | Reference | |
| Spouse/Partner | 19 (24.4) | 19 (11.0) | 2.4 (1.2 – 5.0) | 0.016 |
| Relative | 13 (16.7) | 44 (25.6) | 0.7 (0.4 – 1.5) | 0.362 |
| Social benefit | 2 (2.6) | 2 (1.2) | 2.4 (0.3 – 17.8) | 0.382 |
| Household income range | | | | |
| <10000 | 40 (51.3) | 65 (37.8) | 2.8 (0.9 – 8.8) | 0.083 |
| 10000-20000 | 32 (41.0) | 77 (44.8) | 1.9 (0.6 – 6.0) | 0.290 |
| 20000-30000 | 2 (2.6) | 12 (7.0) | 0.8 (0.1 – 4.8) | 0.760 |
| >30000 | 4 (5.1) | 18 (10.5) | Reference | |
| Religion | | | | |
| Christian | 65 (83.3) | 162 (94.2) | Reference | |
| Muslim | 3 (3.8) | 1 (0.6) | 7.5 (0.8 – 73.2) | 0.084 |
| SDA | 9 (11.5) | 8 (4.7) | 2.8 (1.1 – 7.6) | 0.042 |
| Other/None | 1 (1.3) | 1 (0.6) | 2.5 (0.2 – 40.4) | 0.521 |
| Residence | | | | |
| Urban | 62 (79.5) | 145 (84.3) | Reference | |
| Rural | 16 (20.5) | 27 (15.7) | 1.4 (0.7 – 2.8) | 0.351 |

The results indicate that none of the sociodemographic factors were found to be significantly associated with attitude towards pregnancy. Multivariate regression was not done on attitude as the numbers are too small to do any meaningful statements, otherwise known as overfitting the regression analysis.

Table 5.3: Association between sociodemographic factors and attitude towards pregnancy

| Age | Negative | Positive | p-value |
|-----|----------|----------|---------|
|-----|----------|----------|---------|

| | | | |
|-------------------------------|-----------|------------|-------|
| 18 – 25 | 2 (28.6) | 58 (23.9) | 0.850 |
| 26 – 30 | 1 (14.3) | 43 (17.7) | |
| 31 – 35 | 2 (28.6) | 62 (25.5) | |
| 36 – 40 | 1 (14.3) | 36 (14.8) | |
| 41 – 45 | 0 (0.0) | 31 (12.8) | |
| >45 | 1 (14.3) | 13 (5.3) | |
| School attendance | | | |
| Yes | 7 (100.0) | 231 (95.1) | 0.547 |
| No | 0 (0.0) | 12 (4.9) | |
| Level of education | | | |
| None | 0 (0.0) | 12 (4.9) | 0.466 |
| Primary | 3 (42.9) | 44 (18.1) | |
| High school | 2 (28.6) | 89 (36.6) | |
| College | 2 (28.6) | 67 (27.6) | |
| University | 0 (0.0) | 31 (12.8) | |
| Marital status | | | |
| Single | 3 (42.9) | 85 (35) | 0.459 |
| Married | 1 (14.3) | 84 (34.6) | |
| Separated | 3 (42.9) | 56 (23.0) | |
| Widowed | 0 (0.0) | 18 (7.4) | |
| Employment status | | | |
| Unemployed | 2 (28.6) | 87 (35.8) | 0.306 |
| Formal occupation | 0 (0.0) | 45 (18.5) | |
| Informal | 5 (71.4) | 111 (45.7) | |
| Main source of income | | | |
| Work | 4 (57.1) | 147 (60.5) | 0.971 |
| Spouse/Partner | 1 (14.3) | 37 (15.2) | |
| Relative | 2 (28.6) | 55 (22.6) | |
| Social benefit | 0 (0.0) | 4 (1.6) | |
| Household income range | | | |
| <10000 | 6 (85.7) | 99 (40.7) | 0.125 |
| 10000-20000 | 1 (14.3) | 108 (44.4) | |
| 20000-30000 | 0 (0.0) | 14 (5.8) | |

| | | | |
|------------------|----------|------------|-------|
| >30000 | 0 (0.0) | 22 (9.1) | |
| Religion | | | |
| Christian | 5 (71.4) | 222 (91.4) | 0.139 |
| Muslim | 0 (0.0) | 4 (1.6) | |
| SDA | 2 (28.6) | 15 (6.2) | |
| Other/None | 0 (0.0) | 2 (0.8) | |
| Residence | | | |
| Urban | 6 (85.7) | 201 (82.7) | 0.836 |
| Rural | 1 (14.3) | 42 (17.3) | |

CHAPTER FIVE: DISCUSSION

This study found the unmet need for spacing to be 20.4% and unmet need for limiting to be 10.8% bringing total unmet need for family planning to 31.2%. This was higher than WHO's global unmet need in 2019 which could be attributed to the variation in uptake and access of family planning methods in developing and developed countries. Closer home, a prospective study carried out from 2005 to 2012 in rural Ethiopia on the impact of mental illness on unmet need for family planning had a range of 53.6% to 64% for unmet need for FP (Catalao et al., 2020). Being a prospective study, it was better able to assess risk of unmet need in mental illness. The researcher also thought that the participants were not receiving psychotropics due to poor access to mental health services at the time. This could point to the patients being severely ill unlike those in this current study who were stable on medication. It was still in Ethiopia where (Kebede et al., 2017) found higher unmet need among all the participants although this was a small sample size of only 16 people. Of note is that these figures were significantly higher than Ethiopia's total unmet need which was 22% in 2016 (Yalew et al., 2020) suggesting that there is a higher percentage of unmet need for FP among mentally ill women in comparison to the general population. A similar finding in this current study is its higher unmet need in comparison to the national unmet need which was 18% (KDHS, 2014). While this study considered all women who were sexually active and not on contraceptives, the KDHS study only considered married women. However, a larger proportion of the single, divorced and separated in this study could point to the increased vulnerability of psychiatric patients to discrimination and social isolation with regard to marriage (Agaba et al., 2019).

The most popular contraceptive method used among this sample population was the implant followed closely by injectable unlike a sample of mentally ill women in Ilorin Nigeria whose popular method was the male condom (Tunde-Ayinmode, 2013) and another in Turkey which had coitus interruptus or withdrawal as the most common method (Pehlivanoglu et al., 2007). Religion may have a role to play in choice of the short acting reversible methods above as opposed to long acting reversible methods like the injectable and implants. Being predominantly Islamic, both Ilorin state and Turkey may have patients receiving mixed messages on family planning based on their interpretation of their religion's stance (Sundararajan et al., 2019). In addition, at the time of the study, implants were not heard of by many people in Turkey as they were introduced there recently. When generalised to our Kenyan population, the participant's choice was similar to KDHS 2014 which also had implants and injectable as commonest method suggesting that this is what was socially known. Those who either discontinued or weren't using contraceptives cited fear of side effects and not having sex or infrequent sex as their reasons. This was similar to above studies but for an Ethiopian one where the psychiatric patients reported fear of drug interaction with psychotropic medication as their reason for not using contraceptives (Zerihun et al., 2020).

It could be that they are more knowledgeable or receive more psychoeducation concerning their mental illness being in the capital city's main hospital while another in rural Ethiopia stated lack of knowledge which reflected poor access to FP services including contraception counselling (Zerihun et al., 2019) . In general, all main reasons for not being on any contraceptive still fell largely under fertility or method related reasons.

An interesting finding in this current study is that many patients are not given any advice on family planning when they visit the hospital for review as indicated by a finding of 73.2 percent which was almost similar to numbers recorded by bipolar, schizophrenic and depressive disorder patients from a study in turkey at 81% (Pehlivanoglu et al., 2007). The advice would be beneficial to this sample population since many are the final decision makers in matters concerning their family planning uptake unlike in an Indian study where majority of the women didn't take up FP despite medical advice as they weren't in control of the decisions related to contraceptive use (Bagadia et al., 2020).

Overall attitude towards pregnancy among this study population was positive with very few people having a negative attitude towards it. In comparison is a prospective study in England on pregnant women at 9 weeks gestation, who had eating disorders like Anorexia Nervosa and Bulimia Nervosa. It showed a positive attitude towards pregnancy of 71% but significantly higher negative feelings (Easter et al., 2011). Possible explanation is that most of these women had unplanned pregnancies on account of their substantial weight loss affecting their hormones. In addition, the potential of weight gain during pregnancy distressed them. Women with other mental disorders other than eating disorders were excluded from the study. These current findings were similar to a retrospective Polish study (Bałanda-Bałdyga et al., 2020) which remarkably reported a positive attitude of 90.6% while using a similar likert scale to measure attitude. These results were in spite of the study population consisting of teenage mothers who had just given birth. In general, attitude is positive although results in other studies were more varied unlike this study which had women who had never been pregnant before and therefore had no lived experience of pregnancy. Most studies concerning attitude towards pregnancy were not in women with mental illness and those that did revolve around mental illness and pregnancy focussed on attitude of the caregivers. This study sought to fill the gap by addressing the attitude towards pregnancy in this specific population.

This study found the patients with bipolar and depressive disorders having the highest percentage of total unmet need for FP while panic disorder and PTSD had some of the lowest unmet need at 0.8% and 0.4 respectively. This was a reflection of the clinical characteristics of the patients meaning the most common diagnosis would likely have the greatest unmet need. There were no exact studies to compare to as this is a novel study. However, most studies on mental illness and family planning looked at contraceptive adherence and found that schizophrenics were likely to have rapid repeat pregnancies (Gupta et al., 2019)

and depressed patients were more likely to have inconsistent contraceptive use (Hall et al., 2013b). Follow up to this, this study found no significant association between mental illness and unmet need for family planning. Neither was there one for unmet need for family planning and attitude towards pregnancy. It could be that the tests for attitude should have been self-administered or that the attitude is better assessed as attitude towards potential pregnancy. Also, the women in this study were stable and on medication. However, we cannot rule out the possibility that women with mental illness have the same feelings towards pregnancy as the general population irrespective of the effect of their illness.

This study found significant association between unmet need and religion which is not common in most local studies that have mainly found significant association between unmet need for family planning and age, region of residence, level of education and number of living children (Nyauchi, 2011) including marital status (KDHS, 2014) and employment status and couples' discussion on reproductive health (Omwago, 2002). The significance in religion could be attributed to the greater percentage of women in this sample population identifying as Christian while the patients who were from other religions, though few in number, had a higher proportion of unmet need for FP. Majority of the sample population lived in urban areas which contradicted with their high unmet need for FP. This is possibly due to more women being separated or single and still forming part of the equation for unmet need. If this study were to only account for married women from the sample population, the unmet need would be 14% which would be in line with lower unmet need in urban areas. However, it would still be higher than that of (KDHS, 2014) which was 13% unmet need for FP among the urban population. We cannot down play the significance of marital status and having a spouse as the main source of income which were both at a higher risk for having unmet need. Perceived stability in marriage either makes the women less intentional on consistent contraceptive use or it could be, as some reported, that the husbands oppose the use of FP methods.

Seventy six point four percent (76.4%) of the population had a level of education of secondary and above which was similar to (Shavulimo 2021) who found 73.1% among a sample of 249 women from MPOPC in MNTRH. It was in contrast with a study in South Africa which showed a majority of the psychiatric patients having a level of education at secondary level at 42.3% (Agaba et al., 2019) and another in Uganda (Agaba et al., 2019) being majorly of secondary level and below. The high levels of education in this study could be due to the hospital being located in the capital city where the population captured has better access to education. All in all, this current study, like others, shows a significance of education in mitigating unmet need as demonstrated by an inverse relationship between level of education and unmet need for family planning.

CHAPTER SIX: STRENGTHS AND LIMITATIONS

6.1: Strengths

This study is one of two that focused on the reproductive health of women with mental illness in Kenya. The other being a study by (Shavulimo 2021) on the knowledge, attitude and practice of reproductive health amongst female psychiatric patients of reproductive age. It is also the first study of its kind to assess unmet need for family planning in relation to attitude towards pregnancy among patients with mental illness.

6.2: Limitations

Information from this study cannot be generalised to the whole country as most of the patients live in urban areas therefore biased. This could be due to devolution of health services and lockdown instituted during Covid 19 pandemic which resulted in more patients seeking health services in their counties of residence as opposed to coming to MNTRH as before. Due to the fact that this research took place at a public hospital, the results may not be applicable to patients seeking care in private health facilities. In addition, this study was self-reporting and therefore subject to bias irrespective of the researcher asking the patients to be open and honest. Lastly, this study only covered adult women who were clinically stable and of reproductive age (18-49years). It excluded those who were acutely ill at the time and those outside the age bracket.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

There was a high prevalence of unmet need for family planning among women with mental illness which was higher than the general population at 31.2% irrespective of their high level of education, knowledge of contraceptives and easier access to family planning methods. Socioeconomic factors have a significant role in unmet need for family planning. This reflects the importance of empowering and enhancing stability of female psychiatric patients. Regardless of the unmet need, attitude towards pregnancy was positive and not confounded by the mental illness or sociodemographic status of the patients. Attitude remains a complex thing to explore and its implication towards contraceptive use, behaviour and intention may have other underlying factors involved.

7.2 Recommendations

We recommend integration of family planning services within the female psychiatric clinic and patients to get contraceptive counselling and advice on reproductive health at each clinic via health talks. Furthermore, clinicians need to be aware of reproductive health during treatment of psychiatric patients and improve the quality of care and availability of information on effective utilisation of FP. Encouragement of male/partner involvement and participation in family planning is also recommended with an aim of enhancing knowledge, understanding and contraceptive adherence. Continued efforts towards increasing women's economic empowerment which is associated with increased autonomy over their reproductive health choices. Lastly, we recommend research into the reproductive health of people with mental illness in regards to their contraceptive behaviour surrounding consistency of use especially when sick including more information into the effects of unplanned pregnancy on their mental health.

STUDY TIMEFRAME

| Month | March to August 2019 | January 2021 to July 2021 | July 2021 to August 2021 | August 2021 to September 2021 | November 2021 | December 2021 to April 2022 | May 2022 | May to June 2022 |
|---|-------------------------------|------------------------------------|-----------------------------------|--|------------------|--------------------------------------|-------------|---------------------------|
| Concept and Proposal development | | | | | | | | |
| Submission of concept and revision | | | | | | | | |
| Presentation of concept and corrections | | | | | | | | |
| Submission to ERC for approval | | | | | | | | |
| Data collection | | | | | | | | |
| Data entry & analysis & reporting | | | | | | | | |
| Review of results by supervisors | | | | | | | | |
| Presentation of results | | | | | | | | |
| Corrections and review | | | | | | | | |
| Submission of final thesis | | | | | | | | |

REFERENCES

- (UK, N. C. C. for M. H. (2014). *Antenatal and postnatal mental health: Clinical management and service guidance: Updated edition*.
- Abernethy, V. D., & Grunebaum, H. (1972). Toward a family planning program in psychiatric hospitals. *American Journal of Public Health, 62*(12), 1638–1646.
- Abernethy, V., Grunebaum, H., Groover, B., & Clough, L. (1975). Contraceptive continuation of hospitalized psychiatric patients. *Family Planning Perspectives, 231–234*.
- Adedini, S. A., Odimegwu, C., Imasiku, E. N., & Ononokpono, D. N. (2015). Unmet need for family planning: implication for under-five mortality in Nigeria. *Journal of Health, Population, and Nutrition, 33*(1), 187.
- Agaba, D. C., Migisha, R., Namayanja, R., Katamba, G., Lugobe, H. M., Aheisibwe, H., Twesigomwe, G., & Ashaba, S. (2019). Prevalence and associated factors of metabolic syndrome among patients with severe mental illness attending a tertiary hospital in southwest Uganda. *BioMed Research International, 2019*.
- Ahinkorah, B. O., Ameyaw, E. K., Seidu, A.-A., Agbaglo, E., Budu, E., Mensah, F., Adu, C., & Yaya, S. (2020). Sexual violence and unmet need for contraception among married and cohabiting women in sub-Saharan Africa: Evidence from demographic and health surveys. *Plos One, 15*(11), e0240556.
- Aiken, A. R. A., Borrero, S., Callegari, L. S., & Dehlendorf, C. (2016). Rethinking the pregnancy planning paradigm: unintended conceptions or unrepresentative concepts? *Perspectives on Sexual and Reproductive Health, 48*(3), 147.
- Alkema, L., Kantorova, V., Menozzi, C., & Biddlecom, A. (2013). National, regional, and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015: a systematic and comprehensive analysis. *The Lancet, 381*(9878), 1642–1652.
- Bachrach, L. L. (1984). Deinstitutionalization and women: Assessing the consequences of public policy. *American Psychologist, 39*(10), 1171.
- Bagadia, A., Nanjundaswamy, M. H., Ganjekar, S., Thippeswamy, H., Desai, G., & Chandra, P. S. (2020). Factors influencing decision-making around pregnancy among women with severe mental illness (SMI): A qualitative study. *International Journal of Social Psychiatry, 66*(8), 792–798.
- Bałanda-Bałdyga, A., Pilewska-Kozak, A. B., Łepecka-Klusek, C., Stadnicka, G., & Dobrowolska, B. (2020). Attitudes of Teenage Mothers towards Pregnancy and Childbirth. *International Journal of*

- Environmental Research and Public Health*, 17(4), 1411.
- Bałanda-Bałdyga, A., Pilewska-Kozak, A. B., Stadniska, G., & Dobrowolska, B. (2019). Life situation of teenage mothers. *Age*, 5(7), 8.
- Bonomi, A., Nichols, E., Kammes, R., & Green, T. (2018). Sexual violence and intimate partner violence in college women with a mental health and/or behavior disability. *Journal of Women's Health*, 27(3), 359–368.
- Callegari, L. S., Zhao, X., Nelson, K. M., & Borrero, S. (2015). Contraceptive adherence among women Veterans with mental illness and substance use disorder. *Contraception*, 91(5), 386–392.
- Catalao, R., Medhin, G., Alem, A., Dewey, M., Prince, M., & Hanlon, C. (2020). Mental health impact on the unmet need for family planning and fertility rate in rural Ethiopia: a population-based cohort study. *Epidemiology and Psychiatric Sciences*, 29.
- Chandra, P. S., Carey, M. P., Carey, K. B., Shalinianant, A., & Thomas, T. (2003). Sexual coercion and abuse among women with a severe mental illness in India: an exploratory investigation. *Comprehensive Psychiatry*, 44(3), 205–212.
- Chilcoat, H. D., & Breslau, N. (1998). Investigations of causal pathways between PTSD and drug use disorders. *Addictive Behaviors*, 23(6), 827–840.
- Coverdale, J. H., Turbott, S. H., & Roberts, H. (1997). Family planning needs and STD risk behaviours of female psychiatric out-patients. *The British Journal of Psychiatry*, 171, 69.
- Croft, T. N., Marshall, A. M. J., & Allen, C. K. (2018). *Guide to DHS Statistics*. Rockville, Maryland, USA: ICF; 2018.
- De Chesnay, M. (2008). Vulnerable populations: Vulnerable people. *Caring for the Vulnerable*, 2, 1–14.
- Dobson, V., & Sales, B. D. (2000). The science of infanticide and mental illness. *Psychology, Public Policy, and Law*, 6(4), 1098.
- Easter, A., Treasure, J., & Micali, N. (2011). Fertility and prenatal attitudes towards pregnancy in women with eating disorders: results from the Avon Longitudinal Study of Parents and Children. *BJOG: An International Journal of Obstetrics & Gynaecology*, 118(12), 1491–1498.
- Eaton, L. (2020). *Unwanted pregnancies fall worldwide but women in poorer countries remain disadvantaged, study finds*. British Medical Journal Publishing Group.
- Erol, N., Durusoy, R., Ergin, I., Döner, B., & Çiçeklioğlu, M. (2010). Unintended pregnancy and prenatal

- care: A study from a maternity hospital in Turkey. *The European Journal of Contraception & Reproductive Health Care*, 15(4), 290–300.
- Farr, S. L., Bitsko, R. H., Hayes, D. K., & Dietz, P. M. (2010). Mental health and access to services among US women of reproductive age. *American Journal of Obstetrics and Gynecology*, 203(6), 542-e1.
- Fergusson, D. M., Horwood, L. J., & Boden, J. M. (2008). Abortion and mental health disorders: evidence from a 30-year longitudinal study. *The British Journal of Psychiatry*, 193(6), 444–451.
- Frayne, J., Nguyen, T., Allen, S., Hauck, Y., Liira, H., & Vickery, A. (2019). Obstetric outcomes for women with severe mental illness: 10 years of experience in a tertiary multidisciplinary antenatal clinic. *Archives of Gynecology and Obstetrics*, 300(4), 889–896.
- Garbers, S., Correa, N., Tobier, N., Blust, S., & Chiasson, M. A. (2010). Association between symptoms of depression and contraceptive method choices among low-income women at urban reproductive health centers. *Maternal and Child Health Journal*, 14(1), 102.
- Grant, J. D., Scherrer, J. F., Lynskey, M. T., Agrawal, A., Duncan, A. E., Haber, J. R., Heath, A. C., & Bucholz, K. K. (2012). Associations of alcohol, nicotine, cannabis, and drug use/dependence with educational attainment: Evidence from Cotwin-Control analyses. *Alcoholism: Clinical and Experimental Research*, 36(8), 1412–1420.
- Guedes, T. G., Moura, E. R. F., & Almeida, P. C. de. (2009). Particularities of family planning in women with mental disorders. *Revista Latino-Americana de Enfermagem*, 17(5), 639–644.
- Gupta, R., Brown, H. K., Barker, L. C., Dennis, C.-L., & Vigod, S. N. (2019). Rapid repeat pregnancy in women with schizophrenia. *Schizophrenia Research*, 212, 86–91.
- Hall, K. S., Moreau, C., Trussell, J., & Barber, J. (2013a). Role of young women's depression and stress symptoms in their weekly use and nonuse of contraceptive methods. *Journal of Adolescent Health*, 53(2), 241–248.
- Hall, K. S., Moreau, C., Trussell, J., & Barber, J. (2013b). Young women's consistency of contraceptive use—does depression or stress matter? *Contraception*, 88(5), 641–649.
- Hariri, A. G., Karadag, F., Gokalp, P., & Essizoglu, A. (2011). Risky sexual behavior among patients in Turkey with bipolar disorder, schizophrenia, and heroin addiction. *The Journal of Sexual Medicine*, 8(8), 2284–2291.

- Harris, K. M., & Edlund, M. J. (2005). Self-medication of mental health problems: New evidence from a national survey. *Health Services Research, 40*(1), 117–134.
- Hartz, S. M., Pato, C. N., Medeiros, H., Cavazos-Rehg, P., Sobell, J. L., Knowles, J. A., Bierut, L. J., & Pato, M. T. (2014). Comorbidity of severe psychotic disorders with measures of substance use. *JAMA Psychiatry, 71*(3), 248–254.
- Heinisch, O. (1963). *Cochran, w. G.: Sampling techniques*. John Wiley and Sons, New York, London.
- Henkel, D. (2011). Unemployment and substance use: a review of the literature (1990-2010). *Current Drug Abuse Reviews, 4*(1), 4–27.
- Johnson, K. C., LaPrairie, J. L., Brennan, P. A., Stowe, Z. N., & Newport, D. J. (2012). Prenatal antipsychotic exposure and neuromotor performance during infancy. *Archives of General Psychiatry, 69*(8), 787–794.
- Jones, M., Pietilä, I., Joronen, K., Simpson, W., Gray, S., & Kaunonen, M. (2016). Parents with mental illness—a qualitative study of identities and experiences with support services. *Journal of Psychiatric and Mental Health Nursing, 23*(8), 471–478.
- Judge-Golden, C. P., Borrero, S., Zhao, X., Mor, M. K., & Callegari, L. S. (2018). The association between mental health disorders and history of unintended pregnancy among women veterans. *Journal of General Internal Medicine, 33*(12), 2092–2099.
- Kebede, T. Z. (2017). *Family planning for women with severe mental illness in rural Ethiopia: a qualitative study*. University of Cape Town.
- Kelly, R. H., Russo, J., Holt, V. L., Danielsen, B. H., Zatzick, D. F., Walker, E., & Katon, W. (2002). Psychiatric and substance use disorders as risk factors for low birth weight and preterm delivery. *Obstetrics & Gynecology, 100*(2), 297–304.
- Kessler, R. C., Nelson, C. B., McGonagle, K. A., Edlund, M. J., Frank, R. G., & Leaf, P. J. (1996). The epidemiology of co-occurring addictive and mental disorders: implications for prevention and service utilization. *American Journal of Orthopsychiatry, 66*(1), 17–31.
- Klijzing, E. (2000). Are there unmet family planning needs in Europe? *Family Planning Perspectives, 74*–88.
- Lecrubier, Y., Sheehan, D. V., Weiller, E., Amorim, P., Bonora, I., Sheehan, K. H., Janavs, J., & Dunbar, G. C. (1997). The Mini International Neuropsychiatric Interview (MINI). A short diagnostic

- structured interview: reliability and validity according to the CIDI. *European Psychiatry*, 12(5), 224–231.
- Łepecka-Klusek, C., & Jakiel, G. (2007). Difficulties in adaptation to pregnancy following natural conception or use of assisted reproduction techniques: A comparative study. *The European Journal of Contraception & Reproductive Health Care*, 12(1), 51–57.
- Lin, H.-C., Chen, Y.-H., & Lee, H.-C. (2009). Prenatal care and adverse pregnancy outcomes among women with schizophrenia: a nationwide population-based study in Taiwan. *The Journal of Clinical Psychiatry*, 70(9), 1297–1303.
- Lozano, M., Obiol, M. A., Peiró, J., Iftimi, A., & Ramada, J. M. (2020). Professional counseling in women with serious mental illness: achieving a shift toward a more effective contraceptive method. *Journal of Psychosomatic Obstetrics & Gynecology*, 1–7.
- Marks, M. (2009). Infanticide. *Psychiatry*, 8(1), 10–12.
- Matevosyan, N. R. (2009). Reproductive health in women with serious mental illnesses: a review. *Sexuality and Disability*, 27(2), 109–118.
- Miller, L. J. (1997). Sexuality, reproduction, and family planning in women with schizophrenia. *Schizophrenia Bulletin*, 23(4), 623–635.
- Morisano, D., Babor, T. F., & Robaina, K. A. (2014). Co-occurrence of substance use disorders with other psychiatric disorders: Implications for treatment services. *Nordic Studies on Alcohol and Drugs*, 31(1), 5–25.
- Muhindo, R., Okonya, J. N., Groves, S., & Chenault, M. (2015). Predictors of contraceptive adherence among women seeking family planning services at Reproductive Health Uganda, Mityana Branch. *International Journal of Population Research*, 2015.
- Mushira, C. A. (2012). *Factors influencing regional differentials in unmet need for family planning in Kenya*. University of Nairobi, Kenya.
- Ndetei, D. M., Khasakhala, L. I., Kuria, M. W., Mutiso, V. N., Ongecha-Owuor, F. A., & Kokonya, D. A. (2009). The prevalence of mental disorders in adults in different level general medical facilities in Kenya: a cross-sectional study. *Annals of General Psychiatry*, 8(1), 1–8.
- Nguyen, T. N., Faulkner, D., Frayne, J. S., Allen, S., Hauck, Y. L., Rock, D., & Rampono, J. (2013). Obstetric and neonatal outcomes of pregnant women with severe mental illness at a specialist

- antenatal clinic. *Medical Journal of Australia*, 199, S26–S29.
- Nyauchi, B. O. (2011). *Determinants of unmet need for family planning among women in rural Kenya*. University of Nairobi, Kenya.
- Obo, C. S., Sori, L. M., Abegaz, T. M., & Molla, B. T. (2019). Risky sexual behavior and associated factors among patients with bipolar disorders in Ethiopia. *BMC Psychiatry*, 19(1), 1–7.
- Obul, H. A. (2013). *Determinants of unmet need for contraception among HIV positive women in Kenya*. University of Nairobi.
- Omwago, M. O. (2002). *Couples' unmet need for contraception in Kenya: evidence from the 1998 KDHS*.
- Ontiri, S., Were, V., Kabue, M., Biesma-Blanco, R., & Stekelenburg, J. (2020). Patterns and determinants of modern contraceptive discontinuation among women of reproductive age: Analysis of Kenya Demographic Health Surveys, 2003–2014. *PloS One*, 15(11), e0241605.
- Özcan, N. K., Boyacıoğlu, N. E., Enginkaya, S., Dinç, H., & Bilgin, H. (2014). Reproductive health in women with serious mental illnesses. *Journal of Clinical Nursing*, 23(9–10), 1283–1291.
- Paquette, R., Tanton, C., Burns, F., Prah, P., Shahmanesh, M., Field, N., Macdowall, W., Gravningen, K., Sonnenberg, P., & Mercer, C. H. (2017). Illicit drug use and its association with key sexual risk behaviours and outcomes: findings from Britain's third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *PloS One*, 12(5), e0177922.
- Paterno, M. T., & Han, H. (2014). Development and psychometric testing of the attitude toward potential pregnancy scale. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 43(6), 710–718.
- Patton, S. W., Misri, S., Corral, M. R., Perry, K. F., & Kuan, A. J. (2002). Antipsychotic medication during pregnancy and lactation in women with schizophrenia: evaluating the risk. *The Canadian Journal of Psychiatry*, 47(10), 959–965.
- Pehlivanoglu, K., Tanriover, O., Tomruk, N., Karamustafalioglu, N., Oztekin, E., & Alpay, N. (2007). Family planning needs and contraceptive use in female psychiatric outpatients. *Turkish Journal of Family Medicine and Primary Care*, 1(3).
- Reardon, D. C. (2018). The abortion and mental health controversy: a comprehensive literature review of common ground agreements, disagreements, actionable recommendations, and research opportunities. *SAGE Open Medicine*, 6, 2050312118807624.
- Regier, D. A., Farmer, M. E., Rae, D. S., Locke, B. Z., Keith, S. J., Judd, L. L., & Goodwin, F. K. (1990).

- Comorbidity of mental disorders with alcohol and other drug abuse: results from the Epidemiologic Catchment Area (ECA) study. *Jama*, 264(19), 2511–2518.
- Sable, M. R., & Libbus, M. K. (2000). Pregnancy intention and pregnancy happiness: Are they different? *Maternal and Child Health Journal*, 4(3), 191–196.
- Schwarz, E. B., Lohr, P. A., Gold, M. A., & Gerbert, B. (2007). Prevalence and correlates of ambivalence towards pregnancy among nonpregnant women. *Contraception*, 75(4), 305–310.
- Seeman, M. V., & Ross, R. (2011). Prescribing contraceptives for women with schizophrenia. *Journal of Psychiatric Practice*®, 17(4), 258–269.
- Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., Hergueta, T., Baker, R., & Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (MINI): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry*, 59(20), 22–33.
- Stone, R. H., Griffin, B., Fusco, R. A., Vest, K., Tran, T., & Gross, S. (2020). Factors affecting contraception access and use in patients with opioid use disorder. *The Journal of Clinical Pharmacology*, 60, S63–S73.
- Strakowski, S. M., DelBello, M. P., Fleck, D. E., & Arndt, S. (2000). The impact of substance abuse on the course of bipolar disorder. *Biological Psychiatry*, 48(6), 477–485.
- Sundararajan, R., Yoder, L. M., Kihunrwa, A., Aristide, C., Kalluvya, S. E., Downs, D. J., Mwakisole, A. H., & Downs, J. A. (2019). How gender and religion impact uptake of family planning: results from a qualitative study in Northwestern Tanzania. *BMC Women's Health*, 19(1), 1–10.
- Tekelab, T., Chojenta, C., Smith, R., & Loxton, D. (2019). Factors affecting utilization of antenatal care in Ethiopia: a systematic review and meta-analysis. *PloS One*, 14(4), e0214848.
- Tunde-Ayinmode, M. F. (2013). Current knowledge and pattern of use of family planning methods among a severely ill female Nigerian psychiatric outpatients: implication for existing service. *Annals of African Medicine*, 12(1), 16.
- Vouking, M. Z., Evina, C. D., & Tadenfok, C. N. (2014). Male involvement in family planning decision making in sub-Saharan Africa-what the evidence suggests. *The Pan African Medical Journal*, 19.
- Wellings, K., Jones, K. G., Mercer, C. H., Tanton, C., Clifton, S., Datta, J., Copas, A. J., Erens, B., Gibson, L. J., & Macdowall, W. (2013). The prevalence of unplanned pregnancy and associated

- factors in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *The Lancet*, 382(9907), 1807–1816.
- Wieck, A., & Abel, K. M. (2016). Sexual, reproductive and antenatal care of women with mental illness. *Comprehensive Women's Mental Health*, 90.
- Wignall, C. M., & Meredith, C. E. (1968). Illegitimate pregnancies in state institutions. *Archives of General Psychiatry*, 18(5), 580–583.
- Wolgemuth, T., Judge-Golden, C., Callegari, L., Zhao, X., Mor, M., & Borrero, S. (2018). Associations between pregnancy intention, attitudes, and contraceptive use among women veterans in the ECUUN study. *Women's Health Issues*, 28(6), 480–487.
- Wulifan, J. K., Brenner, S., Jahn, A., & De Allegri, M. (2015). 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), 1–15.
- Yalew, M., Adane, B., Kefale, B., & Damtie, Y. (2020). Individual and community-level factors associated with unmet need for contraception among reproductive-age women in Ethiopia; a multi-level analysis of 2016 Ethiopia Demographic and Health Survey. *BMC Public Health*, 20(1), 1–9.
- Zabin, L. S., Huggins, G. R., Emerson, M. R., & Cullins, V. E. (2000). Partner effects on a woman's intention to conceive: 'not with this partner'. *Family Planning Perspectives*, 39–45.
- Zerihun, T., Bekele, D., Birhanu, E., Worku, Y., Deyesa, N., & Tesfaye, M. (2020). Family planning awareness, utilization and associated factors among women of reproductive age attending psychiatric outpatient care, a cross-sectional study, Addis Ababa, Ethiopia. *PloS One*, 15(9), e0238766.
- Zerihun, T., Sorsdahl, K., & Hanlon, C. (2019). *Family Planning for Women with Severe Mental Illness in Rural Ethiopia: A Qualitative Study*.
- Elflein J. (2020) Statista
- Lamwenya, S. S. (2021) Reproductive health among women with Mental Illness in Kenya: A Study on Knowledge, Attitude and Behaviour. University of Nairobi, Kenya.
- Ogola, S., Ngatia, K., Dr Marsden, S. (1999) Family planning services. Calverton 1999; 5, 91.

Abrams, A. (2017). *The Catastrophic Effects of Mental Health Stigma*. Psychology Today. <https://www.psychologytoday.com/us/blog/nurturing-self-compassion/201705/the-catastrophic-effects-mental-health-stigma>

Devkota, H. R., Kett, M., & Groce, N. (2019). Societal attitude and behaviours towards women with disabilities in rural Nepal: pregnancy, childbirth and motherhood. *BMC Pregnancy and Childbirth*, 19(1). <https://doi.org/10.1186/s12884-019-2171-4>

Jannini, E. A., & Siracusano, A. (2018). *Sexual Dysfunctions in Mentally Ill Patients*. Springer.

Kenya National Commission for Human Rights. (2012). *Silenced minds: The systematic neglect of the mental health system in Kenya*. Kenya National Commission on Human Rights. https://www.knchr.org/Portals/0/EcosocReports/THE_%20MENTAL_HEALTH_REPORT

Osok, J., Kigamwa, P., Stoep, A. V., Huang, K.-Y., & Kumar, M. (2018). Depression and its psychosocial risk factors in pregnant Kenyan adolescents: a cross-sectional study in a community health Centre of Nairobi. *BMC Psychiatry*, 18(1). <https://doi.org/10.1186/s12888-018-1706-y>

Subramaniapillai, M. (2014). Physical Activity and Mental Health. *Mental Health and Physical Activity*, 7(2), 87-88. <https://doi.org/10.1016/j.mhpa.2014.06.002>

Thomas, F. (2018). *The fear of passing on our mental illness makes us question having children*. [online] Metro. Available at: <https://metro.co.uk/2018/09/22/how-the-fear-of-passing-on-our-mental-illness-is-making-us-question-having-children-7893511/> [Accessed 23 Mar. 2020].

Tommy's (2020). *Tommy's - Planning a pregnancy with a mental health condition*. [online] Tommy's. Available at: <https://www.tommys.org/pregnancy-information/planning-pregnancy/are-you-ready-conceive/planning-pregnancy-mental-health-condition> [Accessed 24 Mar. 2020].

Bonugli R H, Brackley M, Williams GB, Lesser J. Sexual abuse and posttraumatic stress disorder in adult women with severe mental illness: A pilot study. *Issues in mental health nursing*. 2010;31(7):456–60. 10.3109/01612840903581108 [PubMed] [CrossRef] [Google Scholar]

Dickerson FB, Brown CH, Kreyenbuhl J, Goldberg RW, Fang LJ, Dixon LB. Sexual and reproductive behaviors among persons with mental illness. *Psychiatric Services*. 2004;55(11):1299–301. 10.1176/appi.ps.55.11.1299 [PubMed] [CrossRef] [Google Scholar]

Jablensky, Morgan, Zubrick, Bower, Yellachich. Pregnancy, delivery, and neonatal complications in a population cohort of women with schizophrenia and major affective disorders. *American Journal of Psychiatry*. 2005;162(1):79–91. 10.1176/appi.ajp.162.1.79 [PubMed] [CrossRef] [Google Scholar]

Hartz SM, Pato CN, Medeiros H, Cavazos-Rehg P, Sobell JL, Knowles JA, et al. Comorbidity of severe psychotic disorders with measures of substance use. *JAMA Psychiatry*. 2014;71(3):248–54. <https://doi.org/10.1001/jamapsychiatry.2013.3726>.

Kağıtçıbaşı Ç. Tutumlar. In: Kağıtçıbaşı Ç., editor. *İnsan ve İnsanlar*. İstanbul: Cem Ofset Matbaacılık; 1983. pp. 94–104. [[Google Scholar](#)]

The self-medication hypothesis of substance use disorders: a reconsideration and recent applications.

Khantzian EJ

Harv Rev Psychiatry. 1997 Jan-Feb; 4(5):231-44.

[[PubMed](#)] [[Ref list](#)]

Posttraumatic stress disorder and drug disorders: testing causal pathways.

Chilcoat HD, Breslau N

Arch Gen Psychiatry. 1998 Oct; 55(10):913-7.

[[PubMed](#)] [[Ref list](#)]

The co-occurrence of bipolar and substance use disorders.

Strakowski SM, DelBello MP

Clin Psychol Rev. 2000 Mar; 20(2):191-206.

[[PubMed](#)] [[Ref list](#)]

Wellings K, Jones KG, Mercer CH, Tanton C, Clifton S, Datta J, et al. The prevalence of unplanned pregnancy and associated factors in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Lancet* 2013; **382**: 1807–16.

National Collaborating Centre for Mental Health, National Institute for Health and Clinical Excellence. *Guidance. Antenatal and postnatal mental health: clinical management and service guidance: updated edition*. Leicester: British Psychological Society; 2014.

BUDGET AND JUSTIFICATION

| ITEM | COST |
|----------------------------------|--------|
| Transport | 2500 |
| Stationery | 3000 |
| Printing | 65000 |
| Airtime | 1000 |
| Pre-test of tool | 10000 |
| Data collection | 30000 |
| Data entry, statistical analysis | 30000 |
| Ethics Review Committee | 3000 |
| NACOSTI | 1000 |
| Miscellaneous | 5000 |
| Total | 150500 |

Budget Justification

Transport: The researcher will be using public means of transport to and from Mathari National Teaching and Referral Hospital before and during the whole duration of the study.

Printing and stationery: All material to be used including questionnaires, consent forms and any relevant documents attached will be printed at a cost to the researcher. All stationery used will also be purchased by the researcher.

Airtime: In case of any communication with participants or statistician.

Pretesting the tool: To ensure reliability and validity, pretesting the tool at Kenyatta National Hospital will be carried out and involves printing out more papers for questionnaire administration and consent forms.

Statistician: The researcher will hire the services of a mathematician to analyse data collected from the study.

Ethics and NACOSTI: There will be a standardised fee charged by the Ethics and Review committee for any study proposals. After approval, there is also a standardised fee paid to NACOSTI before commencing data collection.

Miscellaneous: To cover any unforeseen costs from the study that are not included in the budget.

APPENDIX 1: PARTICIPANT INFORMATION AND CONSENT FORM FOR ENROLLMENT IN THE STUDY

(To be administered in English or any other appropriate language in this case, Kiswahili translation)

UNMET NEEDS FOR FAMILY PLANNING AND ATTITUDES TOWARDS PREGNANCY AMONG WOMEN WITH MENTAL ILLNESS IN MATHARI NATIONAL TEACHING AND REFERRAL HOSPITAL

ELIZABETH IMUDU IMALINGAT (H58/6780/2017)

UNIVERSITY OF NAIROBI, DEPARTMENT OF PSYCHIATRY

Introduction

I would like to tell you about a study being conducted by me. The purpose of this consent form is to give you the information you will need to help you decide whether or not you will be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer and anything else about the research or this form that is not clear. When I have answered all the questions to your satisfaction, you may decide whether to be in the study or not. This process is called ‘informed consent’. Once you understand and agree to be in this study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical-research:

- i. Your decision to participate is entirely voluntary.
- ii. You may withdraw from the study at any time without necessarily giving a reason for your withdrawal.
- iii. Refusal to participate in the study will not affect the services you are entitled to in this facility or other facilities. I will give you a copy of this form for your records.

May I continue? YES/NO

This study has been approved by the Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol No.....

WHAT IS THIS STUDY ABOUT?

I am interviewing women between the ages of 18 and 49 years who have mental illness. The purpose of the interview is to find out if these women have any unmet needs for family planning and what their attitudes towards pregnancy are. Participants in this research study will be asked questions about their age

and marital status, residence, education level, income, contraceptive choices if any and pregnancy. Participants will also have the choice to undergo a mini mental state exam to assess their cognition, capacity to give consent and their diagnosis. There will be approximately 250 participants in this study randomly chosen. I am asking for your consent to consider participating in this study.

WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY

If you agree to be in this study the following things will happen.

You will be interviewed in a private area where you will feel comfortable answering questions. The interview will last approximately 20 minutes. I will cover topics such as pregnancy, reproduction, fertility preferences and contraceptives.

After the interview has finished, you may proceed to continue your consultation after sanitizing your hands.

I will ask for a telephone number where I can contact you if necessary. If you agree to give your contact information, it will be used only by people working for this study and will never be shared with others.

The reasons why we may need to contact you include:

ARE THERE ANY RISKS, HARM, DISCOMFORTS ASSOCIATED WITH THIS STUDY?

Medical research has the potential to introduce psychological, emotional and physical risks. Effort should always be put in place to minimize the risks. One potential risk of being in the study is the loss of privacy. I will keep everything you tell me as confidential as possible. I will use a code number to identify you in a password protected computer database and will keep all of my paper records in a locked file cabinet. However, no system of protecting your confidentiality can ever be absolutely secure so it is still possible that someone could find out you were in this study and could find out information about you.

Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview, or any questions asked during the interview.

All study staff and the interviewer are professionals with special training in these interviews. Also, some questions may elicit recollection of past trauma which may be distressful. Should this occur, you can

contact the study staff at the number provided at the end of this document. The study staff will link you with appropriate psychotherapy within the hospital.

ARE THERE ANY BENEFITS IN BEING IN THIS STUDY?

You may benefit by receiving free reproductive health information more suitable to you. Also, the information you give will help us to better understand the problems faced by women with mental illness in regard to their reproductive health. This will improve the care that you receive from hospital staff who will better understand how to address your problems moving forward. This information is a contribution to science.

WILL BEING IN THIS STUDY COST YOU ANYTHING?

There are no monetary costs in being this study. I only ask of your time to fill in the questionnaire should you agree to participate.

WHAT IF YOU HAVE QUESTIONS IN FUTURE?

If you have further questions or concerns about participating in this study, please call or send a text message to the researcher at the number provided at the bottom of this page.

For more information about your rights as a research participant, you may contact the Secretary/ Chairperson, Kenyatta National Hospital/ University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh_erc@uonbi.ac.ke

I will pay you back for your charges to these numbers if the call is for study-related communication.

WHAT ARE YOUR OTHER CHOICES?

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

CONSENT FORM (STATEMENT OF CONSENT)

Participant's consent

I have read this consent form or had the information read to me. I have had the chance to discuss this study with a researcher. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study.

I understand that all efforts will be made to keep information regarding my personal identity confidential.

By signing this consent form, I have not given up any of the legal rights that I have as a participant in this research study.

I agree to participate in this research study: Yes No

I agree to provide contact information for follow up: Yes No

Participant printed name/code number.....

Participant Signature/ Thumb stamp.....**Date**.....

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has willingly given her consent.

Researcher's name.....Date.....

Signature.....

Role in the study.....

For more information contact Elizabeth Imudu Imalingat at 0723259562 from 12 pm to 4pm

Supervisors' contacts obondo@uonbi.ac.ke

muthonimathai@gmail.com

APPENDIX 1: PARTICIPANT INFORMATION AND CONSENT FORM FOR ENROLLMENT IN THE STUDY

(To be administered in English or any other appropriate language in this case, Kiswahili translation)

UNMET NEEDS FOR FAMILY PLANNING AND ATTITUDES TOWARDS PREGNANCY AMONG WOMEN WITH MENTAL ILLNESS IN MATHARI NATIONAL TEACHING AND REFERRAL HOSPITAL

ELIZABETH IMUDU IMALINGAT (H58/6780/2017)

CHUO KIKUU CHA NAIROBI, IDARA YA SAIKOLOJIA

Utangulizi

Ningependa kukuambia juu ya utafiti uliofanywa na mimi. Madhumuni ya fomu hii ya idhini ni kukupa habari utakayohitaji kukusaidia kuamua ikiwa utashiriki au sio mshiriki wa utafiti. Jisikie huru kuuliza maswali yoyote juu ya kusudi la utafiti, ni nini kitatokea ikiwa utashiriki katika utafiti, hatari na faida zinazowezekana, haki zako kama kujitolea na chochote kingine juu ya utafiti au fomu hii ambayo haijulikani wazi. Wakati nimejibu maswali yote kwa kuridhika kwako, unaweza kuamua kuwa kwenye masomo au la. Utaratibu huu unaitwa 'idhini ya habari' Mara tu utakapoelewa na kukubali kuwa katika utafiti huu, nitakuomba utie sahihi jina lako kwenye fomu hii. Unapaswa kuelewa kanuni za jumla ambazo zinatumika kwa washiriki wote katika utafiti wa matibabu:

- i. Uamuzi wako wa kushiriki ni wa hiari kabisa.
- ii. Unaweza kujiondoa kwenye utafiti wakati wowote bila lazima utoe sababu ya kujitoa kwako.
- iii. Kukataa kushiriki katika utafiti hakuwezi kuathiri huduma unazostahiki katika kituo hiki au vituo vingine. Nitakupa nakala ya fomu hii kwa kumbukumbu zako.

Naweza kuendelea? NDIO LA

Utafiti huu umeidhinishwa na Hospitali ya Kitaifa ya Kenyatta-Chuo Kikuu cha Nairobi Maadili na Itifaki ya Kamati ya Utafiti Namba.....

UTAFITI HUU UNAHUSU NINI?

Ninawahoji wanawake wenye umri kati ya miaka 18 na 49 ambao wana ugonjwa wa akili. Kusudi la mahojiano ni kujua ikiwa wanawake hawa wana mahitaji yoyote yasiyotekelezwa ya uzazi wa mpango na mitazamo yao kuhusu ujauzito ni nini. Washiriki katika utafiti huu wataulizwa maswali juu ya umri wao

na hali yao ya ndoa, makazi, kiwango cha elimu, mapato, uchaguzi wa uzazi wa mpango ikiwa wapo na ujauzito. Washiriki pia watakuwa na chaguo la kufanya uchunguzi mdogo wa hali ya akili kutathmini utambuzi wao, uwezo wa kutoa idhini na utambuzi wao. Kutakuwa na takriban washiriki 250 katika utafiti huu waliochaguliwa bila mpangilio. Ninaomba idhini yako kufikiria kushiriki katika utafiti huu.

NINI KITATOKEA UKIAMUA KUWA KWENYE UTAFITI HUU WA UTAFITI

Ukikubali kuwa katika utafiti huu mambo yafuatayo yatatokea.

Utahojiwa na mhojiwa aliyefunzwa katika eneo la kibinafsi ambapo utahisi raha kujibu maswali. Mahojiano hayo yatachukua takriban dakika 20. Mahojiano yatashughulikia mada kama vile ujauzito, kuzaa, upendeleo wa uzazi na uzazi wa mpango.

Baada ya mahojiano kumaliza, unaweza kuendelea kuendelea na mashauriano yako baada ya kusafisha mikono yako.

Nitauliza nambari ya simu ambapo ninaweza kuwasiliana nawe ikiwa ni lazima. Ikiwa unakubali kutoa anwani yako ya mawasiliano, itatumika tu kuwa watu wanaofanya kazi kwa utafiti huu na hawatashirikiwa na wengine kamwe. Sababu ambazo tunaweza kuhitaji kuwasiliana nawe ni pamoja na:

KUNA ATHARI ZOZOTE, MADHARA, MAFUTA YANAYOFANIKIWA NA MAFUNZO HAYA?

Utafiti wa kimatibabu una uwezo wa kuanzisha hatari za kisaikolojia, kihemko na za mwili. Jitihada inapaswa kuwekwa kila wakati ili kupunguza hatari. Hatari moja ya kuwa katika utafiti ni kupoteza faragha. Nitaweka kila kitu unaniambia kama siri iwezekanavyo. Nitatumia nambari ya nambari kukutambulisha katika hifadhidata ya kompyuta iliyolindwa na nywila na nitaweka rekodi zangu zote za karatasi kwenye kabati la faili lililofungwa. Walakini, hakuna mfumo wowote wa kulinda usiri wako ambao unaweza kuwa salama kabisa kwa hivyo bado inawezekana kwamba mtu anaweza kugundua kuwa ulikuwa kwenye utafiti huu na angeweza kupata habari kuuhusu.

Pia, kujibu maswali kwenye mahojiano inaweza kuwa mbaya kwako. Ikiwa kuna maswali ambayo hautaki kujibu, unaweza kuyaruka. Una haki ya kukataa mahojiano, au maswali yoyote yanayoulizwa wakati wa mahojiano.

Wafanyakazi wote wa utafiti na mhojiwa ni wataalamu wenye mafunzo maalum katika mahojiano haya. Pia, maswali mengine yanaweza kusababisha kukumbuka kwa kiwewe cha zamani ambacho kinaweza kuwa cha kusumbua. Ikitokea hii, unaweza kuwasiliana na wafanyakazi wa utafiti kwa nambari iliyotolewa mwishoni mwa waraka huu. Wafanyakazi wa utafiti watakuunganisha na tiba sahihi ya kisaikolojia ndani ya hospitali.

KUNA FAIDA YOYOTE KWA KUWA KWENYE UTAFITI HUU?

Unaweza kufaidika kwa kupokea habari ya bure ya afya ya uzazi inayofaa zaidi kwako. Pia, habari unayotoa itatusaidia kuelewa vizuri shida wanazokumbana nazo wanawake walio na ugonjwa wa akili kuhusiana na afya yao ya uzazi. Hii itaboresha utunzaji ambao unapokea kutoka kwa wafanyikazi wa hospitali ambao wataelewa vizuri jinsi ya kushughulikia shida zako kusonga mbele. Habari hii ni mchango kwa sayansi.

JE, KUWA KWENYE UTAFITI HUU KUKUgharimia chochote?

Hakuna gharama za kifedha katika kuwa utafiti huu. Ninauliza tu wakati wako kujaza dodoso ikiwa unakubali kushiriki.

NINI KAMA UNA MASWALI BAADAYE?

Ikiwa una maswali zaidi au wasiwasi juu ya kushiriki katika utafiti huu, tafadhali piga simu au tuma ujumbe mfupi kwa wafanyikazi wa utafiti kwa nambari iliyotolewa chini ya ukurasa huu.

Kwa habari zaidi juu ya haki zako kama mshiriki wa utafiti, unaweza kuwasiliana na Katibu / Mwenyekiti, Hospitali ya Kitaifa ya Kenyatta / Chuo Kikuu cha Nairobi Maadili na Kamati ya Utafiti Simu Namba 2726300 Ext. Barua pepe 44102 uonknh_erc@uonbi.ac.ke

Wafanyakazi wa utafiti watakulipa malipo yako kwa nambari hizi ikiwa simu ni ya mawasiliano yanayohusiana na utafiti.

CHAGUO ZAKO ZINGINE NI NINI?

Uamuzi wako wa kushiriki katika utafiti ni wa hiari. Uko huru kukataa kushiriki katika utafiti na unaweza kujiondoa kutoka kwa utafiti wakati wowote bila udhalimu au kupoteza faida yoyote.

FOMU YA MAJADILIANO (TAARIFA YA MAJIBU)

Idhini ya mshiriki

Nimesoma fomu hii ya idhini au habari hiyo imesomwa kwangu. Nimepata nafasi ya kujadili utafiti huu na mshauri wa utafiti. Nimejibiwa maswali yangu kwa lugha ambayo ninaelewa. Hatari na faida zimeelezwa kwangu. Ninaelewa kuwa ushiriki wangu katika utafiti huu ni wa hiari na kwamba ninaweza kuchagua kujiondoa wakati wowote. Ninakubali kwa hiari kushiriki katika utafiti huu wa utafiti.

Ninaelewa kuwa juhudi zote zitafanywa kutunza habari kuhusu kitambulisho changu binafsi kuwa siri.

Kwa kusaini fomu hii ya idhini, sijatoa haki yoyote ya kisheria ambayo ninayo kama mshiriki katika utafiti huu.

Ninakubali kushiriki katika utafiti huu: Ndio Hapana

Ninakubali kutoa habari ya mawasiliano kwa ufuatiliaji: Ndio Hapana

Jina la mshiriki lililochapishwa

Saini ya mshiriki / Muhuri wa Thumb

.....
.....

Kauli ya mtafiti

Mimi, aliyesainiwa chini, nimeelezea kwa ukamilifu maelezo yanayofaa ya utafiti huu kwa mshiriki aliyetajwa hapo juu na ninaamini kwamba mshiriki ameelewa na ametoa idhini yake kwa hiari.

Jina la mtafiti Tarehe

Sahihi.....

Jukumu katika utafiti

Kwa habari zaidi wasiliana na Elizabeth Imudu Imalingat kwa 0723259562 kutoka saa 12 jioni hadi saa 4 jioni

Mawasiliano ya wasimamizi obondo@uonbi.ac.ke judykamau@uonbi.ac.ke

APPENDIX 2: QUESTIONNAIRE

SECTION 1: RESPONDENT’S BACKGROUND AND MARRIAGE

| | | | |
|-----|---|---|-------------------|
| 101 | What is your current place of residence? | Residence..... Above answer: Rural..... or Urban | |
| 102 | How long have you been living continuously in (Name of current place of Residence)? | YEARS..... ALWAYS..... VISITORS..... | |
| 103 | What is your Nationality? | Kenyan..... | |
| | | Other..... | |
| 104 | In what month and year were you born? | Month..... Doesn't know month..... Year..... Doesn't know year..... | |
| 105 | How old were you at your last birthday? (Compare and correct if inconsistent with above response) | Age in completed years..... | |
| 106 | Have you ever attended school? | Yes..... No..... | If No skip to 109 |
| 107 | What is the highest level of school you attended? (Primary, vocational, Secondary or higher) | Primary..... High school/A level..... College/ Middle level..... University..... | |
| 108 | What is the highest (standard/Form/year) you completed | Standard..... | |

| | | | |
|-----|--|---|--------------------|
| | at that level? If completed less than one year at that level record 00 | Form..... Year..... | |
| 109 | Are you currently married or living together with a man as if married? | Yes, currently married..... | Skip to 112 |
| | | Yes, living with a man.... | Skip to 112 |
| | | No, not in a union..... | Skip to 110 |
| 110 | Have you ever been married or lived together with a man as if married? | Yes, formerly married..... | |
| | | Yes, lived with a man..... | |
| | | No..... | Skip to 116 |
| 111 | What is your marital status now? | Widowed..... | |
| | | Divorced..... | Skip to 115 |
| | | Separated..... | |
| 112 | Is your husband/partner living with you now or is he staying elsewhere? | Living with her..... | |
| | | Staying elsewhere..... | |
| 113 | Does your (husband/partner) have other wives or does he live with other women as if married? | Yes..... | |
| | | No..... | |
| | | Don't know..... | Skip to 115 |
| 114 | Including yourself, how many wives or live-in partners does he have | Total number of wives or live in partners..... Don't know..... | |
| 115 | Have you been married or lived with a man only once or more than once? | Only once..... | |
| | | More than once..... | |
| 116 | Do you have any form of employment? | Yes..... | |
| | | No..... | If no skip to Q118 |

| | | | |
|-----|--|--|--|
| 117 | What is your occupation? | Occupation.....formal/informal | |
| 118 | What is your main source of income? | Work..... Spouse/partner..... Relative..... Social benefit..... | |
| 119 | What is your average household income range? | Below 10000 10000-20000 20000-30000 Above 30000 | |
| 120 | What religion do you identify with? | Christian Muslim Hindu Seventh day Adventist None Other | |

SECTION 2: REPRODUCTION, PREGNANCY AND FERTILITY PREFERENCES

| | | | |
|-----|--|---------|-------------|
| 201 | Now I would like to ask about all the births you have had during your life. Have you ever given birth? | Yes | |
| | | No..... | Skip to 209 |

| | | | |
|-----|---|--|--|
| 202 | Just to make sure I got this right; you have had in total.....births during your life. Is that correct? | Yes..... No..... | |
| 203 | Were all above births live births? (If No go back to 202 and record only live births) | Yes..... No..... | |
| 204 | When was your first birth? | Month..... Doesn't know month..... Year..... Doesn't know year..... | |
| 205 | When was your most recent live birth? | Month..... Year..... | |
| 206 | When did you give birth before your most recent one? | Month..... Year..... | |
| 207 | Is your last baby/child still alive? | Yes..... No..... I don't know..... | |
| 208 | When did your last baby/child die? | Month..... Year..... | |
| 209 | When did your last menstrual period start? Date if given | Days ago..... Weeks ago..... Months ago..... Years ago..... Menopausal/hysterectomy..... | |

| | | | |
|-----|---|--|--|
| | | Before last birth..... Never menstruated..... | |
| 210 | Are you pregnant now? | Yes No Unsure..... | Skip to 213 if No or unsure |
| 211 | How many months pregnant are you? | Number of months | |
| 212 | Now I have some questions about the future. After the child you are expecting now, would you like to have a/another child or would you prefer not to have any/any more children? | Have a/another child.....1 No more/prefer no children....2 Says she can't get pregnant....3 Undecided.....4 | Skip to 215 if answer is 1 Skip to 216 if other |
| 213 | Now I have some questions about the future. Would you like to have a/another child, or would you prefer not to have any more children? | Have a/another child.....1 No more/prefer no children....2 Says she can't get pregnant....3 Undecided.....4 | Skip to 216 for other |
| 214 | How long would you like to wait from now, before the birth of a/another child? (Select years if more than 36 months) | Months..... Years..... Soon/now..... Says she can't get pregnant.... After marriage..... Other..... | |

| | | | |
|-----|--|---|--|
| | | Don't know..... | |
| 215 | After the birth of the child you are expecting now, how long would you like to wait before the birth of another child | Months..... Years..... Soon/now..... Says she can't get pregnant..... After marriage..... Other..... Don't know | |
| 216 | Now I would like to ask a question about your last live birth. At the time you became pregnant, did you want to become pregnant then, did you want to wait until later or did you not want to have any/ any more children at all? | Then..... Later..... Not at all..... | |
| 217 | Now I would like to ask a question about your current pregnancy. At the time you became pregnant, did you want to become pregnant then, did you want to wait until later or did you not want to have any/any more children at all? | Then..... Later..... Not at all..... | |

SECTION 3: CONTRACEPTION

Now I would like to talk about family planning- the various ways or methods that a couple can use to delay or avoid a pregnancy.

| 301 | Have you ever used anything or tried in any way to avoid getting pregnant? | Yes.....1 No.....0 | Skip to 307 if no | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|--|---|-------------------|-----|----|---------------------------|---|---|-------------------------|--|--|----------|--|--|-----------------|--|--|--------------|--|--|-----------|--|--|-----------------------------|--|--|------------------|--|--|--------------------|--|--|----------------------------------|--|--|--------------------------------|--|--|---------------------|--|--|------------------------|--|--|-------------------------------|--|--|--------------|--|--|--|
| 302 | How old were you when you first used a method to delay or avoid getting pregnant?(age in years) | Age..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 303 | How many living children did you have at that time if any? Note: Respondent said she gave birth to (no of live births) in Q202. | Number of living children:..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 304 | Which method did you first use to delay or avoid getting pregnant? | <table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Female sterilisation.....</td> <td>1</td> <td>0</td> </tr> <tr> <td>Male sterilisation.....</td> <td></td> <td></td> </tr> <tr> <td>IUD.....</td> <td></td> <td></td> </tr> <tr> <td>Injectable.....</td> <td></td> <td></td> </tr> <tr> <td>Implant.....</td> <td></td> <td></td> </tr> <tr> <td>Pill.....</td> <td></td> <td></td> </tr> <tr> <td>Emergency contraception....</td> <td></td> <td></td> </tr> <tr> <td>Male condom.....</td> <td></td> <td></td> </tr> <tr> <td>Female condom.....</td> <td></td> <td></td> </tr> <tr> <td>Lactation amenorrhoea method....</td> <td></td> <td></td> </tr> <tr> <td>Standard days/cycle beads.....</td> <td></td> <td></td> </tr> <tr> <td>Rhythm method</td> <td></td> <td></td> </tr> <tr> <td>Withdrawal method.....</td> <td></td> <td></td> </tr> <tr> <td>Other traditional method.....</td> <td></td> <td></td> </tr> <tr> <td>Unsure</td> <td></td> <td></td> </tr> </tbody> </table> | | Yes | No | Female sterilisation..... | 1 | 0 | Male sterilisation..... | | | IUD..... | | | Injectable..... | | | Implant..... | | | Pill..... | | | Emergency contraception.... | | | Male condom..... | | | Female condom..... | | | Lactation amenorrhoea method.... | | | Standard days/cycle beads..... | | | Rhythm method | | | Withdrawal method..... | | | Other traditional method..... | | | Unsure | | | |
| | Yes | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female sterilisation..... | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male sterilisation..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IUD..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Injectable..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implant..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pill..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Emergency contraception.... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male condom..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female condom..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lactation amenorrhoea method.... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard days/cycle beads..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rhythm method | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Withdrawal method..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other traditional method..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unsure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Check Q210 currently pregnant? | Yes.....1 No.....0 | If yes skip to 307 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|--------------------|-----|----|---------------------------|---|---|-------------------------|--|--|--------------|--|--|----------|--|--|------------------|--|--|-----------|--|--|------------------------------|--|--|------------------|--|--|--------------------|--|--|--------------------------------|--|--|----------|--|--|--------------------|--|--|-----------------|--|--|------------|--|--|-------------|--|--|--|
| 305 | Are you currently using a contraceptive\doing something or using any method to delay or avoid getting pregnant? | Yes1 No0 | If no skip to 307 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 306 | Which method or methods are you using? Probe anything else? Scroll through to see all choices | <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">Yes</th> <th style="width: 10%; text-align: center;">No</th> </tr> </thead> <tbody> <tr> <td>Female sterilisation.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Male sterilisation.....</td> <td></td> <td></td> </tr> <tr> <td>Implant.....</td> <td></td> <td></td> </tr> <tr> <td>IUD.....</td> <td></td> <td></td> </tr> <tr> <td>Injectables.....</td> <td></td> <td></td> </tr> <tr> <td>Pill.....</td> <td></td> <td></td> </tr> <tr> <td>Emergency contraception.....</td> <td></td> <td></td> </tr> <tr> <td>Male condom.....</td> <td></td> <td></td> </tr> <tr> <td>Female condom.....</td> <td></td> <td></td> </tr> <tr> <td>Standard days\cycle beads.....</td> <td></td> <td></td> </tr> <tr> <td>LAM.....</td> <td></td> <td></td> </tr> <tr> <td>Rhythm method.....</td> <td></td> <td></td> </tr> <tr> <td>Withdrawal.....</td> <td></td> <td></td> </tr> <tr> <td>Other.....</td> <td></td> <td></td> </tr> <tr> <td>Unsure.....</td> <td></td> <td></td> </tr> </tbody> </table> | | Yes | No | Female sterilisation..... | 1 | 0 | Male sterilisation..... | | | Implant..... | | | IUD..... | | | Injectables..... | | | Pill..... | | | Emergency contraception..... | | | Male condom..... | | | Female condom..... | | | Standard days\cycle beads..... | | | LAM..... | | | Rhythm method..... | | | Withdrawal..... | | | Other..... | | | Unsure..... | | | |
| | Yes | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female sterilisation..... | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male sterilisation..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implant..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IUD..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Injectables..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pill..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Emergency contraception..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male condom..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female condom..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard days\cycle beads..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAM..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rhythm method..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Withdrawal..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unsure..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 307 | Do you know of a place where you can obtain a method of contraception? | Yes..... No..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Check Q210 currently pregnant | Yes..... No..... | If No go to 308 if yes go to 309 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|---|---|----------------------------------|-----|----|---------------------------|---|---|-------------------------|--|--|----------|--|--|-----------------|--|--|--------------|--|--|-----------|--|--|------------------|--|--|--------------------|--|--|----------|--|--|-------------|--|--|-----------------|--|--|---------------------------------|--|--|--------------------|--|--|--|
| 308 | You said that you are not currently using a contraceptive method. Do you think that you will use a contraceptive method to delay or avoid getting pregnant at any time in the future? | Yes..... No..... Don't know..... | If no skip to 311 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 309 | Do you think you will use a contraceptive method to delay or avoid getting pregnant at any time in the future? | Yes..... No..... Don't know | If no skip to 311 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 310 | What contraceptive method would you prefer to use? | <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">Yes</th> <th style="width: 10%; text-align: center;">No</th> </tr> </thead> <tbody> <tr> <td>Female sterilisation.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Male sterilisation.....</td> <td></td> <td></td> </tr> <tr> <td>IUD.....</td> <td></td> <td></td> </tr> <tr> <td>Injectable.....</td> <td></td> <td></td> </tr> <tr> <td>Implant.....</td> <td></td> <td></td> </tr> <tr> <td>Pill.....</td> <td></td> <td></td> </tr> <tr> <td>Male condom.....</td> <td></td> <td></td> </tr> <tr> <td>Female condom.....</td> <td></td> <td></td> </tr> <tr> <td>LAM.....</td> <td></td> <td></td> </tr> <tr> <td>Rhythm.....</td> <td></td> <td></td> </tr> <tr> <td>Withdrawal.....</td> <td></td> <td></td> </tr> <tr> <td>Standard days/cycle beads</td> <td></td> <td></td> </tr> <tr> <td>Other..... specify</td> <td></td> <td></td> </tr> </tbody> </table> | | Yes | No | Female sterilisation..... | 1 | 0 | Male sterilisation..... | | | IUD..... | | | Injectable..... | | | Implant..... | | | Pill..... | | | Male condom..... | | | Female condom..... | | | LAM..... | | | Rhythm..... | | | Withdrawal..... | | | Standard days/cycle beads | | | Other..... specify | | | |
| | Yes | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female sterilisation..... | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male sterilisation..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IUD..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Injectable..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implant..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pill..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male condom..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female condom..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAM..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rhythm..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Withdrawal..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard days/cycle beads | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other..... specify | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|-----|--|---|--|
| | | Unsure..... | |
| 311 | What is the reason you will not use a contraceptive to delay or avoid pregnancy at any time in the future? | <p>NOT MARRIED.....</p> <p>FERTILITY RELATED REASONS..</p> <p>Not having sex.....</p> <p>Infrequent sex.....</p> <p>Menopausal/hysterectomy.....</p> <p>Can't get pregnant.....</p> <p>Not menstruated since last birth</p> <p>Breastfeeding</p> <p>Up to God/Fatalistic.....</p> <p>OPPOSITION TO USE</p> <p>Respondent opposed.....</p> | |

| | | | |
|-----|--|---|----------------------|
| | | Husband opposed..... Others opposed..... Religion prohibits..... Lack of knowledge..... Knows no method..... Knows no source..... METHOD RELATED REASONS Side effects/health concerns..... Lack of access/too far..... Costs too much..... Preferred method not available..... No method available..... Inconvenient to use..... Interferes with body's normal processes..... OTHER DON'T KNOW | |
| | Check Q 301 ever used contraceptives | Yes..... No..... | Skip to 319 if no |
| 312 | In the last 12 months, have you ever done something or used a method to delay or avoid getting pregnant? | Yes..... No..... | |

| | | | |
|-----|--|--|--------------------|
| 313 | Which method did you use most recently? Probe: anything else? | Implant..... IUD..... Pill..... Emergency contraception..... Male condom..... Female condom..... Standard days/cycle beads..... LAM..... Rhythm method..... Withdrawal method..... Other traditional method..... Other..... Unsure | |
| 314 | When did you begin using your current/most recent method? | Month..... Year..... | |
| | Check Q305 Currently using contraceptives | Yes..... No..... | If yes skip to 317 |
| 315 | When did you stop using your most recent method? | Month..... Year..... | |

| | | | |
|-----|---|--|--|
| 316 | Why did you stop using your most recent method? | <p>Infrequent sex.....</p> <p>Not having sex.....</p> <p>Became pregnant while using....</p> <p>Wanted to become pregnant.....</p> <p>Can't get pregnant.....</p> <p>Menopausal.....</p> <p>Husband\partner disapproved.....</p> <p>Health concerns.....</p> <p>Wanted more effective method.....</p> <p>No method available.....</p> <p>Fear of side effects.....</p> <p>Lack of access.....</p> <p>Costs too much.....</p> <p>Fatalistic.....</p> <p>Inconvenient to use.....</p> <p>Interferes with body's processes...</p> <p>Other.....</p> <p>Unsure</p> | |
| 317 | Where did you obtain your most recent/current method when you started using it? | <p>PUBLIC SECTOR</p> <p>Government hospital.....</p> <p>Government health centre.....</p> <p>Family planning clinic.....</p> <p>Outreach (public sector).....</p> | |

| | | | |
|-----|--|---|--|
| | | Field worker..... PRIVATE SECTOR Private hospital\clinic..... Pharmacy..... Private doctor..... Outreach (private sector)..... Field worker..... Maternity home..... OTHER SOURCES Shop..... Church..... Friend/relative..... Other..... Don't know..... | |
| 318 | During that time, who made the final decision about what method you got? | You alone..... Provider..... Partner..... You and provider..... You and partner..... Other..... | |
| | Check Q213 desire for a child? Check Q214: 2 or more years before next child? | | Ask 319 to non-users (current or ever) who |

| | | | |
|-----|---|---|---|
| | <p>Check Q 305 currently using contraceptive method?</p> <p>Check Q301 have you ever used a method?</p> | | <p>do not want to have a/another child or not before 2 years.</p> |
| 319 | <p>You said that you do not want any/anymore children and that you are not using a method to avoid pregnancy. Can you tell me the reason why you are not using a method to prevent pregnancy?</p> <p>Record all reasons mentioned</p> | <p>NOT MARRIED.....</p> <p>FERTILITY RELATED REASONS</p> <p>Not having sex.....</p> <p>Infrequent sex\husband away.....</p> <p>Menopausal\hysterectomy.....</p> <p>Can't get pregnant.....</p> <p>Not menstruated since last birth.....</p> <p>Breastfeeding.....</p> <p>Up to God/fatalistic.....</p> <p>OPPOSITION TO USE</p> <p>Respondent opposed.....</p> <p>Husband opposed.....</p> <p>Others opposed.....</p> <p>Religion prohibits.....</p> <p>Lack of knowledge.....</p> <p>Knows no method</p> <p>Knows no source.....</p> <p>METHOD RELATED REASONS</p> <p>Side effects\health concerns....</p> | |

| | | | |
|-----|---|--|-------------------|
| | | Lack of access\too far..... Costs too much..... Preferred method not available... No method available..... Inconvenient to use..... Interferes with body's normal processes..... OTHER..... DON'T KNOW | |
| 318 | In the last 12 months have you visited a health facility for care of yourself? | Yes..... No..... | If no skip to 320 |
| 319 | Did any staff member at the health facility speak to you about family planning | Yes..... No..... | |
| 320 | Has any staff member in Mathari National teaching and referral Hospital ever spoken to you about family planning? | Yes..... No..... | |

SECTION FOUR: ATTITUDES TOWARDS PREGNANCY

Now I would like to present to you some statements about pregnancy. Feel free to pick a choice you think is closest to how you feel. Remember, your answers will remain anonymous.

| | | |
|-----|--|--|
| 401 | Pregnancy is a time for a woman to happily await the birth of a child. | I strongly agree.....5 I agree.....4 I neither agree nor disagree.....3 I disagree.....2 I strongly disagree.....1 |
| 402 | Pregnancy is a time of fear and anxiety for a woman. | I strongly agree.....1 I agree.....2 I neither agree nor disagree.....3 I disagree.....4 I strongly disagree.....5 |
| 403 | Pregnancy is a time of good relations in a partnership and in the family. | I strongly agree.....5 I agree.....4 I neither agree nor disagree.....3 I disagree.....2 I strongly disagree.....1 |
| 404 | Pregnancy is a time of disorganisation of a woman's personal life | I strongly agree.....1 I agree.....2 I neither agree nor disagree.....3 I disagree.....4 I strongly disagree.....5 |
| 405 | During pregnancy, a woman experiences many interesting maternal experiences. | I strongly agree.....5 I agree.....4 I neither agree nor disagree.....3 |

| | | |
|-----|---|---|
| | | I disagree.....2 I strongly disagree.....1 |
| 406 | Pregnancy requires a great deal of sacrifice from a woman | I strongly agree..... 1 I agree..... 2 I neither agree nor disagree.....3 I disagree.....4 I strongly disagree.....5 |
| 407 | Pregnancy is a time when a woman feels more valued than ever before | I strongly disagree.....5 I agree.....4 I neither agree nor disagree.....3 I disagree.....2 I strongly disagree.....1 |
| 408 | Pregnancy is a difficult time for a woman-full of sacrifices | I strongly agree.....1 I agree.....2 I neither agree nor disagree.....3 I disagree.....4 I strongly disagree.....5 |

Additional comments.....

Thank you.

APPENDIX 3. MINI-MENTAL STATE EXAMINATION

| <i>Mini-Mental State Examination</i> | | |
|---|-------|--|
| MAXIMAL SCORE | SCORE | |
| | | Orientation |
| 5 |) (| What is the (year) (season) (date) (day) (month)? |
| 5 |) (| Where are we: (state) (country) (town) (hospital) (floor)? |
| | | Registration |
| 3 |) (| Name 3 objects: take 1 second to say each. Then ask patient to repeat them. Give 1 point for each correct answer. |
| | | Attention and Calculation |
| 5 |) (| Serials 7s from 100. 1 point for each correct answer. Stop after 5 answers. Alternatively, spell "world" backward. |
| | | Recall |
| 3 |) (| Ask for the 3 objects named above. 1 point for each correct answer. |
| | | Language |
| 9 |) (| Ask patient to name a pencil and watch. (2 points) |
| | | Repeat the following: "No ifs, ands, or buts." (2 points) |
| | | Follow a 3-stage command: "Take a paper in your right hand, fold it in half, and put it on the table." (3 points) |
| | | Read and obey the following: |
| | | Close your eyes (1 point) |
| | | Write a sentence (1 point) |
| | | Copy a drawing of intersecting pentagons (1 point) |
| <p><i>Adapted from Folstein MF, Folstein SE, McHugh PR: Mini-Mental State: A practical method for grading the cognitive states of patients for the clinician. J Psychiatr Res 12:189-198, 1975.</i></p> | | |