INVESTIGATION OF FACTORS ASSOCIATED WITH UPTAKE OF PRECONCEPTION CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE AT JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL, KISUMU

BY

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A Thesis Submitted In partial fulfillment of the Requirements for the Award of Master of Public Health of Jaramogi Oginga Odinga University Of Science and Technology

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

To all beloved women of reproductive age including my daughters as you undergo the noble task of reproduction in a healthy manner to overcome any challenges involved therein. I recognize my family for their support and encouragement, mostly my lovely parents (late Henry and Elizabeth) and my children Nancy, Vera and Javan; for their support and encouragement throughout this study.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal clinic/Care
AORS	Adjusted Odd Ratio
APA	American Pregnancy Association
ART	Antiretroviral Therapy
ARV	Antiretroviral Therapy
CCF	Congestive Cardiac Failure
CDC	Centre of Disease Control
CHEW	Community Health Extension Worker
CHV	Community Health Volunteer
CHW	Community Health Worker
CI	Confident Interval
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CORS	Crude Odd Ratio
DHIS	Division of Health Information System
EDD	Expected Date of Delivery
FP	Family Planning
GOK	Government of Kenya
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
ICF	Inner City Fund
IPV	Intimate partner Violence
JOOTRH	Jaramogi Oginga Odinga Teaching and Referral Hospital
JOOUST	Jaramogi Oginga Odinga University of Science and Technology
KDHS	Kenya Demographic Health Survey
KNBS	Kenya National Bureau of Statistics
LBW	Low Birth Weight
LGA	Low Gestational Age
LMIC	Low and Middle Income Countries
LMP	Last Menstrual Period
MCH	Maternal Child Health
MDG	Millennium Development Goals

MNCH	Maternal, Newborn and Child Health
MNH	Maternal and Newborn Health
MOH	Ministry of Health
NACOSTI	National Commission for Science and Technology& Innovation
NCRSV	Non-Conflict Related Sexual Violence
NRHS	National Reproductive Health Strategy
OPD	Outpatient Department
ORS	Odds Ratio
PCC	Pre-conception Care
PCCS	Pre-conception Care Services
PCHC	Pre-conception Health Care
PPH	Postpartum Hemorrhage
PSC	Patient Support Centre
SCD	Sickle Cell Disease
SD	Standard Deviation
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
SV	Sexual Violence
TB	Tuberculosis
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
US	United States
USA	United State of America
WHO	World Health Organization
WRA	Women of Reproductive Age

DEFINITION OF TERMS

Adverse pregnancy outcomes: Those pregnancy outcomes other than normal live birth which majorly includes preterm birth, sexual transmitted infections, stillbirth, congenital malformations, and spontaneous abortions.

Apgar score: A test given to newborns soon after birth which checks baby's heart rate, muscle tone and other signs to see if extra medical care or emergency care is needed.

Health outcomes: Changes in health that result from measures or specific health care investments or interventions.

Large for gestational age baby: Large for gestational age is used to describe newborn babies who weigh more than usual for the number of weeks of pregnancy. Babies may be called large for gestational age if they weigh more than 9 in 10 babies (90th percentile) of the same gestational age.

Low birth weight: A low-birth-weight a baby that weighs less than 2500 g at birth.

Maternal death: The death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Neonatal death: When a newborn dies during the first 28 days of life.

Patient: In this study, it refers to any woman of reproductive age (15-49 years) intending to get pregnant.

Pre-Conception Care: any preventive, promotive or curative health care intervention provided to women of childbearing age in the period before pregnancy (at least 2 years) or between consecutive pregnancies, to improve health related outcomes for women (regardless of their pregnancy status), newborns or children up to 5 years of age"

Preconception services: Services geared towards a woman's health before she becomes pregnant. It means knowing how health conditions and risk factors could affect a woman or her unborn baby if she becomes pregnant. For example, some foods, habits, and medicines can harm her baby — even before he or she is conceived. Some health problems, such as diabetes, also can affect pregnancy.

Pregnancy health risks: Health problems that may develop or occur during pregnancy.

Pregnancy outcomes: Results of conception and ensuing pregnancy, spontaneous abortion, congenital malformations, lower birth weight, preterm delivery or Stillbirth.

Preterm birth: A birth that occurs before the 37^{th} week of pregnancy

Preterm premature baby: Birth is considered premature, or preterm, when it occurs before the 37th week of pregnancy. A normal pregnancy lasts about 40 weeks.

Safe motherhood: Encompasses a series of initiatives, practices, protocols and service delivery guidelines designed to ensure that women receive high quality gynecological, family planning, prenatal, delivery and postpartum care, in order to achieve optimal health for the mother, fetus and infant during pregnancy.

Women of Reproductive age: Women of age (15–49 years) who are able to conceive.

ABSTRACT

Preconception care involves biomedical, behavioral and social health interventions to women and couples before conception to improve their health status, reduce behaviors, individual and environmental factors that contribute to poor maternal and child health outcomes. It has potential to further reduce global maternal and child mortality and morbidity, especially in low middle income countries where the highest burden of pregnancy related deaths and disability occurs. Most often, preconception care is rarely delivered to women, and it is often ignored or minimized by both the patient and the provider. The factors contributing to the uptake of PCC services have not been extensively revealed, especially in the study area. Therefore, a facility based mixed method cross sectional study design was conducted among 241women of reproductive age and 20 health care providers from September to December 2021, at Jaramogi Oginga Odinga Teaching and Referral Hospital to investigate the factors associated with the uptake of preconception care services. The study employed the use of systematic and purposive sampling techniques in selecting study participants. The information regarding the purpose of the study and the rights of participants were provided for the study participants. Written informed consent was obtained from each study participants before actual data collection. Pre-tested, semi-structured questionnaires were used to collect data. Quantitative data were coded and entered into Microsoft Office Excel 2007, then transferred into Statistical Package for Social Sciences version 22 for analysis. Descriptive statistics were used to calculate frequency and percentage of the characteristics of the participants. Pearson's chi-square was used to find out the correlation for characteristics between users and non users of preconception care services. The resultant significant associations were further analyzed using multivariate logistic regression. The results were considered statistically significant if p-value was less than 0.05. Qualitative data was subjected to thematic analysis and results triangulated with those from quantitative analysis. Tables, figures and texts were used to present the data. The uptake of preconception care services was low, as only 7.5% of women reported to have received the services. In terms of preconception care services received; about (26.1%) of women were screened for medical conditions, (14.9%) received family planning, (10.6%) counseling on other preconception care services and only 1.7% received tetanus toxoid vaccination before conception. Only women's age (X^2 = 13.078; p = 0.006) and occupation (X^2 = 12.357; p = 0.002) were significantly associated with screening for medical conditions before conception. The uptake of family planning services was only associated with religion (X^2 = 6.473; p = 0.031). Only women's age (X^2 = 13.078; p = 0.006) and occupation (X^2 = 7.027; p = 0.028) were associated with PCC counseling before conception, whereby self-employed and employed women were about 4.3 times and 3.6 times, respectively, more likely to receive PCC counseling than the unemployed women (CORS = 4.25; 95% CI: 1.33-13.63; *p* = 0.015) and (CORS = 3.64; 95% CI: 1.07-12.39; *p* = 0.039). No specific factor (p > 0.05) was associated with tetanus toxoid vaccination. The uptake of preconception care services was low, with a concomitant low level of awareness on preconception care services among women. The study recommends that the Ministry of Health should ensure the availability of adequate elements of preconception care, while prioritizing public health education on preconception care, empowering the healthcare providers, and involving stakeholders, so as to achieve a robust uptake.

CHAPTER ONE
INTRODUCTION

1.1 Background

Poor maternal health is one of the major risk factors related to adverse birth outcomes, especially among women entering pregnancy and a lot of focus has been directed on prenatal care as the standard prevention paradigm to reduce poor pregnancy outcomes. However, public health professionals are realizing that pre-natal care alone is not sufficient to improve perinatal health and birth outcomes, and instead have emphasized the importance of pre-conception care (Almaw, 2022; Annadurai *et al*, 2017; Bateson & Black, 2018 2019 ; Beckmann *et al*, 2014). The preconception care services comprise of biomedical, behavioral and social health interventions to women and couples before conception occurs. The Preconception care (PCC) includes interventions that lessen behaviours, individuals and environmental factors that may contribute to maternal ill-health, with the intension of reducing maternal and perinatal mortality rates (Dean *et al*, 2014b; WHO, 2013).

According to World Health Organization recommendation, the packages of interventions for PCC include but not limited to; maternal nutrition and genetic counseling, screening for medical conditions such as hepatitis B virus, hypertension, tuberculosis, asthma, mental disorders, diabetes, and anaemia, cessation of tobacco and alcohol use. The management for infertility or sub-infertility disorders, sexually transmitted infections (STIs), human immuno-deficiency virus (HIV) counseling and treatment, interpersonal violence and female genital mutilation. In addition it also includes folic acid supplementation to prevent tubal neural effect, vaccination against tetanus, provision of the family planning to prevent too early, unwanted and rapid successive pregnancies and stabilization of chronic diseases before conception (Farahi & Zolotor, 2013; Genuis & Genuis, 2017; Hoyt *et al*, 2012b; Joyce, 2018).

The PCC is essential for improving pregnancy and birth outcomes and the future health outcome of women, newborns and child health (Bateson & Black, 2019 ; Dean *et al*, 2014a; Mason *et al*, 2014). The PCC bridges the gap in the continuum of care, and addresses pre-pregnancy health risks and health problems that could have negative maternal and fetal consequences. It therefore has potential to further reduce global maternal and child mortality and morbidity, especially in low and middle income countries (LMICs) where the highest burden of pregnancy-related deaths and disability occurs either due to Iron deficiency anaemia, undernutrition, preterm deliveries, low

birth weight and perinatal deaths due to early pregnancy or sexually transmitted diseases(Beckmann *et al*, 2014; Ekem *et al*, 2018b; Goossens *et al*, 2018; Goshu *et al*, 2018).

Pregnant women who receive preconception care services before conception such as counseling on medical conditions, nutrition, weight management, alcohol and smoking reduction, and consult with specialist regarding any preexisting health condition and receive vaccination and folic acid supplementation are more likely to experience lower adverse pregnancy outcomes such as reduce preterm births and hypertensive disorders among others. However, in most instances preconception care is rarely done to women because about two fifths of them have unplanned pregnancy, which is often ignored by both the woman and the health care provider until the women seek for antenatal care (Arluck & Mayhew, 2018a; Dorney & Black, 2018; Hall *et al*, 2018; Hemsing *et al*, 2017; WHO, 2013).

Globally, maternal and fetal health are threatened mostly because of lack of knowledge on preconception health care (PCHC) and practices carried out by women of reproductive age like smoking, alcohol consumption and recreational drug use as well as physical conditions like obesity. Many women are however, unaware of how their health before conception may influence their risk of having an adverse outcome of pregnancy. For instances, most women often seek prenatal care only after conception, and this expose them to risk associated with pregnancy which could have been avoided or minimized during PCCS (Ayalew *et al*, 2017; Conway *et al*, 1994; Coonrod *et al*, 2009; Delissaint & McKyer, 2011; Dunlop *et al*, 2013).

Good health during pregnancy includes nutritional counseling, screening for medical conditions, genetic counseling, and psycho-sexual counseling. Updating immunizations and optimizing health status is also most vital to the development of the baby. Thus, a mother should be healthy and avoid any practice that will endanger the fetus prior to conception (Ekem *et al*, 2018a; Farahi & Zolotor, 2013; Genuis & Genuis, 2017; Hemsing *et al*, 2017; Hood *et al*, 2007; Hoyt *et al*, 2012a).

In Sri Lanka and Sub-Saharan Africa countries such as Nigeria and Sudan there is low utilization of preconception care services, coupled with poor practices mainly due to low economic status, lack of health care providers, being illiterate and poor awareness about maternal health including preconception care (Mason *et al*, 2014; Patabendige & Goonewardene, 2013; Young *et al*, 2013). This is in conformity with another study done which alluded to the fact that among women who become pregnant, health risks experienced in the preconception period often continue during pregnancy, such as the use of alcohol, tobacco and other substances, nutritional deficiencies, and chronic health conditions such as obesity which demand attention in the context of preconception to avoid complications during pregnancy and birth (Begum *et al*, 2011).

Kenya's implementation plan through the National Reproductive Health Strategy 1999-2003, identified the goal of safe motherhood and child survival as the reduction of both maternal and prenatal morbidity and mortality. Similarly, the government launched a Maternal and Newborn Health Road Map in August 2010 whose goal is to accelerate the reduction of maternal and newborn morbidity and mortality towards the achievement of the Millennium Development Goals (MDGs). The Kenya Demographic Health Survey (KDHS) 2014 shows that the neonatal mortality rate only reduced marginally from 33 to 31 per 1000 live births (KNBS, 2015). This has remained a challenge because the focus of sustainable development goals targets in under-five mortality was (33/1000) and infant mortality was (26/1000) by 2015, whose achievement could have been boosted by embracing preconception care.

1.2 Problem statement

Maternal and neonatal mortality remains high in low and middle income countries (LMICs), where healthcare systems do not meet the minimum standards of the world health organization (WHO, 2019a). Globally, over 810 women die every day due to difficulty associated with pregnancy or childbirth, which is an unacceptable high number and nearly two thirds (66%) occur in Sub Sub-Saharan Africa (SSA). Similarly, 5.3 million deaths occurred in the first five years of life in 2018; of which, 2.5 million occurred in the first month of life (Lucia *et al,* 2019; UN, 2019; WHO, 2015, 2015b; WHO *et al*, 2019). In Kenya, the maternal death rate is estimated at 362 deaths per 100,000 live births and in Kisumu County maternal mortality accounts for 495per 100,000 live births. Despite of the adoption of the Sustainable Development Goal number (SDG3), whose objective is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births by the year 2030 (KNBS & MOHK, 2015; WHO, 2015, 2022). Major contributor

to these maternal deaths are postpartum haemorrhage, abortion, septic shock, sepsis and pre-eclampsia, which can be controlled by HCPs through provision of appropriate care during preconception, antenatal and postnatal period (Sumankuuro *et al*, 2017; WHO, 2019b).

Despite the establishment of free maternity services in 2013, addressing maternal and newborn health (MNH) care services and abolishment of user fee in all public maternity hospitals and clinics by government of Kenya (GOK), there is Still limited data on utilization of PCC put in place to address maternal health services geared towards achieving the desired 100% reproductive health coverage. Furthermore, the factors influencing PCCS among women of reproductive age (WRA) remain unclear, both from the patient and health provision fronts. Again, more emphasis has been on the antenatal care services with little attention given to PCCS. This means that a number of women who might be suffering from various conditions may pass through the health facilities without being identified and treated until they fall pregnant. Similarly, most pregnant women seek antenatal care late, resulting to late diagnosis and treatment of the diseases they may be suffering from. The study therefore evaluated the PCCS uptake and factors associated with PCC among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County.

1.3 Objectives

1.3.1 General objective

To investigate the factors associated with the uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County.

1.3.2 Specific objectives

1. To determine the uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County.
2. To investigate the patients' factors that are associated with preconception care services uptake among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital.
3. To establish health care providers' factors that are associated with preconception care services uptake among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital.

4. To find out health facility factors that are associated with preconception care services uptake among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital.

1.4 Research questions

1. What is the uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County?
2. What are the patient factors that are associated with the uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County?
3. What are health care providers' factors that are associated with the uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital?
4. What are the health facility factors that are associated with the uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County?

1.5 Justification of study

In western societies, PCC is widely recognized to optimize women's health and improving pregnancy outcomes, though it is mostly limited to single interventions or preconception information and counseling to women with chronic illnesses such as diabetes (Shawe *et al*, 2015). There is poor MCH and practices in the developing countries due to lack of knowledge on PCC services and this has been linked to low economic status, lack of health care providers, low literacy and poor awareness about maternal health including PCC (Goshu *et al*, 2018; Mason *et al*, 2014). In Kenya, reports have shown increased number of mothers with pregnancy complications, some which are caused by problems that existed before pregnancy, resulting to pre-term premature babies, low-birth weight, large for gestation age babies, an indication of poor preparation for conception (KNBS & MOHK, 2015; Nyandieka *et al,* 2015). Despite of the ministry of health (MOH) in conjunction with the ministry of public health and sanitation coming up with guidelines in 2012 to improve perinatal care which includes preconception care (MOH, 2022), healthcare service delivery intervention and stakeholder investments such as national hospital insurance fund (NHIF) that have been put into practice, maternal and neonatal morbidities and mortalities have remained high in Kenya. Most of these morbidities and

mortalities result from preventable causes which can be minimized by health education, hence there is need to investigate factors that influence these women from seeking PCCS at JOOTRH so as to inform policy makers, government officials and HCPs on the findings of the study to enable them come up with appropriate interventions to increase uptake of PCCS.

1.6 Significance of study

First and foremost the study will provide information on the state of PCC in Kisumu County; hence it will act as a source of information to all the stakeholders in the reproductive health sector. Reducing the health risks before conception is beneficial to the woman since this will reduce the pregnancy associated complications. The study findings will be used to inform Kisumu County Government especially the reproductive health department and stakeholders of the state of PCCS uptake and barriers to its uptake so as to come up with policies aimed at boosting this noble sector. Additionally, the findings of this study will enable the government to set up policies and regulatory frameworks to curb maternal and neonatal morbidity and mortality and work towards achieving reproductive health goals concerned with SDGs 3 and 4.

1.7 Limitations of the study

The study involved only WRA who sought healthcare services at JOOTRH, and might had suffered from reporting bias. Some women might have given false information for fear of being not attended to by HCP since the study was conducted in a health facility. To reduce reporting bias, the researcher involved interviewers who were nurses working in other departments in collecting data and they ensured they built enough rapport and explained the importance of the research to study participants to limit reporting bias. This was a facility based study and might had missed out on women who rarely seek healthcare services or who might had sought healthcare in other facilities and were expected to be users or non users of PCC services. This was minimized by triangulation with qualitative data, which were obtained from HCPs within the facility

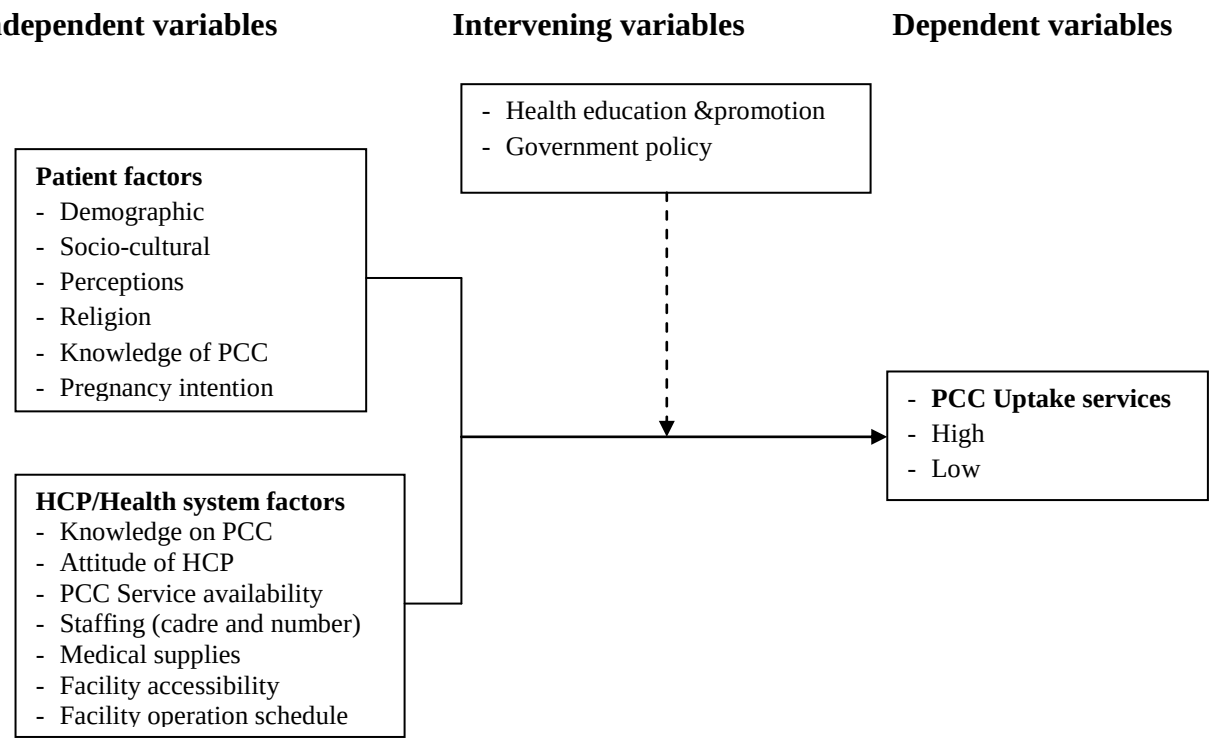
1.8 Assumption of study

The study assumed that preconception care services were available to every eligible respondent in the population, and the services were integrated in reproductive health services as stipulated by policy. The respondents gave correction about PCCS and that their responses were not influenced or manipulated by others.

1.9 Conceptual Framework

The conceptual framework suggests that PCCS uptake by WRA depends on patients' factors, health care providers' factors and health system factors. It also illustrates that intervening variables may influence the uptake PCCS if implemented, either by increasing or lowering uptake.

Figure 1.1 Conceptual Frameworks



(Source: Oketch)

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on uptake of preconception care services among women of reproductive age. Issues such as uptake of preconception care services, level of knowledge on preconception care services and factors influencing preconception care services among WRA were examined.

Pregnancy is often seen as a window of opportunity for intervening on a variety of health practices such as alcohol, tobacco and folic acid use, there is evidence that such interventions focusing solely on the time of pregnancy are narrow and potentially stigmatizing as health risks observed in PCC period continue in pregnancy (Asresu *et al*, 2019; Demisse *et al*, 2019; Kassa *et al*, 2018b; Woldeyohannes *et al*, 2021). Findings from different intervention evaluations suggest that there have been some progress in intervening on preconception health, with the majority of interventions offering assessment or screening followed by brief intervention or counseling (Bateson & Black, 2019 ; D'Souza *et al*, 2022; Smith *et al*, 2018).

The PCC is an intervention intended to identify and modify biomedical, behavioral and social risks to pregnancy through prevention and management, emphasizing factors that must be acted upon before conception or in early pregnancy for maximum impact. It thus defines health interventions prior to conception aimed at improving pregnancy and infant outcomes and it does not only benefit the health of the mother and her child during pregnancy, but also their health in later life (Asresu *et al*, 2019; Kizirian *et al*, 2019; Umar *et al*, 2019b). Therefore, the goal of PCC is to improve the health of the woman before conception, and identify risk factors for adverse maternal or fetal outcomes and initiate interventions to maximize good outcomes (Almaw, 2022; Beckmann *et al*, 2014). While PCC has been acknowledged as an intervention to reduce perinatal morbidity and mortality, it remains underutilized within the continuum of maternal and child healthcare, especially in developing countries, because of low awareness of availability and benefits of the services (Meldgaard *et al*, 2022; Munthali *et al*, 2021; Ndou *et al*, 2023; Ukoha & Mtshali, 2021).

Studies have identified smoking, vaccination, alcohol and supplements/medication use as the most discussed PCC components, while serology, full blood count and blood pressure are the most performed assessments (D'Souza *et al*, 2022; Demisse *et al*, 2019; Simone *et al*, 2018; Ukoha & Mtshali, 2021). Risk perception derives the need for PCC among women, as PCC has been cited as essential for women with pre-existing diabetes, previous pregnancy complications, overweight or chronic illness (Demisse *et al*, 2019; Tekalign *et al*, 2021; Umar *et al*, 2019b).

The need to develop strategies to increase coverage of basic interventions such as improving nutrition; reproductive planning for adolescents; contraception; prevention, detection and treatment of chronic conditions that affect maternal health; immunization, diagnosis, and treatment of infectious diseases; and reducing harmful environmental smoke exposures has been emphasized. Equally, a systems-based approach to increase preconception care services in LMICs, including integration with other programs, task-shifting to CHWs, improving supply chains for preconception care commodities, partnerships with media and information technology, and maximizing demand for and uptake of preconception interventions, especially by adolescents, has also been strongly suggested (Morema *et al*, 2023).

2.2 Uptake of preconception care services

There is growing evidence that preconception care plays an important role in preventing short and long term adverse health consequences for women and their babies, although it is often ignored or minimally used by both the patient and the provider. This is particularly the case for women with chronic health conditions due to the rising prevalence of chronic disease in global populations (Konchak, 2001; Steel *et al*, 2016). Most current research is inclined towards three major topic areas: 1) the prevalence of preconception care practices, use of services and characteristics of users; 2) knowledge of the value and impact of preconception care and availability of preconception services; and 3) women's attitudes, approaches and experiences of preconception care and preconception services. This study was also founded on the three main themes.

Preconception care involves health promotion to reduce risk factors that might affect women and couples of childbearing age (Agricola *et al*, 2013; Al-Akour *et al*, 2015a; Annadurai *et al*, 2017; Arluck & Mayhew, 2018b; Atrash *et al*, 2008a; Atrash *et al*, 2006a). The risk factors of adverse reproductive outcomes include recognized genetic diseases in the family or the individual, previous congenital diseases, miscarriage, prematurity, fetal growth restriction, infertility, chronic maternal diseases, lifestyle, and occupational or environmental factors (Agricola *et al*, 2014; Al-

Akour *et al*, 2015b; Atrash *et al*, 2008b; Atrash *et al*, 2006b). Effective preconception care involves a range of preventive, therapeutic and behavioral interventions and at present, there is increasing interest in offering a global intervention in this field (Annadurai *et al*, 2017; Atrash *et al*, 2008a). There are many barriers and a lack of awareness of preconception health relating to women, healthcare professionals and policies (Ayalew *et al*, 2017; Bateson & Black, 2019 ; Bortolus *et al*, 2017). A study among women who delivered at Isfahan hospitals in Iran found that only 47.7% of the women had received preconception care services, and the factors that influenced the uptake of the services included the levels of education, income, and the number of the wanted pregnancies (Shadan *et al*, 2017).

The PCC care utilization among WRA has been reported to be low in developing countries, because of poor knowledge about PCC, lack of awareness and availability of the services. For instance, systematic reviews and meta-analysis of studies done in SSA countries reported a pooled prevalence of one fourth of PCC utilization among WRA. Similar findings are observed in Eastern Africa and West Africa studies where less than a quarter of women indicated to have received PCC services. The low PCC utilization in these studies were correlated with low knowledge of PCC among the women, including HCPs and the studies suggested there is need to launch programmes that could uplift knowledge level about PCC in order to improve utilization (Alemu *et al*, 2021; Demisse *et al*, 2019; Kassa *et al*, 2018b; Setegn Alie *et al*, 2022; Woldeyohannes *et al*, 2021).

In African countries such as Sudan, Ethiopia and Kenya over three quarters of women are not aware of the PCC services, and less than two fifths utilize PCC services because they are unaware of PCC services and not have information about PCC. The low PCC package implementation cut across all levels of the healthcare, with majority of health facilities offering only family planning, screening for STIs, hypertension, tuberculosis, HIV testing and treatments, weight measurements, vaccination against tetanus. However, other chronic conditions such as screening for mental health disorders, genetic disorders, diabetes mellitus and asthma are less done. Additionally, counseling on nutrition and folic acid during preconception period is least conducted, despite of health facilities being major source of information about PCC and preferred site for PCC uptake. The low folic acid uptake and nutritional counseling could be due to high rates of unplanned pregnancies, due to negative perceptions that folic acid only boost maternal blood and should only be used during pregnancy when maternal-foetal demand for blood is high, but women do not

know that it protects neural tubal effects, but the high HTS uptake could be due to mistrust between couples (Amaje *et al*, 2022; Joyce, 2018; Khalid *et al*, 2015).

Similarly, other cross sectional and meta-analysis that have been done in other African countries, report low utilization of the PCC services. For instance, studies done in Ethiopia, among pregnant mothers reported low awareness and low uptake of PCC less than 15% among WRA, despite of good accessibility to health facility, availability of PCC services and having experienced adverse pregnancy outcomes such as abortion, stillbirths and antepartum haemorrhage. The low uptake of PCC in these studies are reported to be caused by low knowledge of PCC among HCP to implement the services, of the HCPs neither deliver PCC services to WRA nor have adequate knowledge regarding PCC. The HCPs only deliver counseling on folic acid supplementation, vaccination, weight management, diet modification, spacing of children through use of family planning and screening for chronic conditions such as diabetes and hypertension and HIV testing and treatment (Demisse *et al*, 2019; Habte *et al*, 2021 ; Wegene *et al*, 2022).

The awareness of the PCC among women has been shown to affect utilization of the services, coupled with low implementation of the services by the HCPs. For instance, studies done in Malawi, Uganda, South Africa and Kenya reported that majority of the women are unaware and do not have information about PCC services. The HCPs also do not have adequate knowledge about PCC because they only come to learn about PCC during pre-service training but not in school, this result to low implementation of the PCC services and mostly when women initiate the process. The low or partial implementation of PCC is also due to lack of proper guidelines, resources including human resource and the focus is shifted on women with surgical or medical conditions that need immediate attention such as HIV. Women leaving with HIV are given complete PCC package to prevent transmitting the virus to their children, while HIV negative women are given incomplete package majorly concentrating on health education about conception, diet, and healthy lifestyle. The studies suggest inclusion of the PCC in reporting system, training of the HCPs so as to improve implementation and uptake of the PCC services (Meldgaard *et al*, 2022; Morema *et al*, 2023; Munthali *et al*, 2021; Ndou *et al*, 2023).

2.3 Patient related factors

The uptake of PCC services has been shown to be affected by various factors such as distance to nearest health facility, long waiting time, lack of a awareness, knowledge gap among the

healthcare provider that hinder them from implementing such as PCC package among others. Systematic reviews and cross sectional studies done in African countries such as Ethiopia, Malawi report low utilization of PCC among women despite of being close to health facilities where medical and laboratory equipments for PCC services are available. These women with low uptake of PCC services are likely to be nulliparous who have not experienced adverse pregnancy outcomes, depend on their husband for decision making on when to seek healthcare, negative attitude towards PCC and do not know the benefits of PCC. However, increased use of PCC services are observed among women with previous adverse pregnancy outcomes such as abortion, stillbirth, LBW, and neonatal deaths and chronic medical conditions such as HIV and polycystic ovarian syndrome which require surgical and medical intervention (Alie *et al*, 2022; Habte *et al*, 2021 ; Meldgaard *et al*, 2022; Shadan *et al*, 2017).

Similarly, a survey to determine how health needs are associated with five indicators of health services among individuals of reproductive age in Central Pennsylvania (USA), showed that only half of women at risk of pregnancy reported receiving counseling about pregnancy planning in the past year; one-third did not receive routine physical examinations and screening services, and over half received little or no health counseling. Psychosocial stress was associated with having a recent obstetrician–gynecologist visit, with receiving general health counseling, and with receiving pregnancy planning counseling. Cardiovascular risk was positively associated with receiving general health counseling and a regular physical exam, but negatively associated with seeing an obstetrician–gynecologist (Hillemeier *et al*, 2008). In Sudan, cardiovascular disease was found to complicate 1-3% of all pregnancies, of which about 90% were of rheumatic origin. Here, awareness on preconception care was at 11% among the women. Furthermore, only about one-third had positive attitudes towards preconception care, and about 49% intended to seek preconception care next time (Khalid *et al*, 2015).

The uptake of PCC among women depends on their knowledge about the importance of such services, creation of PCC units within health facility with proper guidelines and conducting awareness through mass media. Studies indicate that married women and older than 25 years are likely to utilize PCC because they are likely to have experienced maternal and foetal morbidities, while those who have become pregnant and attend ANC to be more knowledgeable about PCC packages. The women are likely to have received PCC information from HCPs as the main source of PCC during ANC or postnatal care clinics even though the implementation is low because of

lack of policies and proper guidelines on its use (Alemu *et al*, 2021; Ayele *et al*, 2021; Demisse *et al*, 2019; Joyce, 2018; Okemo *et al*, 2021).

The education interventions on PCC are likely to increase the knowledge on preconception health especially on PCC packages that women have less knowledge. Women who have experienced adverse pregnancy outcomes such as congenital abnormalities, neonatal deaths normally receive health education about PCC and its importance from HCW, which influence them to seek PCC earlier to avoid future adverse pregnancy outcomes. Additionally, those who receive contraceptive care are always counseled on some of the PCC components such as HIV testing, sexually transmitted infections, and immunization against tetanus toxoid, this improve the uptake of these PCC at they form part of the package of care offered during family planning services. However, only a few women receive accurate information from HCP, while those who don't plan future pregnancies have a higher probability of not receiving routine health education about PCC or utilizing PCC services such folic acid supplements, physical activity, genetic counseling, immunization including those with mental disorders and chronic medical conditions (Hristova-Atanasova *et al*, 2023; Lemma *et al*, 2022; Zace *et al*, 2022).

Major health risks have been reported by substantial proportions of women in the pre-conception period, compared to those reported by pregnant women (Anderson *et al*, 2006; Biermann *et al*, 2006; Borowski *et al*, 2015). Youths aged 15–24 years from communities in South Africa with greater sexual violence have been shown to be significantly more likely to have experienced an adolescent pregnancy or to be HIV-positive than youths from communities experiencing lower sexual violence (Speizer *et al*, 2009). A study examining the association between intimate partner violence (IPV) and reproductive health practices and outcomes among women in Nigeria, particularly the association between IPV and use of contraception, miscarriages, induced abortions, stillbirths, and infant mortality; and having many children, revealed that women exposed to IPV had a higher likelihood of using modern forms of contraception than those that did not experience IPV and less than 7% wanted more children at anytime (Dossa *et al*, 2014; Homsy *et al*, 2009; Okenwa *et al*, 2011), while in Uganda up to 16.9% of the women experienced pregnancies. In addition, poor lifestyle and low education have been linked to greater risks for preconception care (van der Pal-de Bruin *et al*, 2008).

2.4 Health care providers'/Health facility factors

Cross-sectional studies and systematic analysis conducted in Africa show that PCC is taken as important aspect of care to a woman of reproductive health as it improves the pregnancy outcomes. These influence WRA who plan to conceive to seek pre-pregnancy care, including those who had experienced adverse birth outcomes and medical conditions in their previous pregnancies to use PCC to avoid pregnancy complications. While women with higher education level are able to make decision alone to seek PCC without relying on their husbands', likewise to women who are aware about PCC, but the implementation of PCC services at the health facility remains a nightmare either because HCPs do not have adequate knowledge, lack of clear guidelines or lack of policies regarding their usage. The studies recommend training of HCPs on PCC, integration of PCC services into the healthcare system, and improving women and community awareness through mass media (Amaje *et al*, 2022; Kassa *et al*, 2018b; Morema *et al*, 2023; Tekalign *et al*, 2021; Wegene *et al*, 2022).

The HCP, women and institutional factors have been identified as barriers to the provision of PCC services. Women don't plan for pregnancies, this make them fail to contact HCP in Preconception stage , PCC is majorly done by HCP after conception or when women initiate the process and the major components discussed are stopping smoking, folic acid supplements, immunization against rubella, diet, safer conception among HIV couples to avoid horizontal and vertical transmission. The negative attitude of both women and HCP towards the use of PCC has also been shown to reduce the uptake of services. There is no proper health care guideline on PCC, and the backbone of the administration of services is left for obstetrician-gynecologists who have frequent contacts with women, who may not have enough time due to workload, or inadequate knowledge to deliver the services, since they use the experience they gain or information they receive from women. The delivery of PCC services should be team based approach including general practitioners, nurses, and midwives to improve its uptake. Through this approach, women would become aware of PCC and its benefits which may result to increased uptake and reduced adverse pregnancy outcomes (Bortolus *et al*, 2017; Coll *et al*, 2016; Luquis & Paz, 2015; Ojukwu *et al*, 2016; Poels *et al*, 2016).

While general practitioners in public health facilities are key providers of PCC, only about a half are aware of PCC guidelines, but have low level of knowledge about PCC this hinder HCP from implementing PCC services (Kassa *et al*, 2018b; Kizirian *et al*, 2019; Umar *et al*, 2019b).

Furthermore, information on preconception care found on websites are poor and inaccurate, whether a search is performed by women or health professionals, making it unlikely that such information may have any positive impact among women and health professionals (Agricola *et al*, 2013). Consequently, PCC has been suggested from adolescents, which includes interventions targeting life skills development and nutrition, to improve the health and nutrition of adolescent and young women and their future babies (Baxter *et al*, 2018). In Delaware, physicians were found to frequently discuss only some aspects of preconception care, including diabetes and weight management, while less frequently discussing other topics like reproductive life plans, vaccinations, and HIV screening (Kukreja *et al*, 2012). This has the potential to promote knowledge on the discussed topics, while leaving the patients with limited information on the areas less addressed.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

The chapter focused on the sampling design, study area, study population, methods of data collection and measurements, data processing and analysis.

3.2 Research design and period

The study was conducted in June 2020, using a facility based cross sectional mixed method design to assess the factors associated with uptake of preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County. This is a one-time point study and provides a 'snap shot' and the outcome could be used for strengthening service delivery.

3.3 Study area

The study took place at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Kisumu County. This health facility was chosen for a study as it has been elevated to a teaching and referral hospital; therefore, increasing the number of patients which can be accessed as far as the study is concerned. In Kisumu County, there are 47 health facilities and JOOTRH is one of them with the highest number of about 5 million, seeking health care at the facility. Being that majority of the inhabitants of surrounding region are of low socio-economic status; health-seeking is generally poor. They are mainly small-scale business people, fish mongers and jua kali artisans with a few white-collar jobs. There are also inadequate personnel in health sector to address some of the health challenges including PCC.

3.4 Study population

The study population was all women of reproductive age who attended healthcare services at JOOTRH and a selected number of health workers doing PCC services during the study period.

3.5 Selection criteria

3.5.1 Inclusion criteria

The study included women of reproductive age (15-49 years), who sought healthcare services at JOOTRH and had resided in Kisumu County for not less than 6 months.

3.5.2 Exclusion criteria

The study excluded women who were below 15 years and above 49 years and those who were not residents of Kisumu County who were receiving OPD/MCH/CCC services.

3.6 Sampling

3.6.1 Sample size determination

The sample size calculation was done using Cochran statistical formula (Cochran, 1977).

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

Where:

n = Desired sample size

Z= Z score at 95% CI (1.96)

P= 0.172 (estimated proportion of women who received PCC) (Karuri *et al*, 2014).

Q= 1-p

d= margin of error (5%).

n = {[1.96^2×0.172 × 0.828]/0.05^2}

n = 218.84 = 219

Including a 10% (22) adjustment for non-response, sample size reached was **241** women.

3.6.2 Sampling procedure

Systematic random sampling technique was used to select the study participants. Briefly, about 730 women seek MCH/OPD services in a month; this formed the targeted population for the study. Sample interval (n^{th} term) was arrived at by dividing targeted population with sample size to obtain (730/241) =3. The first respondent's for the study was randomly selected among the first three women who attended for OPD, MCH and CCC services. Thereafter, every third women who attended for MCH/OPD services during the study period were systematically selected, where a participant declined the study the following woman was selected for the study until the sample size was achieved. On the other hand, purposive sampling technique was used to select health care providers who were working in OPD, MCH and comprehensive care clinic (CCC) of JOOTRH for qualitative study.

3.7 Data collection procedure

Semi-structured questionnaires were used to gather quantitative data from the selected women. Qualitative data was obtained from health care workers working in OPD, MCH and CCC using

key informants interview (KII) guides. The quantitative data addressed the socio-demographic attributes of the respondents, as well as the uptake of PCC, patient, healthcare providers and health facility factors that affect the uptake of PCCS. On the other hand, the qualitative data focused on helping identify the factors that drive or hamper the uptake of PCC, and included views, opinions, and suggestions. The semi-questionnaires were administered by nurses working in other departments other than OPD/MCH/CCC, respondents were allowed 30-45 minutes to fill in the semi structured questionnaires and this was conducted within the health facility. The uptake of the PCC services were measured based on the four components of PCC to include; family planning, immunization against tetanus, screening for chronic medical conditions and counseling on other PCC services. Medical conditions screened included (hepatitis B virus, hypertension, tuberculosis, asthma, diabetes mellitus, anaemia, HIV and STIs). The other PCCS counseling done included (cessation of tobacco and alcohol, nutrition and folic acid supplementation). The respondents' who received at least two components of PCC services mentioned above were indicated to have received the PCC services, while those who received one or none were indicated to have not received PCC services.

3.8 Validity and reliability of research instruments

To ensure validity of research tools, research assistants were trained on data collection using the prepared questionnaire and how to administer it. The researcher also ensured validity through triangulation of research methods whereby both quantitative and qualitative were collected. To ensure reliability in this study, research tools were pre-tested at neighbouring health facility, after which the research tools were reviewed guided by the pre-test findings. Triangulation was further used during analysis, whereby quantitative data were compared with findings from the qualitative data either to support or contradict. Content validity was ensured through consultation with the supervisors who provided expert opinion on the data collection tools.

3.9 Data management and analysis

Quantitative data were cleaned, coded and entered into Microsoft Office Excel 2007, then transferred into Statistical Package for Social Sciences version 22 for analysis. Descriptive statistics were used to calculate frequency and percentage of the characteristics of the participants. Pearson’s chi-square was used to find out the correlation for characteristics between users and non users of preconception care services. The resultant significant associations were further analyzed using multivariate logistic regression. The results were considered statistically significant if p-

value was less than 0.05. Qualitative data was subjected to thematic analysis, as it helped identify key themes arising from the data, and enhance the chances of describing the attitudes and psychological states of the respondents (Boreus & Bergstrom, 2017), and results triangulated with those from quantitative analysis. Tables, figures and texts were used to present the data.

3.10 Ethical considerations

This study was approved by the Board of Postgraduate Studies of JOOUST, followed by a research permit from the National Commission for Science, Technology and Innovation (NACOSTI/P/20/5106). Further, permission to conduct the study was obtained from the Management of JOOTRH (IERC/JOOTR/196/20). The title and objectives of the study was read and explained to the study participants before seeking their written consent to take part in the study, and they were given freedom of choice to answer the questions at their will. The interviews were conducted in a private room and they were assured that any information they gave to the researcher were to be treated with confidentiality. The filled questionnaires were returned to the researcher, kept under locked cupboard by the researcher and only used for the research purposes.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of the respondents

A total of 241 women participated in the study, giving a response rate of 100%. The majority (45.2%) of the respondents were aged between 26-35 years, with the least respondents (13.3%) being aged 36-45 years. More than half of the respondents were married (62.7%), attained secondary (45.6%) and tertiary (16.2%) education respectively. Less than a third (26.6%) were employed and nearly all the respondents (92.1%) were Christians, with only 15 (6.2%) being Muslim (Table 4.1).

Table 4.1: Socio-demographic characteristics of respondents

Variables	Frequency (n)	Percent (%)
Age in years (Mean±SD)	28.7±7.35	
Age group		
16-25	93	38.6
26-35	109	45.2
36-45	32	13.3
46-55	5	2.1
56+	1	0.4
Missing data	1	0.4
Marital status		
Single	72	29.9
Married	151	62.7
Widowed	16	6.6
Divorced	1	0.4
Missing data	1	0.4
Education level		
None	4	1.7
Primary	39	16.2
Secondary	110	45.6
Tertiary	86	35.7
Missing data	2	0.8
Occupation		
Unemployed	93	38.6
Self employed	81	33.6
Employed	64	26.6
Missing data	3	1.2
Religion		
Christian	222	92.1
Muslim	15	6.2
None	1	0.4
Missing data	3	1.2

4.2 Uptake of preconception care services

With regards to PCC services uptake, less than 10% of women of reproductive age received atleast two components of PCC services, with almost a third of women receiving family planning (Figure 4.2 and Table 4.2).

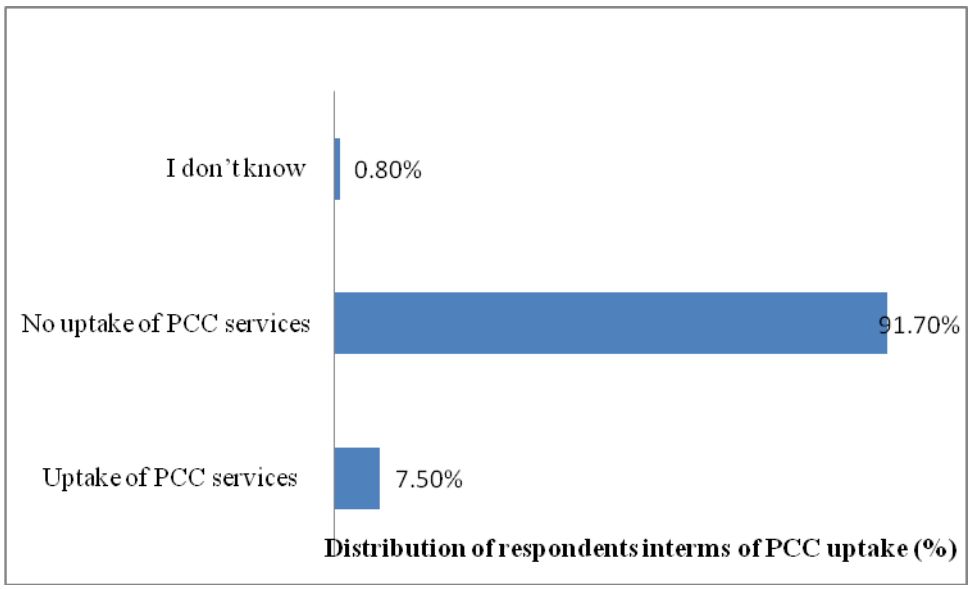


Figure 4.2: Uptake of preconception care services

Table 4.2 Uptake of components of preconception care services

PCC services	Users frequency (n)	Percent (%)	Non-users frequency(n)	Percent (%)
Family planning	36	14.9%	205	85.1%
Immunization against tetanus	4	1.7%	237	98.3%
Screening for chronic medical conditions	11	26%	230	74%
Counseling for other PCC services	26	10.6%	215	89.4%

4.3 Patient factors associated with uptake of preconception care

4.3.1 Knowledge about requirements of preconception care services

The respondents were asked if there are special groups of women requiring PCC services. About a half of the respondents stated that indeed there were special groups of women, requiring services. Their major reason of support for this special group was that most of the women who are intending to conceive may not know how to take care of themselves during pregnancy process. Some were of view that those women who experienced complications during previous pregnancy need special attention as explained by the respondents.

"Women living with HIV/AIDS need to seek health facility care before becoming pregnant to avoid infecting their children" (Participant 4, 34 years, Nyamasaria resident).

"Those women who are likely to develop complications like those with chronic illnesses" (Participant 44, 37 years Okana resident).

"Women with history of complications during pregnancy should go to the hospital before they become pregnant, to know their problem ealier" (Participant 137, 31 years, Luanda resident).

However, about a third of respondents (31.1%) were of the opinion that there are no special groups of women requiring PCC services. Their major views were that every woman is at risk in pregnancy hence all categories of women require special attention. Every woman is eligible because all can benefit from getting the information as expressed below.

"Every woman is eligible to get the information" (Participant 241, 30 years, Nyamware resident).

"All women of reproductive age are eligible to receive care before conceiving" (Participant 231, 32 years, Forems resident).

"All women of reproductive age should get access to information because anybody maybe at risk" (Participant 45, 38 years, Masogo resident).

4.3.2 Pregnancy intentions

The respondents were asked whether it's advisable for a woman to discuss about the intention to become pregnant, in advance. About 40% of the WRA either strongly agreed or agreed that women need to discuss their pregnancy intention in advance with their HCP (Table 4.3).

Table 4.3: Women response towards pregnancy intention discussion

Argument	**WRA**	
Women discuss pregnancy intention	**N**	**%**
Strongly disagree	30	13
Disagree	43	18.60
Neutral	65	28.10
Agree	57	24.70
Strongly agree	36	15.60

4.3.3 Pregnancy prevention information

The participants were asked to state based on their tradition what may prevent a woman from getting information about the outcome of pregnancy before she gets pregnant. Almost 95% of respondents mentioned lack of awareness/education on the availability of the services, witchcraft, ignorance and myths surrounding pregnancy. The community also believed that pregnancy is sacred, and it is always considered a taboo to talk about it before it happens. Culture and religion were also reported to play a role. Some Muslim participants stated that according to their religion they don't talk about pregnancy before it happens. Below are some of their views:

"Muslims don't talk of pregnancy before it happens" (Participant 6, 19 years, Obunga resident.

"Luos believes that someone should not talk about a baby while Still in the womb and don't even buy clothes" (Participant 50, 28 years, Nyalenda resident).

Some also believe that before marriage, a woman should not be pregnant. This may prevent those who plan to get pregnant outside marriage from getting information. Some participants said they had no restrictions; in their culture they just give birth. Some participants said that most women come to facilities when they are already pregnant hence this prevents them from getting the whole package of services.

Other participants stated that if a woman is not ready to become pregnant, she can't be taught about pregnancy. Some of these views were as explained by the respondents below:

"Most of women come to the health facilities when they are already pregnant to attend clinic" (Participant 57, 30 years, Tom Mboya resident).

"In most cases, women seek for advice in the hospital when they are already pregnant at times nothing much can be done" (Participant 241, 30 years, Nyamware resident).

"If she is not ready to become pregnant, she can't be taught about pregnancy" (Participant 106, 22 years, Manyatta resident).

4.3.4 Source of information on pregnancy

Hospital set up was the most preferred source of information on pregnancy (85.2%), while church was the least preferred source of information (1%) concerning pregnancy (Figure 4.3).

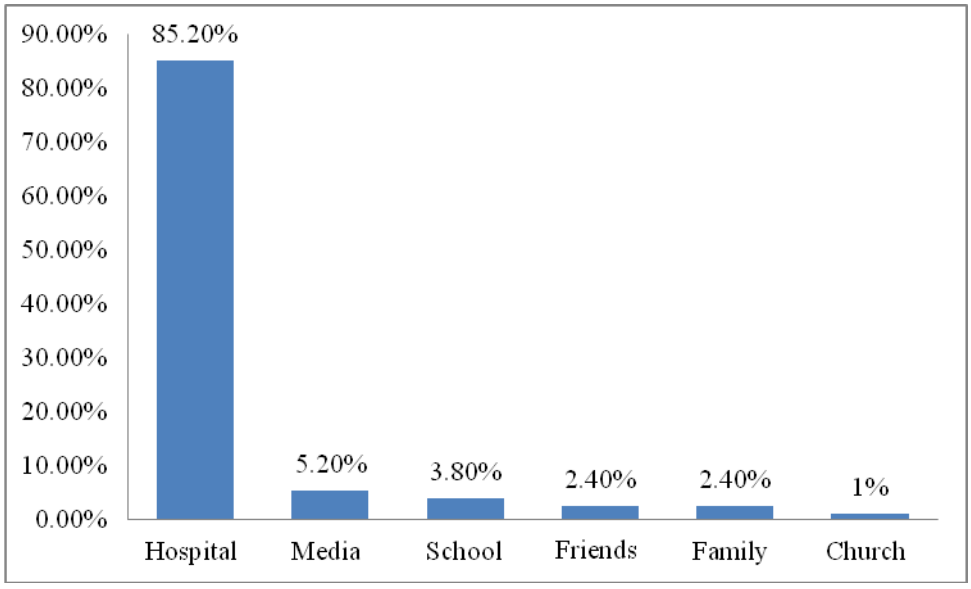


Figure 4.3: Pregnancy information source

4.3.5 Patient awareness on preconception care services

Knowledge level about the services may influence an individual to utilize the service. The respondents were asked questions ranging from whether they had heard about preconception care

services and its various components. Only about 28% of the respondents indicated that they had heard of PCC services, and almost 40% of these women were married.

4.3.6 Factors associated with preconception care services

Over two-thirds of the respondents (71.8%) had not heard of the preconception care services. There was a significant association of the factors (age category, marital status, education level, occupation) and having heard of preconception care services. There was no significant association between religion and having heard of preconception care services (Table 4.4).

Table 4.4 Factors associated with preconception care services

Variable		Awareness of PCC services		P Value
	N=241	Yes (%)	No (%)	
Age (years)				
16-25	82	10(12.2)	72(87.8)	
26-35	103	36(35)	67(65)	
36-45	43	18(41.9)	25(58.1)	
46-55	7	4(57.1)	3(42.9)	**0.0001**
≥56				
Marital Status				
Single	70	12(17.1)	58(82.9)	
Married	148	54(36.5)	94(63.5)	
Widowed	16	2(12.5)	14(87.5)	
Divorced	1	0	1(100)	**0.01**
Education Level				
None	6	1(16.7)	5(83.3)	
Primary	36	9(25)	27(75)	
Secondary	107	20(18.7)	87(81.3)	
Tertiary	85	37(43.5)	48(56.5)	**0.002**
Occupation				
Unemployed	91	13(14.3)	78(85.7)	
Self employed	71	27(38)	44(62)	
Employed	72	27(37.5)	45(62.5)	**0.001**
Religion				
Christian	218	64(29.4)	154(70.6)	
Muslim	15	3(20)	12(80)	
None	1	0	1(100)	0.605

4.3.7 Sources of information on preconception care services

While establishing the knowledge level of the participants on preconception care, participants were asked to indicate the best place they would consider in case they were to get information on PCC. Majority of the study participants (45.4%) preferred the hospital and the smallest percentage of the respondents preferred their family (4.5%) (Figure 4.4).

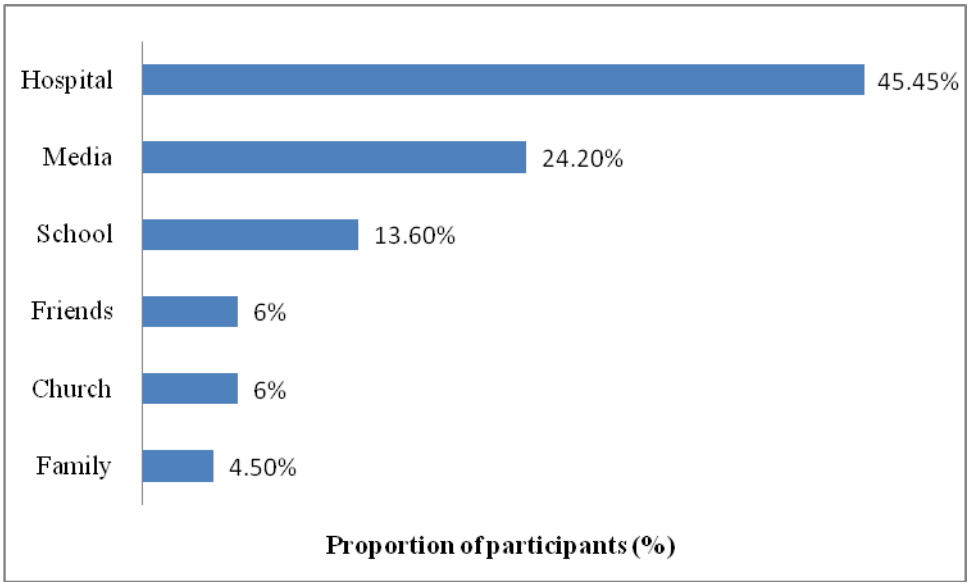


Figure 4.4: Preferred source of information on preconception care services

4.3.8 Definition and components' of preconception services

The respondents were asked their understanding of care given to a person before becoming pregnant. Majority said it is healthcare given to women before pregnancy to prepare them curatively and promote healthy child bearing e.g., family planning. This makes sure the mother and unborn baby gets good health and their diseases prevented. This care also ensures the woman is fully prepared for the pregnancy journey as explained below.

"Health care given to women before pregnancy to curatively and promote healthy child bearing e.g. family planning" (31-year-old, Seme resident).

"It could be information on how to take care when pregnant"(24-year-old, Nyalenda resident).

"Health related issues concerning a woman who intends to be pregnant to prevent problems which may arise as a result of pregnancy or aggravated by pregnancy either to her or her baby" (38-year-old, Masogo resident).

"Care given to men and women to reduce maternal and foetal morbidity and mortality" (35-year-old, Buoye resident).

"Matters pertaining to health-related issues as far as being pregnant is concerned and what to do in case problems arise during pregnancy and on the child's health too" (google) (37-year-old, Manyatta resident).

However, about 2% of the respondents described PCC services correctly and indicated that it care given to a woman before conception in preparation for pregnancy and childbirth, as expressed by some of them;

"Care given to a mother immediately before conceiving" (34-year-old, Kibuye resident)

"It is the care given to a mother in preparing her on how to take care of the unborn baby and herself after conception" (25-year-old, Kisumu resident).

"People go to clinic when already pregnant, pre natal care, ante natal care, I know of services given after being pregnant, going to clinic when pregnant" (30 year old, Kondele resident).

About one third (31%) of the respondents had no idea about PCC as indicated by their varied responses like:

"I am not aware of any service given to a woman before she becomes pregnant" (28-year-old, Manyatta resident).

Quite a number of respondents similarly gave vague responses that included:

"*Cancer screening, child spacing, treatment, abstaining, using condoms, not having a child, visiting hospital, coming to the clinic, taking long to get pregnant, free services, being faithful to one partner, taking care while pregnant, clinic attendance, treatment of TB, HIV and adherence, etc"*

The study participants were also asked the components of healthcare addressed by preconception services. Family planning is the only component that the respondents got right (7.4%), however the majority of the respondents seemed not to have understood the concept as they referred mostly to services offered in the department dealing with antenatal care as well as family planning. These

services include blood pressure check, weight measurements, ultrasound, antiretroviral drug and other medications adherence, couple counseling and blood grouping as they referred to them as the major components of preconception care. These ensure good health outcomes of the mother and her child during pregnancy and even after delivery. However, a good number of respondents stated that they were not aware of the preconception care components.

The respondents were asked their views on the time at which a woman intending to have a baby should be given information concerning the intended pregnancy and its possible outcomes. Majority were of the view that this can be done anytime she visits the hospital because not all pregnancies are planned for, she can become pregnant at any time and she gets informed so that she will prepare properly to handle a pregnancy. Others felt that this information should be given before pregnancy while others stated that it is suitable after pregnancy. Their major explanation was that the information can be given before pregnancy since this will enable her health to be checked and advised accordingly for good outcome since she is not pregnant by that time. Further explanations were that the information should be given before marriage to avoid unwanted pregnancy and also others said after marriage before, she gets pregnant. Another explanation was that the information is suitable to women when still doing family planning provided, they have attained the age that can support pregnancy during ANC visits. Another view was that information on intended pregnancy should be given at the first clinic visit to make the mother aware of the outcome of safe pregnancy. Other participants felt this information should be given during the second pregnancy because maybe she had complications during the first pregnancy. Below are some of their views:

"Anytime, not all pregnancies are planned for" (19-year-old, Muhoroni resident)

"The moment she decides to have a baby. Her health is checked and advised accordingly for good outcome" (38-year-old, Ahero resident).

"Before conception so that she is well informed about the possible complications that may arise with child birth" (26-year-old, Millimani resident).

4.4 Healthcare provider factors

4.4.1 Knowledge about requirements of preconception care services

When asked if there are special groups of women requiring PCC services, majority of healthcare providers (75%) stated that there were indeed special groups of women requiring services. Their major reason was that any woman with comorbidities such as HIV, congestive cardiac failure, sickle cell disease and bad obstetric history that may interfere with the health of the mother and child to be born need special attention so that they can be prepared of the risk and how to cope with the risk as explained in focus group discussions.

"Yes, women with comorbidities such as HIV, CCF and sickle cell disease etc need preconception care so that they can be prepared of the risk and how to cope with the risk" (23-year-old female HCP).

"Yes, the special groups that requires are the mothers who have been done evacuation following an abortion" (45-year-old female HCP).

However, a quarter of the HCPs in the KII who answered **NO** stated that all women of reproductive age are at risk, hence all require PCC services as stated by one of the health providers.

"No, every woman of reproductive age requires preconception care, to help one plan well and be able to do child spacing accordingly" (30-year-old female HCP).

"*No, every woman is at risk therefore should get the right information" (47-year-old male HCP).*

4.4.2 Pregnancy intentions

The HCP were asked whether it's advisable for a woman to discuss about the intention to become pregnant, in advance. A half of the HCP also supported that pregnancy intention should be discussed (Table 4.5). Health care providers were also asked their views on the time at which a woman intending to have a baby should be given information concerning the intended pregnancy and its possible outcomes. Their major view was that this should be done before conception and once she is ready to be pregnant to improve their health status before conception. Another view was that any woman of reproductive age should be given such information regarding intended pregnancy because everyone chooses to have babies at their own time.

"Before conception, to be psychologically and physically fit both health wise"(23-year-old female healthcare provider).

"Any woman who is in adolescence stage, to become physically and psychologically fit for pregnancy outcome" (53-year-old female healthcare provider).

***"**As soon as she is ready to be pregnant, to enter into pregnancy when ready" (47-year-old male HCP).*

"2 weeks. As a pre conception measure" (28-year-old male HCP).

Other responses from health care providers included:
"In school, college, when they come and talk about it, any woman of reproductive age, anytime she wishes to have a baby, 1 year before conception, months before conception, 13 to 49 years, pre conceptive period, 3 months before conception, in ante natal period, before getting pregnant."

Table 4.5: Health care providers' response on pregnancy intention

Argument	**Healthcare Providers**	
Women discuss pregnancy intention	**n**	**%**
Strongly disagree	2	10
Disagree	1	5
Neutral	7	35
Agree	9	45
Strongly agree	1	5

4.4.3 Pregnancy prevention information

The healthcare providers were also asked to give their opinion on what may prevent a woman from getting information about the outcome of pregnancy before she gets pregnant. Majority mentioned lack of information (ignorance) on the importance and availability of services. Other reasons given that may prevent a woman from getting services were that most facilities do not offer services, inadequate staffing and lack of training on provision of services.

4.5 Health facility factors associated with uptake of pre-conception care services

4.5.1 Preconception care availability in the facilities

The respondents were asked if PCC services are offered in the facilities. Nearly half (49.3%) of the WRA reported that PCC services are not offered and around a third (34.7%) agreed that the PCC services are available in the facilities. About 75% of the HCP indicated that PCC services are offered in their healthy facility (Table 4.4). The WRA and healthcare providers stated that the PCC services are offered in MCH/FP, Gynecology ward, Obstetric ward, OPD and PSC departments. The persons responsible for offering the services are consultants, doctors, clinical nurses, qualified nurses, midwifes, clinical officers and trainee nurses (Table 4.6).

Table 4.6: Preconception care services availability in the facility

Argument	**WRA**		**Healthcare Providers**	
PCC service Availability	**n**	**%**	**n**	**%**
Yes	50	34.70	15	75
No	71	49.30	5	25
I don't know	23	16	0	0

4.5.2 Preconception care medical supplies

Majority (71%) of WRA did not know whether medical supplies for services are available or not. The percentage of WRA and healthcare providers who acknowledged that the medical supplies are always available was 13% and 50% respectively (Table 4.7).

Table 4.7: Availability of medical supplies for preconception care services

Argument	WRA		Healthcare Providers	
Availability of medical supplies	**n**	**%**	**n**	**%**
Never	11	5.70	0	0
Somehow	20	10.40	8	40
Always	25	13	10	50
I don't know	137	71	2	10

4.5.3 Tools for assessing common risk factors of pregnancy

Majority of the WRA and healthcare providers (79.7% and 70%, respectively) acknowledged that relevant information concerning common risk factors for pregnancy is not given to women who are eligible for services. The respondents were asked tools used to assess the women for common risk factors for pregnancy. A few mentioned blood pressure machine, tape measure, clinic book and thermometer. However, majority stated that they have no idea of the tools used to asses them. The healthcare providers mentioned laboratory test screening, blood pressure measurement, use of pictures, counseling and pregnancy tests. Pre conception care checklist/pregnancy injection assessment ANC booklet, patients medical file, outpatient registers charts, questionnaires, calendar and uterine pictorial models as tools used to assess them for common risk factors for pregnancy (Table 4.8).

Table 4.8: Tools for assessing common risk factors for pregnancy

Argument	WRA		Healthcare providers	
Relevant information on risks during pregnancy given to women	**n**	**%**	**n**	**%**
Yes	32	20.30	6	30
No	126	79.70	14	70

4.5.4 Preconception care services offered to women of reproductive age

About 30% of the respondents had no idea of the PCC related services offered to women of reproductive age. Approximately 30% of respondents equated antenatal services to PCC related services.

"Most services offered to women are done in MCH department on pregnant mothers and children (25 years old)"
"I just know services offered to pregnant mothers e.g. checking weight and pressure" (27 years old).

"Checking if the baby is breathing well, taking weight, pressure"

"Taking weight, pressure and checking if the baby is breathing well" (23 years old).

"I have pregnant mothers checked blood pressure, weight and height"(32 years old).

"Checking the level of blood in the body, test urine of the mother, checking if you have any other disease like TB"(31years old).

It was revealed that about 30% of the respondents to issues related to family planning and talked of methods of FP, counseling and health talks. Less than 10% of the respondents had varied responses, most of them included ARVs, cancer screening, monitoring of viral load. These services are mostly offered to HIV positive clients routinely. Health care workers responses on PCC related services included: family planning, cervical cancer screening, breast cancer screening, HIV counseling and testing, ANC profile, counseling, blood group plus workup, provision of prevention services, STIs screening, teachings, health education on planned pregnancy, advise them before conception, advise them with their spouses if possible about the risks during pregnancy, they should know what precautions to take in case of any danger signs, nutritional counseling, birth plan, gender based violence services, identify the facility where she will deliver.

4.5.5 Access to related services at the facility

Around 7.3% of respondents stated that all eligible women always access the services all times they visit the health facility. Majority (65.8%) of WRA did not know whether women access services at health facility visit. Majority of healthcare providers (60%) stated that women sometimes access these services upon facility visit (Table 4.9).

Table 4.9: Accessibility of preconception care services

Argument	WRA		Healthcare Providers	
All eligible women access services all times at the health facility	**n**	**%**	**n**	**%**
Never	19	9.80	0	0
Sometimes	33	17.10	12	60
Always	14	7.30	8	40
I don't know	127	65.80	0	0

4.5.6 Preconception care feedback

Majority of respondents and healthcare providers (82.4% and 95%, respectively) stated that suggestion boxes for feedback are available in the facilities. However, when it comes to feedback almost all of respondents (90%) and (68%) of healthcare providers stated that women do not give feedback concerning services (Table 4.8). The participants were also asked their concerns from the feedback given. Their major concerns were inadequate resources, poor understanding of services, long waiting time to get the services and need to establish a preconception clinic to enable them get more information concerning the services. This is as explained by some of their responses below:

"There be a special day for gathering and health workers teach the women on this matter" (29 years old, Chulaimbo).

"There are many challenges like the items used in hospital are not always available" (25 years old, Holo)

"Waiting time is long and time consuming due to shortage of staff" (53 years old, female HCP).

"Improper communication, the use of oral contraceptives, disagreement between a woman and husband" (40 years old, female HCP).

Table 4.10: Preconception care feedback

Argument	WRA		Healthcare Providers	
	Yes (%)	No (%)	Yes (%)	No (%)
Suggestion box available in department	173(82.4)	37(17.6)	19(95)	1(5)
WRA give feedback concerning services	18(28.8)	155(90)	4(23.5)	13(68)
There are other forums where women give feedback	59(24.3)	107(44)	8(44.4)	10(55.6)

4.5.7 Preconception care data

The study looked at PCC data availability and access among the respondents and healthcare providers. Majority of WRA stated that the data on pregnancy history and outcomes is available (71.4%). Majority (64.7%) of healthcare providers stated that the data is not available

The respondents and healthcare providers were further asked to name the type of information in the data. Some respondents mentioned the number of visits to the clinic and the vaccinations the child gets, viral load results as type of information found in the data. The information in data mentioned by healthcare providers included the number of women who became pregnant, co morbidities e.g. puerperal sepsis, mortality, PPH or other co-morbidity like SCD, duration before conception, risk factors during pregnancy, or how to go about the risk factors. Also included were name, age, parity, gravidity, mode of delivery, outcome - alive/dead, discharge notes, discharge advice, LNMP, EDD, Apgar scores of baby and sex of baby (Table 4.11).

Table 4.11: Preconception care data

Argument	Respondents		Healthcare providers	
	Yes (%)	No (%)	Yes (%)	No (%)
Data available on pregnancy history and outcomes	142(71.4)	57(28.6)	6(35.3)	11(64.7)
Women/community members have access to data	2(11.6)	79(97.5)	5(41.7)	7(58.3)
Respondent accessed/used the data	22(9.1)	87(79.8)	5(41.7)	7(58.3)

4.5.8 Preferred hospital worker

The respondents were asked their preferred healthcare worker to handle services. Doctors were the most preferred at 40% followed closely by nurses at 39.1%. CHVs were the least preferred to handle related services (Figure 4.5).

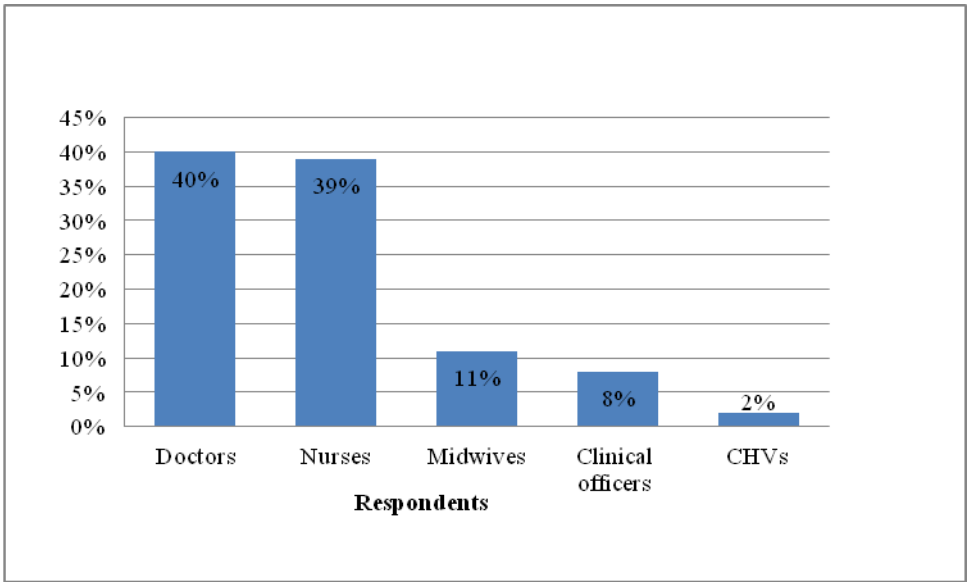


Figure 4.5: Hospital workers preferred by women

4.5.9 Reason for the preferred individual

Majority of respondents (40.1%) would prefer doctors to give them information about issues regarding a woman who intends to become pregnant in a hospital set up. Some of their major reasons are that Doctors are very educated hence they know more about the issue. They have the knowledge and good understanding about pregnant women and can help in case of emergency. Some sentiments were:

"They are more experienced on health matters" (31 years old, Seme resident.

"They are the ones who know more about pregnancy and the pregnant woman" (21 years old, Seme resident).

Majority of respondents (39.1%) also choose nurses as the most preferred regarding issues to deal with intention to become pregnant. There major reasons were that nurses are always available, deals with women mostly hence know more concerning women's health. They are more conversant with pregnant women and can address such issues comprehensively. They work together in MCH. Another respondent preferred a nurse because she feels more comfortable when addressed by a nurse, as reported verbatim below:

"It could be a nurse because he/she is educated more about pregnancy and she/he can give more information before see a doctor" (25 years old, Russia quarters resident)

"Nurses are easily available whenever they are needed and quite approachable and quite a number have the patience to address such issues comprehensively." (35 years old, Migingo village resident).

About 11.1% of respondents preferred to be seen by midwifes regarding pregnancy issues because they felt that they know how to take care of pregnant women hence they trust them more. There other reasons were that midwifery is a long-term career so they know and understand better. Another major reason given was that midwives have enough understanding and education on pregnancy and child birth since they mostly deal with maternal and child health issues. Some sentiments included:

"I trust her a lot even when I am pregnant" (29 years old, Chulaimbo resident)

"It is a long-term career so they know and understand better" (FGD2, 30 years, Seme resident)

"They deal directly with women" (21 years old, Gesoko resident)

Clinical officers were preferred by 8% of respondents who mostly stated that they are professionally trained and skilled; as their reason for preference. Community health volunteers were the least preferred (2%) to give information regarding matters to deal with pregnancy. Those who preferred them stated that they know them well, as stated by one respondent:

"We know them and meet them every day" (participant 13, 20 years, Manyatta resident).

4.6 Recommendations concerning preconception care services

The study participants were asked their general recommendations or comments on preconception care (Table 4.12).

Table 4.12: Participants general comments on preconception care services

Women of Reproductive Age	Healthcare Providers

"I think it is high time PCC be introduced in both public and private hospitals. This area seems to have been neglected" (participant 44, 37 years, Okana resident)	*"Most women do come for PCC too late while they have infertility. Sensitization to be done for them to be attending clinic early" (53 years, male)*
" Saved my life and I would highly recommend it in all health facilities especially to women with chronic diseases. Better not give birth but be alive." (participant 45, 38 years, Masogo resident)	*"Proper collaboration between health facility and the community through CHEW to strengthen." (53 years, female)*
" Should be widely embraced and maximum attention given to it as it turns out to be most effective in preventing health maternal related issues" (participant, 37 years, Manyatta resident)	*" PCC should be provided to all women of reproductive ages not only to those who are need after desperation or a bad outcome such as many miscarriages and abortion." (28 years, female)*
"I have never heard of these services of PCC." (participant 222, 32 years, Paramount resident)	*"PCC information to be included in reproductive health services, so that every woman of reproductive age will have access to it" (26 years, female)*
"Employ more male doctors in the clinic because they do not harass" (participant 227, 35 years, Whitehouse resident)	*"This hospital should provide routine PCC services to all legible mothers /clients" (56-year-old female)*

4.6.1 Other information to be included in PCC

Respondents had mixed opinions on information which should be included in PCC. Most of them gave irrelevant answers not related to PCC. A few however suggested the relevant areas including nutrition, screening for other diseases, male involvement - to include family planning services to men, involving teenage girls/adolescents, infertility, smoking and alcoholism, genetic counseling (pre- marital counseling), disability among others**.** Most of these responses came from participants who had some knowledge on PCC, most of whom had experienced reproductive health problems or issues at some point in time.

4.7 Factors associated with the uptake of PCC services

4.7.1 Factors associated with screening for medical conditions

Only women's age ($x^2 = 13.078$; $p = 0.006$) and occupation ($x^2 = 12.357$; $p = 0.002$) were found to be significantly associated with screening for medical conditions before conception (Table 4.13).

Table 4.13. Factors associated with screening for medical conditions before conception

Variable	Screened for medical conditions		x^2	*p* value
	Yes n (row %)	No n (row %)		
Age (years)			13.078	0.006
16-25	16 (17.2)	77 (82.8)		
26-35	30 (27.5)	79 (72.5)		
36-45	16 (50.0)	16 (50.0)		
46-55	1 (20.0)	4 (80.0)		
≥ 56	0 (0.0)	1 (100.0)		
Marital status			4.750	0.172
Single	22 (30.6)	50 (69.4)		
Married	34 (22.5)	117 (77.5)		
Widowed	7 (43.8)	9 (56.3)		
Divorced	0 (0.0)	1 (100.0)		
Education level			0.688	0.908
None	1 (25.0)	3 (75.0)		
Primary	10 (25.6)	29 (74.4)		
Secondary	27 (24.5)	83 (75.5)		
Tertiary	25 (29.1)	61 (70.9)		
Occupation			12.357	0.002
Unemployed	16 (17.2)	77 (82.8)		
Self-employed	20 (24.7)	61 (75.3)		
Employed	27 (42.2)	37 (57.8)		
Religion			3.641	0.118
Christian	56 (25.2)	166 (74.8)		
Muslim	7 (46.7)	8 (53.3)		
None	0 (0.0)	1 (100.0)		

At bivariate analysis, women aged 36-45 years were significantly associated with increased odds of preconception screening for medical conditions ($p < 0.001$). The women aged 36-45 years were 4.8 times more likely to be screened for medical conditions prior to conception compared to younger women aged 16-25 years (CORS = 4.81; 95% CI: 2.00-11.58). Women aged 26-35 years and those aged 46-55 years were 83% and 20% respectively more likely to be screened for medical conditions before conceiving compared to those aged 16-25 years, though not statistically significant (CORS = 1.83; 95% CI: 0.92-3.62; $p = 0.084$) and (CORS = 1.20; 95% CI: 0.13-11.49; $p = 0.872$) respectively (Table 3). Self-employed women were 58% more likely to be screened for medical conditions before conception than unemployed women, though not statistically significant (CORS = 1.58; 95% CI: 0.75-3.30; $p = 0.226$). Employed women were significantly associated with preconception screening for medical conditions ($p = 0.001$) such that those employed had 3.5 increased odds of being screened for medical conditions prior to conceiving than the unemployed women (CORS = 3.51; 95% CI: 1.69-7.30). After controlling for the other covariate, women aged 36-45 years were 3.3 times more likely to be screened for medical conditions before conceiving

than women aged 16-25 years (AORS = 3.32; 95% CI: 1.31-8.37; p = 0.011). Further, in the multivariate analysis, this study found that employed women were more than twice as likely as the unemployed women to be screened for medical conditions prior to conception (AORS = 2.73; 95% CI: 1.25-5.96; p = 0.011) (Table 4.14).

Table 4.14: Factors associated with screening for medical conditions before conception at bivariate and multivariate

Variable	Screened for medical conditions		CORS (95% CI)	*p* value	AORS (95% CI)	*p* value
	Yes n(%)	No n(%)				
Age (years)						
16-25	16(7.2)	77(82.8)	Reference		Reference	
26-35	30(27.5)	79(72.5)	1.83 (0.92-3.62)	0.084	1.45 (0.71-2.98)	0.309
36-45	16 (50.0)	16 (50.0)	4.81 (2.00-11.58)	< 0.001	3.32 (1.31-8.37)	0.011
46-55	1 (20.0)	4 (80.0)	1.20 (0.13-11.49)	0.872	0.89 (0.09-8.92)	0.921
≥ 56	0 (0.0)	1(100.0)	N/A			
Occupation						
Unemployed	16 (17.2)	77(82.8)	Reference		Reference	
Self employed	20 (24.7)	61(75.3)	1.58 (0.75-3.30)	0.226	1.34 (0.62-2.88)	0.462
Employed	27 (42.2)	37(57.8)	3.51 (1.69-7.30)	0.001	2.73 (1.25-5.96)	0.011

4.7.2 Factors associated with family planning uptake

During this study, only religion (x^2 = 6.473; p = 0.031) was found to play a significant role in determining the uptake of family planning services as part of PCC (Table 4.15).

Table 4. 15: Factors associated with family planning uptake before conception

Variable	Used family planning method		x^2	*p* value
	Yes n (row %)	No n (row %)		
Age (years)			5.144	0.260
16-25	13 (14.0)	80 (86.0)		
26-35	15 (13.8)	94 (86.2)		
36-45	6 (18.8)	26 (81.3)		
46-55	1 (20.0)	4 (80.0)		
≥ 56	1 (100.0)	0 (0.0)		
Marital status			0.994	0.860
Single	10 (13.9)	62 (86.1)		
Married	23 (15.2)	128 (84.8)		
Widowed	3 (18.8)	13 (81.3)		
Divorced	0 (0.0)	1 (100.0)		
Education level			1.057	0.787
None	1 (25.0)	3 (75.0)		
Primary	5 (12.8)	34 (87.2)		
Secondary	16 (14.5)	94 (85.5)		
Tertiary	14 (16.3)	72 (83.7)		
Occupation			2.706	0.262
Unemployed	16 (17.2)	77 (82.8)		
Self employed	8 (9.9)	73 (90.1)		
Employed	12 (18.8)	52 (81.2)		
Religion			6.473	0.031
Christian	34 (15.3)	188 (84.7)		
Muslim	0 (0.0)	15 (100.0)		
None	1 (100.0)	0 (0.0)		

4.7.2 Factors associated with tetanus toxoid vaccination

This study found no particular factor ($p > 0.05$) associated with the tendency to receive tetanus toxoid vaccine by women of reproductive age, as part of PCC (Table 4.16).

Table 4.16: Factors associated with tetanus toxoid vaccine before conception

Variable	Received tetanus toxoid vaccine		x^2	*p* value
	Yes n (row %)	No n (row %)		
Age (years)			4.356	0.668
16-25	1 (1.1)	92 (98.9)		
26-35	2 (1.8)	107 (98.2)		
36-45	1 (3.1)	31 (96.9)		
46-55	0 (0.0)	5 (100.0)		
≥ 56	0 (0.0)	1 (100.0)		
Marital status			2.639	1.000
Single	1 (1.4)	71 (98.6)		
Married	3 (2.0)	148 (98.0)		
Widowed	0 (0.0)	16 (100.0)		
Divorced	0 (0.0)	1 (100.0)		
Education level			1.851	0.835
None	0 (0.0)	4 (100.0)		
Primary	1 (2.6)	38 (97.4)		
Secondary	2 (1.8)	108 (98.2)		
Tertiary	2 (1.2)	85 (98.8)		
Occupation			0.459	1.000
Unemployed	2 (2.2)	91 (97.8)		
Self employed	1 (1.2)	80 (98.8)		
Employed	1 (1.6)	63 (98.4)		
Religion			2.452	1.000
Christian	4 (1.8)	218 (98.2)		
Muslim	0 (0.0)	15 (100.0)		
None	0 (0.0)	1 (100.0)		

4.7.3 Factors associated with PCC counseling

This study further reports that only women's age (x^2 = 13.078; p = 0.006) and occupation (x^2 = 7.027; p = 0.028) were found to be significantly associated with PCC counseling before conception (Table 4.17).

Table 4. 17: Factors associated with PCC counseling before conception

Variable	Received PCC counseling		x^2	*p* value
	Yes n (row %)	No n (row %)		
Age (years)			13.078	0.006
16-25	5 (5.4)	88 (94.6)		
26-35	18 (16.5)	91 (83.5)		
36-45	3 (9.4)	29 (90.6)		
46-55	0 (0.0)	5 (100.0)		
≥ 56	1 (100.0)	0 (0.0)		
Marital status			3.922	0.286
Single	4 (5.6)	68 (94.4)		
Married	20 (13.2)	131 (86.8)		
Widowed	2 (12.5)	14 (87.5)		
Divorced	0 (0.0)	1 (100.0)		
Education level			4.470	0.188
None	0 (0.0)	4 (100.0)		
Primary	1 (2.6)	38 (97.4)		
Secondary	12 (10.9)	98 (89.1)		
Tertiary	13 (15.1)	73 (84.9)		
Occupation			7.027	0.028
Unemployed	4 (4.3)	89 (95.7)		
Self employed	13 (16.0)	68 (84.0)		
Employed	9 (14.1)	55 (85.9)		
Religion			2.177	0.451
Christian	26 (11.7)	196 (88.3)		
Muslim	0 (0.0)	15 (100.0)		
None	0 (0.0)	1 (100.0)		

In the multivariate logistic regression, self-employed and employed women were about 4.3 times and 3.6 times respectively more likely to receive PCC counseling than the unemployed women (CORS = 4.25; 95% CI: 1.33-13.63; p = 0.015) and (CORS = 3.64; 95% CI: 1.07-12.39; p = 0.039) respectively (Table 4.18).

Table 4.18: Factors associated with PCC counseling at multivariate

Variable	CORS (95% CI)	*p* value
Occupation		
Unemployed	Reference	
Self employed	4.25 (1.33-13.63)	0.015
Employed	3.64 (1.07-12.39)	0.039

CHAPTER FIVE
DISCUSSION

5.1 Introduction

This chapter discusses the results of the study in relation to the objectives on the uptake of preconception care services, the level of knowledge on preconception care services and the factors influencing preconception care services among women of reproductive age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu County, Kenya. The study involved 241 participants who were women of reproductive age between 15 and 49 years of which more than 90% were Christians owing to the fact that the region is Christian dominated. About 40% of the women were unemployed and more than half of them (62.9%) were married. Over two thirds of the women were aged between 16 to 34 years (79.2%) to symbolize that they were still young and among the childbearing age. The study also involved 20 healthcare providers from respective related departments.

5.2 Uptake of preconception care services

The uptake of PCC services among WRA in this current study was at 7.5% with about a third of the women receiving majorly screening for chronic medical conditions. This finding supports systematic reviews and meta-analysis of studies done in SSA, Eastern Africa and West African countries that reported prevalence of about 25% of PCC uptake among WRA (Alemu *et al*, 2021; Demisse *et al*, 2019; Kassa *et al*, 2018b; Setegn Alie *et al*, 2022; Woldeyohannes *et al*, 2021). The low PCC utilization in this current study was correlated with poor knowledge about PCC, lack of awareness and availability of the services among WRA and the studies suggested there was need to launch programmes that could uplift knowledge level and awareness about PCC in order to improve utilization. However, cross sectional study done in Isfahan hospital in Iran reported that about a half of women received PCCS, and the use of PCC was influenced by education, income and unwanted pregnancy (Shadan *et al*, 2017) . The low utilization of the PCC in the current study could be due to unplanned pregnancy among these women, as most of them reported visiting hospital only when they are gravid.

In the current study family planning, counseling on other PCC services such as HIV, alcohol and tobacco use cessation, screening on chronic medical conditions were the most PCC services received by women. This finding is supported by meta-analysis studies done in African countries like Ethiopia, where less than one fifth of mothers received PCC services, and HCP mostly

delivered counseling on folic acid supplement, vaccination, weight monitoring, diet modification, family planning and screening for chronic conditions such as diabetes, hypertension and HIV testing and treatment despite of good accessibility to health facility, availability of PCC services and having experienced adverse pregnancy outcomes such as abortion, stillbirths and antepartum haemorrhage. The low uptakes of PCC in these studies are reported to be caused by low knowledge of PCC among HCP to implement the services (Demisse *et al*, 2019; Habte *et al*, 2021 ; Wegene *et al*, 2022). The uptake of family planning, immunization and counseling of chronic medical conditions are common healthcare services offered to the general population when they seek healthcare in the hospitals, and women might have received immunization and family planning during their visit to health facilities for postnatal care, likewise HCP mostly screen for chronic medical conditions when women go for ANC.

5.3 Patient related factors

The study revealed that one third of the participants equated antenatal services to PCC related services, such as monitoring fetal breathing, weight gain and pressure. This could be because of inadequate information women receive from HCP as some of them related PCC to ANC profile, precautions on danger signs, identification of the facility where she will deliver, among others. Such inaccurate information may have no impact as far as PCC is concerned. Although prenatal care has been established as the standard prevention measure to reduce poor pregnancy outcomes, public health professionals however, have found that prenatal care alone is not sufficient to improve perinatal health and birth outcomes, and instead have emphasized the importance of preconception care as is supported by several previous studies (Landeen et al, 2015; Power et al, 2013; Wada et al, 2016; Wally et al, 2018) .

The study found out that less than a third of the WRA were aware of PCC services, with those who were aware of PCC being married women. The preferred source of information about PCC is from health facilities, where about 45% of women would seek information concerning PCC. Most of the women have incorrect information concerning what PCC services, its importance and time of initiation and components of the PCC. For instance, some of the women indicated that PCC services are given to women before pregnancy, while over a half either had no idea of what PCC is or reported PCC as care given to women once a they become pregnant, even though both of the definitions targeted positive health outcomes of both the unborn child and woman. Other women were of the view that PCC is care given to pregnant mothers in the second pregnancy to prevent

complications they experienced in first pregnancy. This concurs with studies done by Ayalew *et al*., 2017; Bateson & Black, 2019; Bortolus *et al*., 2017 which alluded to the fact that there is lack of awareness of preconception health relating to women, healthcare professionals. This could be a reflection that there is a gap in accessing PCC at JOOTRH, Kisumu.

The study revealed that more than two thirds of the participants had not heard of PCC, meaning the level of knowledge on PCC services among women of reproductive age in JOOTRH, Kisumu is low. This is similar to findings from studies done in Ethiopia which revealed that the level of women's knowledge towards preconception care was low in many settings (Ayalew *et al*, 2017; Kassa & Yohannes, 2018). This as well concurs with other studies conducted in Sri Lanka, Nigeria, Sudan, and Ethiopia which found out that over three quarters of women are unaware of PCC services and less than two fifth utilize PCC services in developing countries. (Ekem *et al*, 2018b; Khalid *et al*, 2015; Patabendige & Goonewardene, 2013; Umar *et al*, 2019b).

The study found out that more than half of the healthcare providers at JOOTRH, which is a public health facility, acknowledged that relevant information concerning common risk factors for pregnancy is not given to women who are eligible for PCC services. At the same time, most of them were not aware of the tools used to assess common risk factors of pregnancy as some echoed ANC booklets, pregnancy tests, name, gravidity, EDD, risk factors during pregnancy among others. This concurs with studies done by Kassa *et al* (2018a) and Umar *et al* (2019a) which showed that there was low level of knowledge about PCC among a large proportion of the healthcare providers in public health facilities in Ethiopia.

The study found out that more than half of the respondents were age between 25 to 34 years and similarly more than half of the participants had attained secondary education. Among this cohort however, few participants had knowledge of PCC and some of them addressed family plannning as the main component of PCC. Similarly, the time of pregnancy ignition discussion is not well known despite being a critical time for PCC, as reported by only about half of HCP and women agreeing to discuss pregnancy intention before conceptions. This is in agreement with a study done in Northwestern parts of Ethiopia, which revealed that women with secondary education, and aged 25 to 34 years were more likely to have better knowledge on preconception care with importance of family planning history (Ayalew *et al*, 2017; Kassa & Yohannes, 2018).

5.4 Health care providers factors

On preconception care feedback, almost all participants and heath care providers accepted the fact that a suggestion on box is available in the facility but women do not receive feedback concerning PCC services. Their main reason was poor understanding of services and lack of laid down protocols including counseling. This is similar to a survey done among individuals of reproductive age in Central Pennsylvania (USA), which showed that only half of women at risk of pregnancy reported receiving little or no counseling (Weisman *et al*, 2008).

Most of the healthcare providers stated that preconception care data is not available in the facility although some mentioned puerperal sepsis, mortality, postpartum hemorrhage (PPH), sickle cell disease (SCD) and risk factors during pregnancy. This could be an indication that even the healthcare providers are not very much aware of PCC services. This is supported by a study done by Sijpkens *et al.*, in 2019 which deduced that while PCC has been acknowledged as an intervention to reduce perinatal mortality and morbidity, it remains underutilized, because of low awareness of availability and benefits of the service. While studies show that women with previous adverse pregnancy outcomes such as abortion, stillbirth, LBW, neonatal death and chronic medical conditions like HIV, cardiovascular risks utilize PCC more (Alie *et al*, 2022; Habte *et al*, 2021 ; Hillemeier *et al*, 2008; Meldgaard *et al*, 2022; Shadan *et al*, 2017). This indicates that these morbidities and mortalities could be reduced if PCC uptake is improved. Moreover, Allan *et al* (2018) in their study done in the United Kingdom and Spain also concluded that by providing preconception care, nurses and midwives have an opportunity to deliver important advice to infertile couples at different levels of care to these individuals.

The study revealed that almost all the participants preferred the hospital mostly as the source of information on pregnancy with doctors and nurses as the most preferred to convey the information since they are knowledgeable, approachable and always available in the health facility. This could be a reflection that respondents had confidence in the healthcare providers, thus with correct information, seemingly they would comply. More than half of the healthcare workers acknowledged PCC related services like HIV counseling and testing, health education on planned pregnancy, nutritional counseling, adolescence counseling and STIs screening. This is contrary to a study done by Kukreja *et al.*, 2012 in Delaware which demonstrated that physicians were found to frequently discuss only some aspects of preconception care, including diabetes and weight management, while less frequently discussing other topics like reproductive life plans,

vaccinations, and HIV screening. The JOOTRH being a centre of excellence in western Kenya region in matters relating to HIV care, could be a reason that HIV counseling and testing remain a key component under PCC because any person whether a client, a patient or not who visits the facility is legible for routine screening irrespective of gender, and age.

The study found out that barriers such cultural beliefs, religion and individual factors may influence the uptake of PCC. The study found out that some cultures such as Luo, pregnancy is not talked about while the baby is still in utero, not even buying clothes for the unborn baby as pregnancy is viewed as sacred. It is not culturally accepted to talk about marriage before a woman gets married. The HCP are also exempted from talking about pregnancy with women unless the women indicated that they are ready to become pregnant, which may not be practical as most women only seek health facility when they are already pregnant. A section of participants especially from the Muslim community believed that children came from God hence no need to seek health services. This is similar to a study done by (Abedini *et al*, 2018), which stated that individual barriers can affect the provision of preconception care, just like with any other aspect of health care service.

The study revealed that there was significant association of the factors like age category, marital status and educational level and occupation and having heard of PCC ($p<0.05$). This concurs with a study done in Uganda by (Homsy *et al*, 2009) which found out that poor lifestyle and low education have been linked to greater risks for preconception care.

5.5 Health facility factors

In JOOTRH, the current study revealed that there were no proper policies and guidelines on PCC services are majorly left for gynaecologists, obstetricians, clinicians and nurses who frequently meet women in healthcare facility, even though they may not have enough time to provide such services. Additionally, PCC services majorly family planning, and counseling for PCC services such as folic acid supplementation, weight monitoring, blood pressure measurements, and screening for TB, hypertension is mostly done during ANC visit or during postnatal care. This is in line with other studies that show no proper health care guidelines on PCC and the back bone of administration of PCC is left for obstetrician-gynaecologist who has frequent contacts with women, who may not have enough time to provide such services to women either due to workload

or inadequate knowledge to deliver the services (Bortolus *et al*, 2017; Coll *et al*, 2016; Luquis & Paz, 2015; Ojukwu *et al*, 2016).

Similarly, lack of policies and proper guidelines on utilization of PCC services has also been shown to affect the uptake even to those who seek PCC information from HCP during ANC or in postnatal clinics (Ayele *et al*, 2021; Joyce, 2018; Okemo *et al*, 2021). The provision of PCC services left for specialists and nurses who frequently contact women hinder the implementation as they would mostly seek health care for their babies. On the other hand women who received contraceptives care are always counselled for some PCC components such as HIV testing, STIs, immunization against tetanus toxoid. This means that those who do not receive family planning services have higher probability of not receiving PCC services such as screening for chronic medical conditions, genetic counseling, and physical activity (Hristova-Atanasova *et al*, 2023; Lemma *et al*, 2022; Zace *et al*, 2022). There are no enough tools for PCC services in the current study area. This is in line with a another study done by Meldgaard *et al*, that suggested inclusion of PCC reporting system, training of HCP on PCC services as most of them are unaware of its components and only learn about PCC during pre-service training but not in school so as to improve implementation and uptake of PCC services (Meldgaard *et al*, 2022; Morema *et al*, 2023; Munthali *et al*, 2021).

CHAPTER SIX
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The PCC services uptake among WRA in JOOTRH was less than ten percent with screening of chronic medical conditions being most done. Three quarters of women were unaware of PCC services and had no idea of the availability of PCC services at JOOTRH; their cultural and religious beliefs about pregnancy hindered them from seeking or receiving PCC services despite of PCC services being offered in the health facilities. There was a low level of knowledge on PCC on the reproductive health services among the women of reproductive age who visited the facility, with most of them equating PCC services with ante natal care (ANC) services. The health care providers claimed that PCC services are not rendered to women of reproductive age effectively in the facility due to shortage of staff and lack of resources to use in the implementation of the PCC services. Additionally, most of the HCP do not have adequate information concerning PCC services since they don't receive such training from school but learn them from experience. The health facility lack PCC services policies and guidelines, and PCC services are majorly left for consultants such as gynecologist, obstetricians and nurses who frequently contact women. The study revealed that the uptake of PCC was dependent on factors like age category, marital status, educational level, occupation and being aware of the PCC services.

6.2 Recommendations

1. The Ministry of Health should consider integrating PCC services with other related health programs, in order to improve access and uptake.
2. The ministry of health both at county and national level should focus on campaign programs about importance of PCC services in the community to mitigate patient factors such as religion, cultural beliefs, occupation, age and education that hinder the uptake of PCC services.
3. The Ministry of Health should enhance its focus on PCC, and ensure all facilities are adequately supported with enough human resource who are well trained on PCC services to improve the implementation of the PCC services
4. The county government in collaboration with national government under ministry of health should come up with policies and guidelines on the implementation of the PCC services.

6.3 Suggestion for future research

Further research should be undertaken on the extent and contribution of male involvement in PCC uptake. During such a study, efforts should be geared towards unveiling the difference in the gains encountered by women who are accompanied (or supported) by the male partner and those not accompanied by partners to the health facility. The study should also have a wider geographic coverage, and involve different cadres of health facilities.

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APPENDICES

Appendix I

Informed Consent

Study number……

A. Introduction

My name is Dorothy Aluoch Oketch. I am student at Jaramogi Oginga Odinga University of Science and Technology, pursuing Master of Public Health degree. I wish ask for your support during the study I am doing, where I want to find out important facts on the "**Uptake Of Preconception Care Services Among Women Of Reproductive Age At Jaramogi Oginga Odinga Teaching And Referral Hospital, Kisumu**." I shall explain the project to you in detail should the information contained here be insufficient.

I am making this request to you and some other people, and I am hoping to get a response from you. You will find a copy of the consent form that you may sign as acknowledgement for you to participate in the study. This is enclosed herein and you could be kind enough, please read them both. I am optimistic that you will be of great help to this cause, which will in turn inform policies and approaches to enhance the provision and uptake of PCC to the women intending to become pregnant in the study community and elsewhere.

This study will not interfere with any clinical procedures, and will be conducted as a passive investigation of the procedures revolving around the care given to women who intend to become pregnant. What you will share with me will be highly appreciated. I present herewith, a copy of the consent form for you to sign, should you be willing to help me in this I should be most grateful for your help.

B. Information about the study

Description of the study

You have been asked to take part in the project seeking to find out the Uptake of Preconception Care Services among Women of Reproductive Age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu.

What is the study about?

The PCC has been defined as any preventive, promotive or curative health care intervention provided to women of childbearing age in the period before pregnancy (at least 2 years) or between consecutive pregnancies, to improve health related outcomes for women (regardless of their pregnancy status), newborns or children up to 5 years of age. The well-being of women and children is one of the major determinants of the health of any population, and can help predict future public health challenges for families, communities, and the health care system. Thus, one of the ways to achieve this is the embracement of PCC to increase the chances of health outcomes of pregnancy for both mother and child. Preconception care includes any intervention to optimize a woman's health before pregnancy with the aim to improve maternal, newborn and child health. It bridges the gap in the continuum of care, and addresses pre-pregnancy health risks and health problems that could have negative maternal and fetal consequences. It therefore has potential to further reduce global maternal and child mortality and morbidity, especially in low-income countries where the highest burden of pregnancy-related deaths and disability occurs. In most instances, preconception care is rarely delivered to women owing to the fact most women do have unplanned pregnancy outcomes.

What will be done?

If you decide to take part in the project, you will be involved in an interview and answering a questionnaire. The questionnaire will take about 15 to 20 minutes to answer, while the oral interview will last between 20 to 30 minutes, and the interview will be written and recorded for more accuracy, if you are willing.

Potential Risks

There are no possible major risks during this study. You may, however, feel some discomfort with some questions, which is usual, in case you are anxious. If that will be the case, and if you feel the need to stop the interview, you shall do so voluntarily because the decision to be part of the study is entirely up to you and you may terminate any time. Whatever you decide will not be held against you. You understand that the Principal Investigator (Dorothy Oketch), the person who is responsible for the study, is not a member of any health regulatory board and that your participation will not have any impact on your job or on any other matter.

Expected Benefits

There are no guaranteed direct benefits to you immediately on account of this research. However, the findings of the research will go a long way in improving the management of reproductive health, particularly on preparedness for conception by women of reproductive age. It will also help health workers provide professionally sound interventions and counseling when discussing individual circumstances of women receiving PCC at the facilities.

Confidentiality

Your participation in the project is confidential to the extent permitted by law. None of the information will identify you by name or any other identifiable feature. All information provided by you will be kept confidential, and any materials involved will be under lock, with only limited access. No information that will be traceable to you will be on the transcript. No publication or resulting communication will bear your personal details, and where need be, you shall be notified and your express written authority requested. This guarantees you that no other person will have information related to you.

Decision to Quit

The decision whether to take part or not is entirely up to you. If you decide to take part in the study, you can quit any time. You are free to refuse to take part or withdraw at any time without affecting your future medical care. You are also free to decline to answer questions you don't feel comfortable responding to. This will not have any consequence on your access to the regular services, as well as any benefits that should reach all members of the community.

Questions

If you have any further questions, you can call Dorothy Oketch (Principal Researcher, on 0729658410). Should you have questions regarding the manner in which the study is being conducted, please contact the University Supervisor (Dr. Daniel Onguru: 0721818368).

Declaration by Participant

I have read the consent information form (or it has been read and explained to me in the language I am most comfortable in [_____], and I fully understood what is stated. Any questions I have about the research have been answered.

By signing this form, I am indicating my willingness to participate in this good cause unconditionally. The consent form will be kept in the locker in safety and will not be attached to any transcripts or other materials.

…… ……
Participant's signature/thumbprint Date

…….. ……
Witness signature/thumbprint Date

..... ……
Researcher/Research Assistant Signature Date

Appendix II

Informed Consent (Kiswahili): Kibali Kamilifu

Nambari maaluum ya mhusika……

A) Muhtasari

Jina langu ni Dorothy Aluoch Oketch. Mimi ni mwanafunzi katika chuo kikuu cha Jaramogi Oginga Odinga ya Sayansi na Teknolojia. Nasomea taaluma ya Afya ya Jamii. Naomba usaidizi wenu wakati huu wa masomo ambapo ningependa kupata fahamu kuhusu uchukuzi wa (**Matumizi ya huduma kabla ya ujauzito kati ya wanawake wenye umri wa uzazi katika Hospitali Kuu na Mafunzo ya Jaramogi Oginga Odinga, Kisumu**. Nitafafanua somo hili kwenu kwa undani japo maswala yaliyomo hayatatosha.

Nawaomba, na watu wengine, na natumai kupata mwito kutoka kwako. Utapata sehemu nyingine ya hii fomu ya kukubali yenye utatia sahihi kama makubaliano yako katika somo hili. Zote zimo humu ndani, na tafadhali uzisome zote. Nina matarijio kuu kwamba utakuwa wa manufaa katika somo hili yenye itasaidia mastakabadhi kuweka wazi utumizi wa huduma kabla ya ujauzito kwa wanawake wanaotaka kuwa wajawazito katika eneo hili na kwengine.

Somo hili halitakuwa la tatizo kwa mambo yanayotendeka kwenye kliniki. Itafanywa kama utafiti wa maongezi ya huduma zipeanazo kwa wanawake wanaotaka kuwa wajawazito. Chochote tutakachozungumzia itakuwa ya shukrani. Humu ndani kuna fomu ya kukubali ili utie sahihi ikiwa utakubali kunisaidia. Nitashukuru kwa usaidizi wako.

B) Habari kuhusu utafiti.

Maelezo kuhusu utafiti.

Umeulizwa ujihusishe na mradi uchunguzao matumizi ya huduma kabla ya ujauzito kati ya wanawake wa umri wa uzazi katika hospitali ya Jaramogi Oginga Odinga, Kisumu.

Utafiti unahusu nini?

Huduma kabla ya uzazi umeelezwa kama kizuizi, ukuzaji au tiba inayoingilia kati ya huduma za kiafya zinazopewa wanawake wenye umri wa uzazi kipindi kabla ya ujauzito (chini ya miaka miwili) ama katikati ya ujauzito mfululizo ili kuimarisha matokeo ya kiafya kwa wanawake , watoto wazaliwao ama wale wasiozidi umri wa miaka mitano. Usalama wa wanawake na watoto

ni mojawapo wa vitambulisho kuu za afya kwa idadi yoyote ya watu iwezayo kutabiri changamoto katika afya ya uma kwa familia, jamii na mfumo wa huduma za afya. Hivyo basi, njia mojawapo ya kufikia jambo hili, ni kukubaliana na huduma za kabla ya uzazi ili kuongeza uwezekano wa matokeo ya afya kwa ujauzito wa mama na mtoto. Pia inazuia maafa yanayotokea wakati wa ujauzito kote ulimwenguni. Maafa haya yaweza kusababishwa na kutoelimika kwa wanawake walio katika umri wa uzazi kwa kujiingiza kwa unywaji wa pombe, ututaji wa sigara na madawa ya kulevya yanayodhuru afya. Haya yanaweza kuletwa na hali mbaya ya uchumi ,kutoelimika na kutopata mawaidha kutoka kwa wahudumu hospitalini kabla ya ujauzito.

Ni nini kitafanywa?

Ukiamua kujihusisha na somo au utafiti huu, utahojiwa na pia kujibu maswali kwenye fomu. Mahojiano yanaweza kuchukua kati ya dakika 15 had I 20 ilhali maswali ya kujaza yanaweza chukua muda wa dakika 20 hadi 30. Mahojiano yanaweza kurekodiwa ili kupata matokeo dhabiti.yote haya in kwa idhini yako.

Hatari ziwezekanazo.

Hakuna hatari kuu inayoweza kutokezea wakati wa utafiti huu. Ikiwa utahisi kuwa maswali haya huyapendelei basi unaweza katiza mahojiano haya kwani yote yanafaa kua kwa hiari yako. Utakachoamua haitafanywa dhidi yako, kwani yule ambaye atakua akikuhoji si mwanachama wa bodi yeyote ya afya.

Faida zinazotarajiwa.

Hapatakua na malipo ya halo kwa hapo na yule anayekuhoji katika utafiti huu. Yale ambayo utayachangia katika utafiti huu yatakua ya manufaa kwa afya ya uzazi haswa kwa matayarisho ya kabla ya ujauzito katika maeneo yote yanayotoa huduma ya afya.

Usiri.

Kujishughulisha katika utafiti huu ni kati yako na anayekuhoji tu(Dorothy Oketch). Hakuna taarifa litakalotaja jina lako bila idhini kutoka kwako. Haya yote ni kwa manufaa yako.

Uamuzi wa kujihepusha nazo.

Uamuzi wa kujihusisha na utafiti huu ni wako mwenyewe, wala si wa kulazimishwa. Ukiamua kujihusisha basi unaweza kujiondoa muda au wakati wowote. Una uhuru wa kukataa kutojibu maswali ambazo kwako hayakufurahishi. Haya yote hayatadhuru haki yako ya kupata huduma za afya kokote kule.

Maswali

Ukiwa na maswali mengine basi unaweza kuwasiliana na Dorothy Oketch (ambaye ndiye mtafiti katika somo hili) kwenye simu kutumia nambari 0729658410. Pia ikiwa na maswali jinsi au kwa hali ambavyo utafiti huu ulifanywa tafadhali wasiliana na mwalimu wa chuo hili (Daktari Dan Onguru) kwenye nambari 0721818368.

Tamko la Mshiriki.

Nimesoma taarifa kwenye fomu la kibali (ama nimesomewa na kuelezwa kwa lugha ninayofahamu na kuelewa_----------) na nimeelewa kabisa kilichoandikwa. Maswali yote ambayo niliuliza kuhusu utafiti huu yalijibiwa kikamilifu.

Kwa kutia sahihi fomu hii, nakubali kushirikiana kwa hali nzuri bila kulazimishwa wala kutarajia malipo. Fomu hii itawekwa mahali ambapo hakuna atakayeifikia au kuwekwa pamoja na nakala zingine.

---------- ----------
Sahihi ya mshiriki. Tarehe

---------- ----------
Sahihi ya mshuhudu. Tarehe

---------- ----------
Sahihi ya utafiti/mtafiti msaidizi. Tarehe

Appendix III

Semi- structured questionnaire for women of reproductive age

Title: Uptake of Preconception Care Services among Women of Reproductive Age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu

Part A: Patient Related Factors

1. How old are you?_____ years

2. What is your marital status?

   ☐ Single ☐ Married ☐ Widowed ☐ Divorced

3. What is your level of education?

   ☐ None ☐ Primary ☐ Secondary ☐ Tertiary

4. What is your occupation?

   ☐ Employed ☐ Self-employed ☐ Unemployed

5. What is your religion?

   ☐ None ☐ Christian ☐ Muslim ☐ Other (specify)……

6. Have you ever heard of services given to women who intend to become pregnant?

   ☐ Yes ☐ No

   If yes, where did you get the information from?

   ……

   ……

7. What do you understand by **care given to a person before becoming pregnant**?

   ……

8. Which areas (components of healthcare) are addressed by the care stated above?

   ……

9. In your view, at what point should a woman intending to have a baby be given information concerning the intended pregnancy and its possible outcomes?

   ……

   Why the stated time?

   ……

   ……

10. In your opinion, are there special groups of women who require PCC?

    ☐ Yes ☐ No ☐ I don't know

    Explain……

    ……

11. In your tradition, it is advisable for a woman to discuss about the intention to become pregnant, in advance.

    ☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

12. In your tradition, what may prevent a woman from getting information about the outcome of pregnancy before she gets pregnant?

    ……

13. In case you are to get information about your health and your baby to be, before you become pregnant, where would you consider the best place?

    ……

14. Is this service stated in question 14 available routinely in the hospital for women as they seek for other services?

    ☐ Yes ☐ No

15. Given a chance, who among the hospital workers would you prefer to give you information about issues regarding a woman who intends to become pregnant in a hospital set up?

    ☐ Nurse ☐ Midwife ☐ Clinical officer ☐ Doctor

    ☐ Student nurse ☐ Support staff ☐ CHV

    What would be your reasons for the above preferred individual?

    ……

Part B. Health System Factors

1. Is pre-conception services offered in this facility? ☐ Yes ☐ No
   If **yes**, in which department is the service offered? ……

2. Who is responsible for offering pre-conception services in this facility? tick all that apply
   ☐ Trainee nurse ☐ Qualified nurse ☐ Midwife ☐ Clinical officer
   ☐ Doctor ☐ Consultant ☐ Other(specify)……

3. Are medical supplies/equipment necessary for PCC available in this facility?
   ☐ Never ☐ Sometimes ☐ Always ☐ I don't know

4. Do all women who are legible for PCC services receive information concerning common risk factors for pregnancy?
   ☐ Yes ☐ No
   If **yes**, which tools are used to assess this?
   ……
   ……
5. Are all eligible women able to access PCC services all times they visit the health facility?
   ☐ Never ☐ Sometimes ☐ Always ☐ I don't know

   If they do not always get the services, give brief details.
   ……
   ……

Part C. Uptake of PCC services

1. What PCC-related services are offered to women of reproductive age who visit the hospital?
   ……
   ……
2. Is a suggestion on box available in the department(s) where these women visit for health care services?
   ☐ Yes ☐ No
   If **yes**, do women of reproductive age give feedback concerning PCC services?
   ☐ Yes ☐ No
   If **yes**, what are some of their concerns?
   ……

……

3. Are there other separate forums where the women of reproductive age are capable of giving their feedback concerning the PCC services?

   ☐ Yes ☐ No

   If **yes**, what are some of their concerns?

   ……

   ……

4. At this facility, is data available on women's pregnancy history and outcomes?

   ☐ Yes ☐ No

   If **yes**, do women or community members have access to the data?

   ☐ Yes ☐ No

   If yes, again, have you accessed/used the data?

   ☐ Yes ☐ No

   If you have, name the nature/type of information you got

   ……

   ……

5. What other information/services would you like to be included in PCC?

   ……

   ……

6. Any general comments/recommendations?

   ……

   ……

   ……

Thank you for the time and responses

Appendix IV

Key Informants Interview Guide for Healthcare providers

Title: Investigation of Preconception Care Services uptake among Women of Reproductive Age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu

Part A: Healthcare Related Factors

1. Age ……years
2. Gender ☐ Male ☐ Female
3. What is your employment status here?
   ☐ full time ☐ part time ☐ student ☐ Other
   (specify)……
4. For how long have you worked as a health provider? ……
   And in MCH department? ……
   And in the MCH department of this facility?……

5. In your view, at what point should a woman intending to have a baby be given information concerning the intended pregnancy and its possible outcomes?
   ……
   Why the stated time?
   ……
   ……
6. In your opinion, are there special groups of women who require PCC?
   ☐ Yes ☐ No ☐ I don't know
   Explain……
   ……
   ……
7. Are PCC services routinely available in the hospital for women, alongside other services?
   ☐ Yes ☐ No
8. In your practice, do women discuss about the intention to become pregnant, in advance?
   ☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree
9. In your opinion, what may prevent a woman from getting information about the outcome of pregnancy before she gets pregnant?

……

……

……

Part B. Health System Factors

6. Is pre-conception services offered in this facility? ☐ Yes ☐ No

   If **yes**, in which department is the service offered? ……

7. Who is responsible for offering pre-conception services in this facility? tick all that apply

   ☐ Trainee nurse ☐ Qualified nurse ☐ Midwife ☐ Clinical officer

   ☐ Doctor ☐ Consultant ☐ Other (specify) ……

8. Are medical supplies/equipment necessary for PCC available in this facility?

   ☐ Never ☐ Sometimes ☐ Always ☐ I don't know

9. Do all women who are eligible for PCC services receive the relevant information?

   ☐ Yes ☐ No

   If **yes**, which tools are used to assess this?

   ……

   ……

   ……

10. Are all eligible women able to access PCC services all times they visit the health facility?

    ☐ Never ☐ Sometimes ☐ Always ☐ I don't know

    If they **do not** always get the services, give brief details.

    ……

    ……

Part C. Uptake of PCC services

7. What PCC-related services are offered to women of reproductive age who visit the hospital?

   ……

   ……

   ……

……

……

8. Is a suggestion box available in the department(s) where these women visit for health care services?

   ☐ Yes ☐ No

   If **yes**, do women of reproductive age give feedback concerning PCC services?

   ☐ Yes ☐ No

   If **yes**, what are some of their concerns?

   ……

   ……

   ……

9. Are there other separate forums where the women of reproductive age are capable of giving their feedback concerning the PCC services?

   ☐ Yes ☐ No

   If **yes**, what are some of their concerns?

   ……

   ……

   ……

   ……

10. At this facility, is data available on women's pregnancy history and outcomes?

    ☐ Yes ☐ No

    If **yes**, do women or community members have access to the data?

    ☐ Yes ☐ No

    If yes, again, have you accessed/used the data?

    ☐ Yes ☐ No

    If you have, name the nature/type of information you got

    ……

    ……

    ……

    ……

11. What other information/services would you suggest to be included in PCC?

……

……

……

……

12. Any general comments/recommendations?

……

……

……

……

Thank you for the time and responses

Appendix V

Mwishoni I: Dodoso kwa wanawake wenye umri wa uzazi

Mada: Matumizi ya huduma kabla ya ujauzito kati ya wanawake wenye umri wa uzazi katika hospitali kuu ya Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu

Sehemu ya A: Vijisababu vya wagonjwa

1. Una miaka mingapi?.....

2. Hali yako ya ndoa ni ipi?
   ☐ Sijaolewa ☐ Nimeolewa ☐ Mjane. ☐ Talakiwa

3. Umesoma hadi kiwango kipi?
   ☐ Sijasoma ☐ Msingi ☐ Sekondari ☐ Mengineo

4. Unafanya kazi gani?
   ☐ Nimeajiriwa ☐ Nimejiajiri. ☐ Sijaajiriwa

5. Dini? ☐ Hamna ☐ Mkristo. ☐ Muislamu ☐ Mengineo

6. Unaishi wapi haswa?.....

7. Una ugonjwa usio na tiba?
   ☐ Ndio ☐ La
   Kama ndio, litaje……

8. Umesikia huduma ya wanawake wanaotarajia kuwa wajawazito?
   ☐ Ndio ☐ La
   Kama ndio, ulipata habari wapi?.....

9. Je? Unaelewa chochote kuhusu huduma ipeanayo kwa wanawake kabla ya ujauzito?

.....

.....

10. Ni sehemu gani za afya inayotambuliwa na huduma hapo juu?

    .....

11. Kwa maoni yako, ni wakati upi ambayo mwanamke anafaa apewe maelezo kuhusu ujauzito unaotarajiwa na matokeo yake?

    .....

    .....

    Mbona ni wakati huo?

    .....

    .....

12. Kwa maoni yako, viwango vipi vya wanawake vinahitaji mafunzo kabla ya ujauzito?

    .....

    .....

13. Kulingana na utamaduni wako, ni sawa kwa mwanamke kujieleza kuhusu hatua ya kutaka ku mjamzito?

    ☐ Nakubali kabisa ☐ Nakubali ☐ Sawa ☐ Nakataa ☐ Nakataa kabisa

14. Katika utamaduni wako, ni nini inaweza zuia mwanamke kupata maarifa kuhusu matokeo ya ujauzito kabla ya kuwa mjamzito?

……

……

15. Ikiwa ungependa kujua hali yako na ya mtoto kabla ya ujauzito, ni wapi haswa utakaopendelea?

……

……

16. Huduma uliotajwa katika swali la 14 inapatikana kila saa kwa wanawake wanapoendea huduma zingine?

    ☐ Ndio ☐ La

17. Ukipewa nafasi , ni nani kati ya hawa wahudumu hospitalini ungependa akupe maarifa kuhusu mwanamke anayetarajia kuwa mjamzito?

☐ Mwuguzi ☐ Mkunga ☐ Daktari ☐ Mwuguzi (mwanafunzi)

☐ Wasaidizi hospitalini

Mbona ukamchagua huyo?

.....

.....

Sehemu ya B: Vijisababu kwa mfumo za kiafya

1. Huduma kabla ya ujauzito unatolewa katika hospitali hii?

☐ Ndio ☐ La

Kama ndio, inatolewa katika idara gani?

.....

2. Nani ana jukumu la kupeana huduma za kabla ya ujauzito? Chagua zote zifaayo

☐ Muuguzi (Mwanafunzi) ☐ Muuguzi aliyehitimu ☐ Mkunga ☐ Daktari

☐ Daktari mkuu ☐ Wengine

3. Je, vifaa vya kutoa huduma ya kabla ya ujauzito zinapatikana katika hii hospitali?

☐ Hazipo ☐ Saa zingine ☐ Kila saa ☐ Sina habari

4. Je, wanawake wote wanao uwezo wa kupata huduma za kabla ya ujauzito hupata maarifa kuhusu mambo mabaya ya kujiepusha katika ujauzito?

☐ Ndio ☐ La

Kama ndio, ni vifaa vipi hutumika kudhibitisha haya

……

……

5. Je, wanawake wote wanaofaa kupata huduma ya kabla ya ujauzito huzipata kila mara wanapotembelea kituo hiki?

☐ Hapana ☐ Wakati mwingine ☐ Kila Mara ☐ Sina habari

Kama hawapati huduma hizo, eleza kwa ufupi

……

……

Sehemu ya C: Matumizi ya huduma kabla ya ujauzito

1. Ni huduma gani zinazohusiana na huduma ya kabla ya ujauzito zitolewazo kwa wanawake wenye umri was uzazi wanaotembelea hospitali hii

   ……

   ……

2. Je, kuna sanduku la maoni kwenye idara ambapo hawa wanawake huenda kupata huduma ya afya?

   ☐ Ndio ☐ La

   Kama ndio, wanawake wa umri ya uzazi hutoa majibu kuhusu huduma ya kabla ya ujauzito

   ☐ Ndio ☐ La

   Kama ndio, ni wapi matakwa yao

   ……

   ……

3. Je, kunazo njia tofauti ambapo wanawake hawa huweza kutoa fikira zao kuhusu huduma ya kabla ya uzazi?

   ☐ Ndio ☐ La

   Kama ndio, ni yapi matakwa yao

   ……

   ……

2. Katika hospitality hii, kuna rekodi kuhusu historia ya wanawake wajawazito na matokeo yao?

   ☐ Ndio ☐ La

3. Ni habari/huduma zipi zingine ambazo ungependa ziwe pamoja na huduma za kabla ya ujauzito(PCC)?……

   ……

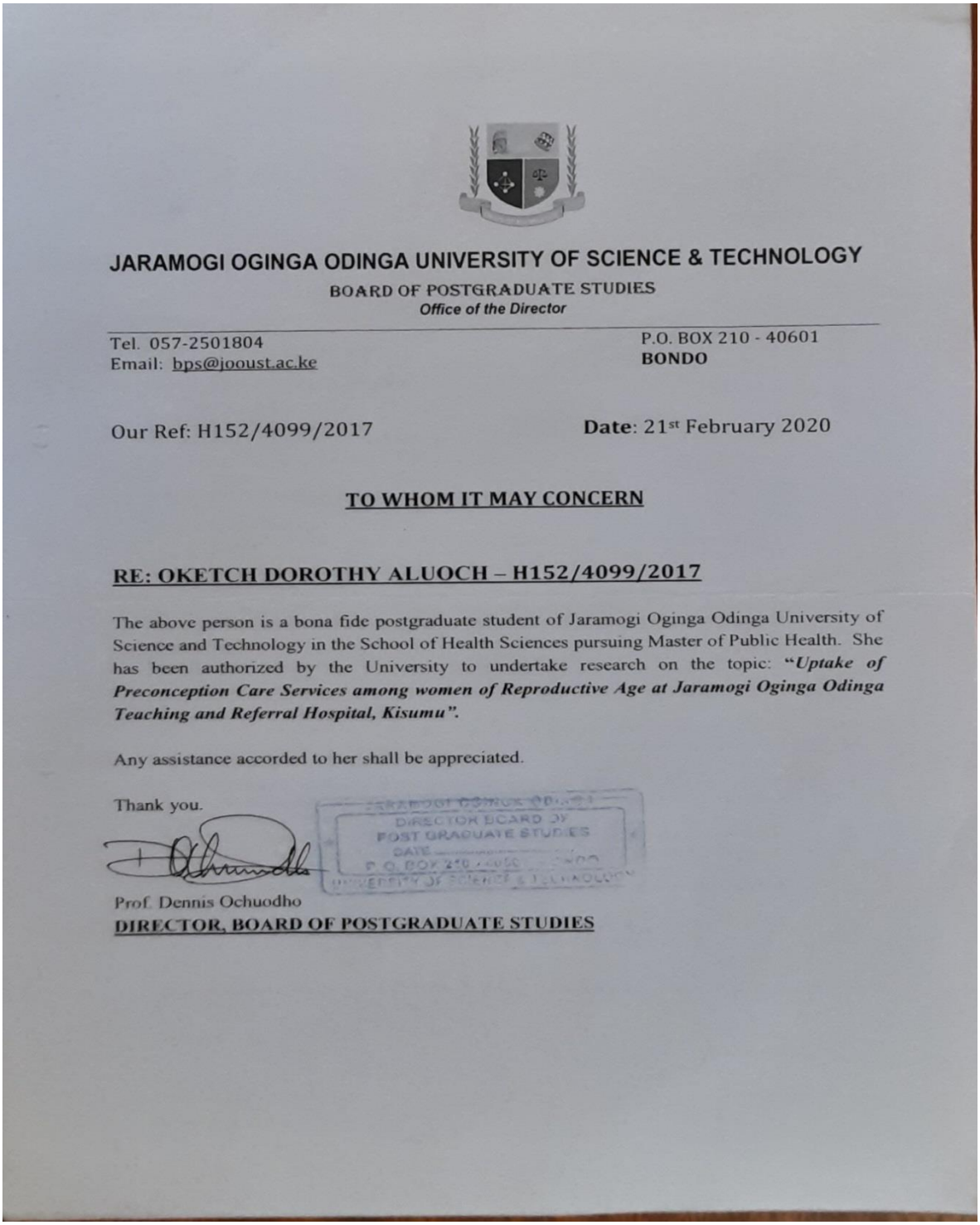
   ……

4. Mapendeleo au maoni yoyote ya ujumla?

   .....

Appendix VI

JOOUST Introductory letter



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

BOARD OF POSTGRADUATE STUDIES

Office of the Director

Tel. 057-2501804
Email: bps@jooust.ac.ke

P.O. BOX 210 - 40601
BONDO

Our Ref: H152/4099/2017

Date: 21st February 2020

TO WHOM IT MAY CONCERN

RE: OKETCH DOROTHY ALUOCH – H152/4099/2017

The above person is a bona fide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Health Sciences pursuing Master of Public Health. She has been authorized by the University to undertake research on the topic: ***"Uptake of Preconception Care Services among women of Reproductive Age at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu".***

Any assistance accorded to her shall be appreciated.

Thank you.

DIRECTOR BOARD OF POST GRADUATE STUDIES
DATE
P. O. BOX 210 - 40601

Prof. Dennis Ochuodho
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

Appendix VII

JOOTRH Ethics and Review Committee

COUNTY GOVERNMENT OF KISUMU
DEPARTMENT OF HEALTH

Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: medsuptnpgh@yahoo.com
ceo@jaramogireferral.go.ke
Website: www.jaramogireferral.go.ke

JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
P.O. BOX 849
KISUMU

When replying please quote
TR /196/20

Ref: .....

5th May, 2020

Date.....

To: Dorothy Aluoch Oketch

Dear Dorothy,

RE: STUDY TITLE:
UPTAKE OF PRECONCEPTION CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE AT JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL, KISUMU

This is to inform you that ***JOOTRH IERC*** has reviewed and approved your above research proposal. Your application approval number is ***IERC/JOOTR/196/20.*** The approval period is ***5th May, 2020 – 5th May, 2021.***

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***JOOTRH - IERC.***
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to ***JOOTRH - IERC*** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***JOOTRH - IERC*** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to JOOTRH - ***IERC.***

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

In case the case of study site is JOOTRH, kindly report to Chief Executive Officer before commencement of data collection.

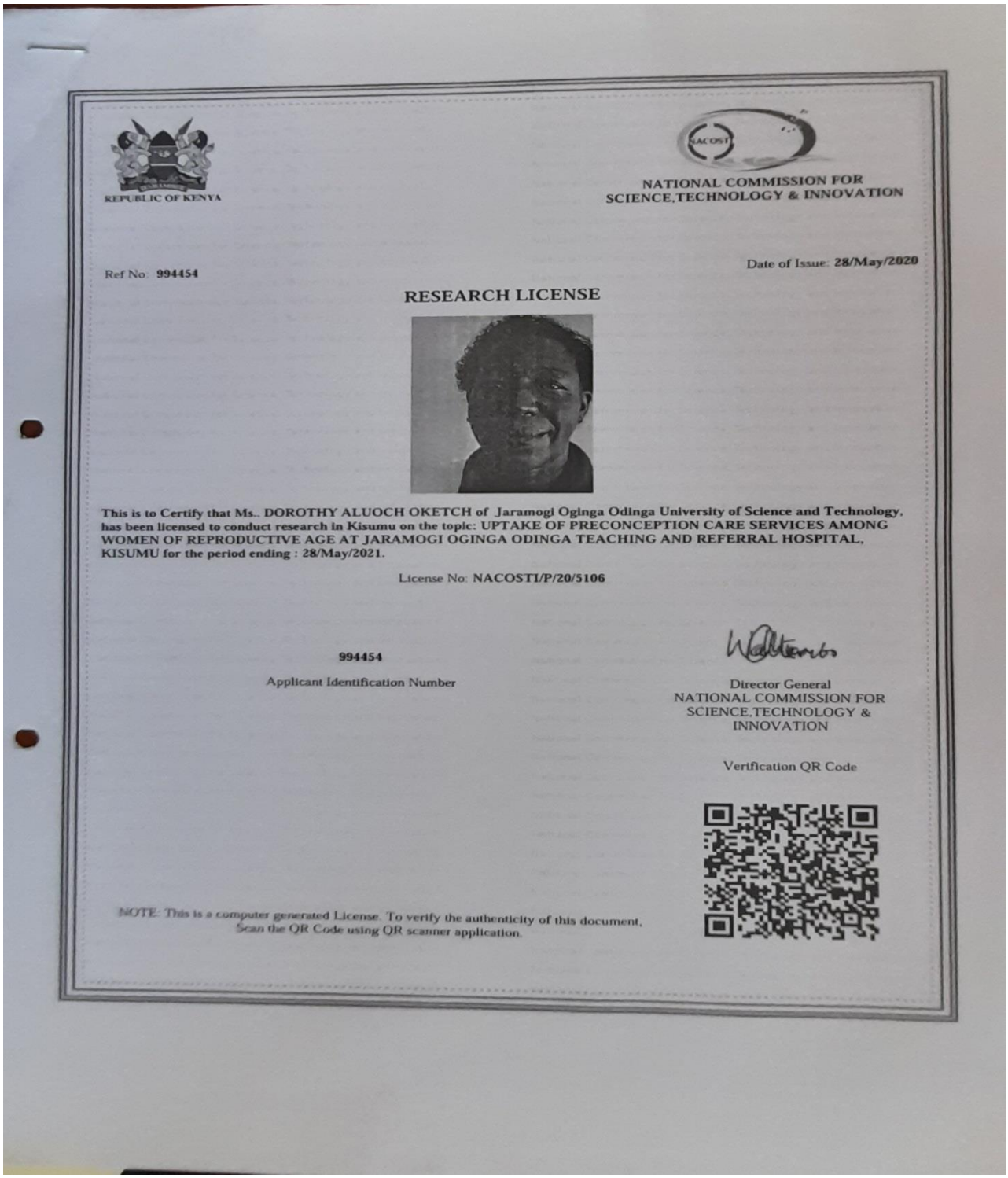
Yours sincerely,

INSTITUTIONAL ETHICS & REVIEW COMMITTEE
05 MAY 2020
JOOTRH

SECRETARY, IERC

Appendix VIII

National Commission for Science, Technology and Innovation Approval (NACOSTILL)



REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **994454**

Date of Issue: **28/May/2020**

RESEARCH LICENSE

This is to Certify that Ms.. DOROTHY ALUOCH OKETCH of Jaramogi Oginga Odinga University of Science and Technology, has been licensed to conduct research in Kisumu on the topic: UPTAKE OF PRECONCEPTION CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE AT JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL, KISUMU for the period ending : 28/May/2021.

License No: **NACOSTI/P/20/5106**

994454

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

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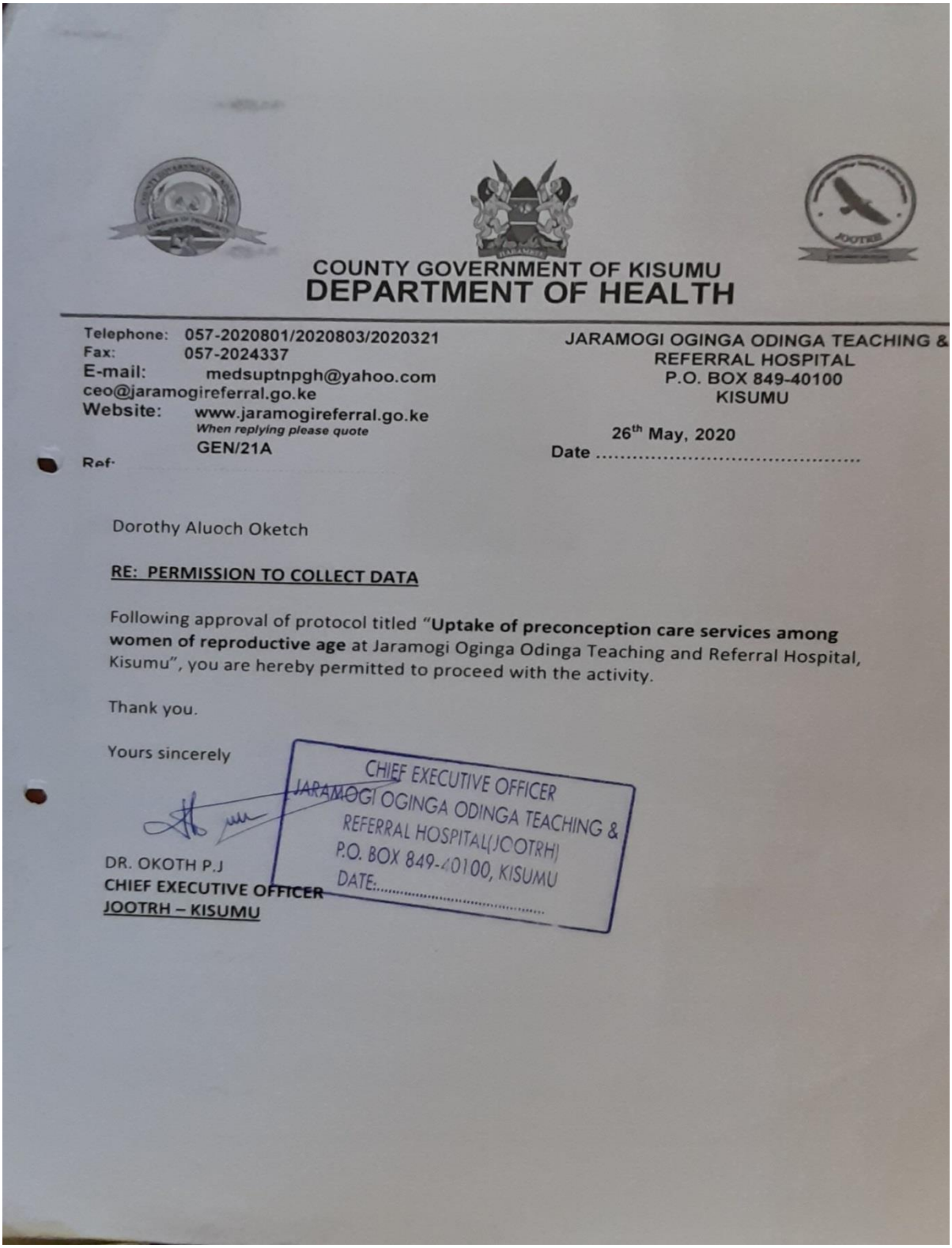
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearence from relevant Government Agencies
5. The License does not give authority to tranfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation
off Waiyaki Way, Upper Kabete,
P. O. Box 30623, 00100 Nairobi, KENYA
Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077
Mobile: 0713 788 787 / 0735 404 245
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix IX

JOOTRH Permission To Collect Data



COUNTY GOVERNMENT OF KISUMU
DEPARTMENT OF HEALTH

Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: medsuptnpgh@yahoo.com
ceo@jaramogireferral.go.ke
Website: www.jaramogireferral.go.ke
When replying please quote
GEN/21A

JARAMOGI OGINGA ODINGA TEACHING &
REFERRAL HOSPITAL
P.O. BOX 849-40100
KISUMU

26th May, 2020

Ref:

Date .....

Dorothy Aluoch Oketch

RE: PERMISSION TO COLLECT DATA

Following approval of protocol titled "**Uptake of preconception care services among women of reproductive age** at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu", you are hereby permitted to proceed with the activity.

Thank you.

Yours sincerely

CHIEF EXECUTIVE OFFICER
JARAMOGI OGINGA ODINGA TEACHING &
REFERRAL HOSPITAL(JOOTRH)
P.O. BOX 849-40100, KISUMU
DATE.....

DR. OKOTH P.J
CHIEF EXECUTIVE OFFICER
JOOTRH – KISUMU