

**REPRODUCTIVE HEALTH AMONG WOMEN WITH MENTAL ILLNESS IN
KENYA: A STUDY ON KNOWLEDGE, ATTITUDE AND BEHAVIOUR**

SHAVULIMO SHEILA LAMWENYA (H58/7323/2017)

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STUDENT DECLARATION

This thesis proposal is my original work and has not been presented in any other University.

Signature..... 

Date...August 2 2021

Shavulimo Sheila Lamwenya

H58/7323/2017

SUPERVISORS

This thesis proposal has been submitted for review with our approval as University supervisors.

Name: Dr. Anne Mbwayo

Department of Psychiatry

Signature..... 

Date: 3rd August 2021

Name: Professor Muthoni Mathai

Department of Psychiatry

Signature..... 

Date: 2nd August 2021

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DEDICATION

I dedicate this research proposal to my family for their steadfast support.

Table of contents

Student declaration.....	ii
Acknowledgement.....	iii
Dedication.....	iv
List of tables	vii
List of figures.....	viii
List of abbreviations and acronyms.....	ix
Operational definitions.....	x
Abstract.....	xi
Chapter One: Introduction	
1.1 Background.....	1
1.2 Statement of the problem	1
1.3 Study justification	2
1.4 Significance	3
1.5 Study Questions.....	3
1.6 Study objectives	4
Chapter Two: Literature review	
2.1 Introduction.....	5
2.1.1 Pregnancy in the setting of concurrent mental illness.....	5
2.1.2 Safe sex practices and mental illness	7
2.1.3 Cancer of the cervix	9
2.2 Theoretical framework	11
2.3 Conceptual framework	12

Chapter Three: Methodology

3.1 Study design	13
3.2 Inclusion criteria	14
3.3 Exclusion criteria	14
3.4 Sample size and sampling procedure	14
3.5 Recruitment and consenting procedure	14
3.6 Data collection procedure	15
3.7 Data collection tool	15
3.8 Study variables	16
3.9 Data quality assurance	16
3.10 Ethical consideration	16
3.11 Data management, analysis and presentation	17
3.12 Study limitations	18
3.13 Results dissemination plan	18

Chapter Four: Results

4.1 Introduction	19
4.1.1. Response rate.....	19
4.2 Descriptive statistics.....	19
4.3 Knowledge, attitude and behavior with regard reproductive health in mental illness.....	21
4.4 Inferential statistics.....	29

Chapter Five: Discussion

5.1 Introduction	38
5.2 Discussion	38
5.3 Conclusion.....	46
5.4 Recommendations.....	46
5.5 Limitations	47
Study timeframe	48
References	49
Appendix One: Budget and justification	62
Appendix Two: Questionnaire.....	63
Appendix Three: KDHS Female Questionnaire Long Version.....	73

List of tables

Table 4.2.1 Socio-demographic characteristics	20
Table 4.2.2 Working diagnosis	21
Table 4.3.1.1: Ability to accurately identify safe days	21
Table 4.3.1.2: Knowledge on need of condom use to prevent sexually transmitted infection.....	22
Table 4.3.1.3: Awareness of cancer of the cervix	23
Table 4.3.2.1: Possibility of contraceptive use in future among those presently not on contraception	23
Table 4.3.2.2: Ability to negotiate for condom use with partner or husband.....	24
Table 4.3.2.3: Ability to decline to sex with husband or partner.....	24
Table 4.3.3.1: Number of antenatal visits during last pregnancy.....	24
Table 4.3.3.2: Age at sexual debut	25
Table 4.3.3.3: Multiple sexual partners in the last twelve months.....	25
Table 4.3.3.4: Number of lifetime sexual partners.....	26
Table 4.3.3.5: Reasons for not using contraception despite not desiring any children.....	26
Table 4.3.3.6: History of lifetime sexual trauma.....	27
Table 4.3.3.7: Age at first episode of sexual trauma	28
Table 4.3.3.8: Respondents who sought medical treatment after sexual trauma	28
Table 4.3.3.9: Uptake of cervical cancer screening services	28

Table 4.4.1.1 Socio-demographic characteristics and ability to accurately identify safe days....	28
Table 4.4.1.2 Socio-demographic characteristics and knowledge on need of condom use to prevent STI	30
Table 4.4.1.3 Socio-demographic characteristics and awareness of cancer of the cervix.....	31
Table 4.4.1.4 Socio-demographic characteristics and possibility of contraceptive use in future among those not presently on contraception.....	32
Table 4.4.1.5 Socio-demographic characteristics and ability to negotiate for condom use with husband or partner	33
Table 4.4.1.6 Socio-demographic characteristics and ability to decline to sex with husband or partner.....	33
Table 4.4.1.7 Socio-demographic characteristics and number of antenatal clinic visits during last pregnancy.....	34
Table 4.4.1.8 Socio-demographic characteristics and uptake of cervical cancer screening services.....	35
Table 4.4.2.1 Working diagnosis and knowledge of safe days.....	36
Table 4.4.2.2 Working diagnosis and knowledge of need for condom use to prevent STIs.....	37
Table 4.4.2.3 Working diagnosis and awareness of cancer of the cervix	37
Table 4.4.2.4 Working diagnosis and possibility of contraceptive use in future	37
Table 4.4.2.5 working diagnosis and uptake of cervical cancer screening	37

List of figures

Figure 2.1 Conceptual framework.....12

List of abbreviations and acronyms

AIDS: Acquired Immune Deficiency Syndrome

KAIS: Kenya AIDS Indicator Survey

KDHS: Kenya Demographic Health Survey

KNBS: Kenya National Bureau of Statistics

MNTRH: Mathari National Teaching and Referral Hospital

NASCOP: National AIDS and STI Control Program

UON: University of Nairobi

HIV: Human Immuno-deficiency Virus

SMI: Serious Mental Illness

STI: Sexually Transmitted Infection

SRH: Sexual and reproductive health

Operational definitions

Woman of reproductive age: females aged between 15 to 49 years (WHO,2006)

Reproductive health: presence of total physical, mental and social well-being and not only the exclusion of disease, in all aspects of the reproductive system (WHO,2009). This study however limits its definition of reproductive health to these areas: conception and pregnancy, safe sex practices and cervical cancer screening.

Sexual and reproductive health: factors pertaining to the physical, social, emotional and spiritual well-being of an individual that are linked to their biological function of pro-creation (WHO, 2006)

Fertility: number of children one has

Mental disorder: disturbance of cognitive functions, emotions, or behavior indicating disturbance of the functions in the bio-psychological, or developmental processes that affect mental functions (DSM 5)

ABSTRACT

Introduction and background: Women with mental illness in Kenya are a unique population and frequently their care focuses on the management of their psychiatric conditions with little focus on

their reproductive health, despite the fact that reproductive ill health contributes to close to one third of the disease burden in women. There are few Kenyan studies regarding their knowledge, attitude and behaviour towards reproductive health in the setting of concurrent treatment of mental illness

Objective: The main objective was to establish the knowledge, attitude and behavior with regard to reproductive health among women with mental illness in Kenya. The specific objectives were to establish knowledge, attitude and reproductive health practices related to pregnancy and contraception, safe sex and cervical cancer screening among women with mental illness.

Methods: The study was conducted at the Mathari National Teaching and Referral Hospital in Nairobi County, Kenya. It utilized a purposive sample of the population of female outpatients with mental illness aged between 18 and 49 years attending the consultant follow-up clinics for mental illness. The research design was cross sectional descriptive study. A structured questionnaire drawn from the relevant portions of the short version of the Female Questionnaire of the Kenya Demographic Health Survey 2014 was used for data collection.

Data analysis and presentation: Data was analyzed using SPSS version 23 and presented using tables. Out of the 249 respondents, a large proportion were aged between 20 to 39 years (74.3%), and those aged 40 years and above were 24.9%. 73% of the respondents had secondary level of education and above, with 26.9% having primary level education. 63.5% of the respondents sampled were single, separated or divorced while 34.1% were married. 45.4% of the respondents had a working diagnosis of psychosis, followed by bipolar and related disorders at 38.2% , depressive disorders at 6.4%, anxiety disorders at 4.8%, convulsive disorders and temporal lobe epilepsy at 2.8 % . 46.2% were able to correctly state when exactly safe days are in the menstrual cycle, 79.2% had knowledge of the need for condom use to prevent transmission of sexually transmitted infections. Of the 83.1% of respondents who had heard of cancer of the cervix, 30% had been screened. 64.3% were not using any contraceptive method at the time of interview with 46.9% of these intending to use a contraceptive in the future. 65.9 % of the 85 respondents who were married or living in a relationship as if married, were able to ask their husbands or partners to use condoms if need arose and 75.3% of these were able in certain circumstances to decline their husband or partners requests for sex. 76.3% of the respondents who had been pregnant in the five years preceding the interview, had four or more antenatal clinics during their pregnancies. The mean age at sexual debut was 19.4 years. Out of the 85 respondents who were married or in a relationship as if married, 36 respondents had had other sexual partners besides their husbands or regular partners in the year preceding data collection. The mean number of lifetime sexual partners was 3.4 (SD 6.4). 21.7% of respondents had a history of sexual trauma.

Conclusion: There was good knowledge on the prevention of STI, sexual debut later than the general population and good utilization of antenatal clinic services in pregnancy, good level of awareness of cervical cancer and cervical cancer screening rates higher than the general population in Kenya. We also found among our respondents higher rates of sexual trauma and risky sexual behavior than the general population of women in Kenya .

CHAPTER ONE

1.1 Background

In the past few decades, changing dynamics in the society, health service delivery, and availability of medicine have greatly affected the reproductive lives of women with serious mental disease (Miller, 1997). American studies show that before the 1950s, sexuality was limited for females with chronic mental illness with the greatest limitation being the relatively reduced access to marriage (Miller, 1997). Women with schizophrenia had lower likelihood of being married and were less sexually active than people without mental illness (Hilger et al, 1983). Treatment of individuals with mental illness within institutions as opposed to care in the community further reinforced sexual inactivity. In subsequent years, deinstitutionalization of individuals with chronic mental illness for community based care enhanced their probability for sexual relationships (Nicholson, Geller & Fisher 1996) and the result of this was an increase in the fertility of mentally ill women. This study sought to establish what women with mental illness know and their attitude and behavior with regard to their reproductive health and use this information as an evidence base for the identification of strengths, weaknesses and opportunities for improving provision of information, communication and education on reproductive health services to this population.

1.2 Statement of the problem

The care of women with mental illness often focuses on their psychiatric care with less attention being given to their sexual and reproductive health (Dinc et al, 2019) despite sexual and reproductive ill health accounting about 33% of the overall burden of disease among females within the reproductive age (Lule et al, 2007). Changes in the society, delivery of healthcare, and available medicines have affected the sexual and reproductive lives of women with mental illness

but there is scanty literature on the birth control needs of this special population (Miller, 1997). Coverdale et al, 2018 found a significant number of females with schizophrenia to have had more sexual partners, higher rates of non-consensual sex and HIV risk behaviors than women without mental illness, and limited knowledge about sexuality. Integrating reproductive health services within mental health visits improves their access and gives opportunities for integrating other programs such as education on sexually transmitted infections (Miller,1996). With the integration of provision of health services there exists opportunities to improve information, communication and education on reproductive health to women receiving mental health services (Coverdale et al 2018). However, any intervention must always first seek to understand its target population so that it can be tailored to meet its' demands. There is a paucity of research with regard to knowledge, attitude and behaviour on reproductive health among mentally ill women in Kenya. This research therefore sought to establish what these women know and practice with regard to their reproductive health and use this information as an evidence base for the identification of strengths, weaknesses and opportunities for provision of information, communication and education on reproductive health services to this population.

1.3 Study Justification

American studies have shown a relative rise in the fertility of females with mental illness associated with a shift from hospital centered treatment to community based management of mental illness (Miller, 1997). These finding generated interest in further studying the attitudes of women with schizophrenia towards their sexuality (Lykestos et al,1983), their knowledge of their reproductive anatomy(Rovensky and Berman,1984) and risky sexual behavior (Cournos et al, 1994). Susser, Valencia and Conover (1993) in their study on HIV among psychiatric male patients living in a shelter in New York identified that risk reduction techniques used in other populations

do not work for this population and suggested further studies to identify specific prevention strategies. In areas where reproductive health among patients with mental illness has been studied, there has developed interest for further research and interventions. Although there has been some Kenyan research on the reproductive health issues of female injection drug users (Ayon et al 2017 and Ndimbii et al 2018), the paucity of information on knowledge, attitude and behaviour on reproductive health among mentally ill women makes it difficult to integrate reproductive health in hospitals that serve these women for their psychiatric needs and provide a one stop service. This information will serve as an evidence base for the identification of strengths, weaknesses and opportunities for improving provision of reproductive health services to this population. This is in keeping with the National Reproductive Health Policy of 2007 (MOH, 2007) that aims at the reduction of hindrances for those seeking information or services on reproductive health, especially among the vulnerable segments of the population.

1.4 Significance

This research sought to generate information concerning the reproductive health knowledge and practices of women who have mental illness; a hitherto unexplored area in the Kenyan mental health system. The knowledge generated by this study will therefore serve as an evidence base to contribute to the holistic care of female patients with mental illness and open up areas for further research.

1.5 Study Questions

The overall question this study sought to answer is: What is the knowledge, attitude and practice of reproductive health among women with mental illness in Kenya?

Specific questions the study sought to answer are these:

1. What is the knowledge of reproductive health among women with mental illness?
2. What is the attitude towards reproductive health among women with mental illness?
3. What are the reproductive health behaviors of women with mental illness?
4. What is the association between working diagnosis and reproductive health knowledge attitudes and behavior among women with mental illness?
5. What is the association between socio-demographic factors and reproductive health knowledge attitudes and behavior among women with mental illness?

1.6 Study objectives

1.6.1 Broad objectives

To establish the knowledge, attitude and behavior with regard to reproductive health among women with mental illness at Mathari National Teaching and Referral Hospital, Nairobi

1.6.2 Specific objectives

1. To establish knowledge related to reproductive health among women with mental illness
2. To determine the attitude towards reproductive health among women with mental illness
3. To determine the reproductive health practices related to pregnancy and contraception, safe sex and cervical cancer screening among women with mental illness
4. To determine the association between socio-demographic factors and knowledge, attitudes and behavior towards reproductive health among women with mental illness
5. To determine the association between the working diagnosis and knowledge, attitudes and behavior in reproductive health among women with mental illness

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section looks at the existing research in these thematic areas of reproductive health in women with mental illness: pregnancy, safe sex practices and cervical cancer screening.

Areas of literature

2.1.1 Pregnancy in the setting of concurrent treatment of mental illness

American studies done among female army retirees suggest that a woman can have contradicting thoughts and attitudes towards pregnancy planning due to their personal, socio-cultural circumstances or experiences (Wolgemuth et al, 2018). When the thoughts and emotions attached to pregnancy are in conflict, it becomes harder for a woman to have clear pregnancy intentions or plans (Downey, Arteaga, Villasenor & Gomez, 2017). A woman's religious beliefs and culture may cause her to be passive about pregnancy planning, believing she has no immediate control about when to get pregnant (Borrero et al, 2015). Disparities observed between women's intentions to plan their pregnancies in comparison to actual contraceptive use have motivated further research on how women's perceptions about conception and pregnancy affect uptake of family planning methods (Aiken et al., 2016). Patients with serious mental illness generally utilize less healthcare services than patients without mental illness. Women with mental illness have been shown to avoid psychiatric care during pregnancy, with up to 33% of women with active psychotic symptoms having no psychiatric services during pregnancy (Gold & Marcus, 2008)

Indirect determinants of fertility such as socio-cultural, and economic factors affect choices about the number of children a woman plans to have but these factors operate through direct determinants such as biological and behavioral factors (Bongaarts and Potter 1983). Studies in Africa, Central Asia and Eastern Europe have shown a downward trend in the fertility levels over the last three

decades thought to be linked to greater uptake of contraceptives. Unintended pregnancies still constitute more than one third of all pregnancies implying that there is still a gap between actual and desired family size (Susheela et al, 2003). Unplanned pregnancies constitute the majority of pregnancies among women with SMI (Desai & Chandra, 2009). Women with SMIs have greater likelihood of terminating their pregnancies compared to other pregnant women (Miller & Finnerty, 1996).

Insufficiently spaced pregnancies endanger both maternal and fetal well-being with double the risk of maternal deaths in pregnancies spaced less than 15 months apart (Lule et al, 2007). Women with SMI have been shown to cope less well with closely spaced pregnancies (Henshaw & Priotti, 2010). Pregnancies in older women also carry a greater risk of antenatal complications (Lule et al, 2007).

Many women with mental illness considering pregnancy are concerned about the risk of passing on their mental health condition to their offspring (Henshaw & Priotti, 2010). Kimbui et al 2018 in their study among pregnant adolescents linked substance abuse and mood disorders in pregnancy to the self-medication hypothesis where patients use substances to relieve the symptoms of mood disorders. Preterm deliveries and low birth weight were also linked to substance abuse and depression in pregnancy.

The risk of teratogenicity that medicines pose to the unborn baby is often the area of concern when psycho-tropic medicines are used in pregnancy, with less attention on the possible effects of an untreated psychiatric disorder on maternal and fetal well-being. A retrospective study done in the United Kingdom by Peterson et al (2014) found that pregnant females psychiatric patients who were actively treated with antipsychotics in the course of their pregnancy had poorer pregnancy outcomes, accounted for by other health and lifestyle factors including higher incidence of obesity,

smoking, alcohol and substance use and side effects of other medication. However, a Canadian study on the linkage of adverse fetal outcomes to antipsychotic use in pregnancy after accounting for confounding factors found no differences with regard to fetal outcomes in comparison to pregnancies not exposed to anti-psychotics (Vigod et al., 2015). We do not yet have any Kenyan literature on the fetal effects of antipsychotic use in pregnancy.

Sexual coercion contributes to unintended pregnancy. Young and uneducated women of lower socio-economic standing are often forced into sexual relations (Heise, 1995). Women with limited socio-economic capability often cannot decline sexual advances initiated by men bearing socio-economic power over them (Mensch et al. 1999). Research done in India by Chandra et al (2003) on sexual violence perpetrated against women with SMI found that up to 30% of sampled women had a history of sexual coercion but only 3.5% of this was captured in medical records. In a Ugandan study done by Agardh et al 2005, sexual coercion and threats contributed to mental ill-health in all genders. We do not have any Kenyan studies exploring the issues of knowledge, attitude and behavior towards pregnancy in women with mental illness.

2.1.2. Safe sex practices and mental illness

Sexually transmitted infections (STIs) are common in people with SMI (Seeman & Ross, 2011). Women with mental disorders have high probability for sexual abuse with their relatively lower social circumstances increasing their risk for sexually transmitted infections as they exchange sex for money, drugs or other favours (Carey et al, 1997). Increased libido and dis-inhibited behavior may occur during the manic phase of Bipolar mood disorder and these can lead to sexual exploitation, personal and physical harm of the patient (Kulkarni et al, 2013). Subordination of women by men, poverty, lack of education, substance use and financial dependency makes it harder for women to bargain for safe sex, leaving them exposed to sexually transmitted infections

including HIV (WHO/UNFPA, 2009). An American study on the rates of HIV infection in mentally ill patients housed in a men's shelter in New York by Susser et al (1993) found that HIV risk reduction methods used in other populations were not as effective among this population because their cognitive impairments interfered with their ability to learn new habits. Poverty also constrained their options for safe sex and influenced their patterns of substance use with the associated risks. This study recommended outreach strategies that were sensitive to the needs of this particular group. Another American study by Dickerson et al (2004) comparing individuals with mental illness with a control group found that mentally ill females had more lifetime sexual partners, a chaotic pattern of sexual relations and greater incidence of non-consensual sex than a group of women that did not have mental disease. Existing research demonstrates a link between HIV prevalence and high-risk behavior among patients with SMI. Research from India found unprotected heterosexual relations to be the major high-risk sexual behaviour among psychiatric in-patients. Psychiatric patients with co-morbid substance use and females with SMI were also found to have higher prevalence of high-risk sexual behavior (Jayarajan & Chandra, 2010).

Collins et al (2009) in a study done in a public psychiatric hospital in Kwa-Zulu Natal for acute psychiatric illness found the HIV prevalence of 26.5% among in-patients to be higher than the general population with women being two times as likely as men to be HIV-positive. The HIV prevalence rate of these women was almost similar to that of women visiting antenatal clinics in South Africa. The 24–34 year-old group was the most at risk for HIV infection.

Most HIV sero-prevalence studies on people with SMI have been done in developed countries with lower population sero-prevalence for HIV. In these countries high sero-prevalence among individuals with SMI reflects the high prevalence of injection drug use alongside high-risk sexual behaviors. In HIV hyper-endemic countries with little injection drug use, the HIV prevalence of

HIV in those with SMI largely matches the general population (Collins et al, 2009). The South African study also found that hospitalization provides opportunity to do HIV testing and start a HIV risk reduction program.

According to Kenya National Population-based HIV Impact Assessment (KENPHIA) done in 2018, HIV prevalence was twice as high among women at 6.6%, compared to men at 3.1% (NASCO, 2020). In the Kenya AIDS Indicator Survey of 2012, presence of HIV infection was significantly higher among women than men aged 20–29 years and 35–39 years with the latter group having the highest prevalence. The peak of HIV prevalence among both men and women was between ages 45–49 years after which it declined (NASCO, 2014). Urban residents had higher HIV prevalence at 6.5% compared to rural residents (5.1%). HIV prevalence was highest among widows (20.3%) and widowers (19.2%) and lowest in women who had reported never being married or having cohabited with a sexual partner at 3.5% and 1.4% respectively. HIV prevalence was lowest among women without primary education at 4% and highest among those with secondary school level of education and above at 7.4%. Tun et al (2015) found that despite risky injection behavior contributing more to the risk of infection with HIV among a group of injection drug users in Nairobi, a majority of those sampled did not use condoms regularly in their sexual relations and few engaged in casual and commercial sexual activity. There is a paucity of data available on safe sex practices among women with mental illness in Kenya.

2.1.3. Cancer of the cervix

There has been accelerated screening for cervical cancer in Kenya on account of research demonstrating its causation being directly linked to infection with Human Papilloma Virus and its amenability to treatment if detected early. Globally, cervical cancer is the fourth most prevalent cancer in women. Cancer ranks third after infectious and cardiovascular diseases as a cause

of death among people attending hospitals in Kenya, causing 28,000 deaths annually (MOH, 2017). Cervical cancer is the leading cancer among females in Kenya (MOH, 2017). Regular screening for cervical cancer allows early identification of cancer in its early stages, which can be treated. Screening is recommended at least once in a lifetime for every woman aged between 30 to 49 years because the precancerous lesions take many years to develop (WHO, 2015c). Morema et al (2014) reported cervical cancer screening coverage in Kenya was 3.2%. In the KDHS of 2013, despite a large percentage of the women sampled having heard of cancer of the cervix (76%), only 14 percent had a cervical cancer screening exam. With 62% of those who had been screened having had a pap smear, 32% percent had visual inspection, and 1% had both screening tests. Awareness and screening for cancer of the cervix was least among women aged 15-19 years, rural, poor and uneducated women and women from North Eastern (KDHS, 2013).

An American study comparing a group of women with schizophrenia with a control group found that these women had a lower probability to have had cervical pap smears than women without a mental disease (Lindamer, 2003). Research done in Hong Kong by Mo et al (2014) showed that individuals with SMI were at increased risk of cancer because of other factors such as smoking, sedentary lifestyle, mal-nutrition and lower utilization of healthcare services. This study which had 591 participants also found high awareness of possibility of having cancer without any symptoms (67.5%), awareness of increased risk of cancer if a relative had cancer (63.1%), treatability of cancer that is discovered early (81.6%). A study done in Turkey among women with bipolar mood disorder by Dinc et al (2019) levels of cancer screening in this group to be lower compared to the general population despite being at a higher risk of cancer. In their study on knowledge, attitude and behaviour with regard to cervical cancer among women in Kinshasa, Ali-Risasi et al (2014) found that a high score of knowledge on the disease was not significantly

correlated with the score on behavior. Morema et al (2014) in a similar hospital based study in Kenya found a strong correlation between age, education level and income on the uptake of cervical screening services. Gichangi et al (2013) found a pap smear uptake rate of 22% among female patients at Kenyatta National Hospital in Kenya. There is a lack of research about the cancer screening behavior and related factors of women with mental illness in Kenya

2.2 Theoretical framework

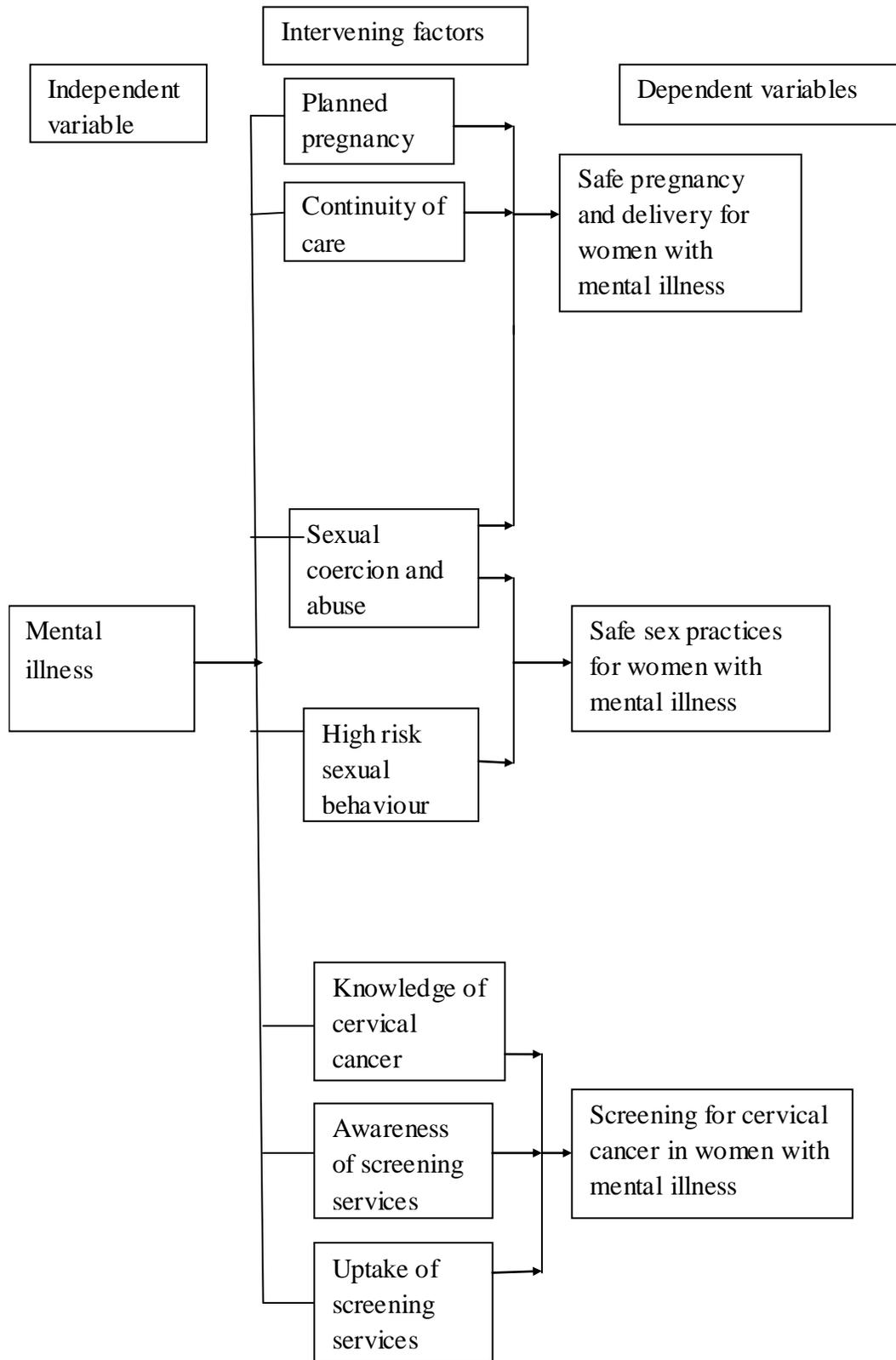
The rational model, also called the “knowledge, attitudes, practices (KAP)” model presumes that increasing knowledge will trigger behavior change. Health education aims at building an individual’s capacities through increasing their knowledge, motivating them, building their skills and raising awareness. Healthy public policies aim at providing a supportive environment to encourage behaviour change. Increasing the individual’s capacities and providing a supportive environment results in sustained change in the individual and communal health (WHO, 2012).

2.3 Conceptual framework

Mental illness is the independent variable being studied on account of it being thought to contribute to the alteration of the patients’ capacity for decision making for service utilization with regard to their reproductive health and increase vulnerability to sexual abuse and coercion. The intervening factors to be studied are health systems and behavioral factors that are thought to modify the contribution of mental illness on the reproductive health outcomes. Reproductive health of women with mental illness is the dependent variable in this study.

Below is a diagram illustrating the conceptual framework:

Figure 2.1 Conceptual frame work



CHAPTER THREE: METHODOLOGY

3.1 Study design

The study was a prospective cross-sectional descriptive research design that used quantitative data collection methods.

Study area: Mathari National Teaching and Referral Hospital (MNTRH) in Nairobi is the national mental hospital in Kenya which was established in 1911. It is situated in Mathari North constituency of the Nairobi County. It is managed by the National Government through the Ministry of Health. Its catchment area is therefore the entire Country. The majority of the population captured however comes from Nairobi County and its environs, which is the capital city of Kenya with a total area of 696 square kilometers and a total population of 4397073 as per the 2019 census (KNBS,2019). It is bordered to the north by Kiambu county, North east by Murang'a County, South by Kajiado County and East by Machakos County whose residents utilize health facilities in Nairobi County. The Mathari National Teaching and Referral hospital has an inpatient bed capacity 700 and in the year 2018/2019 had a total of 10091 specialist follow-up clinic reviews, out of which 4648 were female, with an average number of four clinic appointments annually (HRID, 2020).

Study Population: the study population was women with mental illness in Kenya. The target population to be sampled was adult female outpatients of the reproductive age (18-49 years) attending Consultant Psychiatric follow-up clinics at the Mathari National Teaching and Referral hospital

3.2 Inclusion criteria

The study included eligible female out-patients on scheduled follow up clinics for mental illness aged between 18 to 49 years. Female patients on routine follow-up who came to the out-patient department for drug prescription refill or review following missed scheduled routine clinics, on any other day than the scheduled Tuesday clinic days, were also included.

3.3 Exclusion criteria

The study excluded female patients who were acutely ill, had impaired cognitive function including dementia and intellectual disability and thus had impaired capacity to understand and consent to the study. New out-patients and female inpatients were not included in the study.

3.4 Sample size and sampling procedure:

Sample size was be calculated using the Yamane formula for sample size determination which utilizes $n = N / (1 + N(e * e))$. where n is the sample size, N is the population and e(level of precision/margin of error) is 0.05 for 95% confidence interval. With 4648 female patients reviews done in the financial year 2018/2019 at the follow-up clinics , with an average number of four clinic appointments annually per patient, N was 1162, the sample size n was 298 i.e. $n = 1162 / (1 + 1162(0.05 * 0.05))$ This study utilized purposive sampling as its sampling procedure. This is a non-probability sampling procedure and it was chosen because this was a special population being sampled and due to the reduction of patient numbers due to the global Covid 19 pandemic.

3.5 Recruitment and consenting procedure

The study sampled female outpatients of the reproductive age (18-49 years) attending routine follow-up clinics at the MNTRH in Nairobi Kenya. The researcher recruited patients during the

Tuesday Clinics at Wards 5 Female and 6 Female as they sat in the waiting bay during patient triage and explained the study, its target participants, its intended benefits and the principal of free participation and ability to opt out and confidentiality. Patients who showed interest to participate were taken to a separate room and those who met inclusion criteria were subjected to a short mental state examination to assess their cognition and ability to give consent. Those who were assessed as possessing capacity to consent and were still willing to participate were guided through the questionnaire and their responses written down by the researcher. Once the clinic reviews commenced the researcher allowed the patients to be reviewed then continue with the data collection afterwards.

3.6 Data collection procedure

Once eligible participants had been identified and had consented to the study, the researcher allowed them to comfortably sit down in a place that offered privacy and then proceeded to administer the tool. The researcher read out the items in the questionnaire to the participant and filled out the responses for the participant. Once the researcher completed the questionnaire, they thanked the patient and ushered her back to the clinic waiting area and then stored the questionnaire in a safe place awaiting analysis.

3.7 Data collection tool

The study utilized researcher assisted structured hardcopy questionnaires drawn from the relevant segments of the long version of the Kenya Demographic Health Survey Female Questionnaire (2014). The first part of the questionnaire captured patient bio-data including age, area of residence, patient diagnosis derived from patient file and the rest of the questionnaire captured data on pregnancy, safe sex practices and cervical cancer screening.

3.8 Study variables

Mental illness was the independent variable while the three dependent variables were safe pregnancy and delivery, safe sex practices and cervical cancer screening among women with mental illness.

3.9 Data quality assurance

The researcher pre-tested the tool with female patients recruited from the Kariobangi Health Centre Psychiatric outreach clinic prior to familiarize herself with conducting the interviews and ensure appropriateness of the responses. The Kariobangi Health Centre Psychiatric outreach is an outreach clinic by the MNTRH which seeks to decongest the main hospital by availing psychiatric services for their patients drawn from the Kariobangi catchment area at their local health centre. The clinic is run by doctors and nurses and psychologists from MNTRH and captures a patient population similar to that captured in the main hospital.

During the actual data collection, the researcher availed herself to explain the study and to fill in the questionnaires and ensure their completeness. The questionnaires were de-identified to ensure anonymity. Statistical analysis for the data's internal and external validity and reliability were used to ensure good quality data had been collected. Reliability is the extent to which a data collection tool produces consistent results while validity is an assessment of the ability of a test to measure what it was intended to measure. The research objectives were clearly defined so that target measurements were well understood. The filled questionnaires were stored securely by the researcher awaiting analysis

3.10 Ethical considerations and approval

This study sought clearance before data collection. The proposal was submitted to the Kenyatta National Hospital-University of Nairobi Ethics Review Committee (KNH-UON ERC) and approval (P461/09/2020) given prior to data collection. Consent for data collection was also granted by the Mathari National Teaching and Referral Hospital research and training committee. A research license (NACOSTI/P/21/9005) permitting the researcher to collect data was granted by the National Commission for Science, Technology and Innovation (NACOSTI).

The study interviewed adult out-patients who were assessed as having capacity to consent to participate in the study. All participants had to give their informed consent to participate in this study after the study and data collection procedure had been fully explained to them. All participants were free to leave the study at any point they wish and this did not affect their access to the hospital services. Participant anonymity was maintained through the de-identification of questionnaires and the issuing of unique questionnaire numbers to delink the questionnaires from the actual participants. Participants' information was kept confidential and was not disclosed unless with the respondent's consent. The study anticipated the risk of recollection of past traumatic events by the participants and mitigated for this through linkages with appropriate psychotherapeutic care within the hospital.

3.11 Data management, analysis and presentation

Data from the questionnaires was analyzed using the Statistical Package for Social Sciences version 23.0. This yielded both quantitative and qualitative data. Quantitative data was analyzed using measures of central tendency like the mean, mode and median of the responses to each question to establish the proportion of responses selected for each question on each of the factors.

The Chi-square test is the non-parametric test that was used to analyze categorical data. Analyzed data was presented in graphs and tables for ease of interpretation. The qualitative data that the study yielded was reported as verbatim comments

3.12 Study limitations

This study only sampled a proportion of the entire population of women attending outpatient follow-up clinics at the MNTRH. It therefore on account of sampling bias, though minimized, missed out on certain characteristics in this population. This study was carried out only on one location; the MNTRH therefore did not capture the diversity of patients captured by other hospitals in Kenya. This study only explored three factors in the broad area of reproductive health so it did not adequately capture the contribution of numerous other areas of reproductive health. This study only captured women who were clinically stable and aged between 18 years to 49 years. It therefore excluded women who were acutely sick at the time and those outside these age brackets despite them also having reproductive health concerns.

3.13 Results dissemination plan

The results of this study were disseminated through presentation at the Department of Psychiatry at the UON School of Medicine. A written report will be presented to the MNTRH research committee for onward transmission to the Ministry of Health. The other channel for dissemination of research findings will be through online publication of papers from the thesis.

CHAPTER FOUR: RESULTS AND DATA ANALYSIS

4.1 Introduction

This section seeks to present the data in keeping with the study objectives of knowledge, attitude and behavior with regard to reproductive health among women with mental illness. The information will be presented as tables and narratives.

4.1.1 Response rate

The calculated study sample size was 298 but the study only captured 249 participants representing a response rate of 83.5%. This was occasioned by the reduced patient numbers during the period of data collection on account of a one month travel cessation as part of the COVID-19 containment measures.

4.2 Descriptive statistics

4.2.1 Socio-demographic characteristics

Residence: The majority of the respondents sampled were residents of urban areas at 69.5%, followed by those who reside in the countryside at 15.7% and 14.9%. in other towns in Kenya

Age: Out of the 249 respondents, a large proportion were aged between 30 to 39 years (44.2%), followed by those aged 20-29 years (30.1%) and those aged 40 years and above (24.9%) and those aged less than 20 years were the least (0.8%).

Level of education: 33.2% of the respondents had secondary level of education, with 31.2 % having college level education and 26.3% having primary level education.

Marital status: 40.1% of the respondents sampled were single, 34% were married and 25.9% were widowed, separated or divorced.

Diagnosis: 45.4% of the respondents had psychotic disorders, 38.6% had bipolar and related disorders, 6.4% had depressive disorders, 4.4% had anxiety disorders, 2.8% had convulsive

disorders and temporal lobe epilepsy and others at 2.4% (substance use disorders, attention deficit hyperactivity disorder and unconfirmed diagnosis).

Table 4.2.1: Socio-demographic characteristics

Age	Frequency (n=249)	Percent
<20	2	0.8
20-29	75	30.1
30-39	110	44.2
40 and above	62	24.9
Education		
Primary	67	26.9
Secondary/A Level	82	32.9
College (Middle Level)	77	30.9
University	23	9.2
Current residence		
Nairobi/Mombasa/Kisumu	173	69.5
Town	37	14.9
Countryside	39	15.7
Nationality		
Kenyan	246	98.8
Congolese, Tanzania	3	1.2
Marital status		
Single	98	39.4
Married	85	34.1
Separated/Divorced	60	24.1
Widowed	6	2.4

4.2.2 Working diagnosis

The largest category of patients sampled (45.4%) had psychosis followed by bipolar and related disorders at 38.2% depressive disorders at 6.4% anxiety disorders at 4.8% convulsive disorders and temporal lobe epilepsy at 2.8% and others (substance use disorders, attention deficit and hyperactivity disorder, unconfirmed diagnosis) at 2.4 % .

Table 4.2.2.: Working diagnosis

	Frequency (n=249)	Percent
Bipolar and related disorders	95	38.2
Depressive disorders	16	6.4
Convulsive disorders and temporal lobe epilepsy	7	2.8
Psychotic disorders	113	45.4
Anxiety disorders	12	4.8
Others	6	2.4

4.3 Knowledge, attitude and behavior (KAB) towards reproductive health in women with mental illness

4.3.1 Assessment of Knowledge

The majority (79.9%) of the respondents sampled were able to accurately identify the presence of days within the female menstrual cycle where chances of conception are heightened as shown in the table below, however only 46.2% were able to correctly state when exactly in the menstrual cycle this is likely to be.

Table 4.3.1.1: Ability to accurately identify safe days

<i>Are there certain days when a woman is more likely to become pregnant?</i>	Frequency (n=249)	Percent
Yes	199	79.9
No	40	16.1
Don't know	10	4.0
When is one likely to conceive?	Frequency (n=199)	Percent
Just before her periods begin	35	17.6
During her period	4	2.0
Right after her period has ended	92	46.2
Halfway between two periods	33	16.6
Don't know	35	17.6

The majority of respondents sampled (79.2%) had knowledge of the need for condom use to prevent transmission of sexually transmitted infections.

Table 4.3.1.2. Knowledge on need of condom use to prevent sexually transmitted infection.

<i>If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in asking that they use a condom</i>	Frequency (n=249)	Percent
Yes	197	79.2
No	20	12.0
Don't know	22	8.8

The majority of respondents sampled (83.1%) had heard of cancer of the cervix.

Table 4.3.1.3: Awareness of cancer of the cervix

<i>Have you ever heard of cervical cancer?</i>	Frequency (n=249)	Percent
Yes	207	83.1
No	42	16.9

4.3.2 Assessment of attitude towards reproductive health

The majority of the respondents sampled (64.3%) were not using any contraceptive method at the time of interview. Out of the 160 respondents who were not using any contraceptives, 31.9% did not have any future intent to use contraceptives.

Table 4.3.2.1: Possibility of contraceptive use in future among those not presently on contraception

<i>Are you currently using a contraceptive method?</i>	Frequency (n=249)	Percent
Not currently using	160	64.3
Currently using	89	35.7

<i>Possibility of using a contraceptive method to delay or avoid pregnancy at any time in the future)</i>	Frequency (n=160)	Percent
Yes	75	46.9
No	51	31.9
Don't know	34	21.2

Out of the 85 respondents who were married or living in a relationship as if married, 65.9 % reported they were able to ask their husbands or partners to use condoms if need arose.

Table 4.3.2.2: Ability to negotiate for condom use with partner/husband

<i>Could you ask your (husband/partner) to use a condom if you wanted him to?</i>	Frequency (n=85)	Percent
Yes	56	65.9
No	25	29.4
Depends/not sure	4	4.7

Out of the 85 respondents who were married or in a relationship as if married, 75.3% were able in certain circumstances to decline their husband or partners sexual demands/request

Table 4.3.2.3: Ability to decline to sex with husband/partner

<i>Can you say no to your (husband/partner) if you do not want to have sexual intercourse?</i>	Frequency (n=85)	Percent
Yes	64	75.3
No	19	22.4
Depends/not sure	2	2.4

4.3.3 Assessment of behavior with regard to reproductive health

Out of the 80 respondents who had been pregnant in the five years preceding the interview, 76.3% had four or more antenatal clinics during their pregnancies.

Table 4.3.3.1: Number of antenatal visits during last pregnancy in those who have been pregnant in the past five years

<i>How many times did you receive ante natal care during your last pregnancy?</i>	Frequency (n=80)	Percent
<4	13	16.3
≥4	61	76.3
Not specified	6	7.5

Out of the 195 respondents who were sexually active and had responded to the question on their age at onset of sexual activity, the mean age at sexual debut was 19.4 years (SD 4.4)

Table 4.3.3.2: Age at sexual debut

Age at sexual debut	Age (n=195)
Mean±SD	19.4±4.4
Median (IQR)	19 (17.0 – 22.0)
Min	5
Max	32

Among the 85 respondents who were married or in a relationship at the time of interview, 36 had had multiple sexual partners in the twelve months preceding the interview with 75% of these had had one sexual partner in addition to their husband or regular partner, while 25% had more than one sexual partner in addition to their husband or regular partner in the past twelve months.

Table 4.3.3.3: Multiple sexual partners in last 12 months among those who are married or in a relationship

<i>In total how many different people (other than your husband/partner) have you had sexual intercourse within the last twelve months?</i>	Frequency (n=36)	Percent
1	27	75.0
>1	9	25.0

Out of the 199 respondents who were or had been sexually active, the mean number of lifetime sexual partners was 3.4 (SD 6.4).

Table 4.3.3.4: Number of lifetime sexual partners

<i>In total how many different people have you had sexual relations with in your lifetime?</i>	Age (n=199)
Mean±SD	3.4±6.4
Median (IQR)	2 (1.0 – 3.0)
Min	1
Max	70

Among 40 respondents who stated that they did not want any more children, but were not using any contraception at the time of the interview, 52.5% attributed the lack of contraceptive to being unmarried and thus not having any sexual relations.

Table 4.3.3.5: Reasons for respondents not using contraception despite not desiring any more children

<i>You said you do not want to have any more children, what are the reasons that you are not using a contraceptive method to prevent pregnancy</i>	Frequency (n=40)	Percent
Breast feeding	2	5.0
Currently pregnant	1	2.5
Infrequent sex	2	5.0
No reason	2	5.0
Not having sex	9	22.5
Not married; Not having sex	21	52.5
Not menstruated since last birth	1	2.5
Side effect/health concerns	2	5.0

Out of the respondents sampled, 21.7% had a history of sexual trauma, with five of these instances occurring in the past 12 months.

Table 4.3.3.6: History of lifetime sexual trauma

<i>At any time in your life, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts when you did not want to?</i>	Frequency (n=249)	Percent
Yes	54	21.7
No	195	78.3
<i>IF EVER MARRIED OR LIVED WITH A MAN: In the past 12 months has anyone other than your/any husband/partner physically forced you to have sexual intercourse when you did not want to?</i>	Frequency (n=151)	Percent
Yes	1	0.7
No	150	99.3
<i>IF NEVER MARRIED OR LIVED WITH A MAN: In the past 12 months has anyone other than your/any husband/partner physically forced you to have sexual intercourse when you did not want to?</i>	Frequency (n=86)	Percent
Yes	4	4.7
No	82	95.3

Among the 43 respondents for whom age at first sexual trauma was captured, the mean age was 22.4 years (SD 8.4).

Table 4.3.3.7: Age at first episode of sexual trauma

<i>How old were you the first time you were forced to have sexual intercourse or perform other sexual acts</i>	Age (n=43)
Mean±SD	22.4±8.4
Median (IQR)	22.0 (17.0 – 27.0)
Min	5
Max	44

Out of the 54 respondents who had a history of sexual trauma, 53.7 % sought medical treatment after the incident.

Table 4.3.3.8: Respondents who sought medical treatment after sexual trauma

	Frequency (n=54)	Percent
Yes	29	53.7
No	25	46.3

Out of the 207 respondents who were aware of cervical cancer, 30% had ever had screening done

Table 4.3.3.9: Uptake of cervical cancer screening services

<i>Have you ever had a test or exam to see if you had cervical cancer?</i>	Frequency (n=207)	Percent
Yes	62	30.0
No	145	70.0
<i>What type of exam did you have to see if you have cervical cancer?</i>	Frequency (n=62)	Percent
PAP smear	43	69.4
VIAVILLI	9	14.5
Don't know/Not sure	9	14.5
PAP smear and VIAVILLI	1	1.6

4.4 Inferential statistics

4.4.1 Correlation between Knowledge, Attitude and Behaviour and socio-demographic factors

In this analysis of socio-demographic factors on knowledge, attitude and practice, the age group covering those less than twenty years was merged with those aged 20-29 because those in the former group were only two respondents.

None of the socio-demographic characteristics of the respondents were shown to have statistically significant effect on the ability to identify the safe days.

Table 4.4.1.1 Socio-demographic characteristics and ability to accurately identify safe days

Age, <i>n</i> (%)	Yes (n=92)	No (n=107)	p-value
<30	29 (31.5)	31 (28.9)	0.869
30-39	40 (43.5)	46 (43.0)	
40 and above	23 (25.0)	30 (28.0)	
Education, <i>n</i> (%)			
Primary	25 (27.2)	24 (22.4)	0.496
Secondary	25 (27.2)	37 (34.6)	
Tertiary	42 (45.7)	46 (43.0)	
Current residence, <i>n</i> (%)			
City	67 (72.8)	73 (68.2)	0.253
Town	9 (9.8)	19 (17.8)	
Countryside	16 (17.4)	15 (14.0)	
Marital status, <i>n</i> (%)			
Single	35 (38.0)	41 (38.3)	0.726
Married	36 (39.1)	37 (34.6)	
Separated/Div./Wid.	21 (22.8)	29 (27.1)	

4.4.2 Socio-demographic characteristics and knowledge on need of condom use to prevent STI

The respondents who were married were the biggest group of those who had the knowledge of the need for condom use to prevent the transmission of sexually transmitted infections (p=0.009).

Table 4.4.1.2 Socio-demographic characteristics and knowledge on need of condom use to prevent STI

Age, <i>n</i> (%)	Yes	No/Don't know	p-value
<30	57 (28.9)	20 (38.4)	0.408
30-39	89 (45.2)	21 (40.4)	
40 and above	51 (25.9)	11 (21.2)	
Education, <i>n</i> (%)			
Primary	53 (26.9)	14 (26.9)	0.202
Secondary	60 (30.5)	22 (42.3)	
Tertiary	84 (42.6)	16 (30.8)	
Current residence, <i>n</i> (%)			
Nairobi/Mombasa/Kisumu	138 (70.1)	35 (67.3)	0.855
Town	28 (14.2)	9 (17.3)	
Countryside	31 (15.7)	8 (15.4)	
Marital status, <i>n</i> (%)			
Single	68 (34.5)	30 (57.7)	0.009
Married	72 (36.5)	13 (25)	
Separated/Div./Wid.	57 (28.9)	9 (17.3)	

4.4.3 Socio-demographic characteristics and awareness of cancer of the cervix

There was a rise in the level of cervical cancer awareness with increasing levels of education. Those with tertiary level of education were most likely to have been aware (p value: 0.022). The females aged between 30-39 years and single females were the greatest percentage among those who were aware of cervical cancer with p values of 0.037 and 0.025 respectively

Table 4.4.1.3: Socio-demographic characteristics and awareness of cancer of the cervix

Age, <i>n</i> (%)	Yes (n=207)	No (n=42)	p-value
<30	57 (27.6)	20 (47.6)	0.037
30-39	96 (46.4)	14 (33.3)	
40 and above	54 (26.1)	8 (19.0)	
Education, <i>n</i> (%)			
Primary	51 (24.6)	16 (38.1)	0.022
Secondary	65 (31.4)	17 (40.5)	
Tertiary	91 (44.0)	9 (21.4)	
Current residence, <i>n</i> (%)			
Nairobi/Mombasa/Kisumu	145 (70.0)	28 (66.7)	0.059
Town	34 (16.4)	3 (7.1)	
Countryside	28 (13.5)	11 (26.2)	
Marital status, <i>n</i> (%)			
Single	74 (35.7)	24 (57.1)	0.025
Married	73 (35.3)	12 (28.6)	
Separated/Div./Wid.	60 (29.0)	6 (14.3)	

Assessment of attitude

Socio-demographic characteristics and possibility of contraceptive use in future among those not presently on contraception

Those who were between 30-39 years years were most likely to consider use of a contraceptive in future (p value: 0.038).

Table 4.4.1.4 Socio-demographic characteristics and possibility of contraceptive use in future among those not presently on contraception

Age, <i>n</i> (%)	Yes (n=75)	No/Don't know (n=85)	p-value
<30	29 (38.6)	26 (30.6)	0.038
30-39	33 (44.0)	29 (34.1)	
40 and above	13 (17.3)	30 (35.3)	
Education, <i>n</i> (%)			
Primary	13 (17.3)	25 (29.4)	0.190
Secondary	25 (33.3)	26 (30.6)	
Tertiary	37 (49.3)	34 (40.0)	
Current residence, <i>n</i> (%)			
Nairobi/Mombasa/Kisumu	54 (72.0)	57 (67.1)	0.567
Town	13 (17.3)	14 (16.5)	
Countryside	8 (10.7)	14 (16.5)	
Marital status, <i>n</i> (%)			
Single	38 (50.7)	44 (51.8)	0.304
Married	19 (25.3)	14 (16.5)	
Separated/Div./Wid.	18 (24.0)	27 (31.8)	

Socio-demographic characteristics and ability to negotiate for condom use with partner/husband

The respondents who resided in the cities were more likely to negotiate for condom use with their husbands and partners (p value: 0.034).

Table 4.4.1.5 Socio-demographic characteristics and ability to negotiate for condom use with partner/husband

Age, <i>n</i> (%)	Yes (n=56)	No/Depends (n=29)	p-value
<30	15 (26.8)	5 (17.2)	0.495
30-39	24 (42.9)	16 (55.2)	
40 and above	17 (30.4)	8 (27.6)	
Education, <i>n</i> (%)			
Primary	19 (33.9)	9 (31.0)	0.777
Secondary	17 (30.4)	11 (37.9)	
Tertiary	20 (35.7)	9 (31.0)	
Current residence, <i>n</i> (%)			
City	45 (80.4)	17 (58.6)	0.034
Town	3 (5.4)	7 (24.1)	
Countryside	8 (14.3)	5 (17.2)	

Socio-demographic characteristics and ability to decline to sex with husband/partner

Socio-demographic factors were not found to have any effect on the respondents' ability to negotiate for sex with their spouses or partners.

4.4.1.6 Socio-demographic characteristics and ability to decline to sex with husband/partner

Age, <i>n</i> (%)	Yes (n=64)	No/Depends (n=21)	p-value
<30	12 (18.8)	8 (38.1)	0.096
30-39	30 (46.9)	10 (47.6)	
40 and above	22 (34.4)	3 (14.3)	
Education, <i>n</i> (%)			
Primary	18 (28.1)	10 (47.6)	0.254
Secondary	22 (34.4)	6 (28.6)	
Tertiary	24 (37.5)	5 (23.8)	
Current residence, <i>n</i> (%)			
City	47 (73.4)	15 (71.4)	0.919
Town	7 (10.9)	3 (14.3)	

Countryside	10 (15.6)	3 (14.3)
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Socio-demographic characteristics and number of antenatal visits during last pregnancy

Assessment of behavior

Socio-demographic characteristics were not found to have any statistically significant effect on the frequency of antenatal clinic visits during the respondents' last pregnancy.

Table 4.4.1.7 Socio-demographic characteristics and number of antenatal visits during last pregnancy

Age, <i>n</i> (%)	<4 (n=13)	≥ 4 (n=61)	p-value
<30	4 (30.8)	20 (32.8)	0.572
30-39	7 (53.8)	37 (60.7)	
40 and above	2 (15.4)	4 (6.6)	
Education, <i>n</i> (%)			
Primary	6 (46.2)	15 (24.6)	0.275
Secondary	4 (30.8)	22 (36.1)	
Tertiary	3 (23.1)	24 (39.3)	
Current residence, <i>n</i> (%)			
Nairobi/Mombasa/Kisumu	9 (69.2)	45 (73.8)	0.158
Town	0 (0.0)	8 (13.1)	
Countryside	4 (30.8)	8 (13.1)	
Marital status, <i>n</i> (%)			
Single	3 (23.1)	7 (11.5)	0.372
Married	6 (46.2)	39 (63.9)	
Separated/Div./Wid.	4 (30.8)	15 (24.6)	

Respondents aged between 30-39 years were likely to have been screened for cervical cancer (p value: 0.004).

Table 4.4.1.8 Socio-demographic characteristics and uptake of cervical cancer screening services

Age, <i>n</i> (%)	Yes (n=62)	No (n=145)	p-value
<30	8 (12.9)	49 (33.8)	0.004
30-39	31 (50.0)	65 (44.8)	
40 and above	23 (37.1)	31 (21.4)	
Education, <i>n</i> (%)			
Primary	16 (25.8)	35 (24.1)	0.181
Secondary	14 (22.6)	51 (35.2)	
Tertiary	32 (51.6)	59 (40.7)	
Current residence, <i>n</i> (%)			
Nairobi/Mombasa/Kisumu	44 (71.0)	101 (69.7)	0.806
Town	11 (17.7)	23 (15.9)	
Countryside	7 (11.3)	21 (14.5)	
Marital status, <i>n</i> (%)			
Single	19 (30.6)	55 (37.9)	0.526
Married	25 (40.3)	48 (33.1)	
Separated/Div./Wid.	18 (29.0)	42 (29.0)	

4.4.2 Correlation between Knowledge Attitude and Behavior and working diagnosis

There was no statistically significant relationship demonstrated between the working diagnosis and knowledge on safe days.

Table 4.4.2.1 Working diagnosis and Knowledge on safe days

	Yes (n=91)	No (n=103)	p-value
Bipolar and related disorders	40 (44)	41 (39.8)	0.201
Depressive disorders	2 (2.2)	10 (9.7)	
Convulsive disorders and temporal lobe epilepsy	3 (3.3)	1 (1.0)	
Psychotic disorders	41 (45.1)	46 (44.7)	
Anxiety disorders	5 (5.5)	5 (4.9)	

The respondents with psychotic disorders had more knowledge on the need for condom use to prevent STI (p value: 0.037)

Table 4.4.2.2 Working diagnosis and Knowledge on need of condom use to prevent STI

	Yes (n=193)	No (n=50)	p-value
Bipolar and related disorders	76 (39.4)	19 (38)	0.037
Depressive disorders	13 (6.7)	3 (6.0)	
Convulsive disorders and temporal lobe epilepsy	2 (1.0)	5 (10.0)	
Psychotic disorders	91 (47.2)	22 (44.0)	
Anxiety disorders	11 (5.7)	1 (2.0)	

The working diagnosis was not shown to have any statistically significant effect on the awareness of cancer of the cervix

Table 4.4.2.3 Working diagnosis and Awareness of cancer of the cervix

	Yes (n=202)	No (n=41)	p-value
Bipolar and related disorders	85 (42.1)	10 (24.4)	0.053
Depressive disorders	14 (6.9)	2 (4.9)	
Convulsive disorders and temporal lobe epilepsy	4 (2.0)	3 (7.3)	
Psychotic disorders	88 (43.6)	25 (61.0)	
Anxiety disorders	11 (5.4)	1 (2.4)	

The working diagnosis was not shown to have any statistically significant effect on future choice of contraceptive use.

Table 4.4.2.4 Working diagnosis and possibility of contraceptive use in future among those not presently on contraception

	Yes (n=86)	No (n=157)	p-value
Bipolar and related disorders	39 (45.3)	56 (35.7)	0.558
Depressive disorders	4 (4.7)	12 (7.6)	
Convulsive disorders and temporal lobe epilepsy	2 (2.3)	5 (3.2)	
Psychotic disorders	36 (41.9)	77 (49.0)	
Anxiety disorders	5 (5.8)	7 (4.5)	

The working diagnosis was not shown to have any statistically significant effect on uptake of cervical cancer screening services,

4.4.2.5 Working diagnosis and uptake of cervical cancer screening services

	Yes (n=58)	No (n=144)	p-value
Bipolar and related disorders	28 (48.3)	57 (39.6)	0.254
Depressive disorders	2 (3.4)	12 (8.3)	
Convulsive disorders and temporal lobe epilepsy	0 (0.0)	4 (2.8)	
Psychotic disorders	27 (46.6)	61 (42.4)	
Anxiety disorders	1 (1.7)	10 (6.9)	

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This section seeks to discuss the study findings and compare the results with other similar studies.

5.2 Discussion

5.2.1 Socio-demographic characteristics and working diagnosis

The majority of the respondents sampled were residents of cities (69.5%), followed by those who reside in the countryside (15.7%) and in other towns in Kenya (14.9%). Due to the location of the hospital in Nairobi so it predominantly served patients in its environs but since it is a national referral hospital, it has patients from all the regions of the country referred for treatment. With devolution of health services, and the establishment of regional referral hospitals in the different counties, the expectation is that more patients are being treated at their regional hospitals rather than at the national referral hospitals in Nairobi (Marangu, 2014). This finding was also likely to have been due to the travel restrictions within the Nairobi Metropolitan region that occurred for one month during the period of data collection as part of the Covid-19 containment measures.

Out of the 249 respondents, a large proportion were aged between 20 to 39 years (74.3%), followed by those aged 40 years and above (24.9%) and those aged less than 20 years were the least (0.8%). Similar findings of a predominance of psychiatric patients in their thirties was found by Kibuti 2020, who did a study among psychiatric outpatients at MNTRH (n=434). The large proportion of female patients between age 20-39 would be explained by the onset of mental illness in this age range but also hormone mediated exacerbations of mental illness related to pregnancy, delivery and contraceptive use that predominates in this age group (Kulkarni et al, 2013)

73.1% of the respondents had secondary level of education and above, with 26.9% having primary level education. KNBS (2014) in the Kenya Demographic Health Survey (KDHS) of 2013 that sampled 31079 females found that 52% of respondents had primary level education, 16 % started but didn't complete secondary education while 19% completed secondary level education with 14 % proceeding beyond secondary school level. Ndetei et al (2008) in their study done among psychiatric inpatients at MNTRH (N 691) found levels of education of primary schools and below at 45.4%, secondary school at 42.4% and tertiary level education at 3.1%. Agaba et al (2019) in their study among psychiatric outpatients at Mbarara Regional Referral Hospital in Uganda (n: 302) found that 65.89 had education levels of secondary school and below. Goar et al (2018) in their study of adult psychiatric liaison patients at the Jos University Teaching Hospital in Nigeria (N 142) found that 42.3% of patients had secondary level education. The predominance of higher levels of education in this study could be due to the location of the hospital in the capital city Nairobi where the population captured has better access to education (Goar et al, 2018).

39.4% of the respondents sampled were single and 34.1% were married, 24.1% were separated or divorced and 2.4% were widowed. The KNBS (2014) found that 60% of the women sampled (n=31079) were married or living with a partner as if married. Goar et al (2018) in their study among liaison psychiatry patients in Nigeria found that 47.2% of their patients were never married. Dickerson et al (2004) in their American study among outpatient psychiatric patients on follow-up at a community treatment centre in Baltimore (n=200) found that the women were less likely to have been married than a comparison group of without mental illness. A predominance of the never married, divorced and separated could point to increased vulnerability of psychiatric patients to discrimination and social isolation with regard to marriage (Goar et al, 2018).

The largest category of patients sampled (45.4%) had psychosis followed by bipolar and related disorders at 38.2%, depressive disorders at 6.4%, anxiety disorders at 4.8%, convulsive disorders and temporal lobe epilepsy at 2.8 % and others (Attention deficit and hyperactivity disorder, substance use disorders and unconfirmed diagnosis) at 2.4%. Kibuti (2020) in her study at MNTRH found psychotic disorders to dominate the out-patient psychiatric illness at 22.7% followed by substance use disorders (15.2%) and mixed alcohol and other substance use at (13.1%). However her study participants were both male and female respondents and her study captured patients who were referrals from other facilities. Ndeti et al (2008) in their study on the clinical epidemiology among 691 inpatients at MNTRH found that at admission, the diagnosis of schizophrenia dominated at 33.9%, followed by bipolar mood disorder at 23%, psychosis at 20% and substance use disorder at 6.1%. This study captured both male and female in-patients at the hospital. Mudenge (2009) in his study among 384 male and female psychiatric inpatients at Ndera Mental Health Hospital in Kigali, Rwanda found schizophrenia to dominate at 39.3%, followed by mania (38.5%), depression (8%) substance abuse (6.7%) and Post Traumatic PTSD (5.2%). However, Agaba et al (2019) in their study among 302 psychiatric out-patients at Mbarara Regional Referral Hospital in South-Western Uganda found bipolar and related disorders to predominate at 63.58%, followed by schizophrenia at 26.16% then depression at 10.26%.

5.2.2 Knowledge

The majority (79.9%) of the respondents sampled were able to accurately identify the presence of days within the female menstrual cycle where chances of conception are heightened as shown in the table below, however only 46.2% were able to correctly state when exactly in the menstrual cycle this is likely to be.

The majority of respondents sampled (79.2%) had knowledge of the need for condom use to prevent transmission of sexually transmitted infections which was comparable to KNBS (2014) in the KDHS 2014 found that 80% of women sampled (n=31079) had knowledge of need for condom use to prevent STIs. Anyanwu and Fulton (2015) in their study among young women aged 16-29 years in Nigeria (n=102) found that most (78.4%) of the participants reported that condom use would prevent sexually transmitted infections.

The majority of respondents sampled (83.1%) had heard of cancer of the cervix while 16.9 % had not heard about it. Out of the 207 respondents who were aware of cervical cancer, only 30% had ever had screening done and out of these, 69.4% had had a pap smear done while 14.5% had VIAVILLI done and another 14.5% were unsure of the specific screening test done. KNBS (2014) found that 75% of women age between 15 to 49 years who were sampled had heard about cancer but only 14 percent had been screened. The higher levels of screening among our study participants is likely due to the predominantly urban and educated population that was sampled (Morema et al, 2014). Ngune et al (2020) in their study among Kenyan women aged 15-24 years (n=2716) found that close to 33% were unaware of cancer of the cervix.

5.2.3 Attitude

The majority of the respondents sampled 64.3% were not using any contraceptive method at the time of interview. Out of the 160 respondents who were not using any contraceptives, 46.9% intended to use a contraceptive in the future while 31.9% did not have any future intent to use contraceptives. This finding of a lack of contraceptive use is higher than in the general population. KNBS 2014, found that 57% of the Kenyan women sampled who were married were using contraceptive method while 61% of the unmarried but sexually active females were using a contraceptive. Tumlinson and Curtis (2015) in their Kenyan study among 5673 Kenyan women drawn from both urban and rural settings found that an average of 25 % of

married women expressed desire to space or limit their pregnancies but were not on any contraception. The higher incidence of lack of contraceptive use was likely due to a predominance of single, separated and divorced respondents in our study.

Out of the 85 respondents who were married or living in a relationship as if married, 65.9 % reported they were able to ask their husbands or partners to use condoms if need arose. Out of the 85 respondents who were married or in a relationship as if married, 75.3% were able in certain circumstances to decline their husband or partners sexual demands/requests, while 22.4 % did not at any point in time refuse their husbands or partners sex. These findings are comparable to a study in South Africa and Botswana among females aged 15-49 years (n=2658) by Langen (2015) found that 71% had suggested condom use to their partners in the twelve months preceding the survey while 29% hadn't, those who were married formed a great percentage of those who didn't suggest condom use. The high levels of ability to negotiate for safer sex was likely due to a predominantly urban and well educated sample captured in our study

5.2.4 Behavior

Out of the 80 respondents who had been pregnant in the five years preceding the interview, 76.3% had four or more antenatal clinics during their pregnancies while 16.3% had less than four visits. KNBS (2014) found that 60% of the women who had been pregnant in the 5 years preceding the survey had had four or more antenatal visits. The respondents in our study had a higher incidence of four or more clinic visits compared to the general population likely due to predominantly urban setting with improved access to care and higher levels of education that are both associated with better health seeking behavior.

Out of the 195 respondents who had ever been sexually active and had responded to the question on their age at onset of sexual activity, the mean age at sexual debut was 19.4 years (SD 4.4) and a median age of 19 years with an age range of 5 to 32 years. The median age of sexual debut for women in Kenya is 18 years (KNBS, 2014). This population has a later debut than the national average which is associated with living in urban areas and higher levels of education. A study by Ramrakha (2000) in New Zealand among a birth cohort at 21 years (n=992) found that those with psychiatric morbidity had sexual debut earlier at an average age of 16 years compared to those without psychiatric disease. Despite adjusting for socio-economic factors, those with psychiatric disorders associated with dis-inhibition and impulsivity were strongly associated with risky sexual behavior.

Among the 85 respondents who were married or in a relationship at the time of interview, 36 respondents had had other sexual partners besides their husbands or regular partners, 75% of these had one sexual partner in addition to their husband or regular partner, while 25% had more than one sexual partner in addition to their husband or regular partner in the past twelve months. This rate is higher than the KDHS of 2013 which found that one percent of married women had 2 or more partners in the year preceding the survey (KNBS, 2014). Out of the 199 respondents who were or had been sexually active, the mean number of lifetime sexual partners was 3.4 (SD 6.4) with a median of 2 lifetime sexual partners and a range of 1-70 lifetime partners. The average number of lifetime sexual partners among Kenyan women was 2.1 (KNBS, 2014). Abayomi et al (2013) found that more than 38.2% of sampled patients at a Psychiatric hospital in Ogun, Nigeria had had more than two sexual partners. The finding in our study is in keeping with Lindamer (2003) who found that women with serious mental illness had more lifetime sexual partners than those without mental illness. Mackinnon et al (1996) in their study in the United Kingdom among 178

people with severe mental illness found that among 92 who were sexually active at the time of the survey, 44% had multiple sexual partners and 50 % never used condoms.

Among 40 respondents who stated that they did not want any more children, but were not using any contraception at the time of the interview, the lack of contraceptive use was largely attributed to being unmarried (52.5%), not having any sexual relations at the moment (22.5%). Ochako et al (2015) in her study among young women (n=34) of low socio-economic status found that despite all participants knowing about modern family planning, uptake of it was low. Commonly reported themes that negatively affect family planning include the concern of long-effects of modern contraception, serious health damage and the association with family planning with promiscuity. Our study finding of a predominance of lack of marriage and sexual inactivity as reasons for lack of contraceptive use point to possible social discrimination of women with mental illness with regard to marriage (Goar et al, 2018).

Out of the respondents sampled, 21.7% had a history of sexual trauma, with five of these instances occurring in the past 12 months, with 1 case happening among those who have ever been married and 4 being among those have never been married. Among the 43 respondents for whom age at first time of sexual trauma was captured, the mean age was 22.4 years (SD 8.4), with a median of 22 years. Out of the 54 respondents who had a history of sexual trauma, 53.7 % sought medical treatment after the incident while 46.3% didn't seek medical treatment after the history of trauma. This incidence of sexual trauma is higher than that in the general population. KNBS (2014) in the Kenya Demographic Health Survey found that 14 % of Kenyan women aged 15-49 have ever experienced sexual violence, with 8% of these having occurred in the twelve months preceding the survey. Lundberg et al (2013) in their study among psychiatric patients (n=602) at the Butabika Mental Hospital in Uganda found that women with serious mental illness had higher prevalence

of sexual violence than women in the general population. Khalifeh et al (2014) in a study among outpatient psychiatric patients (n=303) in the United Kingdom, in contact with community services found that women with severe mental illness reported past sexual violence at 10% in contrast to 2% in normal controls. Our study findings show a higher incidence of sexual violence compared to the general population pointing to the increased vulnerability of women with mental illness to sexual violence due to among other things impaired risk perception during periods of illness that make them vulnerable to sexual violence (Lundberg, 2013).

5.2.5 Association between KAB and socio-demographic factors

None of the socio-demographic characteristics of the respondents were shown to have statistically significant effect on the ability to identify the safe days.

The respondents who were single were the biggest group of those who lacked the knowledge of the need for condom use to prevent the transmission of sexually transmitted infections (p=0.009). There was a rise in the level of cervical cancer screening with increasing levels of education, with those with primary level of education and below being less likely to have been tested (p value: 0.022) than the others. This finding is similar to the study by Gichangi et al (2003) on cervical cancer screening among females at the Kenyatta National Hospital in Nairobi. The single females were the greatest percentage among those who were not screened for cervical cancer (p value: 0.025). The respondents who resided in Nairobi and other cities were more likely to negotiate for condom use with their husbands and partners (p value: 0.034). Socio-demographic factors were not found to have any effect on the respondents' ability to negotiate for sex with their spouses or partners. This is in contrast with a study by Langen et al(2005) that found that women who were financially dependent and greater age difference with their spouses were less likely to negotiate for safer sex. Those respondents who were aged less than 20 years were least likely to have had

any cervical cancer screening test (p value: 0.005). This finding agrees with the findings by Morema et al (2009) in their study among women aged 18-49 years (n=424) seeking services at a public hospital in Kisumu , where they found that the younger age groups were less likely to have been screened for cervical cancer.

5.2.6 Association between KAP and working diagnosis

The respondents with bipolar and related disorders were at an increased likelihood of not knowing the need for condom use to prevent STI (p value: 0.037). The working diagnosis was not shown to have any statistically significant effect on knowledge on safe days, the future use of contraception, the awareness of cancer of the cervix, uptake of cervical cancer screening.

5.3 Conclusion

This study found a significant correlation between mental illness and reproductive health among women in the areas of pregnancy and conception, risky sexual behavior and cervical cancer screening. The women sampled were predominantly single, urban and relatively well educated. There was good knowledge on the need for condom use for prevention of sexually transmitted diseases, good level of awareness of cervical cancer and cervical cancer screening rates higher than the general population in Kenya and sexual debut later than the general population and good utilization of antenatal clinic services in pregnancy. However there was a significant lack of contraceptive use despite not desiring fertility which was attributed to high levels of reported sexual inactivity. In comparison to the general population there were higher levels of multiple sexual partners in the twelve months preceding interview and higher rates of history of sexual trauma.

5.4 Recommendations

The study recommends the following measures at the MNTRHI follow-up clinics for females:

1. Regular health talks offered at the patient waiting bays every morning just before patient reviews in the clinic to cover different areas of reproductive health
2. Integration of the female psychiatric clinic with family planning services and cancer screening as a one-stop shop
3. Routinely screening for sexual violence in the patient clerkship and establish pathways for care of those who have undergone sexual violence
4. Further research on the diverse areas of reproductive health in women with mental illness.

5.5 Study limitations

The study sampled a predominantly urban and well educated population which may not be representative of female psychiatric patients in other parts of the country

The study was cross-sectional in nature and cross sectional studies are not the best way to establish correlations between several variables

STUDY TIMEFRAME

Month Activity	March- August 2019	Sept 2019- June 2020	July 2020	August 2020	Oct 2020- Feb 2021	March -June 2021	July 2021	August 2021
Concept and proposal development								
Submission of proposal and revision								
Presentation of concept And corrections								
Submission to ERC for approval								
Data collection								
Data entry and analysis and report writing								
Review of results by supervisors								
Presentation of results								
Corrections and review								
Submission of final thesis								

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APPENDIX ONE: BUDGET AND JUSTIFICATION

Item	Cost
NACOSTI (National Council of Science and technology) permit	5000
Stationery Printing paper 5 rims @500 Pens 50 @20 Envelopes 50 @10 Folders 20 @ 50	5000
Printing Printing and photocopy of thesis 10 copies @ 200 Binding 10 copies @ 100	3000
Airtime Talk time 500 Internet bundles 500	1000
Pre-test of tool Printing of questionnaires 30 @ 100 Transport costs 5 trips @ 500 Lunch 4@500 Miscellaneous 2500	10000
Data collection Printing questionnaires 300 @100 Transport 10 trips @ 500 Lunch 10 @ 500 Emergencies/Miscellaneous expenses 5000	17000
Data entry, collation, statistical analysis	50000
Total	86000

APPENDIX TWO: QUESTIONNAIRE CONSENT FORM

Title of Study: REPRODUCTIVE HEALTH AMONG WOMEN WITH MENTAL ILLNESS IN KENYA: A STUDY ON KNOWLEDGE, ATTITUDE AND BEHAVIOUR

Principal Investigator and institutional affiliation: Dr. Shavulimo Sheila Lamwenya, University of Nairobi, Department of Psychiatry, MMED Psychiatry student

Introduction:

I would like to tell you about a study being conducted by the above listed researcher. The purpose of this consent form is to give you the information you will need to help you decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical research: i) Your decision to participate is entirely voluntary ii) You may withdraw from the study at any time without necessarily giving a reason for your withdrawal iii) Refusal to participate in the research will not affect the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your records.
May I continue? YES / NO

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol No. **P461/09**

WHAT IS THIS STUDY ABOUT? The researchers listed above are interviewing individuals who are females with mental illness. The purpose of the interview is to find out your knowledge and practices about your reproductive health. Participants in this research study will be asked questions about conception and pregnancy, safe sex practices and cervical cancer screening. There will be approximately 300 participants in this study randomly chosen. We are asking for your consent to consider participating in this study.

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

If you agree to participate in this study, the following things will happen:

You will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview will last approximately 10 minutes. The interview will cover topics such as conception and pregnancy, safe sex practices and cervical cancer screening.

We will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. The reasons why we may need to contact you include: to help fill areas that have not been clearly captured in the interview.

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

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

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

ARE THERE ANY BENEFITS BEING IN THIS STUDY?

The information you provide will help us better understand how mental illness contributes to the reproductive health of women. This information is a contribution to science and will help us to identify areas that can be improved to deliver better services to you.

WILL BEING IN THIS STUDY COST YOU ANYTHING?

No

WILL YOU GET REFUND FOR ANY MONEY SPENT AS PART OF THIS STUDY?

No

WHAT IF YOU HAVE QUESTIONS IN FUTURE?

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

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

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

WHAT ARE YOUR OTHER CHOICES?

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

CONSENT FORM (STATEMENT OF CONSENT)

Participant's statement

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

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

It may be embarrassing for you to have to give your personal information. We will do everything we can to ensure that this is done in private. Furthermore, all study staff and interviewers are professionals with special training in these interviews. Also, recalling some past events may be stressful, in case this happens you can stop the interview.

The study staff will treat you for minor conditions or refer you when necessary

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

I agree to participate in this research study: Yes No

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

Participant printed name: _____

Participant signature / Thumb stamp _____ **Date** _____

Researcher's statement

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

Researcher's Name: _____ **Date:** _____

Signature _____

Role in the study: _____ [i.e. study staff who explained informed consent form.]

For more information contact _____ at _____ from _____ to _____

Witness Printed Name (If witness is necessary, A witness is a person mutually acceptable to both the researcher and participant)

Name _____ **Contact information** _____

Signature /Thumb stamp: _____ **Date:** _____

Brief Mental status examination

Orientation in time, place and person	Oriented/not oriented
mood	Euthymic/elated/low
speech	Normal/disorganised
memory	Long term Ok/Impaired working OK/Impaired
Thought and perception	Delusions or hallucinations present YES/No

QUESTIONNAIRE

Questionnaire number.....

Patient file diagnosis.....

SECTION ONE: RESPONDENT'S BACKGROUND

101	What is your current place of residence	Nairobi/Mombasa/Kisumu.....1 Town.....2 Countryside.....3 Outside Kenya.....4	
102	How long have you been living continuously in(NAME OF CURRENT PLACE OF RESIDENCE)	YEARS..... ALWAYS..... VISITORS.....	
103	What is your nationality?	KENYAN.....	Skip to 105
		TANZANIAN.....	
		UGANDAN.....	
		SOMALI.....	
		ETHIOPIAN.....	
		SUDANESE.....	
	OTHER.....		
104	What is your main reason of moving to Kenya?	JOIN FAMILY LIVING IN KENYA MARRIAGE WORK SCHOOL ESCAPE INSECURITY/WAR ESCAPE ENVIRONMENTAL DISASTER(EG FLOOD,DROUGHT ETC)	
105	In what month and year were you born	MONTH..... DON'T KNOW MONTH..... YEAR..... DON'T KNOW YEAR.....	
106	How old were you at your last birthday? (COMPARE AND CORRECT IF INCONSISTENT WITH THE ABOVE RESPONSE)	AGE IN COMPLETED YEARS	
107	Have you ever attended school?	YES	
		NO	Skip to section 2
108	What is the highest level of school you attended: primary, vocational, secondary or higher?	PRIMARY..... POST-PRIMARY..... SECONDARY/A LEVEL..... COLLEGE(MIDDLE LEVEL).... UNIVERSITY.....	
109	What is the highest (standard/form/year) you completed at that level? IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL RECORD '00'	STANDARD/FORM/YEAR.....	

SECTION TWO: REPRODUCTION

201	Now I would like to ask about all the births you have had	YES..... NO.....	
-----	---	---------------------	--

	during your life. Have you ever given birth?		
202	Just to make sure that I have this right: you have had in TOTAL.....births during your life. Is that correct?		
203	Are you pregnant now?	YES..... NO..... UNSURE.....	If no or unsure skip to 207
204	How many months pregnant are you?	MONTHS.....	
205	When you got pregnant did you want to get pregnant at that time?	YES..... NO.....	If yes skip to 207
206	Did you want to have a baby later on or did you not want any (more) children?	LATER..... NO MORE.....	
207	Have you ever had a pregnancy that miscarried, was aborted or ended in a stillbirth?	YES..... NO.....	If no skip to 210
208	When did the last such pregnancy end?	MONTH YEAR.....	
209	How many months pregnant were you when the last such pregnancy ended?	MONTHS.....	
210	When did your last menstrual period start DATE IF GIVEN.....	DAYS AGO..... WEEKS AGO..... MONTHS AGO..... YEARS AGO..... IN MENOPAUSE/HAS HAD HYSTERECTOMY..... BEFORE LAST BIRTH..... NEVER MENSTRUATED.....	
211	From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant?	YES.....	
		NO.....	Skip to section 3
		DON'T KNOW.....	Skip to section 3
212	Is this time just before her period begins, during her period, right after her period has ended or halfway between two periods	JUST BEFORE HER PERIODS BEGIN..... DURING HER PERIOD..... RIGHT AFTER HER PERIOD HAS ENDED..... HALFWAY BETWEEN TWO PERIODS..... OTHER.....(SPECIFY) DON'T KNOW.....	

SECTION 3: PREGNANCY AND POSTNATAL CARE

If i) no children(yes.....) or ii) no children in the last five years (yes.....), skip to section 4			
Now I would like to ask some questions about your children born in the last five years:			
	Last Birth Name Living....Dead.....	Next to last birth Name Living..... Dead.....	Second from last birth Name Living.....Dead.....
301 when you got pregnant with (NAME) did you want	YES.....SKIP TO 303 NO.....		

to get pregnant at that time?			
302 Did you want to have a baby later on or did you not want any (more) children?	LATER..... NO MORE.....SKIP to 303		
303 How much longer did you want to wait?	MONTHS..... YEARS..... DON'T KNOW.....		
304 Did you see anyone for antenatal care for this pregnancy?	YES....SKIP TO 306 NO.....		
305 What are the reasons for not receiving antenatal care for this pregnancy?	DISTANCE..... COST..... TOO MUCH WORK..... HUSBAND REFUSED..... RELIGIOUS REASONS.....		
306 Whom did you see? Anyone else? (RECORD ALL MENTIONED)	HEALTH PERSONNEL DOCTOR..... NURSE/MIDWIFE..... OTHER PERSON COMMUNITY HEALTH WORKER..... TRADITIONAL BIRTH ATTENDANT..... OTHER.....(SPECIFY)		
307 Where did you receive antenatal care for this pregnancy? Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.	HOME YOUR HOME..... OTHER HOME..... PUBLIC SECTOR GOVT HOSPITAL..... GOVT HEALTH CENTRE..... GOVT DISPENSARY..... OTHER PUBLIC SECTOR.....(SPECIFY) PRIVATE MED SECTOR PRIVATE HOSPITAL..... FAITH BASED CHURCH HOSPITAL/CLINIC..... NURSING/MATERNITY HOME..... OTHER PRIVATE MEDICAL SECTOR.....(SPECIFY)		
308 How many months were you when you first received antenatal care for this pregnancy?	MONTHS..... DON'T KNOW.....		
309 How many times did you receive antenatal care during this pregnancy?	NUMBER OF TIMES..... DON'T KNOW.....		

SECTION FOUR: MARRIAGE AND SEXUAL ACTIVITY

401	Are you currently living with a man as if married?	YES, CURRENTLY MARRIED.....	Skip to 404
		YES LIVING WITH A MAN.....	Skip to 404
		NO, NOT IN A UNION.....	Go to 402
402	Have you ever been married or lived together with a man as if married?	YES, FORMERLY MARRIED.....	
		YES, LIVED WITH A MAN.....	
		NO.....	Skip to 411

403	What is your marital status now widowed, divorced or separated?	WIDOWED.....	Skip to 408
		DIVORCED.....	Skip to 408
		SEPARATED.....	Skip to 408
404	Is your (husband/partner) living with you now is he staying elsewhere?	LIVING WITH HER..... STAYING ELSEWHERE.....	
405	Does your (husband/partner) have other wives or does he live with other women as if married?	YES.....	
		NO.....	
		DON'T KNOW.....	Skip to 408
406	Including yourself, how many wives or live-in partners does he have?	TOTAL NUMBER OF WIVES OR LIVE IN PARTNERS..... DON'T KNOW.....	
407	Are you first, second,..... wife	RANK.....	
408	Have you been married or lived with a man only once or more than once?	ONLY ONCE..... MORE THAN ONCE.....	
409	How old were you when you first started living with your husband/partner?	AGE.....	
410	When you first got married or lived with a man, was it your choice or was it arranged?	OWN CHOICE..... ARRANGED.....	
411	When you first got married or lived with a man, was the man older than you, younger than you or the same age as you?	OLDER..... YOUNGER..... ABOUT THE SAME AGE..... DON'T KNOW/DON'T REMEMBER.....	
NOW I WOULD LIKE TO ASK SOME QUESTIONS ABOUT SEXUAL ACTIVITY IN ORDER TO GAIN A BETTER UNDERSTANDING OF SOME SEXUAL LIFE ISSUES. IF THERE IS ANY QUESTION YOU ARE NOT COMFORTABLE ANSWERING, PLEASE LET ME KNOW.			
412	How old were you when you had sexual intercourse for the very first time?	Never had sexual intercourse.....	Skip to section 5
		Age in years.....	
		First time when I started living with first husband/partner.....	
413	Apart from your husband/partner, have you had sexual intercourse with any other person in the last twelve months?	YES.....	
		NO	Skip to 416
414	In total how many different people have you had sexual intercourse with in the last twelve months?	NUMBER OF PARTNERS IN LAST TWELVE MONTHS..... DON'T KNOW.....	
415	In the last twelve months have you ever given or received	YES..... NO.....	

	money, gifts or favors in return for sex?		
416	In total how many different people have you had sexual intercourse in your lifetime?	NUMBER OF PARTNERS IN LIFETIME..... DON'T KNOW.....	

SECTION FIVE: FERTILITY PREFERENCES

501	Are you currently pregnant?	YES	
		NO UNSURE	Skip to 503
502	Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE ANOTHER CHILD.....	Skip to 505
		NO MORE.....	
		UNDECIDED/DON'T KNOW.....	
503	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	HAVE (A/ANOTHER) CHILD.....	
		NONE/NO MORE.....	Skip to 506
		CAN'T HAVE CHILDREN.....	
		UNDECIDED/DON'T KNOW.....	
504	How long would you want to wait from now for the birth of a/another child?	a) MONTHS	Skip to 506
		b) YEARS.....	
		c) SOON/NOW.....	
		d) SAYS SHE CAN'T GET PREGNANT.....	
		e) AFTER MARRIAGE...	
		f) OTHER	
		g) DON'T KNOW.....	
505	After the birth of the child you are expecting, how long would you like to wait to have another child	a) MONTHS.....	
		b) YEARS.....	
		c) SOON/NOW.....	
		d) SAYS SHE CAN'T GET PREGNANT.....	
		e) AFTER MARRIAGE...	
		f) OTHER.....	
		g) DON'T KNOW	
506	Are you currently using a contraceptive method?	NOT CURRENTLY USING.....	Skip to 507 if she responded with a or b in 504 Skip to 508 if she responded with a or b in 505
		CURRENTLY USING....	Skip to section 6

507	<p>You said you do not want to have any more children, can you tell me why you are not using a contraceptive method to prevent pregnancy? RECORD ALL REASONS MENTIONED</p>	<p>NOT MARRIED</p> <p>FERTILITY-RELATED REASONS</p> <p>Not having sex.....</p> <p>Infrequent sex.....</p> <p>Menopausal/hysterectomy....</p> <p>Can't get pregnant.....</p> <p>Not menstruated since last birth.....</p> <p>Breast feeding.....</p> <p>Up to God/fatalistic.....</p> <p>OPPOSITION TO USE</p> <p>Respondent opposed.....</p> <p>Husband opposed.....</p> <p>Others opposed.....</p> <p>Religion prohibits.....</p> <p>Lack of knowledge.....</p> <p>Knows no method.....</p> <p>Know no source.....</p> <p>METHOD-RELATED REASONS</p> <p>Side effects/health concerns.....</p> <p>Lack of access/too far.....</p> <p>Costs too much.....</p> <p>Preferred method not available.....</p> <p>No method available.....</p> <p>Inconvenient to use.....</p> <p>Interferes with body's normal processes.....</p> <p>OTHER</p> <p>DON'T KNOW</p>	
508	<p>Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future?</p>	<p>YES.....</p> <p>NO.....</p> <p>DON'T KNOW.....</p>	<p>Skip to 510</p>
509	<p>What contraceptive method would you prefer to use?</p>	<p>Female sterilization.....</p> <p>Male sterilization.....</p> <p>IUD.....</p> <p>Injectable.....</p> <p>Implant.....</p> <p>Pill.....</p> <p>Condom.....</p> <p>Female condom.....</p> <p>Lactational amenorrhoea method...</p> <p>Rhythm method.....</p> <p>Withdrawal</p> <p>Other..... (Specify)</p> <p>Unsure.....</p>	
510	<p>What is the reason you will not use a contraceptive method to delay or avoid pregnancy at any time in the future?</p>	<p>NOT MARRIED</p> <p>FERTILITY-RELATED REASONS</p> <p>Not having sex.....</p> <p>Infrequent sex.....</p> <p>Menopausal/hysterectomy....</p> <p>Can't get pregnant.....</p> <p>Not menstruated since last birth.....</p> <p>Breast feeding.....</p> <p>Up to God/fatalistic.....</p> <p>OPPOSITION TO USE</p> <p>Respondent opposed.....</p> <p>Husband opposed.....</p> <p>Others opposed.....</p> <p>Religion prohibits.....</p> <p>Lack of knowledge.....</p> <p>Knows no method.....</p> <p>Know no source.....</p>	

		METHOD-RELATED REASONS Side effects/health concerns..... Lack of access/too far..... Costs too much..... Preferred method not available..... No method available..... Inconvenient to use..... Interferes with body's normal processes..... OTHER DON'T KNOW	
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SECTION SIX: HIV/STI PREVENTION

601	If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in asking that they use a condom when they have sex?	YES..... NO..... DON'T KNOW.....	
602	Is a wife justified in refusing to have sex with her husband when she knows he has sex with women other than his wives?	YES..... NO..... DON'T KNOW.....	
If currently married or living with a man continue with this section, if not in a union skip to the next section(7)			
603	Can you say no to your (husband/partner) if you do not want to have sexual intercourse?	YES..... NO..... DEPENDS/NOT SURE.....	
604	Could you ask your (husband/partner) to use a condom if you wanted him to?	YES..... NO..... DEPENDS/NOT SURE.....	

SECTION SEVEN: SEXUAL COERCION

If ever married/ever lived with a man go to 701, if never married or never lived with a man go to 702			
701	Now I want to ask you about things that may have been done to you by someone other than (your/any) (husband/partner). At any time in your life, as a child or as an adult, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts when you did not want to?	YES.....	Skip to 703
		NO.....	Skip to 704
		REFUSED TO ANSWER/NO ANSWER.....	Skip to 704
702	At any time in your life, as a child or as an adult, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts when you did not want to?	YES.....	
		NO.....	
		REFUSED TO ANSWER/NO ANSWER.....	Skip to 704
703	Who was the person who was forcing you the very first time this happened?	CURRENT HUSBAND/PARTNER.... FORMER HUSBAND/PARTNER..... CURRENT/FORMER BOYFRIEND..... FATHER/STEP-FATHER..... BROTHER/STEP-BROTHER... OTHER RELATIVE..... IN-LAW..... OWN FRIEND/ACQUAINTANCE... FAMILY FRIEND..... TEACHER..... EMPLOYER/SOMEONE AT WORK..... POLICE/SOLDIER..... PRIEST/RELIGIOUS LEADER..... STRANGER..... OTHER.....	

704	IF EVER MARRIED OR LIVED WITH A MAN In the past 12 months has anyone other than your/any husband/partner physically forced you to have sexual intercourse when you did not want to?	YES.....	SKIP to 706
		NO.....	Skip to section 8
705	IF NEVER MARRIED/NEVER LIVED WITH A MAN In the past 12 months has anyone physically forced you to have sexual intercourse when you did not want to?	YES.....	
		NO.....	Skip to section 8
706	How old were you the first time you were forced to have sexual intercourse or perform other sexual acts by your/any husband or partner?	AGE IN COMPLETED YEARS.....	
		DON'T KNOW.....	
If they have at least one yes to any question in this section, go to 708, if not a single yes in this section, complete the questionnaire here			
707	Thinking about what you yourself have experienced among the different things we have been talking about, have you ever tried to seek help?	YES.....	Proceed to 708
		NO.....	Skip to section 8
708	From whom have you sought help? RECORD ALL MENTIONED	OWN FAMILY..... HUSBAND'S/PARTNER'S FAMILY..... CURRENT/FORMER HUSBAND/PARTNER..... CURRENT/FORMER BOYFRIEND..... FRIEND..... NEIGHBOR..... RELIGIOUS LEADER..... DOCTOR/MEDICAL PERSONNEL..... POLICE..... LAWYER..... SOCIAL SERVICE ORGANIZATION..... OTHER.....(SPECIFY)	

SECTION EIGHT: CERVICAL CANCER

801	Now I would like to ask you about women's health. Have you ever heard of cervical cancer?	YES.....	
		NO.....	End of questionnaire
802	Have you ever had a test or exam to see if you had cervical cancer?	YES.....	
		NO.....	End of questionnaire
803	What type of exam did you have to see if you have cervical cancer?	PAP smear VIAVILLI DON'T KNOW/NOT SURE.....	

Additional commentsThank you.

APPENDIX THREE: KDHS FEMALE QUESTIONNAIRE LONG VERSION

Accessed from <http://www.google.com/KDHSFemalequestionnairelongversion>