ASSESSMENT OF REPRODUCTIVE HEALTH NEEDS OF WOMEN WITH MENTAL ILLNESS ON FOLLOW UP AT OUTPATIENT PSYCHIATRY CLINIC AT MTRH – ELDORET, KENYA.

BY

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A Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of Masters of Medicine of the Department of Reproductive Health, Moi University.

DECLARATION

Declaration by the Candidate

This thesis is my original work and has not been presented for a degree in any other University. No part of this thesis may be reproduced without the prior written permission of the author and/or Moi University.

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DEDICATION

I dedicate this work to all Women with Mental Illness. May this research and its findings lead to development and implementation of targeted policies and alignment of the health service delivery system towards improving your access to Reproductive Health services.

Also I dedicate this work to my loving spouse who has been my substructure; as I worked on this research project in my efforts towards making a contribution in the improvement of reproductive health status of women with mental illness.

Finally, I devote this work to all the health care workers who have dedicated their lives to improving the access and delivery of Reproductive Health services towards the improvement of the Reproductive Health status of all, at all stages of life.

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ASSESSMENT OF REPRODUCTIVE HEALTH NEEDS OF WOMEN WITH MENTAL ILLNESS ON FOLLOW UP AT OUTPATIENT PSYCHIATRY CLINIC AT MTRH– ELDORET, KENYA.

ABSTRACT

Background: World over, women with mental illness (WMI) face more reproductive health (RH) challenges than those without. They have lower rates of contraception uptake, more unintended pregnancies, more likely to suffer gender based violence and unsafe abortions. They however often interact with the health system in pursuance of mental but seldom RH services. At Moi Teaching and Referral Hospital (MTRH), WMI rely heavily on mental health service providers (MHSP) for screening, diagnosis and treatment and/or referral for RH services - with numerous missed opportunities.

Objective: To assess the reproductive health needs of women with mental illness on follow up at outpatient psychiatry clinic at MTRH.

Methods: This was a cross sectional study using a concurrent mixed method approach. It was conducted at the Outpatient Psychiatry Clinic at Chandaria Cancer and Chronic Disease Centre at MTRH-Eldoret. The study populations were WMI and MHSP. Systematic sampling was used to identify 218 WMI. An interviewer administered semi structured questionnaire was used to collect socio-demographic characteristics and data on RH service need for: contraception, abortal care, cervical cancer screening and gender based violence. The uptake of services was determined from among those with need. Continuous variables were summarized using mean and the corresponding standard deviation (SD) while categorical variables were summarized using frequencies and the corresponding percentages. Qualitative data was collected from 10 MHSP who were purposively sampled after stratification by cadre. An interview schedule was administered for information on the challenges MHSP faced in offering RH alongside mental health services. The major themes on the challenges faced were reported and illustrative quotes provided.

Results: Of the 218 WMI, the mean age was 39.1±12.1 years, with 169 (77.5%) aged 18-49 years. The unmet need for contraception was 75% (n=100). Of the WMI ever pregnant (n=187), the need for abortal care services was 61(32.6%) with abortal care service uptake by 18 (29.5%). The need for cervical cancer screening was 95.9% (N=218) with a service uptake by 40/209 (19.1%). Prevalence of gender based violence (GBV) was 85 (39.0%) (N=218) with service uptake by 3 (3.5%) of the 85 with GBV experience.

The major challenges faced by MHSP in provision of RH alongside mental health services to WMI included heavy patient workload and an uncoordinated multidisciplinary approach in RH service provision.

Conclusion: The RH status of WMI in MTRH is characterized by a high unmet need and a low RH service uptake. This is occurring in a setting where patient factors and system related challenges hamper provision of reproductive alongside mental health services by MHSP.

Recommendations: Strategies to integrate reproductive health and mental health services should be developed and implemented to improve the reproductive health status of WMI.

LIST OF ABBREVIATIONS

ACOG	American College of Obstetricians and Gynecologists
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
BTL	Bilateral Tubal Ligation
CDC	Center for Disease Control
FP	Family Planning
HIV	Human immunodeficiency virus
HPV	Human papilloma virus
IREC	Institutional Research and Ethics Committee
IUCD	Intra Uterine Contraceptive Device
KASF	Kenya AIDS Statistics Framework
KDHS	Kenya Demographic Health Survey
MHSP	Mental Health Service Providers
MMSE	Mini- Mental State Examination
MOH	Ministry of Health
MTRH	Moi Teaching and Referral Hospital
PITC	Provider Initiated Testing and Counseling

RH	Reproductive Health
STI	Sexually Transmitted Infection
UTI	Urogenital Tract Infection
WHO	World Health Organization
WMI	Women with Mental Illness

DEFINITION OF TERMS

Gender based violence: any harm that is perpetrated against a person or a group of people because of their factual or perceived sex, gender, sexual orientation and/or gender identity (Council of Europe., 2011).

Health: a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948).

Mental health: a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community (WHO, 2014).

Mental illness: a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior e.g. political, religious or sexual and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above (DSM V).

Physical violence: any act where one attempts to hurt another through shoving, slapping, kicking, hitting or otherwise inducing physical harm.

Psychological violence: any intentional conduct that seriously impairs another person's mental/psychological integrity like insulting, threatening to induce fear, screaming at someone or making someone feel worthless or ashamed.

Reproductive health: a state of physical, mental, and social wellbeing in all matters relating to the reproductive system, at all stages of life. Reproductive health implies that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide whether, when and how often to do so. Implicit in this are the rights of men and women to be informed of and to have access to safe, effective, affordable and acceptable methods of fertility regulation and the right of access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy child (WHO, 2009).

Resident doctor: a medical school graduate and a doctor in training who is taking part in a graduate medical education program, working at hospitals or doctors' offices to continue their education and training in a specialized field of medicine.

Sexual health: a state of physical, emotional, mental and social well-being in relation to sexuality; it isn't merely the absence of disease, dysfunction or infirmity. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free from coercion, discrimination and violence (WHO, 2006).

Sexual violence: any sexual act or attempt to obtain a sexual act by violence or coercion or violence encompassing attempted rape, fondling or unwanted sexual touching forcing a victim to perform sexual acts such as oral sex or penetrating the perpetrator's body; or penetration of the victim's body (rape).

Urogenital Tract Infections: any infections to the urinary or genital tract whether sexually transmitted or not.

Vulnerable population: a group of people who are at greatest risk of poor health status and health access; who experience significant disparities in life expectancy, access to and use of healthcare services, morbidity and mortality; comprising of those who are socioeconomically disadvantaged, racial and ethnic minorities, queer, those in prison and those labelled with a stigmatizing complex medical disease like HIV and severe mental illness (Waisel DB., 2013).

OPERATIONALIZED DEFINITIONS

Reproductive age group: women with mental illness in the age category of ≥18 to ≤49 years.

Resident doctor: a medical school graduate and a doctor in training who is taking part in a graduate medical education program, working at MTRH to continue their education and training in a specialized field of medicine - Psychiatry and Behavioral Sciences or Reproductive Health.

Vulnerable population: a group of people who are at greatest risk of poor health status and health access, experience significant disparities in life expectancy, access to and use of healthcare services, morbidity and mortality due to severe mental illness.

TABLE OF CONTENT

DECLARATION ii

DEDICATION iii

ACKNOWLEDGEMENT iv

ABSTRACT v

LIST OF ABBREVIATIONS vi

DEFINITION OF TERMS viii

OPERATIONALIZED DEFINITIONS xi

TABLE OF CONTENT xii

LIST OF TABLES xvi

LIST OF FIGURES xvii

CHAPTER ONE: INTRODUCTION 1

1.1 Background 1

1.2 Problem Statement 4

1.3 Justification 5

1.4 Research Questions 7

1.5 Broad and Specific Objectives 7

1.5.1 Broad objective 7

1.5.2 Specific objectives 7

CHAPTER TWO: LITERATURE REVIEW 8

2.1 Introduction 8

2.2 Menstruation 9

2.3 Contraception 10

2.4 Other Pregnancy Related Services 12

2.5 Urogenital Tract Infections and HIV 16

2.6 Cervical and Breast Cancer Screening....19
2.7 Gender Based Violence....21
2.8 Theoretical framework....23
2.9 Conceptual Framework....24
CHAPTER THREE: METHODOLOGY....27
3.1 Study Design....27
3.2 Study Area....27
3.3 Study Population....29
3.3.1 Women with Mental Illness (WMI)....29
3.3.1.1 Eligibility Criteria....29
3.3.1.1.1 Inclusion criteria....29
3.3.1.1.2 Exclusion criteria....30
3.3.1.2 Sampling Procedures....30
3.3.1.2.1 Sample Size Estimation....30
3.3.1.2.2 Sampling Technique....31
3.3.1.3 Measures and Instruments....32
3.3.1.4 Study Procedure....39
3.3.1.5 Data management....45
3.3.1.5.1 Data Collection....45
3.3.1.5.2 Data Entry and Storage....45
3.3.1.5.3 Statistical Analysis and Presentation of Data....45
3.3.2 Mental Health Service Providers (MHSP)....53
3.3.2.1 Sample Size Estimation....54
3.3.2.2 Sampling Technique....54
3.3.2.3 Eligibility Criteria....55
3.3.2.3.1 Inclusion Criteria....55

3.3.2.3.2 Exclusion Criteria 55

3.3.2.4 Study procedure 55

3.3.2.5 Data Collection and Management 57

3.3.2.6 Statistical Data Analysis and Presentation 57

3.4 Data Dissemination 58

3.5 Ethical Considerations 58

CHAPTER FOUR: RESULTS 60

4.1 Introduction 60

4.2 Reproductive Health Needs of Women with Mental Illness 61

4.3 Uptake of Reproductive Health Services by Women with Mental Illness 65

4.4 Challenges Faced by Mental Health Service Providers in Provision of Reproductive Alongside Mental Health Services 67

CHAPTER FIVE: DISCUSSION 71

5.1 Socio - Demographic Characteristics of WMI 71

5.2 Reproductive Health Needs of Women with Mental Illness 73

5.3 Uptake of Reproductive Health Services by Women with Mental Illness 81

5.4 Challenges Faced by Mental Health Service Providers 89

5.5 Strengths and Limitations of the Study 93

5.5.1 Strengths of the Study 93

5.5.2 Limitations of the Study 94

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS 95

6.1 Conclusions 95

6.2 Recommendations 96

REFERENCES 98

APPENDICES....107

Appendix 1: Consent form for women with mental illness....107

Appendix 2: Fomu ya idhini....110

Appendix 3: Questionnaire for women with mental illness....114

Appendix 4: Hojaji la mgonjwa wa akili....123

Appendix 5: Consent form for mental health service providers....133

Appendix 6: Interview schedule for mental health service providers....136

Appendix 7: Mini Mental State Examination (MMSE) tool....138

Appendix 8: Brief patient information....139

Appendix 9: FIGO AUB system 1: 2018 revision....140

Appendix 10: Calculation of the unmet need for contraception....141

Appendix 11: IREC approval of ammendments....142

Appendix 12: Initial IREC approval....143

Appendix 13: Hospital approval (MTRH)....144

Appendix 14: Pilot study approval- Nakuru....145

Appendix 15: Approval from Mental Health Department....145

Appendix 16 KOGS Certificate....147

Appendix 17 FIGO World Congress Certificate....148

Appendix 18: Timeframe....149

Appendix 19: Budget....150

LIST OF TABLES

Table 1: Socio-Demographic Characteristics of Women with Mental Illness 61

Table 2: Contraception and Menstruation Service Needs for WMI 62

Table 3: Other Reproductive Health Needs of WMI 64

Table 4: Uptake of Reproductive Health Services by WMI 66

Table 5: Socio - Demographic Characteristics of Mental Health Service Providers...67

LIST OF FIGURES

Figure 1: Theoretical Framework – The Health Belief Model 23

Figure 2: Conceptual Framework 26

Figure 3 Study Procedures (Enrollment of WMI) 44

Figure 4: Study Procedures.....56

Figure 5: Recruitment and Enrollment of WMI 60

CHAPTER ONE: INTRODUCTION

1.1 Background

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948). It is everyone's wish that they be healthy in order to function optimally; physically, mentally and socially. However, human beings are often afflicted with ill health with impairment of their function. The components of physical, mental and social well-being are interrelated and impairment in one aspect leads to dysfunction in the other aspects of health. It is therefore inherent that a dysfunction in mental health will cause dysfunction in physical, social and mental aspects of health. Reproductive health will therefore in essence be impaired in the presence of impairment of mental health by a mental illness.

Mental illnesses are syndromes characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behaviors like political, religious or sexual and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above (DSM V).

The global data of common mental illnesses from a survey across high income and low income countries shows that 17.6% of adults experienced a mood or an anxiety disorder within the past 12 months and 29.2% in their lifetime, with females more likely to

experience a mood or anxiety disorder and males more likely to experience an alcohol or other substance use disorder (Zachary S, et.al. 2014).

The prevalence of mental illnesses is higher in the women compared to the men in the various categories of psychiatric disorders except in alcohol and substance use where the men predominate. In a population based study, prevalence of psychological distress was 20.9% in men while 29.8% in females; with common mental disorders being anxiety disorder 18.2%, major depressive disorder in 17.4% and compulsive disorder in 10.0%, while common mental disorders among the females were anxiety disorder in 23.6%, major depressive disorder at 22.7%, compulsive disorder in 13.9%, phobia in 10.4% and psychotic disorder in 6.1% (Yousef Veisani et al, 2018). This figure however varies across the different regions of the world.

The Kenyan situation is similar with the overall prevalence of mental disorders at 10.3%, with a prevalence of 17.5% among the females and only 3.8% in the males (Jenkins R., et al. 2015).

The women with mental illnesses have to cope with the disorder itself, stigma associated with the disorder, treatment of the disorder and the effects associated with the disorder and its management (Matevosyan, 2009). Women with mental disorders can be alienated, isolated and detached from society (Beyondblue, 2011). Women with mental disorders may hence lack appropriate clinical care because of negative attitudes, comments or actions of friends, family, workmates, and the public at large; or because of belittlement or low expectations of their future improvement from their own health care team, encouraging an ongoing downward spiral of self-deprecation and self-stigmatization (Beyondblue, 2011).

From the studies conducted in the various parts of the world, patients with mental illnesses have more reproductive health problems compared to the general population. Among the issues that have been reported are: high number of sexual partners (Matevosyan, 2009); they engage in risky sexual actions, suffer increased rates of sexual abuse and rape (Ozcan,et al. 2014), have increased rates of unintended pregnancies and have low rates of using contraceptive methods hence have a decrease in planned pregnancies (Matevosyan, 2009).

This therefore lays emphasis on having effective contraception, post rape care, screening for sexual and physical abuse as well as STI screening in this population (Henshaw and Protti, 2018). They also have high risk pregnancies due to the nature of their illness and the medication they use for stabilization; which puts the mother and baby as a high risk patient population, accentuating the need for antenatal care services, delivery by skilled birth attendant and in a facility with neonatal care specialist due to the anticipated possible complications (Paschetta E, et al. 2014).

The above picture is also painted in Kenya, with a prevalence of common mental disorders among females at 17.5% (Jenkins R, et.al. 2015); yet largely, the level of uptake of reproductive health services among women with mental illness remains undocumented, without a comprehensive reproductive health policy for women with mental illness to address screening services for reproductive health needs identification in this special population.

Unintended pregnancies frequently occur among women with mental illnesses, due to the frequent lack of insight caused by the mental illness, lack of pregnancy planning and impaired behavioral control. Moreover, these women's maternity performance can be jeopardized by recurrent hospitalizations owing to the mental illness, impaired autonomy

and limitations of their self and family care functions (Tatiane Gomez Guedes, et al. 2009).

The WMI, just like those without mental illness, should have cervical and breast cancer screening. However, the WMI are less frequently screened for these malignancies.

Women with mental illnesses are on various medications for the control of the mental illness, and these medications may have adverse effects on their developing fetuses when taken during pregnancy and also may have profound neonatal effects hence need for antenatal care and delivery by a skilled birth attendant.

The objective of this study therefore was to carry out an assessment of the reproductive health needs of women with mental illness and identify their reproductive health needs; in order to propose service interventions which when implemented would comprehensively address the reproductive health needs of this vulnerable population.

1.2 Problem Statement

Women with mental illness often have high number of sexual partners, engage in risky sexual actions and suffer increased rates of sexual abuse and rape (Ozcan, et.al.2014). They have higher rates of unintended pregnancies since they have low rates of uptake of contraception. They hence bear a greater burden of unintended pregnancies, sexually transmitted infections and unsafe abortions.

They often interact with the health care system for the treatment of their mental disorder, but they less frequently actively seek reproductive health services.

In MTRH, the WMI rely heavily on mental health service providers (MHSP) - being their most frequently contacted health service provider - for the identification and/or address of or referral for their reproductive health needs. The MHSP upon identifying a reproductive

health need initiates evaluation and/or treatment or linkage for RH service provision at the directorate of reproductive health. Owing to their diminished autonomy and limited self-efficacy, they may not report their RH concerns to their mental health service providers. Coupled with the lack of a local protocol or guideline to address routine screening and/or reproductive health service provision to the WMI in MTRH, the MHSP may fail to identify the need for RH services.

The WMI are hence likely to get numerous missed opportunities in their reproductive health need identification and service provision and suffer consequences of late RH need identification. They are hence likely to have greater morbidity, higher mortality and more health care costs due to missed opportunities for early need identification and intervention.

1.3 Justification

Though there is cognizance of the fact that the WMI have more unmet reproductive health needs than the women without mental illness, the level of reproductive health needs and the uptake of the reproductive health services among women with mental illness in MTRH, and Kenya by extension; was undocumented.

With the mental health service providers being the most frequently contacted health service provider by WMI; and with the expectation that the MHSP routinely address the RH needs of WMI and/or refer them for RH services, it remained unknown whether they faced any challenges in provision of reproductive alongside the mental health services with the existent service delivery structure.

Hence, the magnitude of the reproductive health service need, service uptake and the challenges faced by MHSP in provision of reproductive alongside mental health services remained unknown.

With the lack of a national guideline or local protocol addressing screening and provision of RH services to women with mental illness, numerous missed opportunities in RH service provision to WMI were likely to arise. This reinforces the need for routine screening for RH service need and development of strategies to improve service provision to WMI.

Also, an effective structure on how these RH services could effectively be provided to this vulnerable population remained unestablished.

This study therefore sought to provide an appraisal of the reproductive health status of the women with mental illness at MTRH, by providing information on the level of need for reproductive health services and utilization of the RH services by WMI where need was established. The MHSP, being the most frequently contacted health service provider by the WMI were expected to identify the RH needs - addressing them and/or referring the WMI for RH services. Therefore, taking cognizance of the challenges they faced in offering reproductive alongside mental health services highlighted the existent gaps in offering the reproductive health alongside mental health services to WMI.

This information is invaluable in service planning and strengthening of linkages, resource allocation, and development of strategies, protocols and guidelines in addressing the reproductive health needs of women with mental illness. This will ultimately lead to improvement in the reproductive health status of women with mental illness through establishment of routine screening services for RH need identification and timely linkage for service provision.

This will then lead to improved reproductive health service uptake with early diagnosis, reduced morbidity and reduced complications, increased planned pregnancies, reduced health care costs and reduced mortality.

1.4 Research Questions

i. What are the reproductive health needs of women with mental illness on follow up at outpatient psychiatry clinic at MTRH?
ii. What is the uptake of the reproductive health services by the women with mental illness on follow up at outpatient psychiatry clinic at MTRH?
iii. What are the challenges faced by mental health service providers in provision of reproductive alongside mental health services to women with mental illness at MTRH?

1.5 Broad and Specific Objectives

1.5.1 Broad objective

To assess the reproductive health needs of women with mental illness on follow up at outpatient psychiatry clinic at MTRH.

1.5.2 Specific objectives

i. To describe the reproductive health needs of women with mental illness on follow up at outpatient psychiatry clinic at MTRH.
ii. To determine the uptake of reproductive health services by women with mental illness on follow up at outpatient psychiatry clinic at MTRH.
iii. To highlight the challenges faced by mental health service providers in provision of reproductive health alongside mental health services to women with mental illness at MTRH.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Reproductive health or sexual health/hygiene addresses the reproductive processes, functions and systems at all stages of life. Reproductive health has the implication that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Men and women should be informed of and have access to safe, effective, affordable and acceptable methods of birth control; and have access to appropriate health care services of sexual, reproductive medicine and implementation of health programs to stress the importance of women to go safely through pregnancy and childbirth in order to provide the couples with the best chance of having a healthy infant (WHO, 2009).

The reproductive health of women with a mental illness is greatly affected due to the mental illness. Women with a mental illness are at a higher risk of adverse reproductive health profile (Henshaw & Protti, 2010). They are more likely not to be in a marriage institution, have a higher number of lifetime sexual partners, more likely to suffer sexually transmitted infection and suffer rape and sexual abuse (Ozcan, et.al.2014). They are also more likely to have sexual intercourse when they did not expect it to occur (Henshaw & Protti, 2010).

The sexual health of WMI is more often than not affected as a result of infringement of their sexual rights. Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; not merely the absence of disease, dysfunction or infirmity. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence (WHO, 2006). This is usually

not the case for WMI in most circumstances as they suffer the consequences of their sexual activity more often than not.

2.2 Menstruation

The reproductive cycle of women from menarche to menopause may not occur without challenges hence the need to screen for symptoms that may require attention, as these can have an impact on the quality of life of the women with mental illness (Henshaw and Protti, 2018). During the acute episodes of mental illnesses, the women with mental illness may not be capable of self-care hence greatly compromising their menstrual hygiene as they are lacking insight. They may not take a shower, may not change sanitary pads or may not put on a sanitary towel when they are running away from home when they are hallucinating due to a psychotic illness. This impairs their social functioning (C. Sumpter, B. Torondel. 2013).

Historically, challenges with menstruation have been normalized by society. In relation to heavy menstrual bleeding, Sir H. Beckwith reported that uterine hemorrhage is a sacrifice that must be made by women at the altar of evolution (Sir. H. Beckwith Whitehouse, 1914). With this belief among women and health care providers alike, the challenges related to menstruation are often overlooked, and even when reported by the patient to the physician; they rarely receive the attention required. In a European population where 415 of women who experienced HMB sought treatment, only 50% received prescriptions and of those treated, only a paltry 18.2% were followed up for full symptomatic control (Ian Fraser et.al. 2015). Therefore, the health care worker also needs to be aggressive in addressing the challenges raised by their patients as regards their experience of menstrual challenges. Though the composite prevalence of menstrual challenges among menstrual women is not known, the reported prevalence of HMB was 44.6% (Ian Fraser et.al.(2015)

in a European patient survey and 53.7% reported among Dutch women (Mark E. Schoep et.al.(2019). The experience of menstrual challenges impacts negatively on women, as the challenges cause social and occupational dysfunction and impair quality of life (Kevin D. Frick et.al.(2009). In a retrospective study in Canada among adolescents with developmental disabilities, the prevalence of heavy, painful or irregular menstrual bleeding was 30% (Kirkham Y. A et al, 2013). The occurrence of menstrual challenges in women generally negatively impacts on the quality of life (Kevin D. Frick et.al. 2009).

Opening up discussion about menstruation and menstrual challenges among women with mental illness is beneficial in alleviating the distress caused by the menstrual challenges as well as serve as an all-important entry point in discussion pertaining contraception, safe sex, fertility and pregnancy planning. Also, discussing menstruation and challenges will help identify the women who will benefit from menstrual suppression therapy based on the challenges identified and the wish of the patient as pertains menstruation as reported in the menstrual suppression in special circumstances (Yolanda A. Kirkham, et.al. 2014).

2.3 Contraception

Contraception refers to the deliberate use of artificial methods or other techniques to prevent pregnancy as a consequence of sexual intercourse.

The women with mental illness are more likely not to be in a marriage institution and have a higher number of lifetime sexual partners, more likely to suffer rape and sexual abuse and have sex at a time they did not intend to have it when it occurs (Henshaw & Protti, 2010). They should therefore have access to the full range of contraceptives, including emergency contraception services and easy access to post rape care services. Women with mental illness also have increased rates of unintended pregnancies and

decrease in planned pregnancies (Matevosyan, 2009). This therefore clearly shows the contraceptive need in this population.

In Kenyan fertility preferences for contraception or spacing of births, 58% of married women in the general population were on some method of contraception while 65% of sexually active unmarried women were on a method of contraception (KDHS, 2014). As the rates of contraception are noted to dramatically increase with education, the women with a mental illness are disenfranchised by having a mental illness as most of them end up not having an education hence they are likely to have a higher unmet need for contraception compared to the general population.

Counseling services for contraception should be readily available and provision of commodities with efficient linkage for service provision should it not be readily deliverable in the facility offering mental health services.

It was noted that the uptake of contraception among the patients 15-49 years old in the general population in Kenya among the women whether married or not; who did not want a child within the next two years or ever in their future, had a 64% contraceptive use. There was an unmet need of 18% for family planning (KDHS 2014). There is a high likelihood that the situation is worse in the women suffering from a mental disorder since their accessibility to the reproductive health services including contraception are generally lower than in the general population. Contraceptive use among the women with mental illness in Kenya remains undocumented, yet these women are at a higher risk of getting unintended pregnancies when they are not on an effective method of contraception.

The women with mental illness who use short term contraceptive methods showed an associated reduction in contraceptive adherence and continuation, a situation that was worse in women who had a concurrent substance use disorder in addition to the mental illness (Lisa S. Calligari, et al. 2014). These women could therefore potentially benefit from long term reversible methods of contraception.

Women with mental illness have increased rates of unintended pregnancies, decrease in planned pregnancies and live birth rates and receive less antenatal care (Matevosyan, 2009).

The women with mental illness are also more likely not to be on a contraceptive method predisposing them to higher rates of unintended pregnancies (Henshaw & Protti, 2010) and are more likely to have had an abortion (Ozcan,et al. 2014).

2.4 Other Pregnancy Related Services

Approximately 50% of all pregnancies are unplanned, across all population groups, with higher rates occurring in women living with mental illness (Cantwell R, et al. 2011). The prevalence of unintended pregnancies in Kenya is 49%, where 41% of all unintended pregnancies end up in abortion (Mohamed S.F., Izugbara C., Moore, A.M., et.al. 2015). Therefore, with WMI being at a higher risk of not being on a contraceptive method hence unintended pregnancies, they could experience higher rates of unsafe abortion. Therefore, WMI should regularly be screened for their need for contraception to prevent unintended pregnancies and the resultant consequences.

Women experience more mood and anxiety disorders among the mental illnesses, while men experience more substance use disorders (Steel Z, et al. 2014). The anxiety and mood disorders become more prominent in pregnancy and a high risk of relapse post-delivery in women with a history of mood or psychotic disorder making prevention a

priority (Fisher J, et al. 2 014). Therefore, women may need higher doses of medication to stabilize their mental illness during pregnancy and in the post delivery period. Relapse of the mood and anxiety disorders puts the mother and her infant at risk as there is increased risk of infanticide, child abandonment and neglect; with jeopardized infant nutrition as initiation and/or continuation of breastfeeding becomes a big challenge when the mental illness is not stabilized.

Women with mental disorders are on various drugs: mood stabilizers, antipsychotics or various anti-epileptics which may be used as mood stabilizers. These medications may have adverse effects on the developing fetus hence the need to have a pregnant woman with mental illness get managed by a multidisciplinary team, attend antenatal clinic checkups for the maternal as well as fetal well-being, and be delivered by a skilled birth attendant. The neonate mey suffer withdrawal of medication upon delivery which may have detrimental effects. This necessitates delivery in a hospital with skilled birth attendant and with staff capable of monitoring of the neonate born to such a woman and optimally managing any complications that may arise.

Pregnancies in WMI tend to involve high risk complications with higher relapse rates in pregnancy with 22.5% requiring admissions. Placental abruption, eclampsia and gestational diabetes mellitus are common and their infants are at higher risk of low Apgar scores <8 at 5 minutes, poor adjustments to postpartum life and higher neonatal intensive care unit admissions (NICU) (Nguyen et al, 2013).

The fetal risks of maternal mental illness include premature birth, fetal growth restriction, and small for gestational age at birth; respiratory distress, medication withdrawal, congenital malformations and infant developmental delay (Paschetta E, et al. 2014).

Antipsychotic medication in pregnancy for women with psychotic disorders has been associated with respiratory distress, medication withdrawal, premature birth, congenital anomalies, fetal growth restriction, small for gestational age and risk of neural tube defects (Paschetta E, et al. 2014). The use of ultrasound during pregnancy is hence of immense value in evaluating the fetal well-being as it enables early detection of some gross congenital anomalies, neural tube defects and early diagnosis of fetal growth restriction with serial ultrasound scanning. This guides in counseling the WMI on potential fetal outcomes and early intervention; like preterm delivery when indicated. However, most women with mental illness do not attend antenatal clinic hence miss an opportunity in benefitting from antenatal ultrasound.

Infants whose mothers took antidepressants during pregnancy may experience the following neonatal adverse effects: premature birth, pulmonary hypertension, low birth weight, heart defects and withdrawal if the mother was on selective serotonin reuptake inhibitors in the third trimester (Udechu A, et al. 2010 ; Hayes R.M, et al. 2012).

Some anti-epileptics like carbamazepine, sodium valproate, and lamotrigine are also used as mood stabilizers. These medications cause significant fetal teratogenicity worse with use of sodium valproate in pregnancy (Jones I, et al. 2014; Vajda FJ, et al. 2003; Campbell E, et al. 2014). These drugs have also been associated with the occurrence of neonatal prematurity, intrauterine growth restriction, small for gestational age, hypoglycemia, microcephaly, withdrawal symptoms, neural tube defects, cardiac and craniofacial defects and suboptimal cognitive outcomes (Paschetta E, et al. 2014; Galbally M, et al. 2010). Women on these anti-epileptics need to be on high folate supplements. Most WMI get unintended pregnancies hence do not attend preconceptional counselling for initiation of the high dose folate and adjustment of their treatment to safer drugs in view of the intended pregnancy. Since most women with mental illness do not

attend antenatal clinics, they are often not on supplements hence higher occurrences of neural tube defects in their infants.

These women also have a greater parenting burden as many women with schizophrenia become single mothers (Kulkari, et al. 2010; Dunsis A, et al. 1996).

It is recommended that all women attend eight antenatal visits through the course of pregnancy (WHO. 2016). These visits are aimed at providing a woman with respectful, individualized, person- centered care at every contact, with implementation of effective clinical interventions and tests, and provision of relevant and timely information and psychosocial and emotional support by practitioners with good clinical and interpersonal skills within a well-functioning health system.

Optimal care should be offered in pregnancy and assessment of risk factors that may negatively impact on the pregnancy outcome should be done for timely interventions.

The antenatal attendance in Kenyan general population was at 96% for women who attended at least one visit, with 58% with four antenatal visits; while 62% were delivered by a skilled birth attendant (KDHS, 2014). These figures however are likely to be lower for the patients living with a mental illness in Kenya, as this still remains undocumented.

It has also been noted that the pre pregnancy mental status of a woman is a strong determinant of postpartum depression. This is more so, when other life stressors are present (Gelaye B, et.al. 2016). WMI are at a higher risk of unintended pregnancies compared to the general populations, and already have a mental illness, which adds more stressors to them. In Kenya, the prevalence of postpartum depression was found to be 18.7% (Ongeri L, et.al. 2018). This is likely to be higher among women with mental illness as some of them may have first diagnosis of a mood disorder in the postpartum period, or as a comorbidity among those with other mental illnesses.

This therefore calls for the need to pay more vigilance to women with mental illness during the peripartum period, as they may show signs of depression or worsen during the peripartum period.

Given the complications that arise in neonates of WMI on medication for the various mental illnesses, it cannot therefore be overemphasized how important it is to have a pregnant woman with a mental illness followed up at the antenatal clinic during pregnancy for early detection of any complications in pregnancy or exacerbation of their mental illness symptoms and early appropriate interventions instituted.

It is also invaluable to have WMI delivered by skilled birth attendant for optimal neonatal care given the complications anticipated. Also, the post-natal care should be instituted for optimal infant care and optimal stabilization of maternal mental illness and ensure the safety of the infant.

2.5 Urogenital Tract Infections and HIV

Sexually transmitted infections refers to a variety of clinical syndromes and infections caused by pathogens that can be acquired and transmitted through sexual activity.

The women with mental illness are more likely not to be in a marriage institution, have a higher number of lifetime sexual partners, more likely to suffer sexually transmitted infections and suffer rape and sexual abuse. They are also more likely to have sexual intercourse when they did not expect it occur (Henshaw & Protti, 2010). Coupled with the fact that they are less likely to practice safe sex through use of condoms, indiscriminate sexual encounters and sexual abuse exposes them to the risk of acquisition of sexually transmitted infections.

Sexually transmitted infections (STIs) are still highly prevalent worldwide. The burden of viral STIs is high with estimated 417 million prevalent cases of herpes simplex virus infection and about 291 million women infected with human papilloma virus (WHO, 2015). Sexually transmitted infections represent an important public health problem due to their complications such as neonatal syphilis- which may result in stillbirths, neonatal death or malformation, cervical cancer caused by human papilloma virus, and pelvic inflammatory disease and infertility due to Chlamydia (WHO, 2003). In addition, ulcerative genital diseases can facilitate transmission or acquisition of HIV. It is also reported that persons with both ulcerative and non-ulcerative genital tract infections have a 2-5 times greater risk of becoming infected with HIV.

The presence of STIs was noted to increase both susceptibility to and infectiousness of HIV, and STIs make it more likely that a co infected person will transmit HIV (Liz Highleyman, 2000).

In Brazil, 25.8% of patients with mental illness reported a history of STI and lifetime diagnosis of syndrome groups: genital discharges (35.8%) and genital ulcers (14.2%). The general population sexually transmitted disease prevalence in Brazil is 5.2% to 21.3%.

This clearly shows a higher prevalence of STIs among women with mental disorders compared to the general population (MRT Dutra, et al. 2014). All patients diagnosed with syphilis, gonorrhea or Chlamydia should also undergo testing for HIV due to the association of these conditions (CDC MMWR, 2015).

In the Kenyan general population, the knowledge of combined sexually transmitted infections preventive measures (HIV testing, condom use, limiting the number of sexual partners and faithfulness to one faithful sexual partner) was 80% among the females and 88% among the males (KDHS, 2014). It is therefore important to establish whether female

patients with mental illness have the knowledge of the combined sexually transmitted infection prevention strategy as it remains undocumented among women with mental illness. Also, it is necessary to find out whether women with mental illness undergo screening for urogenital tract infections, whether ulcerating or discharge causing.

Failure to diagnose and treat sexually transmitted infections at an early stage may result in serious complications and sequelae including infertility, fetal wastage, ectopic pregnancy, anogenital cancer and premature death, as well as neonatal and infant infections. Appropriate treatment of such conditions at the first contact between the patient and the health care providers is therefore an important public health measure.

Since mental health service provision points may be the only point of contact of the women with mental illness with a health facility, screening for urogenital infections should be done routinely at all mental health service points.

The risk factors associated with genital tract infection includes: new sex partner, more than one sex partner, one sex partner with other sex partners, sex partner who has an STI, inconsistent use of condoms in individuals not in a mutually monogamous relationship, previous or coexisting STI and exchange of money or drugs for sex. These risk factors also put the patients with mental illness at a higher risk of acquiring HIV. The women with mental illness have most of these risk factors especially during the acute phase of their illness, when there is lack of insight putting them at a high risk of acquiring sexually transmitted infections and HIV.

In Kenya, the HIV prevalence is 4.9%, though more females than males are HIV positive (NASCOP, 2018). HIV disease can have neurological sequel and present with features of a mental illness, like psychosis. It is hence important that any patient presenting with an acute mental illness be tested for HIV. Mental illness can affect adherence to antiretroviral

therapy due to the nature of the mental illness or due to the pill burden. Should a woman with mental disorder become pregnant, in the presence of poor adherence; the risk of mother to child transmission of HIV is increased. Babies born to mothers with HIV and a mental illness may not be given infant prophylaxis against HIV due to maternal mental illness hence increasing the risk of HIV transmission to the baby.

2.6 Cervical and Breast Cancer Screening

Among the reproductive health services, cervical cancer screening is key in early detection of precancerous lesions and early cancer with early treatment hence reducing cancer associated mortality and morbidity.

The most recent world data available indicates that lung cancer is the most commonly diagnosed cancer at 11.6% of the total cases, and the leading cause of cancer deaths; 18.4% of total cancer deaths among males and females combined. The incidence of the female breast cancer closely follows at 11.6%. When it comes to cancer deaths among the females, breast cancer takes the lead in cancer incidence and mortality, with colorectal and lung cancer taking the second and third position respectively for incidence; and cervical cancer being the fourth cancer in incidence and mortality among cancer mortalities in females (GLOBOCAN, 2018).

The most frequent cancer among women in developing countries and the leading cause of cancer deaths among women of reproductive age is cervical cancer, yet, in the general population in Kenya, only 16.4 % of women had ever been screened for cervical cancer by a health professional (Ng'ang'a et. al. 2015). Though undocumented, the uptake of cervical cancer screening is likely to be lower among women with mental illness in Kenya compared to the general population.

In the U.S.A, 65.7% of women with mental health illness received cervical cancer screening during the one-year period of study. Evidence of other health care use was the strongest predictor of screening (M. James, et al. 2017). The screening rates for the WMI in USA of 65.7% is such a low uptake of the service compared to the cervical cancer screening rates of 85% among the American women in the general population (C. Woodland., et.al. 2016).

The women with mental illness however rarely seek reproductive health services. They interact with the health care system for reproductive health services less frequently and are hence more likely to have a lower screening rate of cervical cancer. They are also disenfranchised by the mental illness as their access to education may be limited hence limiting their access to reproductive health services including cervical cancer screening (M. James, et al. 2017).

The women with mental illness have a high risk of genital tract infections like human papillomavirus which predisposes a woman to cervical cancer; and HIV which reduces the latency to cervical cancer from precancerous lesions. Therefore, institution of easily accessible cervical cancer screening services will be of immense value in early detection of precancerous lesions and early referral for suspicious lesions for cancer for early intervention before progression or complications set in (Henshaw & Protti, 2018).

Breast cancer screening can be done through routine breast examination done by a health care provider alongside breast ultrasonography with routine mammography. Early detection of lesions that could signify breast cancer is necessary in reducing morbidity and mortality that would otherwise arise from delayed diagnosis (Henshaw & Protti, 2018). Though there is paucity of data on uptake of breast cancer screening services in Kenya, in the general population and among WMI, the uptake of breast cancer screening among WMI in the USA is 64.8% (C. Woodland et al. 2016).

Cancer screening does not only carry an advantage in reduction in mortality and morbidity being a common cause of cancer morbidity and mortality among women but also leads to cost reduction when precancerous lesions are detected and managed curtailing progression to cancer which heavily impacts on quality of life and its negative impact on mental health (GLOBOCAN 2018).

2.7 Gender Based Violence

Globally, gender based violence is on the rise. Women with mental illness are more vulnerable and experience a greater burden of violence. Globally, 35.6% of women have ever experienced either non partner sexual violence or physical or sexual violence by an intimate partner, or both (WHO, 2005).

As previously highlighted, women with mental illness suffer rape and sexual abuse and are more likely to have sexual intercourse when they did not expect it occur (Henshaw & Protti, 2010). A large component of this unintended sexual activity constitutes sexual violence. Unfortunately, it also remains true that the women with mental illness experience childhood sexual abuse, high levels of violence and sexual assault (Mueser 2004). The women with mental illness experience sexual, psychological as well as physical abuse.

In Kenya, there is paucity of data on the population prevalence of gender based violence. However, studies have been conducted among smaller groups on their experience of gender based violence. In a study conducted among adolescent girls and young women in Mombasa, the reported prevalence of recent physical violence was 10.7% with sexual violence at 9.8% (Bhattacharjee P., et al. 2020). This study involved young women who engaged in casual sex, transactional sex or sex work, hence at a high risk of experiencing violence. There however exists a dearth of data on the experience of gender based

violence among women with mental illness in Kenya, though being a vulnerable population and at a high risk of experiencing gender based violence.

Other studies have equally reported that WMI experience high levels of violence, with their experience of sexual, psychological and physical abuse being higher than women in the general population (Mueser 2004). The women living with a mental illness are more likely not to be in a marriage institution.

However, for those who are in marital institutions, experience of intimate partner violence among these women is high (Friedman 2007). There is need to empower WMI on what constitutes violence, as they are more prone to it; and encourage them to seek help whenever they get an experience of violence. The WMI should be directly asked about experience of GBV as they are reluctant to disclose violent victimization unless directly asked for it by the physician (D. Mazza, 1996).

With these women being at increased rates of unintended pregnancies and decrease in planned pregnancies (Matevosyan, 2009), screening for sexual violence in this case would provide a chance for them to access emergency contraception to avoid pregnancy and safe abortal services for those who may not wish to carry a pregnancy resulting from rape.

Since these women with mental illness have frequent contact with the health institutions, it will be of paramount value to have them routinely screened for domestic and intimate partner violence for linkage to services like post rape care and counselling; in an attempt to protect and serve this vulnerable population (Henshaw and Protti, 2018).

2.8 Theoretical framework

The theoretical framework on predicting behavior with social cognition models was adopted in this study. The health belief model focuses on threat perception and behavioral evaluation. It gives a summation of the components that contribute to and influence or modify action in health seeking behaviors. This model is based on the proposal that preventive action towards health seeking behavior is likely to be taken by people if they perceive the risks threatening their health to be serious.

The perception of personal susceptibility coupled with more benefits compared to costs also contributes to health seeking behaviors. However, various variables contributing positively or negatively to self-efficacy like demographic variables, psychological characteristics, past experience and the information available to that individual play a major role in the decision making process towards taking the action in health seeking behavior (Sheeran, P and Abraham C. 1996).

This theoretical framework is relevant in this study as the ultimate reproductive health status of WMI depends on their reproductive health seeking behaviors.

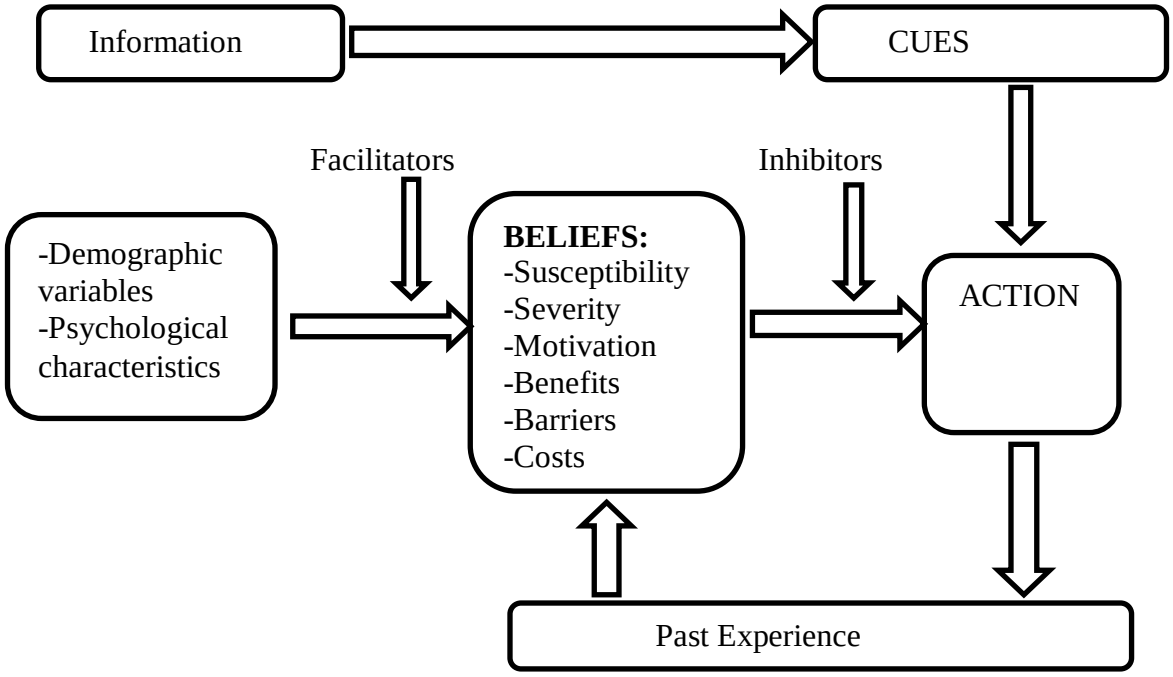

Figure 1: Theoretical Framework – The Health Belief Model

Adapted from: Sheeran, P and Abraham C (1996). The health belief model. In M. Conner and P. Norman (Eds.).

Hence, in determining the reproductive health needs and the uptake of the reproductive health services of WMI, we looked directly at the product of the interaction of the various factors in the theoretical framework- the reproductive health status of WMI as a direct result of their health seeking behavior. Highlighting the challenges faced by mental health service providers in offering reproductive alongside mental health services unearthed some factors in the patient themselves, their environment or the health service delivery system which motivates or hinders the WMI from taking up the RH services.

2.9 Conceptual Framework

The theoretical framework above, when applied to this study illustrated how the reproductive health status of women with mental illness is influenced by the interplay of the factors that influence uptake of the reproductive health services.

In assessing the RH needs of women with mental illness, cognizance has been made to their self-efficacy being affected by many factors. The demographic characteristics include factors like age, marital status and source of income. These may influence the perception of the need for certain RH services by the WMI and influence their uptake or non-uptake of the RH services. The various mental illnesses among the WMI are also part of the psychological characteristics affecting self-efficacy. Their access to, processing of the information and interpretation of the verbal and nonverbal cues useful in their perception of health threats to motivate them in health seeking behavior may contribute to their level of reproductive health service need and/or their RH service uptake.

The WMI face various barriers to RH services uptake, especially when acutely mentally ill when HCW require consent from their next of kin for the provision of RH services like cervical cancer screening and contraception. The next of kin may object to the services

based on their own beliefs and prejudices. In the assessment of the benefits versus the costs of their treatment, decision not to take health action may not be commensurate to the threat posed to the health of WMI when their caregivers choose not to give consent for RH service provision to the WMI due to their own personal perceptions or their own previous experiences, especially where the financial costs are to be incurred by the caregiver.

In the presence of delusions or various mental illnesses like paranoia, the WMI may misinterpret information geared towards improving their reproductive health status. Hence, the presence of a mental illness in this population may distort their outcome expectancy hence modify their health seeking behavior.

Therefore, in this study, the WMI interact with the above factors that influence their reproductive health seeking behavior.

The identification of their reproductive health needs (through their perceived risk) and eventual uptake of the reproductive health services; which influences their overall reproductive health status is largely as a result of the interplay of the above factors on their RH service seeking action.

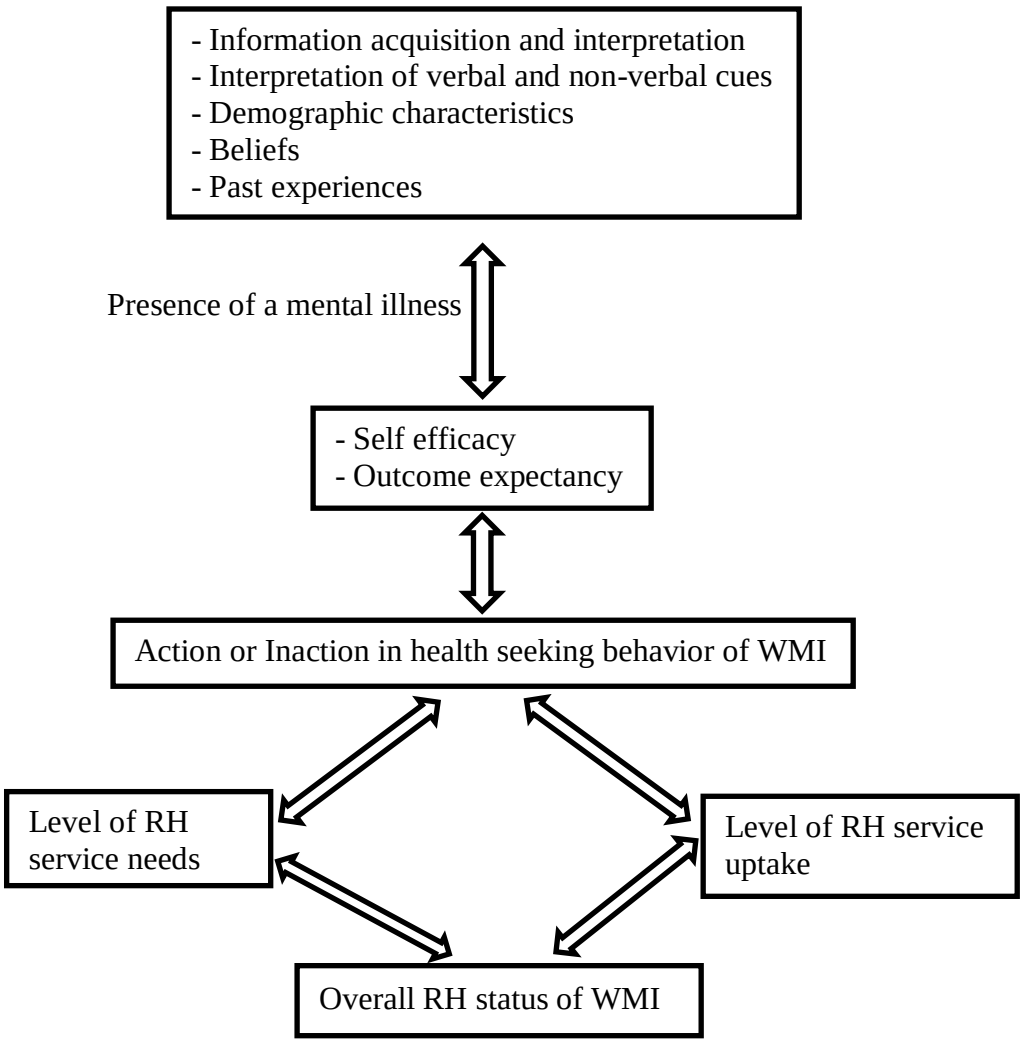

Figure 2: Conceptual Framework

CHAPTER THREE: METHODOLOGY

3.1 Study Design

This is a cross sectional study, using a concurrent mixed method approach.

3.2 Study Area

The study area was the psychiatry outpatient clinic at the Chandaria Cancer and Chronic Disease Centre of the Moi Teaching and Referral Hospital, Eldoret; Kenya. The Moi Teaching and Referral Hospital is the second National Referral Hospital in Kenya after Kenyatta National Hospital. It is located along Nandi Road in Eldoret Town, 310 kilometers Northwest of Nairobi, the capital city of Kenya; Uasin Gishu County, in the North Rift region of Western Kenya.

The hospital offers both in and outpatient services, and serves both cash paying and corporate clients. There are various services offered in MTRH including reproductive health services, general surgery services, orthopedic surgery services, child health and pediatric services, mental health and rehabilitative services among others.

The mental health and behavioral services department offers emergency, inpatient and outpatient care services at various points within the hospital. Those who require in-patient mental health services are admitted at the Kenya Ward. The outpatient services for the new patients and those presenting for psychiatry care without a formal appointment (unscheduled visits) are attended to at a psychiatry clinic in the emergency department, casualty area, room number 7. This service is available seven days a week and runs day and night. Those who are on follow up have scheduled visits, and are served at the Chandaria Cancer and Chronic Disease Centre. This is where the outpatient psychiatry clinic is run on every Wednesday, except for when a public holiday falls on a Wednesday.

For the patients who are booked for scheduled psychiatry clinics, new patients are given shorter follow up durations based on stability of their mental illness, investigations requested and for adjustment of drug dosages. These may be reviewed at intervals of two weeks, one month or two months. Those who are stable are reviewed at three monthly intervals.

The Psychiatry Outpatient Clinic is located on the ground floor of the building – the Chandaria Cancer and Chronic Disease Centre, on the left wing from the main entrance. There are several consultation rooms, and 5-7 rooms are used on each clinic day for consultations, based on the number of available mental health service providers. There is a dispensing pharmacy within the left wing. Within the building on the right wing, there are two rooms dedicated to gyn-oncology services where cervical and breast cancer screening is carried out, alongside investigative procedures like biopsy of lesions when there was suspicion for malignancy. Patients who require other services during their scheduled visit like contraception, laboratory, radiology or antenatal care are referred to the specific service units or departments within MTRH. The various service provision units are within less than 50 meters' radius from the Chandaria Cancer and Chronic Disease Centre, which is more to the periphery. The patients requiring admission to gynecology ward or obstetrics ward are admitted to Faraja Ward or Riley Mother Baby Hospital respectively, both within MTRH and within 50 meters from the psychiatry clinic. The clinically stable patients were given a follow up booking, to be reviewed once every three months; while those who were not clinically stable were admitted to the Kenya wards.

3.3 Study Population

Two populations were studied in this research:

i. Women with mental illness (WMI)
ii. Mental health service providers (MHSP).

3.3.1 Women with Mental Illness (WMI)

The study involved women with mental illness who were on follow up at the outpatient psychiatric clinic at the Chandaria Cancer and Chronic Disease Centre of the Moi Teaching and Referral Hospital, Eldoret; Kenya. This study considered women who were on follow up at the psychiatry outpatient clinic for at least one year, as this gave an ample opportunity for the women with mental illness to interact with the mental health service providers at least on four occasions, as well as interact with the health service delivery system at MTRH. The clinic offers psychiatry care to both male and female patients, with more male than female patients being attended to on each clinic day. The female patient population comprises about 30% of the total attendance on any clinic day. The clinic runs on Wednesdays. On average, 40 female patients were served on each clinic day (Wednesday). Hence, with three monthly reviews, a population of about 500 WMI were expected to be attended to at the clinic over the three-month research period, based on the 2018 daily activity register form the clinic records. The research period was taken as three months as most WMI were stable hence on quarterly follow up.

3.3.1.1 Eligibility Criteria

3.3.1.1.1 Inclusion criteria

i. Women with mental illness who were 18 years or older and on follow up at the psychiatric outpatient clinic at MTRH.
ii. Women with mental illness with capacity to consent as assessed using the Mini Mental State Examination tool.

3.3.1.1.2 Exclusion criteria

i. Women with mental illness with documented speech and/or hearing disability in addition to a mental illness.

ii. Women with mental illness who were on follow up for less than one year.

3.3.1.2 Sampling Procedures

3.3.1.2.1 Sample Size Estimation

The main aim of the study was to assess the Reproductive Health Needs of Women with Mental Illness on Follow at Outpatient Psychiatry Clinic at MTRH- Eldoret. Such reproductive health needs included but were not limited to uptake of contraception, urogenital tract infection screening and treatment, screening for breast and cervical cancer and screening for gender based violence. There is limited data in the literature on the level of need for reproductive health services among the women with mental illness, as well as uptake of these services. Hence, a conservative proportion of 50% was used in order to determine the sample size sufficient to answer the reproductive health needs and service uptake in this group of participants. Therefore, in order to be 95% confident in determining the proportion of women with need for reproductive health services or utilizing any of the reproductive service at the facility to within plus or minus 5% of the proposed 50%, we determined the sample size using Fisher's formula as follows:

$$n = \left(\frac{Z_{1-\alpha/2}}{d} \right)^2 \times P \times (1-P)$$

$$= \left(\frac{1.96}{0.05} \right)^2 \times 0.5 \times (1-0.5)$$

$$= 385$$

Where Z_c is the quartile of the standard normal distribution corresponding c x 100% percentile; c = (1 – a/2), a is the type I error, equal to 5% or 0.05; d is the margin of error equal to 0.05; and P is the proportion of women with the outcome of interest.

Approximately, 40 women were attended to at the psychiatry clinic on each Wednesday in 2018. Since most stable WMI are given quarterly appointments, it was expected that each WMI gets a follow up visit once in every three months. This gave an average of approximate population of 500 women who were being reviewed once every three months.

The sample size was therefore corrected for this finite population size (500 women) as the population of the women with mental illness is smaller than the general population as follows:

$$\frac{n}{1+n/N} = \frac{385}{1+385/500} = 218.$$

Where: N is the total population of women with mental illness reviewed once every three months and *n* being the sample needing correction as derived from the Fisher formula.

Hence we needed to recruit 218 study participants.

3.3.1.2.2 Sampling Technique

Systematic sampling technique was used to select the participants for inclusion in the study since we expected to encounter about 500 WMI over the three-month study period, Hence, to attain the sample size of 218 participants, sampling interval was calculated as; k = *N/n*, where *N* was the expected total population of WMI to be reviewed over the three-month study period (500) and *n* was the requisite sample size (218).

Therefore; k = 500/218 = 2.3 ≈ 2.0. Thus, every second participant was sampled for inclusion in the study.

For any second woman with mental illness who was a potential study participant but did not meet the eligibility criteria or declined to participate in the study, the one who was next in the series was then considered as a potential study participant. Subsequently,

every second WMI from this replacement was then considered for recruitment into the study.

3.3.1.3 Measures and Instruments

We used a pre-tested, researcher designed questionnaire to collect socio-demographic data and the history on the various reproductive health aspects in order to assess the various reproductive health needs and the level of uptake of the various services by the WMI.

Socio-demographic characteristics

The socio-demographic factors addressed were those that are usually assessed on a routine basis by the clinicians working in psychiatry care. These factors have also been addressed and documented in prior scientific literature (Walter& Tiemeier, 2009). The socio-demographic data collected comprised of age, marital status, source of income and educational level.

The WMI were considered as being adult if they were 18 years or older. They were categorized into whether they were in the 'reproductive age group' (≥ 18-49 years) or '>49 years'.

The marital status was classified as 'married', 'single', also used interchangeably with 'never married'; 'separated', 'divorced' or 'widowed'.

The education level was classified according to the minimal level of education attained. For example, a WMI who had dropped out of school at primary school level in class four is categorized as having primary level of education.

Source of income was categorized as 'wages', if they held seasonal jobs, were on casual or contractual employment without an expectation of continuity of employment beyond one year. They were considered to be on a 'salary' if they worked throughout the year with all expectation of continued employment. The category that relied on their families

for the support of their basic needs were categorized as having ‘family support’ as their source of income while those who asked for help from strangers were calorized as ‘begging’.

Mental illness categories

The mental illnesses stated were those that were already diagnosed by the mental health service providers, as per the universal categories for mental disorders stated in the DSM V. In this study, the WMI who were recruited were already on follow up for at least one year, with an already diagnosed mental illness during the course of follow up.

Menstruation

The categories of the menstrual challenges were categorized based on the FIGO classification of uterine bleeding (Munro MG,. et al., 2018). The tool has various categories for normal and abnormal menstrual bleeding; frequency category, duration, regularity, flow volume, intermenstrual bleeding and unscheduled bleeding categories.

The frequency category was based on whether the menstrual periods were non occurent ‘absent’, ‘frequent’ for occurrence after every <24 days, ‘normal’ for occurrence of between 24-38 days and ‘infrequent’ if occurrence was >38days. Categories of absent, frequent and infrequent were grouped as abnormal.

For the duration of bleeding category, normal bleeding is upto 8 days while that longer than 8 days is prolonged hence abnormal.

Regularity of bleeding is based on the number of days in the variation between the longest and the shortest menstrual cycle. The regular variation being between ≤9 days while irregular menstrual cycles being a variation between the longest and the shortest cycles of 10 or more days.

The menstrual ‘flow’ category, is based on the subjective report by the menstrual woman whether they perceive their flow to be heavy, normal or light.

Any bleeding that occurred between cyclically regular onset of menses was abnormal, in the category of ‘intermenstrual bleeding’, and reported in relation to the menstrual cycle as whether occuring randomly, or predictably in the early cycle, mid cycle or late cycle. Non occurance of intermenstrual bleeding is what is considered normal.

Contraception

The various history elements were put into consideration for assessment of the need for contraception as subsequently discussed (Ashford L. 2003). History taken comprised of history of pregnancy intention, duration of time to intended pregnancies, whether currently pregnant or not, whether current pregnancy was intended or not, use of contraception or partners use of contraception, sexual activity and when last sexually active, history of hysterectomy, menstrual history and history of amenorrhea and when last the menstruation occurred. All WMI of reproductive age group (18-49 years in our study) were categorized as either having a need for contraception or no need for contraception.

Those with no need for contraception were those WMI who were not at risk of unintended pregnancy and those who were infecund. Those not at risk of unintended pregnancy comprised of the WMI who were pregnant or had given birth in the past 2 months, had not had sex in the last 3 months or intended a birth in the next 24 months.

The WMI who were considered infecund were those who were married for 5 years or more had no children and were not on a contraceptive; said that they cannot get pregnant when asked on whether they wanted children in future; were menopausal or had undergone a hysterectomy; had a duration of more than six months not postpartum amenorrheic and not using hormonal methods and those in whom the last period before last birth was more than 5 years and not using hormonal methods.

The WMI in need for contraception were those who were at risk for unintended pregnancy. The WMI who were considered to be at risk of pregnancy were the WMI who were fecund, had sex in the last 3 months, were not pregnant and did not want a birth in the next 24 months. Those who were classified as having a met need for contraception were those who were at risk of pregnancy but on a modern method of contraception, or whose sexual partner was on a contraceptive method (consistent and correct use of condoms or vasectomy); as well as those who were 6 months postpartum amenorrheic and met criteria for lactational amenorrhea method.

The WMI who were considered to have an unmet need for contraception were those who were currently pregnant with an unintended pregnancy, currently at risk of pregnancy and not on contraception, not and not postpartum amenorrheic; and those not on contraception and postpartum amenorrheic >2 months <2 years and no lactational amenorrhea; with pregnancy intention of > 2 years or no desire for future pregnancy.

Gender based violence

The questions used for the assessment of the occurrence of the various forms of violence; sexual, physical and psychological were adapted from the shortened modified version of the Conflict Tactics Scale (Strauss, 1990). We chose to assess for the occurrence of the various forms of violence over a three-month period prior to the research for a better recollection of the events in the recent past by the WMI.

Violence by anyone known or unknown to the WMI was measured by asking all WMI questions, where any positive of ‘yes’ denoted occurrence of violence.

The questions asked included questions to establish whether in the three months that preceded the study anyone had pushed, shaken or thrown something at the WMI; slapped, twisted her arm or pulled her hair; punched her with his/her fist or with something that could hurt her; kicked, dragged or beat her up; tried to choke her or burn her on purpose

or threatened or attacked her with a knife, gun, or any other weapon. Any ‘yes’ response to these questions denoted the occurrence of physical violence.

Similarly, questions used to assess for the occurrence of sexual violence comprised of any ‘yes’ response to any of the questions as to whether in the three months that preceded the study, anyone whether known or unknown to the WMI had physically forced her to have sexual intercourse with him/her even when she did not want to; physically forced her to perform any other sexual acts she did not want to or forced her with threats or in any other way to perform sexual acts she did not want to.

The occurrence of emotional/psychological violence was established in the presence of a ‘yes’ response to any of the questions as to whether in the three months that preceded the study, anyone had said or done something to humiliate the WMI in front of others; threatened to hurt or harm her or someone close to her or insulted her or made her feel bad about herself.

For each of the ‘yes’ response, the WMI was asked whether the perpetrator was someone known or unknown to her and whether or not she sought care after her experience: counselling/psychological support and/or went to hospital and/or reported to the police.

Genitourinary tract infections and HIV

History of symptoms and presence of signs that potentially signified presence of a genital or urinary tract infection were sought. The WMI were asked whether in the three months that preceded the study they had noted any of the following: dysuria, lower back pains, urinary frequency, foul smelling per vaginal discharge, pain during sexual intercourse, vulval itchiness, intermenstrual bleeding, vaginal itchiness, genital ulcerations, lower abdominal pains, suprapubic pains or inguinal swellings. Any ‘yes’ response indicated a potential presence of a urinary or genital tract infection which needed to be investigated for and/or treated.

For HIV, when asked whether the WMI had ever taken a HIV test, a ‘yes’ response signified service uptake and a ‘no’ response signified a non-uptake, hence a need for HIV testing services.

Drugs and substance use

History of substance use was established as to whether the WMI had ever used any substance, or never having used any substance. If ever used any drug/substance, the type of substance ever used, and when it was last used. The history of use of substance was not utilized for the sake of making a diagnosis of a substance use disorder. The categories of substances assessed for were those listed in the DSM-5 including alcohol, cannabis (bhang), tobacco, drugs used in hospitals like those inhalants, opioids, sedative hypnotics/anxiolytics, stimulants, among others. Alcohol included any ethanol containing drink both legal and illegal. Hashish was included with cannabis *(bhang)*. Inhalants included a variety of substances e.g. amyl nitrate, cleaning fluids, glue and other aerosol sprays. Opioids included heroine, pethidine, morphine and cough syrups containing codeine. Stimulants included methamphetamines/amphetamines and cocaine. The sedatives, hypnotics/anxiolytics included methaqualone and benzodiazepines. Tobacco included cigarettes, tobacco smoked in cigars and pipes (including ‘shisha’) and smokeless tobacco (chewed tobacco, snuff, ‘kuber’). ‘Kuber’ is a form of smokeless tobacco sold in East Africa that often also contains slaked lime and cannabis.

Opioids, sedatives, hypnotics/anxiolytics and stimulants comprised some of the injectable that were listed. Some substances containing methamphetamine include Catha edulis (‘khat’), crystal methamphetamine and 3,4-methylenedioxy-methamphetamine (MDMA).

Cervical cancer and breast cancer screening

History of the WMI was taken on their age and whether they had ever taken up cervical cancer screening or breast cancer screening services. The status of the cervical and breast cancer screening was categorized as those 'with need' for screening and those 'not in need' for screening. The 'in need' for cervical cancer comprised of all WMI who were ever sexually active, 18-65 years old. Those who had 'service uptake' were those who were in the 'in need for cervican cancer screening' category and had undergone any form of cervical cancer screening whether using visual inspection with acetic acid or Lugol's iodine, Pappanicolaou smear or Human papillomavirus DNA testing; or a combination of any of these methods. This was regardless of when they were last screened for the cervical cancer.

The WMI 'in need for breast cancer screening' comprised of all WMI who were ≥25 years old. The WMI with 'uptake for breast cancer screening' were the WMI who reported to ever having had a clinical breast exam and/or breast ultrasound and/or mammography from among those with need for breast cancer screening.

Pregnancy related services

History of previous and current pregnancy was taken to establish whether one had ever been pregnant, or currently pregnant and how long ago they delivered. Also, history on occurrence of abortion(s) was taken to establish whether the WMI had ever suffered an abortion and whether they sought treatment or not.

The WMI who reported to be pregnant at the time of study were categorized as being in 'need for antenatal care services'. Those who had delivered not longer than six months before the study were categorized as being in 'need for postnatal care services'. The WMI who had ever had an abortion, whether spontaneous or induced from a pregnancy

that was either intended or unintended were categorized as being in ‘need for abortal care services’.

The category of ‘uptake of abortal care services’ comprised the WMI who had sought hospital care in pursuit of abortion induction and received the services or those who sought care at a hospital after suffering a spontaneous abortion.

The category of ‘uptake of antenatal care services’ comprised the WMI who were pregnant at the time of the study and had attended at least one ANC visit and had the requisite blood tests- blood grouping and Rhesus antigen typing, hemoglobin concentration, testing for syphilis and HIV; urine test - urinalysis and an obstetric ultrasound at least once.

The category of ‘uptake of post-delivery care services’ comprised of WMI who had delivered within 6 months preceding the study and had delivered in hospital, attended postnatal check-up within two weeks post-delivery, were exclusively breastfeeding their babies and their babies were at par with the immunization schedule as would have been expected for the age of the infant.

3.3.1.4 Study Procedure

Two research assistants were recruited by the principal investigator to help with the identification of WMI who had attended the Outpatient Psychiatry Clinic and collect the MMSE tool from them as they exited the MHSP consultation rooms.

The cognitive functions of the WMI were evaluated to ascertain their capacity to give consent. This was done part of the ethical principles guiding research in vulnerable participants, with WMI being a vulnerable population (Council for International Organization of Medical Sciences, 2002). Among people with mental illnesses, cognitive

functioning is a good predictor of decision-making capacity (Palmer et al., 2005; Candilis, Fletcher & Appelbaum, 2008).

The assessment for the decisional capacity of the WMI was carried our using the standard Mini Mental State Examination (MMSE) tool (Folstein, Folstein & McHugh, 1975); as was administered by the attending mental health service provider; clinical officer, consultant psychiatrist or the psychiatry resident. On the clinic day, the MMSE tool was filled in before the WMI were sampled for recruitment into the study. The MHSP informed the WMI on the purpose of the MMSE, after which the attending MHSP read out the questions on the MMSE tool to the WMI and then filled out the responses in the form. A score was assigned to each response and total scores obtained for each participant. This brief test takes 5-10 minutes to administer and it concentrates only on the cognitive aspects of mental functions. The MMSE has been found to be a valid and reliable test of cognitive function (Folstein, et al., 1975; Tombaugh & McIntyre, 1992). In the interpretation of the MMSE tool, a cut off score of less than 23 was used, as scores equal to or above 23 have been found to be strongly indicative of decision making capacity among patients (Appelbaum, 2007). Those who scored less than 23 were deemed unable of consenting hence excluded from the study. The administration of the MMSE for evaluation of the cognitive function of WMI was also done to improve accuracy of self-report (Babor, et al., 2000). The attending MHSP also documented the diagnosis of the mental illness on the MMSE tool after carrying out the MMSE on each potential study participant.

A pilot study was conducted in May 2019 at the Rift Valley Level 5 Hospital after being granted permission to carry out the pilot study by the facility Medical Superintendent. Based on the expected sample size of 218 WMI for the main study, a pilot study was conducted on 22 WMI and two mental health service providers at the pilot study site to

pretest the data collection tools. The pilot study sample size of 22 WMI was equal to 10% of the sample size for the main study, hence adequate for the pilot (Connelly, 2008).

The attending clinical officer with experience in psychiatry filled in the MMSE tool to assess the decisional capacity of the WMI prior to recruitment for the pilot study. The nature of the study was discussed and written informed consent was sought from each participant during the piloting of the tool. The process of obtaining informed consent was carried by the principal investigator and witnessed by the psychiatry nurse, who had the capacity to understand the procedures, the risks and the merits of the research. The psychiatry nurse was well familiar with the mental condition of the WMI who were potential participants and was independent of the research team. The data tools were in English and Kiswahili for those who did not understand English.

The interview took place in a consultation room where privacy of the participants was ensured. They were taken through half day training by the principal researcher on the data collection tools, the study procedure, the research ethics to be observed and their role in this research.

After the pilot study, the data collection tools were edited. The adjustments that were done comprised of correction of grammar, sequencing of questions, paraphrasing questions and sequencing of sub sections in the questionnaire. Subsequently, IREC gave the approval for the edits done to the questionnaires, permission was sought from the Head of Mental Health Department to carry out my research in the unit, and a letter was written to that effect. The study was carried out between July and October 2019.

The assistance of the consultants and the registrars in the unit was sought in administering the mini mental status assessment tool to all the female clients who attended the clinic. Also, all personnel at the clinic were informed about the nature of the study.

The records personnel retrieved the files for the patients scheduled to attend clinic prior to the clinic day as per their normal routine. As the patients arrived for their appointment in the morning, they filed a mini mental status exam tool in the medical file of each female patient prior to triage. The Mini Mental Status Exam (MMSE) tools were serialized 1,2,3, ... and so forth; and filed in on a first come first served basis in the medical record of the women with mental illness. As the patients were waiting at the triage, they were given brief information about the study.

The patients were seen by the clinicians on a first come first served basis. The attending clinician completed the MMSE tool and recorded the diagnosis of the mental illness as well as the MMSE score on the MMSE tool and introduced the patient to the study. The information that was communicated by the attending clinician was standard (Appendix 8).

At exit from the mental health service providers' consultation room, they were given the MMSE tool to exit with, and my research assistant collected the tool. As she collected the MMSE tools, every second WMI who potentially met the eligibility criteria was given information about the study that they were introduced to while at the triage and directed to the consultation room 7 in which the questionnaire administration was done. The potential participant was then given an explanation about what the study entailed, taken through the consenting process which was followed by questionnaire administration upon consenting to participate in the study.

In the event that the potential participant did not meet the eligibility criteria, either by MMSE score or had attended clinic for less than one year; the patient bearing the next serial number after the one who is not eligible for the study became the next potential participant, and the subsequent second patient from this one then became the next potential participant in that order.

The WMI who were not eligible for study and those who were not sampled as potential participants were given general reproductive health information by the research assistant.

A study serial number was then assigned to the participant after consenting, and the same serial number was noted on the MMSE, consent form and the questionnaire; then the questionnaire was administered.

The WMI who needed services from various units as it became apparent during the interview were referred to the various service delivery units within the hospital, using the standard MTRH referral form; with the patient being taken to this unit by the patient attendant from the Mental Health unit.

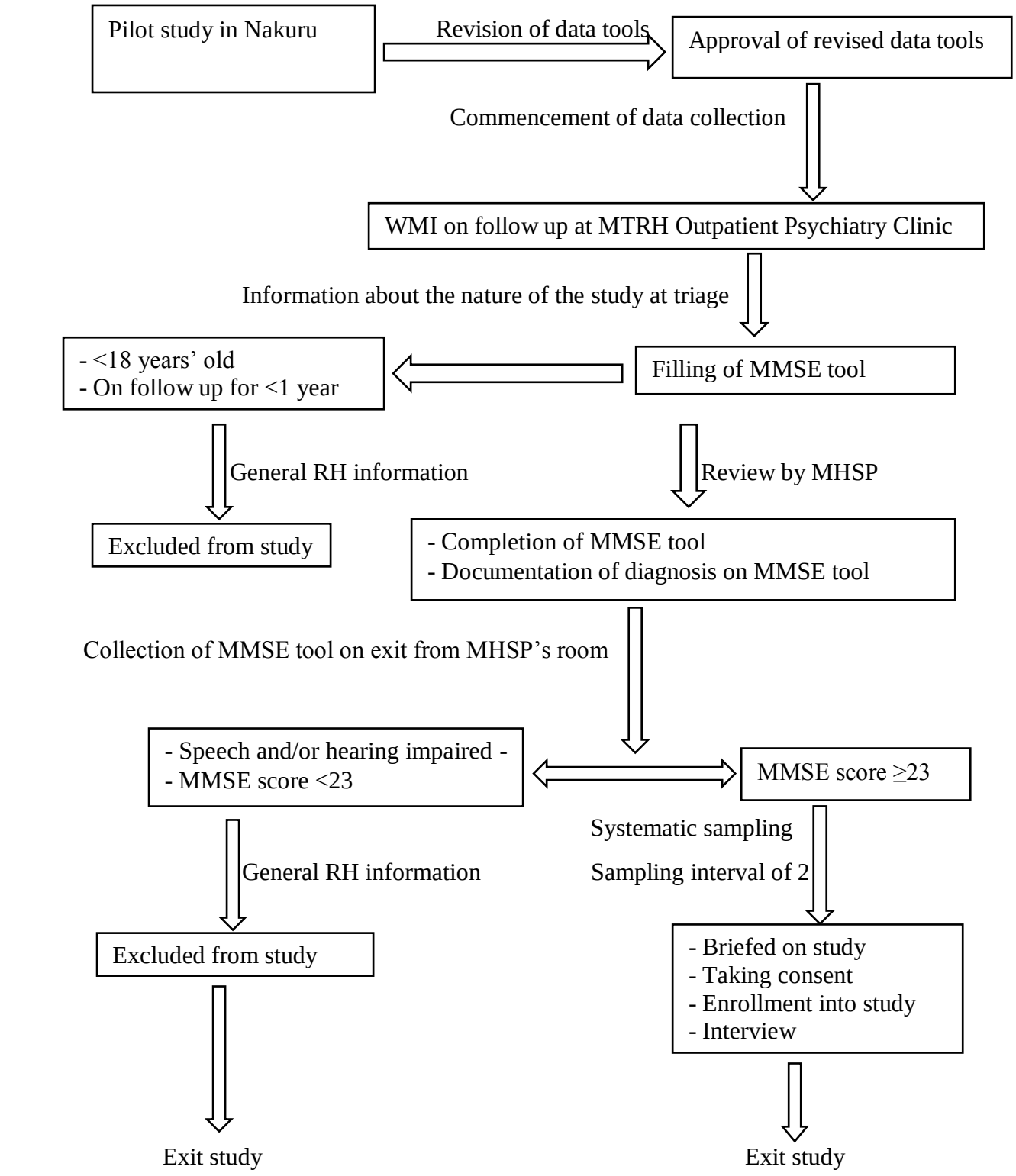

Figure 3 Study Procedures (Enrollment of WMI)

3.3.1.5 Data management

3.3.1.5.1 Data Collection

A semi structured, interviewer administered questionnaire was used for data collection. Data on the socio-demographic characteristics such as age, marital status, and level of education among others was collected. Also, history was taken on reproductive health aspects such as menstruation, unintended pregnancies, previous and current pregnancies as well as abortions, contraceptive utilization, STI screening and treatment, screening for cervical cancer and breast cancer awareness and experience of gender based violence.

3.3.1.5.2 Data Entry and Storage

The data collected was entered into an electronic database which was password protected - the MS Access. It was then checked for completeness then coded. The data was stripped of the identifying information to ensure that the patient confidentiality was maintained (through coding). The entered data was checked for errors and anomalies in preparation for analysis. The data entered was backed up using removable data storage device to cushion against data loss. This hard drive was stored in a locked cabinet. The paper questionnaires were stored in a safe locked cabinet and the key has been retained by the lead investigator.

3.3.1.5.3 Statistical Analysis and Presentation of Data

The data from the MS Access database was then transferred to the STATA/1C 16.1. College Station, Texas .77844 USA for analysis. All analysis was carried out at the 95% level of significance. The various levels of service need and service uptake was reported in percentages within 95% confidence interval.

Socio demographic Characteristics of WMI

The continuous socio- demographic variables of the women with mental illness like age was reported as a mean with the corresponding standard deviation. The discrete variables like marital status, level of education and source of income were analyzed using frequencies and the percentages with their corresponding confidence intervals stated. A frequency table was used for data presentation.

Reproductive Health Needs of Women with Mental Illness

The assessment of the reproductive health needs of the women with mental illnesses was done using the history given by the women with mental illness as stated in the questionnaire. Based on the reproductive health need under assessment, various tools or formulae were applied as described under the section of that particular reproductive health need as described below. The level of need was then reported as a proportion of the women who had demonstrated need for a particular RH service and reported as a percentage with 95% confidence intervals. All analysis was carried out at the 95% level of significance. Frequency tables were used to present the data on the various reproductive health needs.

Need for services for menstrual challenges: The menstrual history was taken using the questionnaire as administered. The information was then grouped according to the International Federation of Gynecology and Obstetrics (FIGO) System 1 for normal and abnormal uterine bleeding (Appendix 9).

From this, the categories of normal and abnormal menstrual bleeding were derived. Presence of dysmenorrhea was included as a menstrual challenge. The need for services relating to menstruation was established and reported as a percentage of WMI who had any menstrual abnormality from among the total number of study participants who were menstrual at the time of study.

The unmet need for contraception: The women with mental illness who were 18-49 years of age were assessed for their unmet need for spacing and unmet need for limiting pregnancy as at the time of study. The total unmet need for FP was derived. This was done though utilization of the history taken on current use of contraceptive methods, pregnancy intention and the timeline to the intended pregnancy. Also, menstrual history was utilized to document amenorrhea and pregnancy (if pregnant or amenorrhea of non-pregnancy etiology) or menopausal status, as well as the history of current pregnancy to state whether pregnancy was intended or not. The computation of unmet need for FP followed the guideline by Ashford, L. (2003). The full computation of the unmet FP need is as shown (Appendix 10).

The number of WMI who were sexually active and at risk of pregnancy (N) was obtained from: women who reported to be currently sexually active women (sexually active in the last three months preceding the study) minus: i) those who had current intended pregnancy ii) postmenopausal women of reproductive age iii) amenorrheic reproductive age women on FP method iv) those who had a pregnancy intention of less than 2 years.

The unmet need for spacing was reported as a percentage of those with pregnancy intention of ≥2 years but not on contraception from among the total number (N) of study participants at risk of pregnancy.

The unmet need for limiting pregnancies was reported as a percentage of those who reported never wanting to get pregnant again from among total number (N) study participants at risk of pregnancy.

The total unmet need for contraception was reported as the sum of unmet need for limiting and unmet need for spacing pregnancies and reported as a percentage.

The need for pregnancy related services: This need was assessed through past history of occurrence of an unintended pregnancy. The level of need was then calculated as a percentage of those with history of occurrence of unintended pregnancy from among all study participants who had ever been pregnant.

The need for abortal care services was calculated and reported as a percentage of those who had ever had an abortion from a pregnancy that was intended or unintended; regardless of whether the abortion was spontaneous or induced, from among all study participants who had ever been pregnant.

The need for antenatal care services was derived as a percentage of the WMI who reported being pregnant at the time of study from among the total number of study participants of reproductive age. In this study, consideration was made to assess those who were currently pregnant for ease of recall and availability of records (documentation) where applicable.

The need for post-delivery care services for the mother and baby was derived as a percentage of WMI who delivered within six months prior to the study from among all the study participants of reproductive age. Consideration was made to assess those who had delivered within six months prior to the study for ease of recall, and that since the baby was most likely to still be breastfeeding and active in the immunization program; availability of records (documentation) where applicable would have been easier.

Then, the composite need for pregnancy related services (pregnancy prevention, abortal care, ANC and post-delivery services) was derived as a percentage of WMI with any of the pregnancy related service need from among all WMI interviewed.

Need for screening and management services for urogenital tract infections: This need was assessed from the history of presence of signs and/or symptoms which could potentially signify a urogenital tract infection, which in essence would have triggered investigation for the infection and/or treatment.

This need was hence calculated as a percentage of the number of WMI who reported at least one of the symptoms and/or signs of urogenital tract infection as stated in the questionnaire from among all WMI who participated in the study.

The need for HIV testing: this was based on the Kenya HIV testing service guidelines (NASCOP 2015), where all Kenyans are expected to know their HIV status and get to re-test annually. Based on these guidelines, the need for HIV testing was calculated as follows a percentage of all WMI who had never taken the HIV test plus all WMI who had taken an HIV test more than one year prior to the study from among all study participants.

Need for cervical and breast cancer screening: In the assessment of the need for cervical cancer screening services, all WMI who had ever had sexual intercourse as were considered as being in need of cervical cancer screening services as per the Kenyan guidelines on cancer screening Ministry of Health, (2018). This information was obtained from the sexual history of the WMI. The need for cervical cancer screening was hence calculated as a percentage of the WMI who had ever had sex (18-65 years of age) from among the total number of the study participants who were18-65 years old.

In the assessment of the need for breast cancer screening services, all WMI who were ≥25 years' old were considered as being in need of breast cancer screening services as per the Kenyan guidelines on cancer screening Ministry of Health, (2018). The need for

breast cancer screening services was hence calculated as a percentage of WMI who were ≥25 years' old from among the total number of study participants.

Therefore, the composite need for breast and/or cervical cancer screening services (n) was calculated as a percentage of all WMI who needed breast cancer screening services and/or cervical cancer screenings services from among all study participants.

Need for gender based violence care services: The assessment for the experience of gender based violence was done using the questionnaire. The questions were adapted from the short form of the tool for assessing for violence (Strauss, 1990). The assessment for experience of sexual (penetrative), physical or emotional violence covered a duration of three months that preceded the study.

Of all the WMI, the experience of any of the forms of violence was considered as a need for services by the survivor. This was reported as a composite need for gender based violence care services. It was derived as a percentage of all WMI with experience of sexual and/or physical and/or emotional violence in the three months preceding the study from among all study participants.

Then, from the total number of WMI who reported experience of the sexual, physical or emotional violence, the need for care services relating to the specific GBV experience was derived as follows:

The need for sexual violence care services was calculated a percentage of all WMI who reported experience of sexual violence in the three months preceding the study from among all WMI who reported experience of any form of GBV in the three months preceding the study.

The need for physical violence care services was calculated as a percentage of all WMI who reported experience of physical violence in the three months preceding the study

from among all WMI who reported experience of any form of GBV in the three months preceding the study.

The need for emotional violence care services was calculated as a percentage of all WMI who reported experience of emotional violence in the three months preceding the study from among all WMI who reported experience of any form of GBV in the three months preceding the study.

Uptake of Reproductive Health Services by WMI

The uptake of the various reproductive health services by the women with mental illnesses was determined using the history as given by the women with mental illness that demonstrated service utilization when need was identified as stated in the questionnaire. The level of uptake of the various reproductive health services was then indicated as a proportion of the women who had demonstrated utilization of a particular reproductive health service from among those in whom need for service was identified, and reported as a percentage within 95% confidence interval. All analysis was carried out at the 95% level of significance. A frequency table was used to present data on the uptake of the various reproductive health services.

Uptake of care services for menstrual challenges: The uptake was calculated as a percentage of WMI who reported any menstrual challenge(s) and sought treatment from among the total number of WMI who were menstrual at the time of the study and reported menstrual challenges.

The uptake of contraception: It was reported as the contraceptive prevalence rate. It was derived from the WMI who were sexually active and 18-49 years old; who were on any modern contraceptive method or whose partner was on a modern method of

contraception from among the total number of women aged 18-49 who were currently sexually active.

The uptake of pregnancy related services was calculated based on uptake of abortal care services, ANC services and postnatal care services as shown below.

Uptake of abortal care services: Was determined as a percentage of the WMI who had sought hospital care for or after abortion from among the total number of WMI who had ever had an abortion, whether spontaneous or induced; regardless of whether the pregnancy was intended or unintended.

Uptake of ANC services: It was determined as a percentage of WMI who had attended at least one ANC visit and had a blood test, urine test and obstetric ultrasound from among the total number of pregnant study participants.

Uptake of post-delivery care services: It was determined as a percentage of the WMI who had delivered within 6 months preceding the study and had delivered in hospital, attended postnatal check-up within two weeks post-delivery, were exclusively breastfeeding their babies and their babies were at par with expected immunization from among the total number of study participants who had delivered within 6 months preceding the study.

The uptake of screening and management services for urogenital tract infections was determined as a percentage of the WMI who sought management for any sign and/or symptom of potential urogenital tract infection from among the study participants who had any symptom and/or sign of potential urogenital tract infection.

Uptake of HIV testing services was derived as a percentage of the WMI who had taken the HIV test within one year or less prior to the study from among all study participants.

The uptake of cervical and breast cancer screening services was calculated as uptake of cervical cancer screening services, uptake of breast cancer screening services and an ultimate composite uptake of both.

Uptake of cervical cancer screening services was derived as a percentage of WMI who had been screened for cervical cancer from among all study participants who were ever sexually active and 18-65 years old.

Uptake of breast cancer screening services was derived as a percentage of WMI who reported to ever having had a clinical breast exam and/or breast ultrasound and/or mammography from among all study participants who were ≥25 years old.

The composite uptake of screening services for breast and cervical cancer was determined as a percentage of all WMI who had taken up breast and/or cervical cancer screening services from among all study participants in whom need for screening for breast and/or cervical cancer had been established.

The uptake of any GBV care service was determined as a percentage of WMI who took up any of the GBV care services like hospital care and/or reporting to the police and/or counselling services from among all study participants who reported to have experienced any form of GBV in the three months that preceded the study.

3.3.2 Mental Health Service Providers (MHSP)

Based on the 2018 records from Human Resource Department, there were 32 mental health service providers in the Department of Mental Health and Behavioral Services offering psychiatry care services. They comprised of 10 nurses, 6 clinical officers, 10 mental health residents and 6 psychiatry consultants.

3.3.2.1 Sample Size Estimation

The logic of informational comprehensiveness and the application of concept of information power (Malterud et.al, 2015) was adopted in reaching the sample size since the population under study attained homogeneity with a focused research aim. The research aim was focused – targeted at identification of challenges faced by mental health service providers. The population homogeneity was attained as the population shared some characteristics: worked within the same health system and service delivery structure. They had a considerable work experience of at least one year in this environment providing mental health services hence had a fair amount of time for adequate interaction and service delivery to women with mental illness within this working environment (MTRH). The study participants from the various cadres were proportionately recruited into the study to further ensure population homogeneity.

The recruitment of the study participants across the cadres was done until code saturation was attained. Each participant from each cadre was considered for interview as a key informant, in keeping with the aim of exploring the account of each of the participants; for qualitative data on the challenges faced by mental health service providers in offering reproductive alongside mental health services. A total of 10 participants were interviewed through individual interviews using the interview schedules.

3.3.2.2 Sampling Technique

Population integrity was observed in identification of the mental health service providers (MHSP) for enrollment into the study through stratification by cadre. From among the four cadres of the mental health service providers: nurses, clinical officers, mental health registrars and consultant psychiatrists was employed, purposive sampling was applied.

From each cadre, the MHSP who was on duty on the day of data collection was considered for inclusion into the study.

Data was collected from each of the cadres and analyzed for themes once the whole strata was represented (consultant, registrar, clinical officer and nurse). Another round of data collection across the strata was done. Based on initial analysis sample of data collected across the strata, code saturation was attained after recruiting 10 participants. These participants comprised of two consultants, two clinical officers, three nurses and three mental health residents.

3.3.2.3 Eligibility Criteria

3.3.2.3.1 Inclusion Criteria

MHSP of any of the four cadres: consultant, registrar, clinical officer or nurse.

3.3.2.3.2 Exclusion Criteria

Less than one year in mental health services provision at MTRH.

3.3.2.4 Study procedure

In order to assess the challenges faced by the mental health service providers in offering mental alongside reproductive health services, the mental health service providers were sampled through purposive sampling after stratification by cadre. The mental health service providers were enrolled sequentially across the cadres: consultant, resident, clinical officer and nursing for the interviews as the key informants. Data collection was conducted on Wednesdays during the data collection period.

The mental health service provider attending to patients on the clinic day was considered for interview. The he/she was informed about the study and informed consent sought prior to issuance of the interview schedule for self-administration. If he/she declined to participate, the next health care worker available for that cadre on that day was to be

considered for interview and if none is available on that day, the mental health service provider for that particular cadre attending to patients on the next clinic day was considered for interview. None of the health care workers approached to participate in the study declined to be involved neither did any withdraw their consent from participation.

After collection of data across the strata, with the four cadres represented, data was analyzed for themes. Data collection continued and was analyzed concurrently until code saturation was attained.

Code saturation was attained after the recruitment of a total of 10 mental health service providers, comprising of two consultants, two clinical officers, three nurses and three mental health residents.

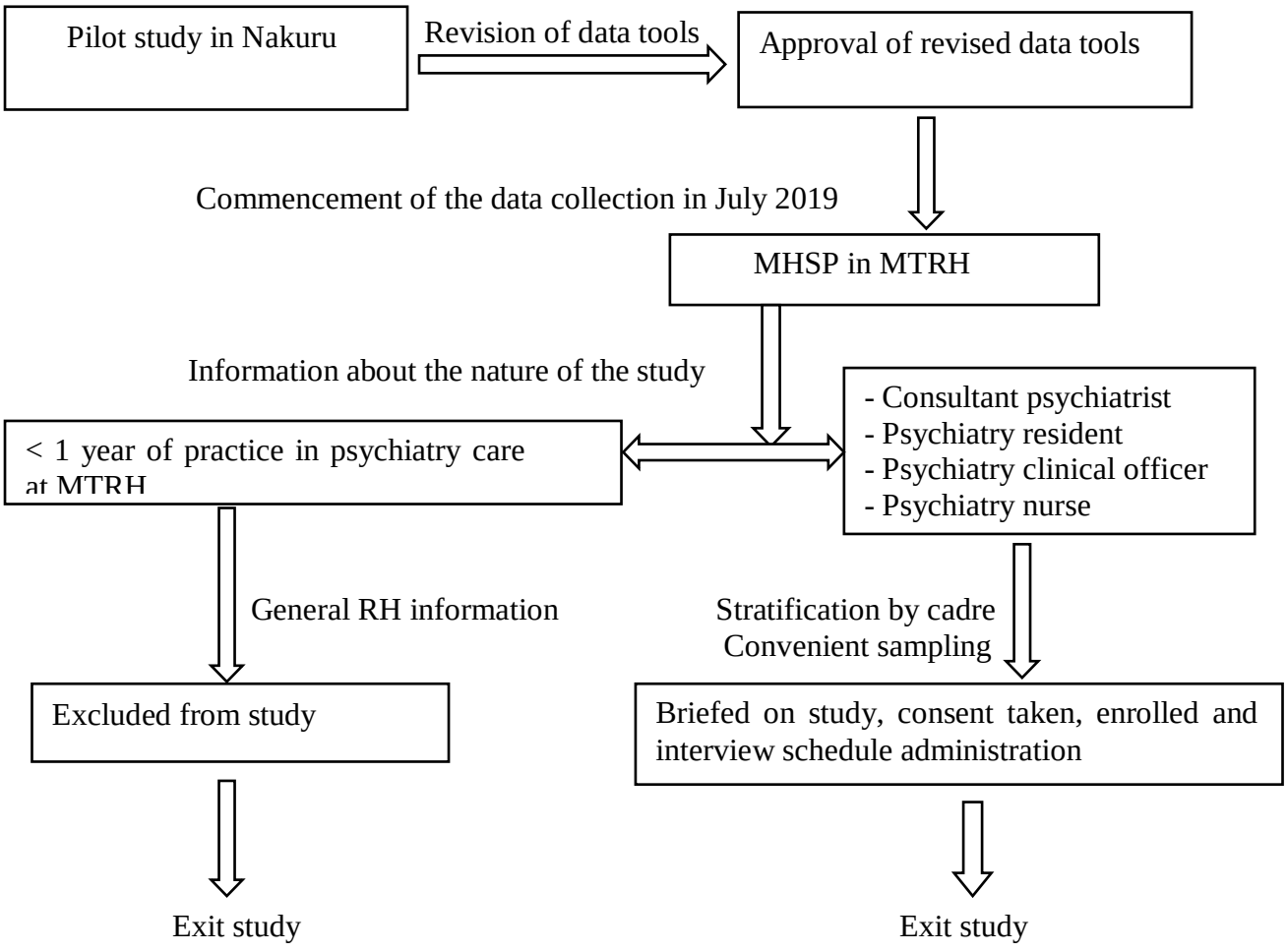

Figure 4: Study Procedures (Enrollment of MHSP)

3.3.2.5 Data Collection and Management

Challenges Faced by MHSP in Provision of Reproductive Alongside Mental Health Services

A pre tested interview schedule was used for data collection on demographic characteristics of the mental health service providers like years of experience in psychiatry practice, age, cadre of mental service providers and gender. Also, qualitative data on how RH services are offered to WMI by the mental health service providers, how they link WMI for reproductive health service provision and the challenges they face in provision of reproductive alongside mental health services was collected.

The data collected using the interview schedule was checked for completeness. It was stripped of the identifying information to ensure that the MHSP confidentiality was maintained. The data entered was backed up using removable data storage device and stored in a separate location to cushion against data loss. The interview schedules were stored in a safe cabinet under a lock and the key has been retained by the lead investigator alone. These will be destroyed five years later following the publication of the findings.

3.3.2.6 Statistical Data Analysis and Presentation

Socio Demographic Data of MSHP

The data was analyzed using the STATA/1C 16.1. College station, Texas .77844 USA software. The socio- demographic data for the mental health service providers was reported based on frequencies and corresponding percentage for cadre of mental service providers, gender, age and years of practice in mental health service provision.

Qualitative Data on Challenges Faced by MHSP

The qualitative data from the collected text from the interview schedule divided into information segments which were then coded. The coding frames that were used included paragraphs, sentences and key phrases. The coded information was then collapsed into themes. The emergent major themes and illustrative quotes were then reported.

3.4 Data Dissemination

The thesis research findings have been presented in the Kenya Obstetrical and Gynecological Society's (KOGS) Forty Fifth Annual Scientific Conference (Appendix 16) and also presented as an e-poster at the XXIII FIGO World Congress of Gynecology and Obstetrics (Appendix 17). The abstract was published in the International Journal of Obstetrics and Gynecology, Poster Abstracts Vol 155 Issue S2 pp 386-387. obgyn.onlinelibrary.wiley.com/doi/10.1002/ijgo.13886 (P0639).

The research findings will also be presented in various conferences and seminars, and a full publication of the research will be pursued from various reputable peer reviewed journals. A copy of this thesis document will be availed to the MTRH management to help inform protocol formulation to guide screening services for reproductive health needs identification and service provision to women with mental illness attended to at the psychiatry unit.

3.5 Ethical Considerations

Approval was sought from the Institutional Research and Ethics Committee (IREC) of the Moi Teaching and Referral Hospital and Moi University prior to conducting the research (Appendix 12). The Moi Teaching and Referral Hospital also granted permission for the study to be conducted within its premises (Appendix 13).

The ability of each potential participant to consent and participate in our study was evaluated by the attending psychiatrist consultant or resident.

The assessment was done using the mini mental status examination (MMSE) tool which gave a score below which (score of 23 or less) the potential participant was considered unable to give consent to participate in the study (Appendix 7).

The researcher sought approval from the Medical Superintendent of the Provincial General Hospital- Nakuru to carry out a pilot study in the facility. This was granted before conducting the pilot study at the facility (Appendix 14).

The data collection tools were edited after the pilot study, after which approval of amendment was sought from IREC before commencement of the study (Appendix 11). The researcher also sought permission from the Head of Mental Health Department to carry out research in the mental health service unit (Appendix 15).

Prior to recruitment of a study participant, a written informed consent was sought from each participant. The potential study participants were informed that their participation in the study was voluntary and that they reserved the right to withdraw from participation at any stage of the interview. Participation in this study was voluntary and there was no inducement of the participants to participate in the research (Appendix 1, Appendix 2 and Appendix 5).

The collected data was de-identified and coded. Confidentiality and anonymity was maintained throughout the research process, with use of serial numbers to protect the participants' identity and conduction of the interviews in privacy- in consultation rooms with doors and use of moderation of the voice volume so as not to be heard from outside. The data contained in the questionnaires and in the hard disc have been safely kept in a locked cabinet only accessible by the researcher. All the database in the software was password protected.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter is organized by objectives and takes cognizance of the two study populations. The first part addresses the first two objectives, with the study population being the women with mental illness, while the second part involves the mental health service providers in addressing the third objective. The figure 4 below shows how the WMI were recruited into the study.

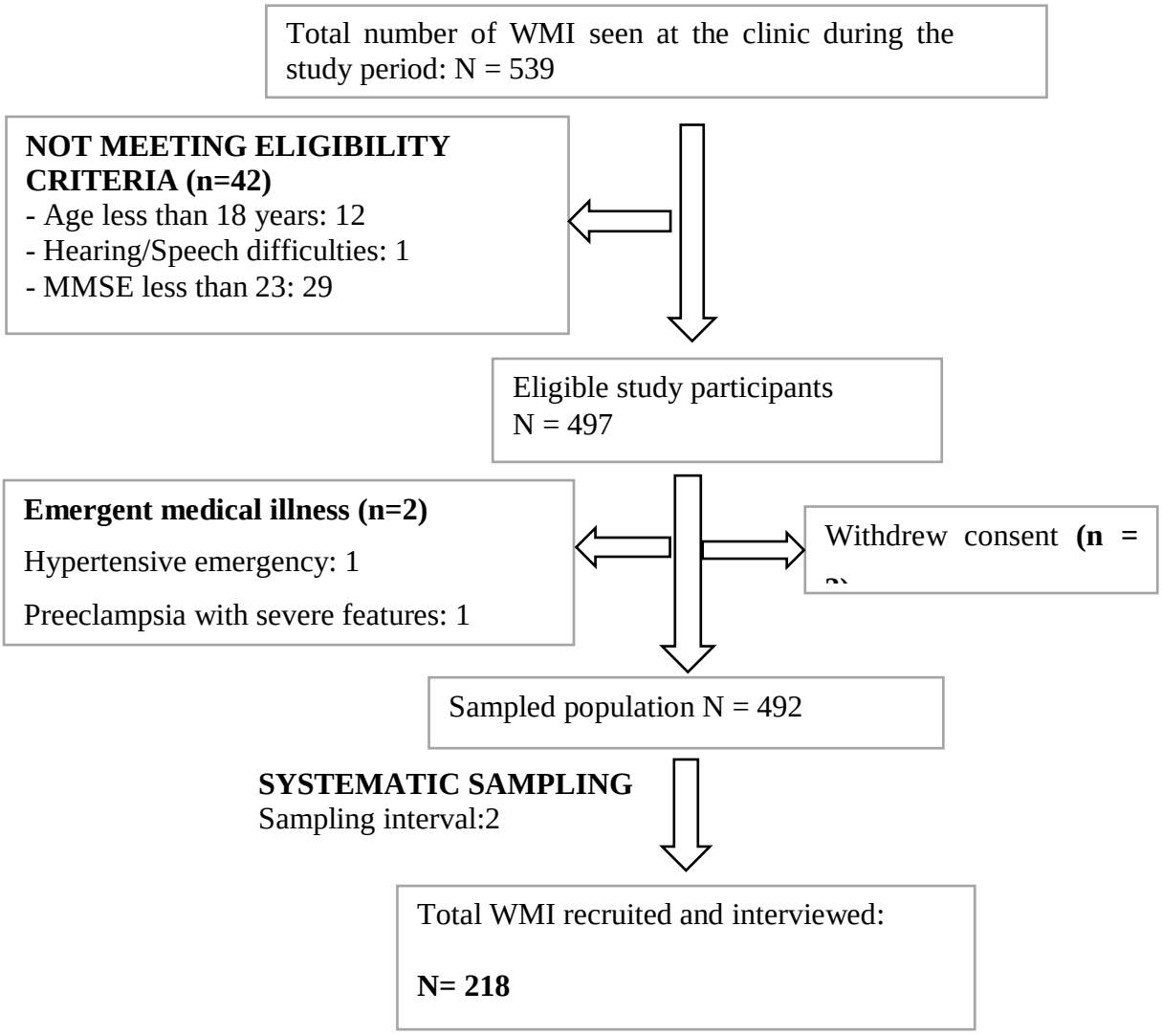

Figure 5: Recruitment and Enrollment of WMI

Socio-Demographic Characteristics of Women with Mental Illness

A total of 218 respondents participated in the study. Of all the 218 respondents, the MMSE mean score was 28.6 (SD ±1.4). The mean age of the respondents was 39.1 years (SD±12.1). Of the 218 WMI interviewed, 94 (44.1%) suffered from bipolar mood disorder and 32(14.7%) had a history of concurrent substance use. Of the 218 respondents, 169 (77.5%) were in the reproductive age group (18- 49 years), 105 (48.2%) were married and 44 (20.3%) had a tertiary level of education as the highest level of education. Regarding the source of income, 101 (46.3%) relied on their families for financial support (Table 1).

Table 1: Socio-Demographic Characteristics of Women with Mental Illness

Variable (N=218)	Category	Frequency	Percentage
MMSE scores (mean, SD)	28.6 (±1.4)		
Age in years (mean, SD)	39.1 (±12.1)		
Age	≤49 years	169	77.5
	>49 years	49	22.5
Marital status	Married	105	48.2
	Single	62	28.4
	Widowed	20	7.8
	Divorced	17	9.2
	Separated	14	6.4
Education level	None	5	2.3
	Primary education	100	45.8
	Secondary education	69	31.6
	Tertiary education	44	20.3
Mental illness	Bipolar disorder	94	43.1
	Schizophrenia	88	40.4
	MDD	17	7.8
	Schizoaffective disorder	15	6.9
	Anxiety disorder	2	0.9
	Organic psychosis	2	0.9
Source of income □	Wages	122	56.0
	Family support	101	46.3
	Salary	25	11.5
	Begging	1	0.5
	Other source	2	1.0
Ever used drugs	No	153	70.2
	Yes	65	29.8
Drugs ever used□□ (n=65)	Alcohol	63	96.9
	Tobacco	14	21.5
	Bhang	6	9.2

□ Some WMI had more than one source of income hence the total of source of income is more than 100%

□□ Some WMI had more than one source of income hence the total of substances used is more than 100%.

4.2 Reproductive Health Needs of Women with Mental Illness

Contraception and Menstruation Service Needs for WMI

The first objective in this study was to assess the reproductive health needs of WMI who were on follow up at MTRH. The various reproductive health needs were assessed as described in the section on statistical analysis above.

Need for contraception: The unmet need for FP among women of reproductive age (n=169) was 75 % (Table 2). The comprehensive computation of the unmet need for FP is as appended (Appendix 10).

Need for services for menstrual challenges: Of the 218 study participants, 117 (53.7%) were menstrual at the time of the study of which 97 (56.7%) reported menstrual challenges. Hence, the need for services for menstrual challenges was 56.7% (Table 2).

Table 2: Contraception and Menstruation Service Needs for WMI

Variable	WMI with need	Percentage	95% CI
Need for contraception			
Total unmet need for FP in WMI at risk of pregnancy (n=100)	75	75.0	65.3-83.1
Menstrual Services			
Need for services for menstrual challenges (n=171)	97	56.7	49.3 - 64.2
***Specific menstrual challenges (n=97)** Dysmenorrhea Heavy menstrual bleeding Irregular cycles Menstrual Hygiene challenges Prolonged bleeding (>8days) Mastalgia	 43 42 40 11 4 2	 44.3 43.3 41.2 11.3 4.1 2.1	
□ Some WMI had co-occurrence of specific menstrual challenges hence the total is more than 100%.			

Other Reproductive Health Needs of WMI

Need for pregnancy related services: Of the 187 WMI who had ever gotten pregnant, 143 (76.5%) needed pregnancy prevention services. Of the 187 WMI who had ever gotten pregnant, 61 (32.6%) needed abortal care services. Of the 169 WMI of reproductive age, the need for antenatal care services (those who were pregnant at the time of study) was 4.1% (CI 1.1% - 7.9%), same as the need for postnatal care services among WMI who were up to 6 months postpartum at the time of study. Of the 218 WMI, 187 needed any of the pregnancy related services, hence the composite need for pregnancy related services was 85.8% (Table 3).

Need for screening and management services for urogenital tract infections: Of the 218 study participants, 67(30.7%) needed investigation and management for potential urogenital tract infections (Table 3).

The need for HIV testing: Of the 218 WMI, 157 (72%) needed to be tested for HIV (Table 3).

Need for breast and cervical cancer screening services: Of the 218 WMI interviewed, 209 (95.9%) needed cervical cancer screening services with 189 of the 218 WMI needing breast cancer screening services. Of the 218 WMI, 216 needed cervical cancer and/or breast cancer screening services, hence the composite need for cervical and/or breast cancer screening was 99.1% (Table 3).

Need for gender based violence management services: An assessment was done on experience of GBV by the 218 WMI within the three months that preceded the study, of whom, 85 (39.0%) needed GBV management services. Of the 85 who reported experience of GBV, 31/85 (36.5%) needed management for sexual abuse, 28/85 (32.9%) needed management for physical abuse, while 80/85 (94.1%) needed management for

psychological abuse. Some WMI had only experienced psychological abuse while others experienced a combination of the various forms of abuse (Table 3).

Table 3: Other Reproductive Health Needs of WMI

Variable	WMI with need	Percentage	95 CI
Pregnancy related services			
Need for pregnancy prevention services among ever pregnant WMI (n=187)	143	76.5	70.4 - 82.6
Need for abortal care services among ever pregnant WMI (n=187)	61	32.6	25.9 - 39.3
Need for ANC services among 18-49 (n=169)	7	4.1	1.1 - 7.1
Need for post-delivery care services among WMI 18-49 (n=169)	7	4.1	1.1 - 7.1
Composite need for any pregnancy related services (N=218)	187	85.8	81.1 - 90.4
Screening and management of UTIs*and HIV			
Need for screening and management of UTIs (N=218)	67	30.7	24.6 - 36.9
Need for HIV testing (N=218)	157	72.0	66.1 - 78.0
Cervical and breast cancer screening services (N=218)			
Need for cervical cancer awareness and screening	209	95.9	93.2 - 98.5
Need for breast cancer screening services	189	86.7	82.2 - 91.2
Composite need for breast and cervical cancer screening	216	99.1	97.8 – 100
Gender based violence management services			
Need for sexual abuse services (n=85)	31	36.5	26.2 - 46.7
Need for physically abuse services (n=85)	28	32.9	22.9 - 42.9
Need for psychological abuse services (n=85)	80	94.1	89.1 - 99.1
Composite need for any GBV management services (N=218)	85	39.0	32.5 - 45.5
There was co-occurrence of the various forms of GBV.			

4.3 Uptake of Reproductive Health Services by Women with Mental Illness

The second objective in this study was to determine the uptake of the reproductive health services by WMI who were on follow up at MTRH. The uptake of various reproductive health services was determined as a percentage with corresponding confidence interval of service utilization from among the WMI in whom service need was found as per the needs assessment as shown in results for objective one above.

Uptake of management services for menstrual challenges: Of the 97 WMI who were menstrual at the time of study and experiences any of the menstrual challenges, none sought treatment for menstrual challenges (Table 4).

Uptake of contraception: Of the 127 WMI who were 18-49-year-old and sexually active at the time of study 51 (40.2% - CI. 31.6% - 48.7%) were on a modern method of contraception (Table 4).

Uptake of abortal care services: Of the 61 participants who ever suffered an abortion, 18 (29.5%) sought abortal care services (Table 4).

Uptake of antenatal care services: Of the 7 women who were pregnant at the time of study, only 14.3%, had taken up ANC clinic visits, obstetric ultrasound, laboratory services and prenatal supplements (Table 4).

Uptake of postnatal care services: Of the 7 WMI of reproductive age who had given birth 6 months prior to the study, 6 (85.7%) had a hospital delivery, had attended postnatal care visit within 2 weeks postpartum, infant immunization was up to date and were exclusively breastfeeding.

Uptake of urogenital tract infection management services: Of the 67 WMI who reported any sign(s) and/or symptom(s) for potential urogenital infections, 30 (44.8%) had sought diagnosis and treatment services (Table 4).

Uptake of HIV testing: Of the 218 WMI, 61 (28.0%) had the HIV test within the one year that preceded the study (Table 4).

Uptake of cervical cancer screening services: Of the 209 WMI who were ever sexually active and 18-65 years of age, 40 (19.1%) had ever taken up cervical cancer screening (Table 4).

Uptake of breast cancer screening: Of the 189 WMI ≥25 years, 38 (20.1%) had ever had clinical breast examination and/or breast ultrasound and/or mammography (Table 4).

Of the 85 WMI who experienced sexual, physical or emotional violence, only 3 (3.5%) had sought any GBV management services like hospital care and/or reporting to the police (Table 4).

Table 4: Uptake of Reproductive Health Services by WMI

Variable	WMI who took up service	Percentage	95% CI
Composite uptake for Rx of any menstrual challenge (n=97)	0	0.0	
Uptake of FP among currently sexually active 18-49 yrs. (n=127)	51	40.2	31.6 - 48.7
Uptake of abortal care services (n=61)	18	29.5	18.1 - 41.0
Composite uptake of ANC services (n=7)	1	14.3	0 - 40.2
Composite uptake of post delivery services (n=7)	6	85.7	59.8 - 100.0
Uptake of HIV testing (n=218)	61	28.0	22.0 – 33.9
Uptake of Diagnosis and Rx services for urogenital infections (n= 67)	30	44.8	32.9 - 56.7
Uptake of cervical cancer screening (n=209)	40	19.1	13.8 - 24.5
Uptake of Breast cancer screening (n=189)	38	20.1	14.4 - 25.8
Composite uptake of screening for breast and/or cervical cancer (n=216)	59	27.3	21.4 - 33.3
Composite uptake of any GBV management (n=85)	3	3.5	0 - 7.5

4.4 Challenges Faced by Mental Health Service Providers in Provision of Reproductive Alongside Mental Health Services.

Socio - Demographic Characteristics of Mental Health Service Providers

Ten healthcare workers were interviewed for the challenges they face in offering reproductive alongside mental health services. The results in this section are based on 10 respondents comprising of consultants, registrars, clinical officers and nurses. Of the ten mental health service providers, 9 (90%) were female. In the distribution of the 10 MHSP by cadre, 3 (30%) were residents and 3 (30%) were nurses, the other cadres were distributed as shown in the table. The median age was 39.7 years (SD ±5.5) and the median experience in psychiatry practice was 6.3 years (SD ±4) (Table 5).

Table 5: Socio - Demographic Characteristics of Mental Health Service Providers

Variable (N=10)	Category	Frequency	Percentage
Cadre	Nurse	3	30.0
	Clinical officer	2	20.0
	Resident doctor	3	30.0
	Consultant psychiatrist	2	20.0
Gender	Male	1	10
	Female	9	90
Age (***years)***	Mean (SD) 39.7 (±5.5)		
Years in psychiatry practice	Mean (SD) 6.3 (±4)		

Qualitative Data on Challenges Faced by MHSP in Offering RH Alongside Mental Health Services

The mental health service providers reported on the challenges they faced in offering reproductive alongside mental health services. The major themes and the key phrases that emerged from the challenges they faced included the following:

a. Patient Related Challenges

i. Consent for Additional Care

Consent for provision of services other that mental health services when the women are acutely ill being usually given by the next of kin, makes provision of reproductive health services in this setting totally reliant on what the next of kin feels about the service. This was reflected as stated by a mental health nurse "*getting consent from the patients is difficult when acutely mentally ill"*. This was reiterated by a mental health consultant who stated that, *"Sometimes, the next of kin is reluctant in consenting for a service that has been proposed to benefit the patient like HIV testing or even referral for cervical cancer screenin*g" stated a mental health consultant.

ii. Misconceptions

The patients by nature of their illness or due to the stigma they face as a result of their illness may misconstrue the services proposed to benefit them, especially the reproductive health services. This was reported by a mental health nurse that, "*beliefs by some patients that we attempt to curtail their reproduction due to their mental illness mounts resistance to uptake of family planning"*.

iii.Challenges Posed by Poor Menstrual Hygiene

The mental health service providers are sometimes forced to work in an unhygienic condition when a woman in acute mental illness attack gets her menses and refuses to use menstrual hygiene products. This not only affects provision of the mental services they have been admitted for but also highlights that these women would possibly have benefitted from menstrual suppression therapy. "*It is usually a big challenge dealing with them (women with mental illness) during their menses. Some are so elated they will not even listen to you, and some get very heavy flows (menstrual) and everything around them gets messed up",* stated a mental health nurse.

b) System and Provider Related Challenges

i. Challenges Posed by Uncoordinated Multidisciplinary Approach in RH Service Provision for WMI

The internal referral system relies on phone calls to the acute- on – call resident in gynecology unit and written referral note to the unit within reproductive health where the service requisite is to be obtained from. When the acute-on – call is not readily available to attend to the patients from or within mental unit due to other concurrent duties, the WMI may end up not getting the reproductive health service they required. Also, for the services for which the women were referred to book at the gynecology clinic, having to attend an additional clinic to the mental health may deny them an opportunity at getting the service, as they end up not booking the clinic for the service altogether. Some services like evaluation for genitourinary tract infection require evaluation at that point of encounter with the patient, hence having to refer for booking delays the service. "*Unavailability of RH services in the mental unit is a big problem. Delayed review of the patients from the Kenya ward for reproductive health services leads to no service for the patient by the time they are discharged. We hardly get to discuss the patients as a team as*

each discipline makes decisions on their own." ....." mental health consultant. Also, it was reiterated that *"Most of the patients I refer end up not going for the services because of the booking. These patients lack patience and end up not going back for the service"* ....." mental health resident.

ii. Lack of Reproductive Health Commodities in the Mental Unit

Even in situations where the women with mental illness have obvious need and have expressed willingness to take up the services like contraception, lack of ready availability of commodities contributes to missed opportunities in provision of services which could have led to eased burden on their mental health, like contraception to prevent unintended pregnancy.

"I do not offer FP services since we do not stock the commodities. I refer to FP clinic" stated a clinical officer.

iii. Inadequate Personnel and Heavy Patient Workload

The staff available within mental health unit do not specifically seek to identify reproductive health concerns and largely address their main area, mental health. This is occasioned by the heavy patient workload seeking mental health services. *"There are many patients on each clinic day so it is difficult to concentrate on the reproduction as more patients are waiting to be served",* mental health resident**.**

CHAPTER FIVE: DISCUSSION

5.1 Socio - Demographic Characteristics of WMI

The mean age of the women with mental illness on follow up at the Chandaria Cancer and Chronic Disease Centre was 39.1± 12.1 years. Most of the women with mental illness (77.5%) were in the reproductive age group, 18-49 years. Those who were married or cohabiting comprised 48.2% of the WMI. This percentage is however lower than the general population in Kenya, where 54.6% were married and a further 5.1% living together (KDHS 2014). In a study conducted in Ethiopia among WMI in their reproductive age (18-49), 44.3% were in a marital institution (T Zerihun, 2020), compared to the national average of 66% of women in the general population being in a marital institution or in union (Ethiopia DHS, 2019). This hence shows that though there were more WMI in Kenya than in Ethiopia who were married or in union, in both countries, more WMI are not when compared to the general population in these countries. This is in line with the reproductive health profile of women with severe mental illness in the United Kingdom, as being more likely not to be in a marriage institution compared to women in the general population (Henshaw and Protti, 2010).

The majority of WMI in this study (97.7 %) had attained at least a primary level of education. Similar findings were reported in a study conducted at MTRH where 96% of in- patients at the mental health unit had attained at least a primary education level (MF Jaguga, 2017). In Ethiopia, 90% of WMI of reproductive age had attained at least a primary level of education (T Zerihun, 2020).

Most WMI in our study supplemented their wages or salaries with financial support from their families (46.3%). This is way lower than the 61% employment rate of the women in the general population in Kenya (KDHS 2014). These findings are in line with a Canadian

study reporting that income level not independently predictive of mental health service use (Leah S. Steel et al, 2007).

In this study, the WMI already had a diagnosis of mental illness established by the psychiatrist prior to recruitment into the study. While undergoing review by the attending mental health service provider, the diagnosis was noted on the MMSE tool that was completed by the attending MHSP. From the assessment of the mental illnesses documented on the MMSE tool by the MHSP, the commonest mental disorders among the women on follow up were the bipolar mood disorders at 43.1%, with schizophrenia being second at 40.4% while major depressive disorder was third at 7.8%. This is dissimilar to the WHO which reports the commonest mental illnesses among women as unipolar depression, bipolar mood disorders and schizophrenia, with depressive disorders accounting for 41.9% of the disability from neuropsychiatric disorders (WHO, 2017). Also, our study findings were different from those in the Ethiopian study among WMI of reproductive age where schizophrenia was commoner, followed by major depressive disorder and bipolar disorder respectively (T Zerihun, 2020).

Drug and substance use negatively impacts mental health as alcohol and drug abuse may sharply increase symptoms of mental illness or even trigger new symptoms. In an American study, 29% of people with mental disorders had an addictive disorder with 22% overlapping with alcohol and 15% with another drug disorder (Darrel A. et al, 1990). In our study, 29.8% of WMI reported to ever have used drugs/substances. Though a similar percentage is reported in our study, our study tool was only designed to report on use of the said drug/substance but not diagnose substance use as a comorbidity. Lower rates of substance are usually reported among WMI compared to their male counterparts who usually have more substance use as a mental illness comorbidity (Steel Z, et al. 2014). The higher rates of substance use as a comorbidity in the American study could be due to the

inclusion of the male gender in whom substance use is more prevalent, as well as our study only reporting only on use as opposed to substance use as a diagnosed co morbidity. In another study conducted at MTRH among the patients admitted in the mental health service unit, the prevalence of mental comorbidity with substance abuse was at 49.6% within the 12 months that preceded their admission, with alcohol being the commonest substance used (MF Jaguga, 2017). This study however was comprised of both male and female participants which could contribute to the higher prevalence as only female participants were studies in this study, in which alcohol use was the commonest, similar to the above findings. This was followed by tobacco use, with bhang use being third. There was co-use of these substances. In our study however, there were no tools applied for diagnosis of substance use disorder in this population hence the assessment was only based on history of use, not a substance use disorder as a comorbidity.

5.2 Reproductive Health Needs of Women with Mental Illness

Need for Services for Menstrual Challenges

In our study, most of the WMI- 78.4% were menstrual. Of these WMI who were menstrual, most of them (56.7%) experienced menstrual challenges, hence needed services to address their specific menstrual challenges. Though the composite prevalence of menstrual challenges among menstrual women is not known, the reported prevalence of heavy menstrual bleeding was 44.6% in a European patient survey (Ian Fraser et.al. (2015) and 53.7% reported among Dutch women (Mark E. Schoep et.al. (2019). In our study, the prevalence of heavy menstrual bleeding was lower, at 43.3%.

In a retrospective study in Canada among adolescents with developmental disabilities, the prevalence of heavy, painful or irregular bleeding was 30% (Kirkham Y. A et al, 2013). This is lower than the prevalence of menstrual challenges reported in our study at 56.7%. This could be attributed to having more challenges factored in the computation of the

composite prevalence in our study while only dysmenorrhea, irregularity and heaviness comprised the prevalence reported in the adolescents, and that our study involved women from 18 years, across the age spectrum as long as they were menstrual.

The experience of menstrual challenges impacts negatively on women, as the challenges experienced can cause social and occupational dysfunction and impair quality of life due to psychological distress (Kevin D. Frick et.al.(2009). While irregular cycles can cause social embarrassment due to unpredictability, heavy menstrual period and prolonged menstrual bleeding can cause anemia. In the assessment for these menstrual challenges, the regularity of the cycles was documented as reported subjectively by the WMI interviewed since they did not have menstrual diaries which could have been used to objectively evaluate the regularity of their cycles as recommended (M.G. Munro et al., 2018). The regularity of their menses could not be assessed since most WMI did not keep menstrual diaries and for the few who do, they did not have menstrual diaries with them at the time of the interview. Among the least occurring were challenges with menstrual hygiene among 11.3% of the participants (Table 2). Poor menstrual hygiene can impair or limit social interaction and cause self-isolation. More so, when menses occurs in women with mental illness during acute phase of illness, they may not be able to take care of themselves and it may be difficult for anyone around them to help out as they may not cooperate when actively hallucinating. This was corroborated by the mental health service providers, as was highlighted as challenges posed by poor menstrual hygiene; when they reported the challenges they faced in offering reproductive alongside mental health services (4.4. a (iii). There is general paucity of data in menstrual challenges among WMI.

With over 50% of the WMI experiencing menstrual challenges, a deliberate effort in assessing for menstrual challenges and addressing them at every visit should be instituted (Henshaw and Protti, 2018).

Opening up discussion about menstruation and menstrual challenges among women with mental illness is beneficial in alleviating the distress caused by the menstrual challenges as well as serve as an all-important entry point in discussion pertaining contraception, safe sex, fertility and pregnancy planning. Also, discussing menstruation and challenges will help identify the women who will benefit from menstrual suppression therapy based on the challenges identified and the wish of the patient as pertains menstruation as reported in the menstrual suppression in special circumstances (Yolanda A. Kirkham, et.al. 2014).

Need for Contraception and Pregnancy Related Services

Our study identifies a huge need for contraception in the realization of planned parenthood for the WMI. In line with the finding that WMI are more unlikely to be on a contraceptive method (Henshaw and Protti, 2010); Shah, 2006), our study found an astonishing unmet need for family planning of 75% (table 2)! This was more than four times the unmet FP need for the general population in Kenya, where the unmet need for spacing at 9% and unmet need for limiting at 8% (KDHS, 2014). This is also in line with what was reported by Shah, that WMI have a higher unmet need for contraception compared to the general population (Shah, 2006).

Among all women with mental illness who had ever gotten pregnant, a whopping 76.5% were in need of pregnancy prevention services as they reported to have ever had an unintended pregnancy. This is about double the occurrence of unintended pregnancies reported in a cross sectional study in Kenya in the general population among women 15-

49 years, where 49% had unintended pregnancies and 41% of those ended up with induced abortion (Mohamed SF., Izugbara, C., Moore, A.M. et.al. (2015). This finding is in line with this study finding that the unmet need for contraception is equally enormous, at 75%, hence having a high rate of unintended pregnancies in tandem.

In comparison, in a study conducted in Ethiopia, Addis Ababa among WMI of reproductive age, 87.8% had an unintended pregnancy (T Zerihun, 2020). Though this occurrence was higher than that reported in our study, it was still way higher than the occurrence of unintended pregnancy in their general population. This corroborates the report by (Cantwell R, et. al. 2011), that WMI have higher rates of unintended/unplanned pregnancies compared to women in the general population.

The need for antenatal care services was 4.1%, with the majority of the participants who reported being pregnant at the time of the study (57.1%) having unintended pregnancy. This emphasizes the existent gap in satisfaction of the need for contraception in attainment of planned pregnancies among WMI. Like the need for antenatal care services, the need for postnatal care services was 4.1% among the WMI who had delivered within six months that preceded the study.

With most WMI not being on a contraceptive method, there was a high occurrence of unintended pregnancies. From among the women who were ever pregnant, 32.6% had ever had an abortion, hence needed to utilize abortal care services. Compared to the abortion rate in Kenya among women 15-49 years of 48 per 1000 women (Susheela Singh et.al. (2013), S.F Mohammed, et. al. (2015); the need for abortal care service among the WMI was higher than that reported for the general population. This need for abortal care services among WMI in this study is however lower that that reported in a study among WMI of reproductive age in Ethiopia, where 84.3% reported having had an induced abortion (T Zerihun, 2020). The higher service need as reported in the Ethiopian

study could be as a result of only reporting induced abortions among the unintended pregnancies, while in our study, abortion rates were based on intended and unintended pregnancies.

Among the WMI in our study, the overall need for any pregnancy related services was very high, with 85.5% being in need of pregnancy prevention, abortal care, antenatal care or postnatal care services. This illustrates the huge need for pregnancy related services among the WMI presenting an opportunity for prevention of an unintended pregnancy through screening for need for contraception, and provision of services like antenatal care, safe abortal care services and postnatal care for those requiring them (Table 3).

The high rates of unintended pregnancies alongside the high abortion rates among WMI is in agreement with the report that women with mental illness are at increased risk of unintended pregnancies and decrease in planned pregnancies (Matevosyan, 2009). This therefore calls for a deliberate effort in meeting the need for contraception in order to help them attain planned parenthood.

Need for Screening for Urogenital Tract Infections and HIV

In our study, the presence of signs/ symptoms of a possible urogenital tract infection was 30.7% of the WMI. Hence, the need for investigation and/or treatment for urogenital tract infection among women with mental illness in this study was 30.7% (table 3). This highlights the need for a deliberate effort to screen these WMI for possible urogenital tract infections during every visit to the mental health clinic (Henshaw and Protti, 2018). Unlike in Brazil where 25.8% of the women with mental illness reported a history of STI and lifetime diagnosis of syndrome groups of genital discharges (35.8%) and genital ulcers (14.2%) (MRT Dutra, et al. 2014), the WMI in our study in MTRH had no diagnosis alluded to the urogenital tract infection. They however reported

signs/symptoms which needed investigation for possible diagnosis of a urogenital tract infection. Overall, they had a lower rate of signs/symptoms which could relate to urogenital tract infections compared to their Brazilian counterparts with a confirmed diagnosis. The rates in our study could be lower due to reliance only on signs and/or symptoms as reported by the WMI. This was not accompanied by clinical and/or laboratory evaluation for possible urogenital tract infections, which could result in a higher occurrence. Since some genital tract infections are asymptomatic, there could be a higher prevalence of urogenital tract infections among the WMI in our study, hence need for laboratory investigations for documentation of presence or absence of an infection. With WMI being more likely to have a higher number of lifetime sexual partners, suffer rape and sexual abuse and also being more likely to have sexual intercourse when they did not expect it occur (Henshaw and Protti, 2010), the WMI are generally at higher risk of suffering sexually transmitted infections including HIV(Dickerson, 2004). The need for HIV testing in our study was very high at 72% (Table 3), as most WMI were tested more than one year prior to the study. With WMI having at least four visits to the mental health outpatient clinic per year, this equates to numerous missed opportunities at diagnosis and/or treatment of those who could be HIV infected. With reports that persons with both ulcerative and non-ulcerative genital tract infections have a 2-5 times greater risk of becoming infected with HIV (Liz Highleyman, 2000), it is essential to routinely offer HIV testing to WMI who are at a higher risk of contracting urogenital tract infections as well as HIV. It is also reported that the presence of STIs increases both susceptibility to and infectiousness of HIV, and STIs make it more likely that a co infected person will transmit HIV (Liz Highleyman, 2000). Women with mental illness therefore need to be routinely screened for genital/urinary tract infections including HIV

testing with prompt diagnosis and treatment instituted to halt occurrence of complications and minimize transmission and/or acquisition of new infections like HIV

Need for Cervical and Breast Cancer Screening Services

The assessment of the women with mental illness for need for cervical cancer screening services was considered among those who were ever sexually active and 18 years or older with the upper age limit being taken as 65 years. This was in line with the National Cancer Screening Guidelines of 2018 (Ministry of Health, 2018).

Among women with mental illness, the need for cervical cancer screening was 95.9% (Table 3). Women with mental illness may require more encouragement and information packaging about cervical cancer be delivered in a manner that is easily understandable for those with a mental illness to encourage uptake of cervical and breast cancer screening (Henshaw and Protti, 2018).

The WMI have a higher burden of the risk factors for cervical cancer development like multiple sexual partners and higher risk of STI acquisition. Despite this, there is paucity of studies on the level of need for cervical cancer screening in this vulnerable population.

Also, of the WMI, 86.7% had the need for breast cancer screening (Table 3). Women should be encouraged to know what is normal for them and regularly check their breasts and be aware of warning signs for cancer (Henshaw and Protti, 2018).

Of the WMI in this study, the composite need for breast and cervical cancer screening was 99.1%. This shows that almost all the WMI had the need for screening for breast and/or cervical cancer. Therefore, this emphasizes the need for deliberate discussion on screening for these common morbidity and mortality causing malignancies.

Need for Gender Based Violence Care Services

All respondents were assessed for history of experience of gender based violence within the three months that preceded the study and whether they took any action following the experience. The questions were adapted from the shortened, modified version of the Conflict Tactics Scale Tool and were used to assess the women for their experience of sexual, physical and emotional violence (Strauss, 2004).

Globally, 35.6% of women have ever experienced either non partner sexual violence or physical or sexual violence by an intimate partner, or both (WHO, 2005). This is much higher among women with mental illness given their vulnerabilities, as corroborated in our study where within the three months that preceded our study, 39% of WMI reported having experience GBV; physical, psychological or sexual. This is in line with the report that WMI experience high levels of violence, with their experience of sexual, psychological and physical abuse being higher than women in the general population (Mueser 2004).

In our study, the need for sexual violence care services was 36.5% by the WMI who had an experience of GBV. This was more than three times higher than that reported in the study conducted in Mombasa where 9.8% reported a recent experience of sexual violence (Bhattacharjee P., et.al. 2020). Though the study conducted in Mombasa was among women at a high risk of experiencing sexual abuse, the experience of sexual abuse among WMI is clearly higher. In our study, only the experience of penetrative sexual violence was included as per the tool revision as was guided by the responses given at the time of pilot study. Therefore, the prevalence of overall experience of sexual violence in these WMI is likely to be much higher than reported herein, as other forms of sexual violation including attempted rape were not included. Of all the WMI, 32.9% of those who reported experience of GBV needed services for experience of physical abuse (table 3).

This also is higher than that reported among the adolescents and young women in Mombasa where only 10.7% reported a recent experience of physical abuse (Bhattacharjee P., et.al. 2020).

The experience of GBV does not always take one form over the other as 91.4% of the WMI in our study were in need for care services after experience of psychological abuse. This emphasizes the need to empower WMI on what constitutes violence, as they are more prone to it; and encourage them to seek help whenever they get an experience of violence. The WMI should be directly asked about experience of GBV as they are reluctant to disclose violent victimization unless directly asked for it by the physician (Mazza, 1996).

5.3 Uptake of Reproductive Health Services by Women with Mental Illness

Uptake of Services for Menstrual Challenges

Though 56.7% of the women with mental illness who were menstrual at the time of interview reported to have been experiencing menstrual challenges, the challenges largely remained unaddressed as none (0%) of the WMI who reported to have been experiencing menstrual challenges sought treatment (table 4). There was hence no uptake for menstrual related services. Historically, challenges with menstruation have been normalized by society. In relation to heavy menstrual bleeding, Sir H. Beckwith reported that uterine hemorrhage is a sacrifice that must be made by women at the altar of evolution (Sir. H. Beckwith Whitehouse, 1914). With this belief among women and health care providers alike, the uptake of services related to menstrual challenges is generally low. In a European patient survey in the general population of menstrual women, the uptake of services related to menstrual challenges (HMB) was 41% (Ian Fraser et.al.(2015). This is higher compared to the lack of uptake (0%) reported in our study. This could be

attributed to general lack of routine screening of WMI for menstrual challenges. There is general paucity of data on the uptake of menstrual services among WMI. There is need to routinely screen WMI for menstrual challenges, as they impact on their quality of life with limitation of their daily activities (Kevin D. Frick et al. 2009).

Assessment of WMI for menstrual challenges and instituting therapies like menstrual suppression in eligible candidates will help alleviate the challenges as well as improve the quality of life of WMI. Menstrual suppression is considered safe and a viable option for women who need or want fewer or no menses (Kirkham YA et.al. (2014). Practice of menstrual suppression will also solve the challenge posed by poor menstrual hygiene, as highlighted in (4. 4a (iii)) above as one of the challenges experienced by WMI and also as a challenge faced by mental health service providers hampering their service provision to WMI.

Uptake of Contraception and Pregnancy Related Services

The uptake of contraception among WMI was equally low, with a contraception prevalence rate at 40.2%, which is less than the contraception prevalence rate of the general population of women aged 15-49 reported at 53% in Kenya (KDHS 2014). This contraception prevalence rate was however higher than that reported among WMI in Ethiopia which was at 38.6% (T Zerihun, 2020). The contraceptive prevalence rate in Kenya though higher than that reported in Ethiopia, the contraception characteristics in both countries are similar; with high unmet FP need and low uptake. Encouraging uptake of modern contraceptives in WMI will not only prevent occurrence of unintended pregnancies but also address some of the menstrual challenges like heavy menstrual bleeding.

Just like the low uptake of contraceptives, the uptake of abortal care services was equally low. In our study, the uptake of abortal care services was low at 29.7% among women who reported having had an abortion. This implies that most of the WMI had undertaken an unsafe abortion. This reflects the huge need for pregnancy prevention services to avert unsafe abortion, and the need to encourage uptake of safe abortal services for those who may require them. In order to reduce the morbidity and mortality causing complications resultant from unsafe abortion WMI should be encouraged to seek safe abortal care should they need the service (Mohamed, S.F., Izugbara, C., Moore, A.M., et.al. 2015).

From our study, the need for ANC services for WMI was 4.1%. These women in whom need was established were assessed for their actual visits to the medical facility for follow up of the pregnancy in pursuit of antenatal care services, utilization of laboratory services, use of prenatal supplements and use of obstetric ultrasound. Of these women, the composite uptake of the ANC services was very low, as only 14.3% had utilized all the above stated services. This uptake was very low, compared with 84-92% reported in an Australian retrospective hospital based study (Nguyen et al, 2013). This could be as a result of including uptake of ultrasonography as part of the ANC services which was very low among the WMI who attended ANC. Also, the number of WMI who were pregnant at the time of our study was small (only 7).

Attendance of ANC clinics gives an opportunity for blood and urine tests and ultrasonography to be conducted which can serve as pointers to pregnancy complications (WHO, 2016). Generally, pregnancies in WMI are high risk pregnancies. With higher unintended pregnancy rates in WMI, regular screening for pregnancies should be conducted in these women at mental health clinic as they are more predisposed to teratogenic effects of the psychiatric medications they may be on. Pregnancy planning in WMI and early diagnosis of pregnancy will help in early medication change and earlier

engagement of a multidisciplinary team in their pregnancy care, and emphasizes the need for ultrasound monitoring of pregnancies in this population. Ultrasonography is essential in detection of fetal anomalies which may arise as a result of the psychotropic medication they might be taking (Henshaw and Protti, 2010).

This low uptake of ANC services by WMI who were pregnant at the time of study is in line with the report that WMI are less likely to receive antenatal care while pregnant (Shah, 2006).

The WMI who had delivered 6 months prior to the study were assessed if they were delivered by a skilled birth attendant, they actually visited a health facility in pursuit of postnatal care within two weeks post-delivery, whether exclusively breastfeeding their infant and if the infant immunization status is up to date. The composite uptake of these post-delivery services among the WMI who had delivered six months prior to the study was 85.7%. This finding could be attributed to the small number of participants in this sub population of WMI. There is paucity of data on the uptake of postpartum services among WMI to be used for comparison with this study finding. The WMI should however be encouraged to have regular follow up visits in the postnatal period for assessment of depression or exacerbation of symptoms of their mental illness (Ongeri L., et.al. 2018).

Uptake of Urogenital Tract Infections and HIV Testing

Despite the WMI acknowledging the signs/symptoms that relate to urogenital tract infections, the uptake of treatment for these symptom syndromes was only 44.8% (table 4) with an equally low uptake of HIV testing as only 28% of WMI had taken the HIV test within one year prior to the study. Of the 84.9% of the WMI who reported to have ever taken up HIV testing, 5.4% were HIV positive. The rate of uptake of HIV testing was

lower than the 90% that was targeted by the national 90/90/90 strategy by 2020 of the HIV program as envisioned by UNAIDS, with at least 90% being tested for HIV (UNAIDS, 2014). This is to be in line of overcoming the HIV pandemic in Kenya. Also, the prevalence of HIV among the WMI was higher than the national average of 4.9% (NASCOP, 2018). Since mental health service provision points may be the only point of contact of the women with mental illness with a health facility, screening for urogenital infections should be done routinely at all mental health service visits, and provider initiated HIV testing emphasized to increase uptake of HIV testing (Henshaw and Protti, 2018).

Persons with both ulcerative and non-ulcerative genital tract infections have a 2-5 times greater risk of becoming infected with HIV (Liz Highleyman, 2000). This emphasizes the need to routinely screen for urogenital infections and HIV so as to decrease the prevalence of both conditions. With the serious complications like subfertility, ectopic pregnancy, and transmission to the newborn that can arise from undiagnosed and/or untreated urogenital tract infections and HIV; appropriate screening and treatment should be instituted at every contact between the patient and the health care providers as may be appropriate. This therefore makes it very important to have women with mental illness routinely screened for sexually transmitted infections through history taking and risk factor identification, like multiple sexual partners and unprotected sexual intercourse (Henshaw and Protti, 2018). This will lead to reduction transmission and/or acquisition of HIV as well as prevent complications that may arise from untreated urogenital tract infections.

Uptake of Cervical and Breast Cancer Screening

In our study, the uptake of cervical cancer screening among WMI (18-65years) was 19.1% (Table 4). This uptake of cervical cancer screening in our study population was slightly higher than the cervical cancer screening rates reported among women 30-49 years in the general population, at 16.4% in Kenya general population in 2015 (Ng'ang'a et al, 2018). This higher uptake of cervical cancer screening in this study could have arisen from the temporal difference in the assessments of uptake of cervical cancer screening, with the data from the general population having been obtained in 2015, a time after which the cervical cancer screening awareness campaigns could have led to increased screening uptake at the time of our study in 2019. Also, the WMI generally interact more with the health system compared to the general population, hence more likely to receive screening than the general population.

The uptake of cervical cancer screening in our study was however lower than reported in the USA, where uptake of cervical cancer screening by WMI was 65.7%, while those without was 85% (C. Woodland et al. 2016).

Though the cervical cancer screening uptake is higher in the USA than in the Kenyan population, the uptake among WMI is still lower that the general population, just like in the Kenyan situation.

The WMI who were twenty-five years or older were assessed for uptake of breast cancer screening. This was in line with the 2018 Kenya National Cancer Screening Guidelines that all women are expected to be self-breast aware, more so for those from 25 years of age (MoH, 2018).

The uptake of breast cancer screening among WMI in our study was 20.1% (Table 4). This is low, considering a higher uptake of breast cancer screening of 64.8% that was reported among WMI in USA (C. Woodland et al. 2016).

The uptake of screening for breast and cervical cancer in WMI in the USA was generally higher than that reported in our study as generally, the baseline uptake of malignancy screening rates are higher in USA compared to Kenya, given their more robust malignancy screening programs.

Each woman should know what their breasts look and feel like when normal, so that they can detect any changes that may signify an abnormality. Early detection of any breast changes through self-breast examination, clinical breast examination, breast ultrasonography or through mammography is essential in detection of breast malignancies and give opportunity for early intervention. Self-breast examination though not recommended as a screening method, women should be encouraged to be aware and to report changes in their breasts, such as nipple discharge, rash on nipples, inversion, dimpling or new mass in the breast or axilla.

Addressing the factors that hinder the women with mental illness from taking up the cervical screening services like raising awareness about cervical cancer through patient education, adequate patient counselling to alleviate fears of the procedure and informing them on the service provision points alongside counselling on the importance of early detection and treatment of precancerous lesions not only carries a morbidity reduction but also a mortality reduction benefit (WHO, 2014).

The healthcare provider should discuss and educate the women about their breast health and promote breast awareness (Henshaw and Protti, 2018).

Uptake of Gender Based Violence Care Services

The uptake of services by the survivors of gender based violence was generally very low among WMI. Only 3.5% of the WMI survivors who experienced any form of GBV in the three months that preceded the study had sought any form of GBV related services (Table 4). This follows the general trend in Kenya where more than 90% of the GBV survivors do not seek healthcare, even after experience of rape (KNBS, 2014). This level of inaction is however worse among WMI compared to that reported in the general population in Uasin Gishu County, in unpublished data, where 12% sought hospital care and 6% sought legal intervention (Ofwona, Lisa L., 2016).

Gender based violence is on the rise worldwide with women with mental illness not being spared. Being a vulnerable population, this reiterates the need to educate the women with mental illness on domestic violence and what to do should one be a victim of sexual, physical or emotional abuse. The mental health service provider may be the first person to whom disclosure about violence is made, hence important for the clinician to routinely screen women with mental illness and provide effective support and advice, and referral as may be appropriate. This will also contribute significantly to occurrence of unintended pregnancies in this population for timely institution of emergency contraception and other requisite services.

This emphasizes the need to empower WMI on what constitutes violence, as they are more prone to it; and encourage them to seek help whenever they get an experience of violence. The WMI should be directly asked about experience of GBV as they are reluctant to disclose violent victimization unless directly asked for it by the physician (D. Mazza, 1996). Also, screening services for experience of any form of GBV should be offered to WMI at every attendance to the mental health service clinic (Henshaw and Protti, 2018).

5.4 Challenges Faced by Mental Health Service Providers in Provision of Reproductive Alongside Mental Health Services.

The mental health service providers had a mean age of 39.7 years (SD5.5), and with a mean experience of 6 years in psychiatry care (SD 4). The long duration of psychiatry service provision to the WMI gave them ample interaction with the system as well as the WMI. This made them to be adequately versed with the challenges that they faced in offering mental alongside reproductive health services. They were of mixed gender with 90% being female while 10% of the mental health service provider key informants were male (table 5).

The challenges faced by the mental health service providers in provision of reproductive health services alongside mental health services were numerous and seriously impacted the delivery of reproductive health services in the unit.

The provision of RH services relied heavily on the linkage of the WMI by the MHSP to the RH service provision points for the RH services. The linkage system for RH service provision to WMI comprised of either having the RH resident - on - call called to attend to the WMI in need of reproductive health services from the mental health service provision unit. Alternatively, the WMI would be given an internal consultation form filled in by the attending MHSP to take to the RH service provision point based on their need *"…. I refer to FP clinic....." as* stated by a clinical officer. The WMI would then either get the service at that moment or when service provision is not feasible at that moment; get a booking for a later provision of the said RH service. This therefore in essence created a chance for the WMI to get services from the mental health service providers and at a different time, get the services of the RH service provider. However, this denies the WMI the benefit of a shared decision making in managing their mental illness alongside addressing the RH needs in a multidisciplinary manner. This was highlighted by the

mental health consultant while addressing the gaps in RH service provision to the WMI "*.....We hardly get to discuss the patients as a team as each discipline makes decisions on their own*." *.....*"

This however was reported to be associated with numerous challenges, whose overall effect was missed opportunities in identification of the RH needs of the WMI, delayed service provision of the WMI and at worst; lack of RH service provision to the WMI even when a need was identified. Lack of ready availability of the skilled personnel for service provision, ready physical space (infrastructure) and the commodities greatly disenfranchises the WMI from accessing the requisite RH services. This was highlighted by a mental health consultant who stated that the "*.....unavailability of RH services in the mental unit is a big problem. Delayed review of the patients from the Kenya ward for reproductive health services leads to no service for the patient by the time they are discharged*." *.....*".

In the mental health service provision unit, the RH commodities like contraceptives were not available within the unit. Therefore, the WMI would not get the service for the identified need, even when she was willing to take up the service and the MHSP was willing to offer the service *".... I do not offer FP services since we do not stock the commodities. I refer to FP clinic....."* stated a clinical officer. This therefore necessitated referral to the family planning clinic which resulted in non-uptake of the service; as the WMI opted to go home as they were impatient to queue at the family planning clinic to get the service from there. *".....Most of the patients I refer end up not going for the services because of the booking ....."*, said a mental health resident.

Lack of patience was cited as one of the contributors to the low uptake of the RH services among WMI *".....these patients lack patience and end up not going back for the service" ....."* said a mental health resident. Since they may not be willing to queue and wait for

their turn to be served and get a booking for their RH service need, or wait at the Mental Health Service Provision Unit for them to be attended to by the RH resident-on-call, they would leave for home hence miss the opportunity to get the RH service. As stated by a mental health resident, *"..... most of the patients (I refer) end up not going for the services because of the booking....."*.

The women with mental illness need routine screening for their RH needs. These include but not limited to contraception, pregnancy related service needs, gender based violence screening, screening for sexually transmitted infection and screening for malignancies at every visit. Screening the WMI for the RH service needs is labor intensive, hence manpower in service provision being very crucial. Inadequate personnel as was reported becomes a major handicap in realization of reproductive health in this vulnerable population. Due to the heavy workload for the MHSP in provision of mental health services, they are not able to screen for RH service need as a mental health resident reported that *".....there are many patients on each clinic day so it is difficult to concentrate on the reproduction as more patients are waiting to be served....."***.** The lack of personnel dedicated to screening and provision or referral for reproductive health service of WMI makes their RH service needs go unidentified, hence unattended to. Women only get to receive these services when they already have complications; after having missed opportunities for diagnosis.

The patient related challenges majorly were as a result of their mental illness. The challenges faced in obtaining consent for RH services from WMI largely arose as a result of their mental illness especially when they were acutely ill and/or admitted. This was highlighted by the mental health nurse who stated that "*.... getting consent from the patients is difficult when acutely mentally ill... "....".* Some WMI falsely believed that since they have a mental illness, the health service providers did not want them to

reproduce. Phobia for uptake of some of the services is based on the misconceptions about the real intention of the health workers suggesting certain services. This was well elaborated by a mental health nurse who stated that "*... beliefs by some patients that we attempt to curtail their reproduction due to their mental illness mounts resistance to uptake of family planning"*. This corroborates a report by Miller (2008) that some women with mental illness have delusional beliefs about contraception and about the likelihood of them becoming pregnant. These delusions further contribute to them not consenting for services like contraception. Therefore, despite having a mental illness that predisposes them to lack of insight hence high risk of ending up having sexual intercourse when not intending to; and not intending to get pregnant, they decline taking up contraception when offered.

Also, the WMI when acutely ill do not have the capacity to give consent, a point at which their next of kin can give consent on their behalf. The next of kin's beliefs and misconceptions on services being proposed make them decline giving consent for the WMI to get the proposed RH services hence missed opportunities in RH service provision are registered. This was stated by a mental health consultant that, *"... Sometimes, the next of kin is reluctant in consenting for a service that has been proposed to benefit the patient like HIV testing or even referral for cervical cancer screening.*" "*...*"

The state of the menstrual hygiene among some WMI also negatively affect the working environment of the mental health service providers. In as much as none of the WMI took up any of the menstruation related services, despite 11.3% of WMI who were menstrual at the time of study reporting challenges with menstrual hygiene (table 4. 2), when acutely ill, their poor menstrual hygiene negatively affects the working environment. When the WMI are in their menses and acutely ill with mental illness, elated or in acute psychosis, they may lack insight hence not take care of their menstrual hygiene. They end

up staining themselves with menstrual blood as well as the surfaces and their surroundings. This creates a challenge to the mental health service providers in not only having to offer mental health in an unhygienic environment, but also poses an infection transmission risk as some infections like HIV can be transmitted via blood. They may also not take a shower, may not change sanitary pads or may not put on a sanitary towel when they are running away from home when they are hallucinating in psychotic illnesses. This impairs their social functioning (C. Sumpter, B. Torondel. 2013). Also, this situation highlights a gap in the care of WMI with menstrual challenges, as provision of menstrual suppression therapy would be an ideal RH service in such circumstances. Discussing menstruation and challenges will help identify the WMI who will benefit from menstrual suppression therapy based on the challenges identified and their wish (Yolanda A. Kirkham, et.al. 2014). Unfortunately, menstrual suppression therapy is not offered in MTRH.

This therefore reiterates the recommendation by Henshaw and Protti, (2018) that the WMI require routine screening for reproductive health needs. Overcoming the challenges hampering provision of mental alongside reproductive health services in MTRH will serve as a big victory towards improving the reproductive health status of these WMI.

5.5 Strengths and Limitations of the Study

5.5.1 Strengths of the Study

The study determined the need for the reproductive health services and the uptake of reproductive health services among women with mental illness. Given the paucity of data in the reproductive health status of WMI, this study forms a baseline for further studies in this population.

Through the use of the concurrent mixed methods approach, the existing gap in reproductive health service delivery to women with mental illness was established by

highlighting the challenges faced by the mental health service providers in offering reproductive alongside mental health services.

Involvement of the mental health service providers in highlighting the key challenges they faced in offering reproductive alongside mental health services highlighted the areas which when strengthened would lead to realization of improved RH status of WMI and streamline service provision to this vulnerable population.

5.5.2 Limitations of the Study

Being a hospital based study, generalization of the findings to the general population is limited.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The women with mental illness have a myriad of reproductive health needs which largely remain undiagnosed and unaddressed. Routine screening of WMI for reproductive health needs is not done hence numerous missed opportunities in identification of the RH needs.

The WMI have unmet RH needs in: pregnancy prevention and contraception, abortal care, screening for gynecological malignancies, screening, diagnosis and treatment of urogenital tract infections and screening for and management of survivors of gender based violence.

Despite the WMI having attended the psychiatric outpatient for at least one year, in a facility where services are offered by different specialties, there is a very low uptake of gynecology services like contraception and abortal care, cervical and breast cancer screening services, urogenital infection diagnosis and treatment services and services related to gender based violence by the survivors. Sadly, no uptake at all for any menstrual related services.

Therefore, the reproductive health status of women with mental illness is characterized by a high unmet reproductive health service need with low reproductive health service uptake. This is happening in a setting where routine screening for reproductive health service need is not instituted. This is compounded by the patient factors and system related challenges hampering provision of reproductive alongside mental health services by the mental health service providers.

6.2 Recommendations

In MTRH, screening of women with mental illness for reproductive health is not done routinely. Hence, routine screening of WMI for RH needs should be instituted. This will enhance identification of the RH needs with prompt linkage to service provision hence reducing missed opportunities for intervention where need is identified.

With RH needs screening services being labor intensive; and the mental health service providers having cited heavy patient workload as a challenge hindering them from offering reproductive health services, incorporating a reproductive health care worker on the mental health clinic days and at the mental health service provision unit to specifically screen for reproductive health needs and effect referrals for RH services within MTRH service provision points will greatly enhance timely need identification and linkage for RH services.

The lack of some reproductive health service commodities like contraceptives within the mental health service provision unit was a major setback in RH service provision to the WMI who were in need of contraception services. availing such commodities to the mental unit will ensure service provision to the WMI when need is identified and the woman with mental illness is ready to take up the services.

For seamless RH service provision to WMI, a multi-disciplinary approach is required. Involvement of the requisite stakeholders in formulating a protocol that seamlessly incorporates reproductive health service provision within the setting of mental health service provision will not only reduce number of patient visits to the hospital, but also optimize service provision during a single visit. This therefore will require concerted efforts between the reproductive health and mental health

service providers, in working out a protocol for effective RH needs screening strategy; and when a need is identified; a service linkage strategy that minimizes missed opportunities in addressing the identified RH needs. Strengthening direct linkages to RH service provision points should be explored. Example; by having all women with mental illness who are sexually active linked to room 23 in Chandaria, just across the floor from the mental health service provision point for cervical cancer screening. Even after the protocol has been formulated, sensitization of the mental health service providers and the reproductive health service providers on this protocol will be essential in ensuring cohesiveness in RH service provision to this vulnerable population. Also, Requisite resources should also be allocated for such a protocol to be implemented to improve reproductive health service need identification, improve on service uptake as well as mitigate on the challenges faced by mental health service providers in providing reproductive alongside mental health services.

We also recommend utilization of these study findings as a basis of further research in reproductive health among women with mental illness in other study settings.

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APPENDICES

Appendix 1: Consent form for women with mental illness

My name is Righa E, Wawuda. I am currently pursuing my Master's Degree in Reproductive Health at Moi University. A dissertation is a requirement in partial fulfillment of this course and I intend to carry out of "An Assessment of Reproductive Health Needs of Women with Mental Illness on Follow up at Outpatient Psychiatry Clinic at MTRH – Eldoret".

This research will involve assessment of the services that every female should access at various stages or circumstances in their lifetime. I will inform you on the purpose of the research and invite you to participate, and you are free to talk to anyone you are comfortable with about this research before you make the decision on whether to participate or not.

During the interview, feel free to stop me at any point in case you need clarification on any aspect of the study. I will gladly take time to explain to you. If you have any more questions later on, kindly feel free to contact me using the contact provided in this questionnaire.

Purpose of the research:

The purpose of this research is to assess the reproductive health needs of women with mental illness with the aim of identifying any existent gaps in providing these services to you, in order to seek ways in which to improve reproductive health service provision to you.

Research intervention, Risks and Benefits:

Only a semi structured questionnaire will be administered by the principal investigator or by the research assistant. You are free to respond or choose not to respond to the questions that you may find inconvenient to you. Your refusal to participate in the study

will not change the treatment plan that your doctors deem fit for you, or prejudice you in any other way. This study will not put you at any risk as no surgical or medical interventions will be done and no substances will be administered during this study. Information about you will not be shared with anybody. No immediate benefit will accrue of you.

Participation and Confidentiality:

In this research, all the women attending the psychiatric outpatient clinic are invited to participate in the assessment of their reproductive health needs. The research will be conducted during the psychiatry clinic day, on Wednesdays for a total period of three calendar months. The questionnaire administration will take a total of twenty-five minutes. The information gathered will be treated with utmost confidentiality: your name will not be used as you will be identified using a serial number only known to me and my assistant hence protecting your identity. The information obtained will be used to improve services in MTRH, to form protocols and may be published in medical journals and /or presented in scientific symposia (both local and international).

Contacts:

In case you have any questions, you can ask them now, during or after the study. You can contact me on Telephone: 0755741979, Email address: erighawawuda@gmail.com. You can also contact the IREC chairperson, MOI TEACHING AND REFERRAL HOSPITAL; P.O.BOX 3-30100, ELDORET. The Moi University and MTRH Ethics and Research Committee have reviewed and approved this study. This committee is charged with the responsibility of ensuring that research participants are protected from harm.

Respondent's declaration:

I have read the above information/ the above information has been read out to me. I have been given an opportunity to ask questions and seek clarification and my concerns have been satisfactorily addressed. I hereby voluntarily consent to participate in this research.

Name of participant.....Signature of participant.....

Date (day/month/year) .....

Declaration by the witness for an illiterate participant:

I have witnessed the accurate reading of the consent form to the potential participant, and that she has been given an opportunity to ask questions and seek clarification; and that her concerns have been fully addressed. I hereby confirm that the potential participant willingly consented to participate in this research.

Name of witness.....Signature of witness.....

Date (day/month/year) …….....

Participant's Thumb print:

Declaration by the researcher/research assistant taking the consent:

I have accurately read out the information provided above to the potential participant and I have given her an opportunity to ask questions and seek clarification; and that I have fully addressed all her concerns.

This is to confirm that I have not coerced her into consenting and that she has given consent out of her own free will.

Name of researcher/assistant.....Signature of researcher/assistant.....

Date (day/month/year) …….....

Appendix 2: Fomu ya idhini

Jina langu ni Dr. Righa E, Wawuda. Ninasomea uzamili kwenye Chuo Kikuu cha Moi, katika kitengo cha afya ya uzazi. Ili kuhitimu shahada hii, ninahitajika kufanya utafiti na iliamua kufanya kutafiti juu ya kutathmini mahitaji ya uzazi ya wanawake walio na ugonjwa wa akili, ambao wanafwatilia matibabu yao katika kliniki ya wagonjwa wenye ugonjwa wa akili iliyoko Chandaria Chronic Disease and Cancer Centre, hapa MTRH, Eldoret.

Utafiti huu unahusu utathmini wa mahitaji ya kiuzazi ya mwanamke katika maisha yake. Unao uhuru wa kuongea na yeyote unayemfahamu kuhusu utafiti huu kabla ya kufanya uamuzi wako kuhusu kushiriki katika utafiti huu au la.

Wakati mahijiano yanaendelea, unao uhuru wa kunikatiza na kuuliza maswali wakati wowote endapo kutakuwa na mambo au vipengee katika hojaji ambayo utakuwa hujayaelewa kikamilifu. Itakuwa furaha kwangu kukueleza. Iwapo maswali mengine yataibuka baada ya kuhojiwa, tafadhali jisikie huru kuniuliza kupitia nambari yangu ya simu ya rununu au anwani ya barua pepe kama ilivyonakiliwa katita kipengee cha mawasiliano.

Lengo la utafiti:

Lengo kuu la utafiti huu ni kutathmini mahitaji ya wanawake walio na ugonjwa wa akili, ili kuona kama kunayo mapengo katika utoaji wa huduma za kiuzazi na kuangazia changamoto ambazo wahudumu wa afya ya akili huzipata katika utoaji wa huduma za afya ya uzazi zikiandamana na huduma za afya ya akili; ili jutafuta njia mwafaka ya kuziba mapengo hayo, na kuwezesha utoaji wa huduma bora za kiuzazi katika kliniki ya utoaji wa huduma za akili.

Athari na faida za utafiti huu na jinsi utafiti huu utakavyofanyika:

Nitakuuliza ama msaidizi wangu atakuuliza maswali kuhusu mahitaji yako ya afya ya uzazi na vilevile huduma zinazopatikana kwenye kliniki hii. Pia nitakuuliza maswali yanayohusu jamii yako na uchumi wako. Una uhuru wa kuyajibu au kukosa kuyajibu maswali yoyote ambayo hutakuwa huru kujibu.

Kushiriki kwako kwenye utafiti huu hakutaathiri huduma ya matibabu ambayo madaktari wako wanaona yanakufaa, ama kukuathiri kwa njia nyingine yeyote ile. Utafiti huu hautakuweka kwenye hatari yoyote ama kukunufaisha moja kwa moja. Utafiti huu, hautahusisha kukupa dawa ya aina yoyote au kukufanyia uchunguzi wowote wa kimatibabu wowote ule; wala hautafanyiwa upasuaji wa aina yoyote ile.

Jinsi ya kumhusisha muhusika na usiri wa utafiti:

Katika utafiti huu, nitawahusisha wanawake wote ambao wanafwatizia matibabu ya ungonjwa wa akili katika kuyachambua mahitaji yao ya kiuzazi. Utafiti huu utafanyika siku ya kliniki ya Jumatano, na utaendelea kwa muda wa miezi mitatu baada ya kuanza. Mahojiano yatachukua muda wa dakika ishirini na tano.

Habari zitakazojitokeza zitawekwa katika mazingira ya faragha ya hali ya juu, na hautatambulishwa. Jina lako litabanwa. Nitakutambua kwa nukuu maalum ambayo nitakupa. Mimi na msaidizi wangu ndio watu pekee ambao watakua na ufahamu kuhusu nukuu hii. Matokeo ya utafiti huu yatatumiwa kuboresha huduma ya uzazi katika kliniki hii na huenda yakachapishwa kwa jarida za kimatibabu ama kujadiliwa kwenye vikao vya kisayansi, humu nchini na hata ngambo.

Mawasiliano:

Endapo uko na maswali, unaweza kuniuliza saa hii. Naomba uwe huru kuniuliza maswali ambayo huenda yakaibuka wakati wa utafiti au hata baadaye. Jisikie huru kunipigia simu kupitia nambari yangu ya rununu: 0755741979 au anwani yangu ya barua pepe:

erighawawuda@gmail.com. Kama utahitaji kuwasiliana na kamati inayosimamia utafiti (IREC), unaweza kufanya hivyo kwa kumuandikia barua mwenyekiti wa kamati kupitia anwani ya posta ifuatayo: Mwenyekiti wa IREC, Hospitali ya Mafunzo na Rufaa ya MOI; Sanduku la Posta 3- 30100, ELDORET.

Kamati inayosimamia utafiti katika Chuo Kikuu cha Moi na Hospitali ya Mafunzo na Rufaa ya Moi (IREC) kushughulikia sheria za utafiti unaohusu binadamu. Kamati hii huhakikisha kwamba wamemlinda mhusika yeyote anayeshiriki katika utafiti wowote dhidi ya madhara ya aina yoyote ambayo huenda yakampata kwa kushiriki katika utafiti. Wanakamati wa IREC wamelisoma na kuidhinisha pendekezo langu la utafiti huu.

Kiapo cha Mhojiwa:

Nimeyasoma maelezo yaliyotangulia/ nimesomewa maelezo yaliyotangulia kisha nikapewa nafasi ya kuuliza maswali na kutafuta uwazi. Maswali yangu yote yamejibiwa kikamilifu. Kwa hivyo, ninatoa idhini kwa hiari yangu mwenyewe kushiriki katika utafiti huu.

Jina la mhojiwa: .....Sahihi ya mhojiwa: .....

Tarehe (siku/mwezi/mwaka): .....

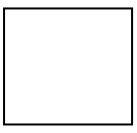
Kiapo cha shahidi wa mhojiwa ambaye hajasoma:

Nimeshuhudia mhojiwa akisomewa kwa usahihi maelezo yaliyomo kwenye nakala hii na akapewa nafasi ya kuuliza maswali na kutafuta uwazi. Maswali yote aliyoyauliza yalijibiwa kikamilifu. Kwa hivyo, ninadhibitisha ya kwamba mhojiwa ametoa idhini kwa hiari yake mwenyewe ya kushiriki katika utafiti huu.

Jina la shahidi.....Sahihi ya shahidi.....

Tarehe (siku/mwezi/mwaka): …….....

Alama ya kidole gumba cha mhojiwa:



Kiapo cha mtafiti/ msaidizi anayechukua idhini ya mhojiwa:

Nimechukua muda kumsomea mhusika maelezo yaliyomo kwenye nakala hii kwa usahihi kisha nikampa nafasi ya kuniuliza maswali na kutafuta uwazi. Ninadhibitisha kuwa nimeyajibu maswali yote aliyoniuliza kwa usahihi na kikamilifu.

Ninathibitisha ya kwamba mhusika ametoa idhini ya kuhusika katika utafiti huu kwa hiari yake mwenyewe.

Jina la mtafiti/ msaidizi: …….....Sahihi ya mtafiti/msaidizi: .....

Tarehe (siku/mwezi/mwaka): ……

Appendix 3: Questionnaire for women with mental illness

ASSESSMENT OF THE REPRODUCTIVE HEALTH NEEDS OF WOMEN WITH MENTAL ILLNESS ON FOLLOW UP AT OUTPATIENT PSYCHIATRY CLINIC AT MTRH – ELDORET.

Date (dd/mm/yy) ……. Serial Number…….

SECTION 1: SOCIO-DEMOGRAPHIC DATA

In which year were you born?.....

1.2 What is your marital status? (Tick one that applies).

Single [ ] Married [ ] Divorced [ ] Widowed [ ] Separated [ ] Other [ ]

(If other to 1.2 above, specify……).

1.2.1 If ever married, were you in a previous marital institution prior to this one referred to above? Yes [ ] No [ ]

1.2.2 If Yes to the above, how many previous marital institutions were you in? ……

1.2.3 If separated, what was the reason for the separation? Social problems []

Issues related to the mental illness [] Issues related to finances [ ]

Other [] If Other, explain……

1.2.4 If divorced, what was the reason for the divorce? Social problems []

Issues related to the mental illness [] Issues related to finances [ ]

Other [] If other, explain…….

1.3 What is your highest level of your education: (Tick one that applies).

None [] Incomplete Primary [ ] completed primary [ ]

Incomplete Secondary [] Complete secondary [ ] Incomplete Tertiary [ ] Complete tertiary [ ]

1.4 What is your source (sources) of income? (Tick all that apply).

Salary [] Wages [ ] Family [ ] Sex for money [ ] Begging [ ] Other[ ]

(If other to 1.4 above, specify …….).

SECTION 2: HISTORY RELATED TO THE MENTAL ILLNESS:

2.1 State the year when you were diagnosed with a mental illness…….

2.2 What mental illness (illnesses) do you suffer from? (As indicated by the psychiatrist completing the mini mental status exam tool) ……...

2.3 Are you currently on medication for your mental illness stated above? (Tick the one that applies). Yes [] No [ ]

2.4 If No to 2.3 above, state the reason(s). ……

SECTION 3: MENSTRUAL HISTORY:

3.1 How old were you when you got your first menstrual period? …….

3.2 When was the first day of your last menstrual period?.....

3.3 For how many days do you receive your periods? .....

3.4 How heavy do you consider your periods to be? (tick one that applies)

Heavy [] moderate [ ] light [ ]

3.5 Do you get your periods every month? (Tick one that applies). Yes [] No [ ]

3.6 If No to 3.5 above, how many months apart are your cycles?.....

3.7 Have you had a missed period in the last three months? (Tick one that applies).

Yes [ ] No [ ]

3.8 Have you had any challenges with your menstrual periods? Yes [ ] No [ ]

3.9 If yes to 3.7 above, what challenges have you had with your menstrual periods? Tick all that apply.

Severe period pain	
Prolonged bleeding	
Heavy bleeding	
Missing periods (irregular)	
Bleeding more than once within one month	
Problems with menstrual hygiene	

SECTION 4: USE OF CONTRACEPTIVES:

4.1 Have you ever had sexual intercourse? Yes [ ] No [ ]

4.2 If yes to 4.1 above, are you currently sexually active Yes [ ] No [ ]?

4.3 If Yes to 4.2 above, did you use protection the last time you had sexual intercourse?

Yes [ ] No [ ]

4.4 Have you ever used any form of contraceptives? Yes [] No [ ]

4.5 If Yes to 4.4 above, which ones? (Tick all that apply).

Birth control pills	
Condoms	
Depo Provera	
Implanon	
Jadelle	
Intrauterine contraceptive device	
Other	

4.6 If other to 4.5 above, which method(s)……

4.7 In how many years' time do you intend to get your next pregnancy? ……..

4.8 Are you currently using any contraceptive method? Yes [ ] No [ ]

4.9 If yes to above, which method? (Tick the all that apply).

Birth control pills	
Condoms	
Depo Provera	
Implanon	
Jadelle	
IUCD	
Other	

4.10 If other to 4.9 above, which method(s)……

SECTION 5: HISTORY OF PREVIOUS PREGNANCIES:

5.1 Have you ever been pregnant before? Yes [] No [ ]

If No to 5.1, skip to Section 8

5.2 How old were you when you first got pregnant? ……

5.3 If Yes to 5.1 above, have you ever gotten pregnant at a time when you did not intend to get pregnant? Yes [] No [ ]

5.4 How many pregnancies have you previously had?

5.5 Have you ever lost a pregnancy? Yes [ ] No [ ]

If no to 5.5 above, proceed to section 6.

5.6 If yes to above, how many pregnancies have you lost? …….

5.7 Did you lose your pregnancy spontaneously or was the loss induced?

Spontaneous [ ] Induced [ ]

5.8 Did you go to hospital for continued care after you had lost your pregnancy?

Yes [ ] No [ ]

SECTION 6: ANTENATAL CARE:

(This section is applicable only to those who are currently pregnant. Otherwise, proceed to section 7).

6.1 When was your last normal menstrual period? ..... (The researcher to calculate the gestational age in weeks based on the LNMP as provided in section 4 above). Gestation in weeks…….

6.2 In this current pregnancy, did you intend to get pregnant at the time you got pregnant?

Yes [] No [ ]

6.3. Have you attended any antenatal care visit(s) in the current pregnancy so far?

Yes [] No [ ]

6.4 If Yes to question 6.3 above, how many visits to the ANC have you attended so far?

……

6.5 Have you had any blood tests done in the current pregnancy? Yes [ ] No [ ]

6.6 Have you had any urine tests done during this current pregnancy? Yes [ ] No [ ]

6.7 Have you had any ultrasound investigations done during this pregnancy?

Yes [ ] No [ ]

6.8 Are you currently taking any nutritional supplements? Yes [ ] No [ ]

6.9 Have you planned on where you intend to deliver your baby from? Yes [] No [ ]

SECTION 7: POSTNATAL CARE:

(Applicable only to those who delivered in the past 6 months, otherwise, proceed to Section 8):

7.1 Where did you have your baby delivered? At home [] In hospital [ ] Other [ ]

If other, specify……

7.2 Who assisted you in the delivery of your baby?

Health care worker [ ] Traditional birth attendant [ ]

Delivered unassisted [ ] Other birth attendant [ ]

If other, specify…….....

7.3 Was your baby admitted to hospital in the first two weeks of life?

Yes [] No [ ]

7.4 Who takes care of your baby? Myself [] Family members [ ] other [ ]

If other to above, specify…….....….....

7.5 What do you feed your baby? Breast milk only [] breast milk with other feeds [ ]

Other feeds only []

7.6 What is the immunization status of your baby?

Immunization up to date [] Partially immunized [ ] Not immunized at all [ ]

7.7 Have you made any dietary adjustments for yourself since you delivered your baby?

Yes [ ] No [ ] If yes to above, explain……

7.8 Are you taking any nutritional supplements? Yes [ ] No [ ]

SECTION 8: GENITAL TRACT INFECTIONS:

8.1 Do you know that there are diseases that can be spread through unprotected sexual intercourse? Yes [] No [ ]

8.2 Do you know of any ways of protecting oneself from diseases that can be spread through unprotected sexual intercourse? Yes [] No [ ]

If Yes to above, which ways? ……

8.3 If Yes to 8.2 above, tick all that apply.

Abstinence	
Correct and consistent condom use	
Faithfulness to one faithful partner	
Being screened for infections	
Other.....	

8.4 In the past 3 months, have you suffered from any of the following? (Tick all that apply).

Dysuria		Lower back pains	
Urinary frequency		Foul smelling discharge	
Vaginal discharge		Pain during sexual intercourse	
Vulval itchiness		Intermenstrual bleeding	
Vaginal itchiness		perineal ulcerations	
Suprapubic pains		inguinal swellings	
Lower abdominal pains		Genital ulcerations	

8.5 If you have experienced any of the above in 8.4 above, did you seek treatment?

Yes [] No [ ]

8.6 If No to 8.4 above, explain why you did not seek treatment. .....

.....

SECTION 9: HIV:

9.1 Have you ever been tested for HIV? Yes [ ] No [ ]

(If No to 9.1 above, proceed to 9.5 below)

9.2 If yes to 9.1 above, how long ago were you tested for HIV?

Less than 1 year ago [] More than one year ago [ ]

9.3 What was your HIV test result? Positive [] Negative [ ] I do not know [ ]

9.4 If HIV positive, are you on antiretroviral drugs? Yes [ ] No [ ]

9.5 If No to 9.1 above, why have you never taken the HIV test?.....

SECTION 10: CERVICAL AND BREAST CANCER SCREENING

10.1 Have you ever heard about screening for breast cancer? Yes [] No [ ]

10.2 Do you ever carry out self-breast examination? Yes [] No [ ]

10.3 Have you ever had clinical breast examination? Yes [] No [ ]

10.4 Have you ever had a breast ultrasound done? Yes [] No [ ]

10.5 Have you ever had a mammography done? Yes [] No [ ]

10.6 Have you ever heard about cervical cancer screening? Yes [] No [ ]

10.7 Have you ever had screening for cervical cancer done? Yes [] No [ ]

10.8 If Yes to 10.7 above, how many years ago did you last have cervical cancer screening? ....

SECTION 11: HISTORY OF DRUG AND SUBSTANCE USE:

11.1 Have you ever used any drugs or substances? Yes [] No [ ]

11.2 If Yes to above, which ones? (Tick all that apply).

Tobacco	
Bhang	
Alcohol	
Injectable drugs	
Inhaled drugs	
Pharmaceutical drugs	
Others	

11.3 How old were you when you first used any of the substances above? …….

11.4 When did you last use the above substance(s)? …….

11.5 Have you ever injected drugs for pleasure? Yes [] No [ ]

11.6 If Yes to above, when did you last inject? .....

11.7 If Yes to 11.5 above, which drug did you inject? .....

11.8 If you answered Yes to 11.5 above, have you ever shared this information on your injectable drug use with your mental health service provider? Yes [ ] No [ ]

11.9 If No to the above, what are your reasons? .....

SECTION 12: SEXUAL HISTORY AND HISTORY OF VIOLENCE:

(Note that this section contains sensitive information and may evoke emotions. Linkage services will be provided appropriately if affected).

12.1 Have you ever had sexual intercourse? Yes [] No [ ]

12.2 If yes to 12.1 above, how old were you when you had your first sexual encounter?

12.3 Did you consent to the sexual act? ……. Yes [ ] No [ ]

12.4 If no to 12.3 above, what did you do after that?

Nothing [ ] Filed a police complaint [ ] went to hospital [ ]

12.5 Are you currently in a sexual relationship? Yes [ ] No [ ]

12.6 Have you ever had sexual intercourse against your own free will? Yes [] No [ ]

12.7 If yes to 12.6 above, what did you do after that?

Nothing [] Filed a police complaint [ ] Went to hospital [ ]

12.8 Are you presently or within the past three months, being forced to have sexual intercourse against your own free will? Yes [] No [ ]

12. 9 If Yes to 12.8 above, who is the perpetrator?

Person known to me [] Person unknown to me [ ]

12.10 If yes to 12.8 above, what did you do after that?

Nothing [] Filed a police complaint [ ] Went to hospital [ ]

12. 11 Are you presently or within the past three months, being hit, slapped, kicked, or otherwise physically hurt by your partner or someone important to you? Yes [] No [ ]

12. 12 If Yes to 12.11 above, who is the perpetrator?

Person known to me [] person unknown to me [ ]

12.13 If yes to 12.11 above, what did you do after that?

Nothing [] Filed a police complaint [ ] Went to hospital [ ]

12.14 Currently, or within the past three months does anyone insult, threaten making you scared, scream at you, or make you feel worthless? Yes [] No [ ]

12.15 If yes to 12.14 above, who is the perpetrator?

Person known to me [] Person unknown to me [ ]

12.16 If yes to12.14 above, what action have you taken?

None [] Filed a police complaint [ ] Went to hospital [ ] Other [ ]

If other, explain .....

Thank you very much for participating in this study. Kindly feel free to contact me in case you have any questions you may need addressed.

Appendix 4: Hojaji la mgonjwa wa akili

TATHMINI YA MAHITAJI YA AFYA YA UZAZI YA WANAWAKE WALIO NA UGONJWA WA AKILI WANAOFWATILIA MATIBABU KATIKA KLINIKI YA MATIBABU YA UGOJWA WA AKILI KATIKA HOSPITALI YA MTRH-ELDORET.

Tarehe (siku/mwezi/mwaka)……. Nambari ya hojaji…….

SEHEMU YA KWANZA: TARKIMU ZA MASUALA YA KIJAMII NA KIUCHUMI.

1.1 Je, ulizaliwa mwaka gani? .....

1.2 Je, hali yako ya ndoa iko vipi? (Chagua jibu moja linalokufaa).

Sijaolewa [ ] Nimeolewa [ ] Nimetalakiwa [ ] Mjane [ ]Tumetengana [ ]

Hali Nyingine [ ]

(Fafanua hali nyingine ya ndoa) ……)

1.2.1 Kama umeolewa, ulikuwa katika ndoa ya awali kabla ya ndoa ya sasa?

Ndio [ ] La [ ]

1.2.2 Kama umewahi kuwa katika ndoa ya awali, ni ndoa ngapi za awali?.....

1.2.3 Je, kama mmetangana, ni nini kilisababisha utengano huo?

Sababu za kijamii [ ] sababu zinazoambatana na ugonjwa wa akili [ ]

Sababu za kiuchumi [ ] sababu zinginezo [ ]

Kama ni kwa sababu zinginezo, fafanua .....

1.2.4 Kama umetalakiwa, ni kwa sababu gani?

Sababu za kijamii [ ] sababu zinazoambatana na ugonjwa wa akili [ ]

Sababu za kiuchumi [ ] sababu zinginezo [ ]

Kama ni kwa sababu zinginezo, fafanua .....

1.3 Je, kiwango chako cha juu zaidi cha masomo ulichohitimu ni kipi? (Chagua jibu moja linalokufaa).

Sina elimu [ ] Shule ya msingi haikukamilika [ ] Shule ya msingi ilikamilika [ ]

Sikukamilisha Shule ya sekondari [ ] Nilikamilisha Shule ya sekondari [ ]

Sikukamilisha Elimu ya juu [ ] Nilikamilisha Elimu ya juu [ ]

1.4 Je, Chimbuko la riziki yako ni lipi? (Chagua zote zinazokufaa).

Mshahara [ ] Vibarua [ ] Familia [ ] Kuuza ngono [ ] Kuombaomba [ ]

Chimbuko linginelo [ ]

(Fafanua chimbuko linginelo ni lipi) ……

SEHEMU YA PILI: HISTORIA INAYOHUSIANA NA UGONJWA WA AKILI:

2.1 Je, ulipatikana na ugonjwa wa akili mwaka gani? ……

2.2 Je, unaugua ugonjwa upi kamili wa akili? ……..……..

2.3 Je, unatumia dawa za ugonjwa wa akili kwa hivi sasa? (Chagua jibu moja linalokufaa).

Ndio [ ] La [ ]

2.4 Kama jibu lako ni La, ni kwa sababu gani hutumii dawa? Sababu za kiuchumi [ ] niliachishwa dawa na daktari [ ] nilichoka kutumia dawa [ ] sababu zinginezo [ ]

2.5 Kama jibu lako katika 2.4 hapo juu ni sababu zinginezo, fafanua zaidi. .....

SEHEMU YA TATU: HISTORIA YA HEDHI:

3.1 Je, ulipata hedhi kwa mara yako ya kwanza ukiwa na umri wa miaka mingapi? …….

3.2 Je, siku ya kwanza ulipopata hedhi zako za mwisho ilikua gani? ……

3.3 Je, wewe hupata hedhi kwa muda wa siku ngapi? .....

3.4 Je, wewe huchukulia hedhi zako kuwa nyingi kiasi gani? Nzito [ ] Kawaida [ ] Light [ ]

3.5 Je, wewe hupata hedhi kila mwezi? (Chagua jibu linalokufaa).

Ndio [ ] La [ ]

3.6 Kama jibu lako katika 3.5 hapo juu ni La, wewe hupata hedhi zako baada ya miezi ngapi? .....

3.7 Je, kwa muda ambao hukupata hedhi zako ndani ya miezi mitatu iliyopita? (Chagua jibu linalokufaa).

Ndio [ ] La [ ]

3.8 Je, umekuwa na changamoto zozote zinazohusiana na hedhi zako? Ndio [ ] La [ ]

3.9 kama jibu lako ni Ndio katika 3.8 hapo juu, ni changamoto gani ambazo umekuwa ukikumbana nazo?

Maumivu makali ya hedhi	
Kuvuja damu kwa siku nyingi	
Kuvuja damu nyingi	
Kukosa hedhi miezi mingine	
Kuvuja Zaidi ya mara moja ndani ya mwezi mmoja	
Changamoto za kiusafi wakati wa hedhi	

SEHEMU YA NNE: HISTORIA YA MATUMIZI YA NJIA ZA KUPANGA UZAZI:

4.1 Je, umewahi kushiriki ngono? Ndio [ ] La [ ]

4.2 Kama umewahi kushiriki ngono, ndani ya miezi mitatu iliyopita, umekuwa ukishiriki ngono? Ndio [ ] La [ ]

4.3 Kama Ndio katika 4.2 hapo juu, je, ulitumia kinga wakati wa kushiriki ngono mara ya mwisho? Ndio [ ] La [ ]

4.4 Umewahi tumia njia yoyote ya kupanga uzazi? Ndio [ ] La [ ]

4.5 Kama ndio, ni njia zipi hizo? (Chagua zile umetumia).

Tembe za kupanga uzazi	
Mpira wa kondomu	
Sindano ya kupanga uzazi	
Bandiko la uzazi (miaka mitatu)	
Bandiko la uzazi (miaka mine)	
Chombo cha shaba (IUCD)	
Njia nyingineyo	

4.6 Je, unanuia kushika uja uzito katika siku za usoni? Ndio [ ] La [ ]

4.7 Kama Ndio katika 4.6 hapo juu, je, unanuia kushika uja uzito baada ya miaka mingapi kuanzia sasa? ……

4.8 Je, unatumia njia yoyote ya kupanga uzazi kwa sasa? Ndio [ ] La [ ]

4.9 ama ndio katika 4.8, ni njia zipi hizo? (Chagua zile umetumia).

Tembe za kupanga uzazi	
Mpira wa kondomu	
Sindano ya kupanga uzazi	
Bandiko la uzazi (miaka mitatu)	
Bandiko la uzazi (miaka mine)	
Chombo cha shaba (IUCD)	
Njia nyingineyo	

SEHEMU YA TANO: HISTORIA YA UJA UZITO ULIOPITA:

5.1 Je, umewahi shika uja uzito mbeleni? Ndio [ ] La [ ]

Kama La katika 5.1, ruka hadi sehemu ya nane.

5.2 Je, ulikuwa na umri wa miaka mingapi wakati ulishika uja uzito wako wa kwanza? ……

5.3 Kama Ndio katika 5.1, je, umewahi shika uja uzito wakati ambapo hukutarajia kushika uja uzito? Ndio [ ] La [ ]

5.4 Je, umewahi skika uja uzito mara ngapi? .....

5.5 Je, umewahi poteza uja uzito? Ndio [ ] La [ ]

5.6 Kama ndio, umepoteza mimba ngapi? ……

5.7 Je, katika kupoteza uja uzito, uliavya ama ilitoka yenyewe?

Ilitoka yenyewe [ ] Niliavya [ ]

5.8 Baada ya kupoeza uja uzito, ulienda hospitali ili kufuatizia matibabu zaidi?

Ndio [ ] La [ ]

SEHEMU YA SITA: HUDUMA ZA KLINIKI YA WAJA WAZITO:

(Sehemu hii inapaswa kukamilishwa na walio waja wazito kwa sasa pekee. Sivyo ruka hadi sehemu ya saba).

6.1 Je, siku ya kwanza ya kupata hedhi yako mara ya mwisho ilikuwa tarehe ngapi? .....

6.2 Je, ulinuia kushika uja uzito huu ulioubeba kwa sasa? Ndio [ ] La [ ]

6.3 Je, umeenda kliniki ya uja uzito? Ndio [ ] La [ ]

6.4 Kama umeenda kliniki, umeenda mara ngapi kufikia sasa? .....

6.5 Je, umefanyiwa vipimo vyovyote vya damu kliniki? Ndio [ ] La [ ]

6.6 Je, umefanyiwa vipimo vyovyote vya mikojo tangu uende kniniki? Ndio [ ] La [ ]

6.7 Je, umefanyiwa uchunguzi wowote wa mionzi isiyo ya x-ray (ultrasound) kwa mimba hii kufikia sasa? Ndio [ ] La [ ]

6.8 Je, kuna virutubisho lishe vyovyote ambavyo unavitumia kwa sasa?

Ndio [ ] La [ ]

6.9 Je, unao mpango wa unakonuia kujufungulia mwanao? (birth plan)?

Ndio [ ] La [ ]

SEHEMU YA SABA: HUDUMA BAADA YA KUZAA:

(Sehemu hii ikamilishwe tu na wale waliojifungua ndani ya miezi sita iliyopita, sivyo, ruka hadi sehemu ya nane).

7.1 Je, ulijifungulia wapi motto wako? Nyumbani [ ] Hospitalini [ ] Kwingineko [ ]
Kama jibu lako ni Kwingineko, fafanua mahali hapo. ……...

7.2 Je, ni nani aliyekusaidia wakati wa kujifungua motto wako? Mhudumu wa afya [ ] Mkunga [ ] Nilijifungua nikiwa peke yangu [ ] Msaidizi mwingine wa uzazi [ ]
Kama ulisaidiwa na msaidizi mwingine, ni nani huyo? ……..

7.3 Je, baada ya kujifungua, mtoto wako alilazwa hospitali akiwa chini ta umri wa wiki mbili? Ndio [ ] La [ ]

7.4 Je, ni nani ambaye humchunga mtoto wako? Mimi mwenyewe [ ] Jamii yangu [ ] Mtu mwingine [ ]
Kama ni mtu mwingine, ni nani huyo? …….

7.5 Je, unamlisha mtoto wako nini? Maziwa ya matiti pekee [ ] maziwa ya matiti pamoja na vyakula vingine [ ] vyakula vingine pekee [ ]

7.6 Je, hali ya chanjo za mtoto wako iko vipi? Amepata chanjo zote kufikia sasa [ ] Haja pata chanjo zingine [ ] Hajawahi pata chanjo yoyote [ ]

7.7 Je, umefanya mabadiliko yoyote katika lishe yako ili kuhakikisha umepata virutubisho vifaavyo tangu ujifungue? Ndio [ ] La [ ]
Kama ndio, ni mabadiliko yapi uliyoyafanya? .....

7.8 Je, unatumia virutubisho lishe vyovyote kwa hivi sasa? Ndio [ ] La [ ]

SEHEMU YA NANE: MAGONJWA YA SEHEMU NYETI:

8.1 Je, unafahamu kwamba kunayo magonjwa ambayo husambazwa kupitia kufanya ngono bila kinga? Ndio [ ] La [ ]

8.2 Je, unafahamu njia zozote za kujikinga dhidi ya magonjwa ambayo husambazwa kupitia mapenzi bila kinga? Ndio [ ] La [ ]

8.3 ama Ndio, chagua njia ambazo unazifahamu?

Kukaa bila kushiriki ngono	
Kutumia mpira kila mara wakati wa ngono	
Kuwa mwaminifu kwa mpenzi mmoja mwaminifu	
Kuchunguzwa magonjwa	
Njia nyingine.....	

8.4 Kwa muda wa miezi sita iliyopita, umekuwa na shida yoyota kati ya zilizotajwa hapo hini? (Chagua zile zinaambatana nawe).

Uchungu wakati wa kukojoa		Kuumwa na mgongo	
Kutokwa na uchafu kwa uke		Uchungu wakati wa kufanya ngono	
Kujikuna kuma		Hedhi katikati ya mwezi	
Kusikia kujikuna uke		Vidonda kwa periniamu	
Uchungu kwa sehemu inayowiana na kibofu		Kufura kwa tezi za nyonga	
Uchungu kwa tumbo chini ya kitovu		Vidonda kwa nyeti	

8.5 Je, kama umepata shida mojawapo ya zilizotajwa hapo 8.4, ulitafuta matibabu?

Ndio [ ] La [ ]

8.6 Kama hukutafuta matibabu, ni kwa nini? .....

SEHEMU YA TISA: UKIMWI:

9.1 Je, umewahi pimwa ukimwi? Ndio [ ] La [ ]

Kama hujawahi kupimwa, ruka hadi swali la 9.5).

9.2 Kama ulipimwa ukimwi, ni muda gani uliopita tangu kipimo hicho? Chini ya mwaka mmoja uliopita [ ] Zaidi ya mwaka mmoja uliopita [ ]

9.3 Je, majibu yako ya kipimo cha ukimwi yalikuwaje? Nilipatikana na virusi [ ] Sikupatikana na virusi [ ] Sijui [ ]

9.4 Kama ulipatikana na virusi, unatumia dawa za kupunguza makali ya virusi vya ukimwi? Ndio [ ] La [ ]

9.5 Kama hukupima virusi vya ukimwi kulingana na 9.1 hapo juu, ni kwa sababu gani? .....

SEHEMU YA KUMI: UCHUNGUZI WA SARATANI YA KIZAZI NA MATITI

10.1 Je, umewahi kusikia kuhusu uchunguzi wa saratani ya matiti? Ndio [ ] La [ ]

10.2 Je, umewahi kujipima matiti kwa ajili ya kutafuta dalili za saratani ya matiti? Ndio [ ] La [ ]

10.3 Je, umewahi fanyiwa kipimo cha matiti na mhudumu wa afya kwa ajili ya kutafuta dalili za saratani ya matiti? Ndio [ ] La [ ]

10.4 Je, umewahi fanyiwa kipimo cha matiti na mhudumu wa afya kwa kutumia mionzi isiyo ya X ray (ultrasound) kwa ajili ya kutafuta dalili za saratani ya matiti? Ndio [ ] La [ ]

10.5 Je, umewahi fanyiwa kipimo cha matiti na mhudumu wa afya kwa kutumia mionzi iliyo ya X ray (mammogram) kwa ajili ya kutafuta dalili za saratani ya matiti? Ndio [ ] La [ ]

10.6 Je, umewahi kusikia kuhusu uchunguzi wa saratani ya mlango wa kizazi? Ndio [ ] La [ ]

10.7 Je, umewahi kufanyiwa uchunguzi wa saratani ya kizazi? Ndio [ ] La [ ]

10.8 Kama ndio katika 10.7, ni miaka mingapi iliyopita tangu ufanyiwe uchunguzi huo? .....

SEHEMU YA KUMI NA MOJA: HISTORIA YA MATUMIZI YA DAWA ZA KULEVYA:

11.1 Je, umewahi kutumia aina yoyote ya madawa ya kulevya? Ndio [ ] La [ ]

11.2 Kama Ndio, ni dawa zipi ulizotumia? (chagua dawa zote ulizitumia).

Tumbaku	
Bangi	
Pombe	
Dawa za kujidunga	
Dawa za kunusa	
Dawa za hospitali	
Zinginezo..……	

11.3 Je, ulikuwa na umri wa miaka mingapi ulipotumia dawa za kulevya kwa mara yako ya kwanza?.....

11.4 Je, ulitumia dawa za kulevya lini kwa mara yako ya mwisho? .....

11.5 Je, umewahi tumia dawa za kulevya za kujidunga sindano? Ndio [ ] La [ ]

11.6 Kama Ndio, ulijichoma sindano lini kwa mara ya mwisho? .....

11.7 Kama Ndio kwa swali 11.5, ulijidunga dawa gani?.....

11.8 Kama ndio kwa swali 11.5, umewahi kuongea na mhudumu wako wa afya ya akili kuhusu ujumbe huu juu ya matumizi yako ya dawa za kulevya za kujidunga? Ndio [ ] La [ ]

11.9 Kama jibu lako ni La katika 11.8, ni kwa sababu gani hujamhusisha mhudumu wako kwa hili swala? .....

SEHEMU YA KUMI NA MBILI: HISTORIA YA NGONO NA HISTORIA YA UNYANYASAJI:

(Tahadhari: sehemu hii inahusu habari ambazo ni za kibinafsi sana au siri na inaweza zua hisia. Iwapo utaathirika na hisia ambazo zinaweza zuliwa na maswali katika sehemu hii, utapokea usaidizi wa kisaikologia).

12.1 Je, umewahi kushiriki ngono? Ndio [ ] La [ ]

12.2 Kama ndio katika 12.1, Je, ulikuwa na umri gani wakati ulishiriki ngono kwa mara ya kwanza? .....

12.3 Je, uliposhiriki ngono kwa mara yako ya kwanza, ulishiriki kwa idhini yako? Ndio [ ] La [ ]

12.4 Kama haikuwa kwa idhini yako, ulichukua hatua gani?

Sikuchukua hatua yoyote [ ] Nilipiga ripoti polisi [ ] Nilienda hospitali [ ]

12.5 Je, uko katika uhusiano wa kimapenzi kwa sasa? Ndio [ ] La [ ]

12.6 Je, umewahi fanya mapenzi pasipo na idhini yako (kunajisiwa)? Ndio [ ] La [ ]

12.7 Kama ndio, ulichukua hatua gani? Sikuchukua hatua yoyote [ ]

Nilipiga ripoti polisi [ ]Nilienda hospitali [ ]

12.8 Je, kwa wakati huu au ndani ya miezi mitatu iliyopita, umewahi kulazimishwa kufanya mapenzi pasipo na hiari yako mwenyewe? Ndio [ ] La [ ]

12.9 Kama jibu lako ni Ndio katika 12.8, mtu huyu ni nani? Mtu ninayemfahamu [ ] Mtu nisiyemfahamu [ ]

12.10 Kama jibu laku ni ndio (swali 12.8), ulichukua hatua gani? Sikuchukua hatua yoyote [ ] Nilipiga ripoti polisi[ ] Nilienda hospitali [ ]

12.11 Kwa sasa au ndani ya miezi mitatu iliyopita, kuna mtu yeyote ambaye anakupiga kofi, anakuchapa, anakugonga ngumi, anakupiga mateke au kukujeruhi mwili kwa njia yoyote? Ndio [ ] La [ ]

12.12 Kama Ndio katika 12.11, mtu huyo ni nani?

Mtu ninayemfahamu [ ] Mtu nisiyemfahamu [ ]

12.13 Kama jibu laku ni ndio (swali 12.11), ulichukua hatua gani?

Sikuchukua hatua yoyote [ ] Nilipiga ripoti polisi[ ] Nilienda hospitali [ ]

12.14 Kwa sasa au ndani ya miezi mitatu iliyopita, kuna mtu yeyote ambaye anakutukana, anakutisha au kukukemea? Ndio [ ] La [ ]

12.15 Kama Ndio katika 12.14, mtu huyo ni nani? Mtu ninayemfahamu [ ] Mtu nisiyemfahamu [ ]

12.16 Kama jibu laku ni ndio (swali 12.14), ulichukua hatua gani? Sikuchukua hatua yoyote [ ] Nilipiga ripoti polisi[ ] Nilienda hospitali [ ]

Ahsante sana kwa kukubali kushiriki katika utafiti huu. Jisikie huru kuniuliza maswali yoyote yatakayoibuka kupitia anwani nilizokupa kwenye fomu ya idhini.

Appendix 5: Consent form for mental health service providers

My name is Dr. Righa E, Wawuda. I am currently pursuing my Master's Degree in Reproductive Health at Moi University. A dissertation is a requirement in partial fulfillment of this course and I intend to carry out of "Assessment of Reproductive Health Needs of Women with Mental Illness on Follow up at Outpatient Psychiatry Clinic at MTRH – Eldoret".

This research will involve assessment of the services that every female should access at various stages or circumstances in their lifetime. In addition, I intend to find out the challenges faced by the mental health service providers in providing reproductive alongside mental health services to the women living with mental illness.

Purpose of the research:

The purpose of this research is to assess the reproductive health needs of women with mental illness with the aim of identifying any existent gaps in providing these services, and also find out the challenges faced by the mental health service providers in providing reproductive alongside mental health services to the women living with mental illness.

in order to seek ways in which to improve reproductive health service provision to women with mental illness.

Research intervention, Risks and Benefits:

Only a semi structured questionnaire will be given to you by the principal investigator or by the research assistant for self-administration. You are free to respond or choose not to respond to the questions that you may find inconvenient to you. Your refusal to participate in the study will not change the treatment plan that your doctors deem fit for you, or prejudice you in any other way. This study will not put you at any risk as no surgical or medical interventions will be done and no substances will be administered

during this study. Information about you will not be shared with anybody. No immediate benefit will accrue of you.

Participation and Confidentiality:

In this research, all the mental health service providers are invited to participate in the study. The research will be conducted during the psychiatry clinic day, on Wednesdays for a total period of three calendar months. The questionnaire administration will take about five minutes. The information gathered will be treated with utmost confidentiality: your name will not be used as you will be identified using a serial number only known to me and my assistant hence protecting your identity. The information obtained will be used to improve services in MTRH, to form protocols and may be published in medical journals and /or presented in scientific symposia (both local and international).

Contacts:

In case you have any questions, you can ask them now, during or after the study. You can contact me on Telephone: 0755741979, Email address: erighawawuda@gmail.com. You can also contact the IREC chairperson, MOI TEACHING AND REFERRAL HOSPITAL; P.O.BOX 3-30100, ELDORET. The Moi University and MTRH Ethics and Research Committee have reviewed and approved this study. This committee is charged with the responsibility of ensuring that research participants are protected from harm.

Respondent's declaration:

I have read the above information/ the above information has been read out to me. I have been given an opportunity to ask questions and seek clarification and my concerns have been satisfactorily addressed. I hereby voluntarily consent to participate in this research.

Name of participant.....Signature of participant.....

Date (day/month/year) .....

Declaration by the researcher/research assistant taking the consent:

I have given the participant ample time to read the information provided above and I have given him/her an opportunity to ask questions and seek clarification; and that I have fully addressed all his/her concerns.

This is to confirm that I have not coerced him/her into consenting and that he/she has given consent out of her own free will.

Name of researcher/assistant.....Signature of researcher/assistant.....

Date (day/month/year) …….....

Appendix 6: Interview schedule for mental health service providers

ASSESSMENT OF THE REPRODUCTIVE HEALTH NEEDS OF WOMEN WITH MENTAL ILLNESS ON FOLLOW UP AT OUTPATIENT PSYCHIATRY CLINIC AT MTRH – ELDORET.

Date of interview (dd/mm/yy): ……Serial Number……

1.0 Tick one that applies to your gender: male [ ] female [ ]

2.0 When were you born? (state the year). .....

3.0 How long have you worked in mental health service department at MTRH? (state in years). .....

4.0 How long have you provided psychiatry care services in MTRH? (state the duration in years). .....

5.0 Do you provide any reproductive health services alongside mental health services in your service provision? Yes [ ] No [ ]

If No to 5.0 above, skip to 6.0

5.1 If Yes to 4.1 above, state the reproductive health services that you provide alongside mental health services. .....

.....

5.2 If Yes to 5.0 above, do you face any challenges in offering the reproductive health services you stated in 4.2 above? Yes [ ] No [ ]

5.3 If Yes to 5.2 above, what challenges do you face in offering reproductive alongside mental health services? .....

.....

6.0 Are there any reproductive health services that you would have wanted to provide to the women with mental illness but are not readily available in the mental health service unit? Yes [ ] No [ ]

If yes to 6.0 above, what reproductive health services are these that you would have wanted to provide but are not readily available in the mental health service provision unit? .....

.....

7.0 What do you do for patients who require reproductive health services that are not readily available in the mental service unit?.....

.....

8.0 What suggestions do you make, which when implemented could lead to improved reproductive health service delivery to women with mental illness attending the psychiatry outpatient clinic?

a) To the mental health department.....

.....

b) To the reproductive health department .....

.....

c) To the MTRH management .....

.....

.....

d) To the Ministry of Health

.....

Note:

You can use the space at the back of each page of the interview schedule to input more information in case the space provided is inadequate for the response to any question in the interview schedule.

Thank you for participating in this study. In case any questions arise, kindly contact me using the contacts provided in the consent form.

Appendix 7: Mini Mental State Examination (MMSE) tool

The MMSE is a brief test comprised of eleven question test used in the screening for cognitive impairment. It takes 5-10 minutes to administer the tool. This tool only concentrates on the cognitive aspects of the mental functions.

Patient's name: ..... Date: .....

Instructions: Score one point for each correct response within each question or activity.

Maximum score	Patient's score	Questions
5		"What is the Year? Season? Date? Day? Month?
5		"Where are we now? State? County? Town/City? Hospital? Floor?
3		The examiner names three unrelated objects clearly and slowly then the instructor asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until the patient learns all of them if possible.
5		"I would like you to count backwards from 100 by sevens" (93, 86, 79, 72, 65…) alternatively, spell the word WORLD backwards" (DLROW)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects such as a wrist watch and a pencil, and ask the patient to name them
1		"Repeat the phrase: 'no ifs, ands or buts'
3		"Take the paper in your right hand, fold it in half and put it on the floor". (The examiner gives the patient a piece of blank paper)
1		"Please read this and do what it says" (Written instruction is 'close your eyes')
1		"Makeup and write a sentence about anything". (This sentence must contain a noun and a verb)
1		 "Please copy this picture". The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and 2 must intersect
30		**TOTAL**

Source: Adapted from: Folstein MF, Folstein SE, McHugh PR. (1975).

Appendix 8: Brief patient information

“There is a study being conducted on the assessment of reproductive health needs of women with mental illness who are 18 years and above. The aspects being assessed include contraception, breast and cervical cancer screening, previous and/or current pregnancy among other aspects of reproductive health. You will be given further information by the person who will collect this MMSE tool from you.”

In Kiswahili, the message was as stated below:

“Kuna utafiti unaoendelea kuhusu afya ya uzazi kwa akina mama wanaoishi na ugonjwa wa akili walio na umri wa miaka 18 na kuendelea. Maswala yanayotathminiwa ni kupanga uzazi, saratani ya matiti na kizazi, uja uzito wa mbeleni na/ama ulioko, na mambo mengineyo ya afya ya uzazi. kama ungependa kujua zaidi, utapata ujumbe zaidi kwa atakayechukua hii karatasi ya MMSE.”

Appendix 9: FIGO AUB system 1: 2018 revision

Parameter	**Normal**	Abnormal	
Frequency	Absent (no periods or bleeding) = amenorrhea		
	Infrequent (every > 38 days)		
	Normal (≥24 to ≤38 days)		
	Frequent (every <24 days)		
Duration	**Normal (< 8 days)**		
	Prolonged (>8 days)		
Regularity	Regular variation (shortest to longest ≤9 days)		
	Irregular (shortest to longest 10+days)		
Flow volume (patient determined)	Light		
	Normal		
	Heavy		
Intermenstrual bleeding	None		
	Random		
	Cyclic (predictable)	Early cycle	
		Mid Cycle	
		Late cycle	
Unscheduled bleeding on hormonal medication(eg birth control pills, rings or patches).	Not applicable (not on hormone medication)		
	None (on hormone medication)		
	Present		
Secondary amenorrhea: in women with previpusly regular cycles, if there is no bleeding for six months.			

Source- Adapted from: Munro MG, Critchley HOD, Fraser IS; FIGO Menstrual Disorders Committee (2018). The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. Int J Gynaecol Obstet. 2018 Dec;143(3):393-408. doi: 10.1002/ijgo.12666. Epub 2018 Oct 10. Erratum in: Int J Gynaecol Obstet. 2019 Feb;144(2):237. PMID: 30198563.

Appendix 10: Calculation of the unmet need for contraception among WMI 18-49 years' old

Variable	Category	Frequency	Percentage
Ever had sex (n=169)	No	4	2.4
	Yes	165	97.6
Currently currently sexually active WMI (n=165)	No	38	23.1
	Yes	127	76.9
Variables for contraception need for sexually active women (n=127)	Pregnant	7	5.5
	Postmenopausal	7	5.5
	Preg. Intent <2yrs	2	1.6
	Preg intent ≥2 yrs.	49	38.6
	Never intent preg	62	48.8
Pregnancy type for currently pregnant (n=7)	Intended	3	42.9
	Unintended	4	57.1
Amenorrhea among sexually active (n=127)	Amenorrhea	37	29.1
	Not Amenorrheic	90	90.9
FP status for amenorrheic (n=37)	On FP	15	40.5
	Not on FP	22	49.5
Categories of WMI currently sexually active (n=127)	**Not at risk of pregnancy** Current intended preg -3 Preg. Intent ≤2 years-2 Postmenopausal 18-49 yrs-7 Amenorrhea, 18-49 on FP-15	27	21.3
	Total at risk of pregnancy	100	78.7
FP for those with preg intent of ≥2 years (n=49).	Not on FP	33	67.4
	On FP	16	32.6
FP status for never intent to get pregnant (n=62).	Not on FP	42	67.7
	On FP	20	22.3
Unmet FP need for spacing (n=100)		33	33.0
Unmet FP need for limiting (n=100)		42	42.0
Total unmet need for FP (n=100)		75	75.0

Using the formula by Measure evaluation described in 3.9(b) above for calculation of unmet need for contraception, the unmet FP need for spacing pregnancies is 33.0%, unmet FP need for limiting pregnancies is 42.0%; with total unmet need for FP of 75%.

Appendix 11: IREC approval of ammendments

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471/2/3

MOI UNIVERSITY
COLLEGE OF HEALTH SCIENCES
P.O. BOX 4606
ELDORET
Tel: 33471/2/3

Reference IREC/2018/119
Approval Number: 0003113

24th July, 2019

Dr. Righa E. Wawuda,
Moi University,
School of Medicine,
P.O. Box 4606-30100,
ELDORET-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
24 JUL 2019
APPROVED
P.O. BOX 4606-30100 ELDORET

Dear Dr. Wawuda,

RE: APPROVAL OF AMENDMENT

The Institutional Research and Ethics Committee has reviewed the amendment made to your proposal titled:-

"Assessment of Reproductive Health Needs of Women with Mental illness on Follow Up at Outpatient Psychiatry Clinic at MTRH-Eldoret".

We note that you are seeking to make amendments as follows:-

1. To edit questionnaires for data collection. The edits encompass paraphrasing of some questions, rearrangement of the flow of the questions, reorganization of the sections for smoother flow and breaking down of the double barrel questions into single clearer questions.

The amendments have been approved on 24th July, 2019 according to SOP's of IREC. You are therefore permitted to continue with your research.

You are required to submit progress(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change(s) or amendment(s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

DR. S. NYABERA
DEPUTY-CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc: CEO - MTRH; Dean - SPH; Dean - SOM
Principal - CHS; Dean - SOD; Dean - SON

Appendix 12: Initial IREC approval

MU/MTRH-INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471/2/3

MOI UNIVERSITY
COLLEGE OF HEALTH SCIENCES
P.O. BOX 4606
ELDORET

Reference: IREC/2018/119
Approval Number: 0003113

27th September, 2018

Dr. Righa E. Wawuda,
Moi University,
School of Medicine,
P.O. Box 4606-30100,
ELDORET-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
27 SEP 2018
APPROVED
P. O. Box 4606-30100 ELDORET

Dear Dr. Wawuda,

RE: FORMAL APPROVAL

The MU/MTRH- Institutional Research and Ethics Committee has reviewed your research proposal titled: -

"Assessment of Reproductive Health Needs of Women with Mental illness on Follow Up at Outpatient Psychiatry Clinic at MTRH - Eldoret".

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 3113*** on 27th September, 2018. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; hence will expire on 26th September, 2019. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date. You will be required to submit progress report(s) on application for continuation, at the end of the study and any other times as may be recommended by the Committee.

Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. You will also be required to seek further clearance from any other regulatory body/authority that may be appropriate and applicable to the conduct of this study.

Sincerely,

DR. S. NYABERA
DEPUTY-CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc	CEO	-	MTRH	Dean	-	SOP	Dean	-	SOM
	Principal	-	CHS	Dean	-	SON	Dean	-	SOD

Appendix 13: Hospital approval (MTRH)

An ISO 9001:2015 Certified Hospital

MOI TEACHING AND REFERRAL HOSPITAL

Telephone :(+254)053-2033471/2/3/4
Mobile: 722-201277/0722-209795/0734-600461/0734-683361
Fax: 053-2061749
Email: ceo@mtrh.go.keldirectorsofficemtrh@gmail.com

Nandi Road
P.O. Box 3 – 30100
ELDORET, KENYA

Ref: ELD/MTRH/R&P/10/2/V.2/2010

2nd October, 2018

Dr. Righa E. Wawuda,
Moi University,
School of Medicine,
P.O. Box 4606-30100,
ELDORET-KENYA.

APPROVAL TO CONDUCT RESEARCH AT MTRH

Upon obtaining approval from the Institutional Research and Ethics Committee (IREC) to conduct your research proposal titled:-

"Assessment of Reproductive Health Needs of Women with Mental illness on Follow Up at Outpatient Psychiatry Clinic at MTRH - Eldoret".

You are hereby permitted to commence your investigation at Moi Teaching and Referral Hospital.

CEO
APPROVED
02 OCT 2018

02/10/2018

DR. WILSON K. ARUASA, *MBS* SIGN.....
CHIEF EXECUTIVE OFFICER P. O. Box 3 - 30100, ELDORET
MOI TEACHING AND REFERRAL HOSPITAL

cc - DCEO, (CS)
- Director of Nursing Services (DNS)
- HOD, HRISM

Appendix 14: Pilot study approval- Nakuru

Dr. Righa E. Wawuda

Moi University

P.O. ELDORET

November 5, 2018

5/11/2018

Received

The Medical Superintendent

Provisional General Hospital - Nakuru

P.O. Box 71

NAKURU

Dear Sir,

RE: REQUEST FOR PERMISSION TO CARRY OUT PILOT STUDY IN PGH-NAKURU

I am Dr. Righa E. Wawuda formerly a medical officer in PGH Nakuru and currently a resident in Reproductive Health – Moi University.

I intend to carry out my research on "Assessment of Reproductive Health Needs of Women with Mental Illness on Follow up at Outpatient Psychiatry Clinic at MTRH-Eldoret"

I have been granted IREC approval to carry out my research.

This is to kindly request for permission to carry out my pilot study in your facility prior to embarking on data collection.

Looking forward to a favorable consideration.

Yours sincerely,

Dr. Righa E. W.

Appendix 15: Approval from Mental Health Department

Dr Righa E, Wawuda,
Moi University,
School of Medicine.
P. O. Box 3606-
Eldoret.

The Head of Department,
Psychiatry Department,
Moi University,
School of Medicine,
P. O. Box 3606,
Eldoret.
28/03/2019.

Dear Sir,

RE: REQUEST FOR PERMISSION TO CARRY OUT MY RESEARCH IN YOUR DEPARTMENT TITLED: ASSESSMENT OF REPRODUCTIVE HEALTH NEEDS OF WOMEN WITH MENTAL ILLNESS ON FOLLOW UP AT OUTPATIENT PSYCHIATRY CLINIC AT MTRH – ELDORET.

I am a resident in the Department of Reproductive Health, pursuing Masters of Medicine in Reproductive Health. I am in my third year of study.

I intend to carry out an assessment of reproductive health needs of women with mental illness on follow up at outpatient psychiatry clinic at MTRH – Eldoret. The purpose of this research is to identify any existent gaps and the challenges faced by mental health service providers in providing reproductive health services to women with mental illness, in order to seek ways of improving reproductive health service provision to these patients.

I am therefore writing to you requesting for permission to conduct my research in your department and the participation of the staff in your department in this research.

I have attached the IREC approval for your reference.

I am looking forward to receiving a favorable response.

Yours Sincerely,

Dr Righa E,Wawuda,
Resident, Reproductive Health.

Appendix 16 KOGS Certificate

Appendix 17 FIGO World Congress Certificate

Appendix 18: Timeframe

ACTIVITY	April	May	June	July	August	September	May	July	August	September	October	January	February	June	November
	2018						2019					2021			
Submission to IREC															
IREC approval															
Piloting of data tools															
Design of data base															
Data collection															
Data entry and analysis															
Report writing															
Thesis submission															
Thesis mock defense															
Thesis defense and presentation															

Appendix 19: Budget

Item	No.of units	Cost per unit Khs	Sub-total cost Kshs	Total cost Kshs
Research proposal cost				
Printing charges	10	400.00	**4,000.00**	
Questionnaire photocopy	250	30.00	**7,500.00**	
Photocopy consent	250	10.00	**2,500.00**	
Photocopy MMS Exam tool	250	3.00	**750.00**	
Binding charges	10	50.00	**500.00**	
Pens	10	20.00	**200.00**	
Biostatistician consult	1	20,000.00	**20,000.00**	
Research assistant fee	2	10,000.00	**20,000.00**	
Total proposal cost				**55,450.00**
Piloting Study Cost				
Transpost of researcher and 2 research assistants		6,000.00	**6,000.00**	
Questionnaire photoc.	30	30.00	**900.00**	
Photocopy consent	25	10.00	**250.00**	
Photocopy MMS Exam tool	25	3.00	**75.00**	
Total Pilot Study Cost				**7,225.00**
Thesis Expenses:				
Printing charges (report)	10	1,000.00	**10,000.00**	
Report binding charges	10	200.00	**2,000.00**	
Biostatistician consult fee	1	25,000.00	**25,000.00**	
Total Final Report Cost				**37,000.00**
10% Contingence fee				**29,967.50**
GRAND TOTAL				**129,642.50**