FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMANIMMUNODEFICIENCY VIRUS (HIV) EXPOSED INFANTS AT ST FRANCIS HOSPITAL MUTOLERE

KISORO DISTRICT

A RESEARCH REPORT SUBMITTED TO UGANDA NURSES AND MIDWIVES EXAMINATION BOARD

SCHOOL OF NURSING AND MIDWIFERY

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A DIPLOMA IN NURSING EXTENSION.

HABIYAREMYE JULIUS

REG. NO : JAN22/UO24/DNE/002

NOVEMBER 2023

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ABSTRACT.

Globally, over 400 children are infected with HIV every day and if left untreated, up to 30% of infected children will die by their first birthday and 50% by the second birthday. The study determined factors influencing the uptake of early infant diagnosis (EID) services among HIV Exposed Infants at St. Francis hospital Mutolere Kisoro district. The study involved a descriptive cross sectional study design using random sampling procedure to recruit care givers and purposive sampling procedure to recruit health workers on a sample of 45 respondents. Data was collected using self-administered pretested questionnaires and the collected data was analyzed using statistical package for social science and Microsoft excels 2010, then presented in form of percentages and frequency tables and figures.

Study findings showed that 100% of care taker respondents were aware of Early Infant Diagnosis services. 60% of care taker respondents were females, 40% were males and 40% of care taker respondents had 29 years and above.

Results from the study also revealed that 100% of care taker respondents reported that there were presence a health facility in their sub county.40% of health worker respondents revealed lack of transport to the health facility lead to lost follow up, 64% of care taker respondents reported waiting time of less than or equal to 30 minutes.
In addition, 56% of care taker respondents reported that the age appropriate for EID sample collection is between 6 weeks to18 months, 100% of health worker respondents had ever tested infants for HIV and 66.7% of health workers reported that the test is done once.

The study concluded that uptake of early infant diagnosis is influenced by lack of education. Lack of paternal support, religious beliefs, long distance as care taker factors; health facility related factors include lack of integration of PMTCT services in maternal departments, waiting time and supply chain management. Therefore there should be sensitization about early infant diagnosis (EID) services and continuous professional development about HIV in infants and the guidelines of managing and preventing HIV.

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FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXPOSED INFANTS AT ST FRANCIS HOSPITAL MUTOLERE KISORO DISTRICT

DECLARALATION

I HABIYAREMYE JULIUS, Ssolemnly declare that this research report titled FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXPOSED INFANTS **AT ST. FRANCIS HOSPITAL MUTOLERE KISORO** Is entirely my original work and has never been submitted to Uganda nurses and midwives examination board by any one in partial or total fulfillment of the requirements for academic award in any institution of learning.

NAME: HABIYAREMYE JULIUS

Signature…….

Date……..

AUTHORIZATION PAGE

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Date.....

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Date.....

DEDICATION

I dedicate this dissertation to my wife **NDAYISHIMYE JUSTINE AND CHILDREN ANDINDA TEKLA,ARIHO TREA AND ABAYO ATALIA** who in conjunction with the almighty God contributed both financially and spiritually and have been there for me in as far as academic maintenance is concerned for the betterment of my future.

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ACKNOWLEDGEMENT PAGE

The successful completion of this dissertation has been by the almighty God who has enabled me to pass through all challenges faced in this course.

Great thanks go to my family for the loving heart, support and guidance.

I dedicate this work and send regards to my sponsor Dr David Hager and lois, The grateful acknowledgement is extended to my supervisor **MR. NSENKUYE PASCAL** who tirelessly guided me throughout my research writing, particularly for his kindness and patience.

Furthermore, sincere thanks go to the principal tutor **SR KEMIGISHA CATHELINE** for rendering me a conducive environment towards the successful accomplishment of this dissertation. Great thanks to her and her management.

DECLARATION

I **HABIYAREMYE JULIUS** declare that this research report entitled **FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS(EID) SERVICES AMONG HUMAN IMMUNODEFICIENCY VIRUS(HIV) EXPOSED INFANTS AT ST FRANCIS HOSPITAL MUTOLERE, KISORO DISTRICT**, is my original work and has not been submitted to any institution in partial fulfillment for any award.

SIGNATURE……

DATE…….....

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LIST OF ACRONYMS AND ABBREVIATIONS.

AIDS	Acquired Immunodeficiency syndrome
ANC	Antenatal care
ART	Antiretroviral Therapy
DBS	Dry blood spots
EID	Early Infant Diagnosis
EPL	Expedited Payment Letter
HEIs	HIV Exposed Infants
HIV	Human Immunodeficiency Virus.
IRB	Institutional Review Board
MCH	Maternal and child health
MOH	Ministry Of Health.
PCR	Polymerase Chain Reaction
PMTCT	Prevention of Mother to Child Transmission of HIV
SPSS	Statistical Package for Social Sciences
TB	Tuberculosis
WHO	World Health Organization

DEFINITION OF KEY TERMS

HIV exposed infant: Is a child less than 18 months of age born to a known HIV positive mother.

Early infant diagnosis of HIV infection: Is virological testing that detects HIV DNA or RNA used to diagnose HIV infection in infants and children below 18 months of age.

Uptake: Is the ability to make use of available resources.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction and background of the study.

Early Infant Diagnosis (EID) of HIV is the timely testing and initiation of HIV Exposed Infants (HEI) onto Antiretroviral Therapy (ART). This can significantly reduce morbidity and mortality of HIV infected infants. (Ankrah & Dako-Gyeke, 2021).Early Infant Diagnosis (EID) is the critical first step in reducing human immunodeficiency virus (HIV)-related infant mortality through exposed prompt identification of HIV -infected Infants (HEI) and subsequent initiation of Antiretroviral Therapy (ART). Children with HIV Antiretroviral Therapy trial in Kenya showed that early diagnosis of HIV reduced Infant mortality by 76% and HIV progression by 75%. Mother to child transmission (MTCT) of HIV accounts for the majority (>95%) of infections among children with a 30% transmission rate if no prevention interventions are offered (Douglas, et al. 2021).According to Journal of the international AIDS society March 22 2021, the world health organization (WHO) recommends that all HIV Exposed Infants (HEI) be tested within four to six weeks of birth and that results are returned to their care givers as soon as possible by use of a polymerase chain reaction (PCR) assay as the preferred test. Despite significant scale-up of programs to prevent mother-to-child transmission of HIV, Over 400 children globally are infected with HIV every day. (UNAIDS, children and HIV: fact sheet 2016). If left untreated, up to 30% of infected children will die by their first birthday and 50% by their second birthday. The disease progresses more quickly in Infants. For infants not on treatment, peak mortality occurs between 2 and 3 months old. In 2015, only 50% of 1.2 million HEIs within the priority countries received a virological test within the recommended time frame. (Douglas, et-al. 2021).While access to EID testing for HIV Exposed Infants using

centralized platforms has improved in the last decade, it continues to lag behind need. Coverage has increased from 28% in 2011 to 60% in 2019 (UNAIDS, AIDS info 2019 data). In addition, lack of quick access to the test results limits the clinical utility of the results. Multiple factors are responsible, including lengthy transport times to laboratories for processing and delays in test results being returned due to poor communication back to health facilities and care givers, these factors can lead to loss to follow up or delayed initiation on life- saving treatment.

Despite the benefits of early infant testing, the coverage of EID of HIV services is still low in sub Saharan Africa including Ghan (Ankrah & DakoGyeke, 2021).

According to Douglas, et al.(2021), in sub Saharan Africa, mother to child transmission (MTCT) of HIV remains unacceptably high, though significant declines have been recorded in 21 priority countries that account for 90% of the global HIV infections among HIV infected pregnant women, MTCT rates declined from 22.4,% to 8.9% between 2009 and 2015. In Kenya MTCT rates increased from 8.3% in 2015 to 11.5% in 2017 among an estimated 69497 HIV infected pregnant women, however only 51% of HEI had EID within 2 months of birth.

A study done in 52 facilities across Cameroon, Democratic Republic of Congo(DRC),Ethiopia, Kenya, Senegal and Zimbabwe to assess the clinical impact of point of care EID found that 72% of caregivers received infant test results on the same day as sample collection. In addition, HEIs received their results on the same day, and able to start treatment than those who were diagnosed one or more days. (The journal of the international AIDS society March 22, 2021)

Utilization of EID services in Uganda has lagged behind and according to ministry of health, as low as 40.2% of HEIs receive virological test for HIV using DNA-PCR tests within two months of birth. This low utilization of EID is responsible for an increasing number of children

becoming infected with HIV due to delay in the initiation of prevention interventions. Furthermore a study done to assess the factors associated with utilization of early Infant Diagnosis of HIV at Kisenyi health center IV in Kampala district involving 246 mother baby pairs found out that access to EID of HIV at six weeks of age in kisenyi health center IV is at 22% (Auma, Izudi & Alege, 2016).

A research conducted at Mbarara Regional Referral Hospital, found that among mother-infant pairs receiving HIV care, in more than a week period, over 48% missed their appointments. Furthermore out of the 515 infants who were lost to follow up, 7 infants (1.4%) had tested positive for HIV and 508 had an unknown HIV status (had negative 1st or 2ndPCR results but did not return for final testing) 20 infants (3.6%) tested positive for HIV and were referred for care into the ART clinic. (Ankunda, Cumber &Atuhaire, et al. 2020).

In Kisoro district the situation is worse at St. Francis hospital Mutolere. According to medical records data 2019/2020, total of 35 HIV Exposed infants were seen in EID clinic, only 15 had the second PCR done and only 2 had their third PCR done. Only one infant was initiated on ART

1.2 Statement of the problem.

Globally, over 400 children are infected with HIV every day(UNAIDS, CHILDREN AND HIV; Fact sheet 2016). If left untreated, up to 30% of infected children will die by their first birthday and 50% by the second birthday. The disease progresses more quickly in infants. For infants not on treatment, peak mortality occurs between 2 and 3 months old.

The impact of HIV on children cannot be over emphasized. The 2013 global statistics revealed that 3.2 million children under 15 years old, 9.1% of the global population were living with the virus. In sub-Africa lives 91% of children with the virus had vertical transmission a leading

cause of infant infection. Six percent of HIV infected children are in Asia and the pacific and the remaining 3% live in other parts of the world. (Ankunda, Cumber &.Atuhaire, et al. 2020)

Early Infant Diagnosis (EID) of HIV and timely initiation of Antiretroviral Therapy (ART) can significantly reduce morbidity and mortality of HIV Infected Infants (HEI) (Ankrah & Dako-Gyeke, 2021).

Utilization of EID services in Uganda has lagged behind. According to ministry of health as low as 40.2% of HEIs receive virological test for HIV using DNA-PCR tests within two of birth. This low utilization of EID services is responsible for increasing number of children becoming infected with HIV due to a delay in the initiation of prevention interventions. (Auma, Izudi & Alege, 2016)

A research conducted at Mbarara Regional Referral Hospital, found that among mother-infant pairs receiving HIV care, in more than a week period, over 48% miss their appointments. Furthermore out of the 515 infants who were lost to follow up, 7 infants (1.4%) had tested positive for HIV and 508 had an unknown HIV status (had negative 1^{st} or 2^{nd} PCR results but didn't return for final testing). 20 infants (3.6%) tested positive for HIV and were referred for care into the ART clinic.(Ankunda, Cumber & Atuhaire, et al. 2020).

At St. Francis hospital Mutolere, Kisoro district, EID services available include; provision of PCR services, infant feeding advice, counseling and support, nevirapine and cotrimoxazole prophylaxis. However the low uptake of EID services leaves many of the HIV Exposed infants undiagnosed hence lead to increased childhood HIV related morbidity and mortality. According to medical records data 2019/2020 total of 35 HIV Exposed infants were seen in EID clinic, only 15 had the second PCR done and only 2 had their third PCR done, Only one infant was initiated on ART

Despite EID services being available, establishing factors influencing the uptake of EID services of HIV exposed infants is vital for designing strategies to prevent missed opportunities however the uptake of EID services still remains sub- optimal thus the researcher would like to carry out a study to identify the factors influencing the uptake of Early Infant Diagnosis (EID) of HIV services among HIV Exposed Infants (HEIs) at St Francis hospital Mutolere Kisoro District.

1.3 Purpose of the study.

To determine factors influencing the uptake of EID services among HIV Exposed Infants at St. Francis hospital Mutolere Kisoro district.

1.4 Specific objectives.

1. To identify caregiver's related factors influencing the uptake of EID of HIV services among HIV Exposed infants at St Francis hospital Mutolere kisoro district.

2. To establish the health system /facility related factors associated with the uptake of EID of HIV services among HIV Exposed infants at St Francis hospital Mutolere Kisoro district.

1.5 Research questions.

1. What are the caregivers related factors influencing the uptake of EID of HIV services among HIV Exposed Infants at St. Francis hospital Mutolere kisoro district?

2. What are the health systems /facility related factors associated with the uptake of EID of HIV services among HIV Exposed infants at Francis hospital Mutolere Kisoro district?

1.6 Justification of the study

Despite significant scale-up of programs to prevent HIV, including EID, PMTCT, and given that the utilization of EID services in Uganda has lagged behind. The study will seek to identify gaps in factors associated with uptake of EID of HIV services among HIV Exposed Infants at St Francis hospital Mutolere.

To the ministry of health (MoH); results of the study will be used to guide health workers in managing and carrying out sensitization about factors influencing the uptake of EID of HIV services among caregivers of the HIV Exposed infants.

To the administration; the study findings will help the hospital management to facilitate redesigning of the strategies to enhance utilization of early infant diagnosis of HIV Services.

To the nursing education and research; the study will be of great importance in identifying and initiating early treatment of HIV infected children thus improving their health status and will also avail literature on related topics.

To the researcher; the findings will be compiled into report for a ward of diploma in nursing

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction.

This section presents reviewed literature from studies previously done on factors associated with uptake of Early Infant Diagnosis of HIV services among HIV Exposed Infants. Literature has been reviewed from Google scholar, med line central, medical journals and major health organizations websites like UNAIDS, WHO, UNICEF, UDHS.

Other literature was cited from written records and internet among other sources and presented into headings as below.

2.1 Caregivers factors influencing the uptake of Early Infant Diagnosis of HIV services among HIV Exposed Infants.

According to a study done in Uganda by Auma, Izudi and Alege (2016), about early Infant Diagnosis of HIV among infants born to HIV positive mothers found out that mother's aged 30 years and older had almost two-fold higher likelihood of ensuring their HIV Exposed Infant accessed EID services of HIV test at six weeks compared to those below or equal to 30 years old. Factors such as denial of HIV status, non-completion of the EID process due to frustrations encountered while accessing service and delay in receipt of PCR results served as barriers to mother’s utilization of EID services for their exposed infants. Furthermore the study also identified that adequate knowledge of EID, perceived importance of EID, financial stability as well as financial support from others and the positive attitudes of health workers facilitated HIV positive mother’s uptake of EID services for their exposed infants.

According to Ankunda, Cumber, Atuhaire, et al.(2020), in their study found out that compared to mother's within the ages 18-23 years, mother’s with age >30 years were least likely to have their

Infants lost to follow up. Again, those with 25-29 years were less likely to have their Infants lost to follow up compared to mothers with 18-23 years of age. Young maternal age was identified as outstanding factor responsible for lost to follow up. Factors like long distance to the health facility and lack of transport were reported as barriers to adhering to EID clinic schedules, a mother said "I came all the way from Bushenyi with a child, we spend a whole day here with nothing for my child to eat. Sometimes the health workers are slow and by the time we are out of the queue, the child is already very hungry, so, when I thought about the long journey to and from the health facility and how very challenging it is, I decided to leave my child at home since I was not breastfeeding." Also short child birth spacing and multiple visits from single household. When children are born too close to each other, this can affect their HIV care because the burden of carrying two children to care is enormous for the mother. This is worsened if mother and children have different follow up dates. Early marriage and early pregnancy coupled with HIV infection bring a lot of stress to the young women who would still be girls and in school under normal circumstances. Although early marriage and pregnancy is a common occurrence in Uganda, there is still a lot of stigma and young women of school going age find it hard to seek family planning services.

Individual factors mainly related to parents or guardians of the infants and included socioeconomic status, awareness of HIV control and prevention, compliance to PMTCT and EID services, stigma and discrimination (Adeniyi, *et al.*, 2015). Identified socioeconomic factors include education, occupation, poverty, income, cost of transport, distance to health care facility, geographical relocation, lack of paternal support (spouse permission) and religious beliefs are challenges to parents while seeking EID services. (Ndondoki, *et al.*, 2013)

According to Makau, et al.(2015),a total of 238 mother-infant pairs were interviewed. Majority, (69.2%) were aged below 30 years, 75% had below secondary level of education, 67.6% were married, and 71.4% were of poor social backgrounds. Most (77.4%) had HIV diagnosis made in the preceding year, 68.5% of them during pregnancy.

On the other hand, reasons given for failure to initiate ARV therapy was mainly lack of time to take child to the health Centre (54.8%), lack of information from health care providers (26.0%), and poor counseling offered by staff (11.9%). Denial of mothers to accept their own and subsequently infant's HIV status was also a common barrier to uptake.

According to Nkhonjera, et al.(2021), among the 18 PMTCT mothers interviewed, 4 had defaulted from the PMTCT program together with their HEI and 4 PMTCT mothers together with their HEI were compliant on the PMTCT program. The other 10 PMTCT mothers had their HEI lost to follow up while the mothers were active in PMTCT services. The age range of the participants was from 18 to 46 years with a median of 26 years. A total of 11 participants were married, 6 were divorced and 1 never married. Fifteen participants had a primary level of education while 3 reached the secondary level. Fourteen participants were not employed while 4 ran small-scale business. Fifteen participants were on ART and 13 had disclosed their status to husband, family members, and friends. Fifteen participants had 2 children and above and the average number of children was 3 children, Lack of child spacing; participants reported that they became pregnant before their baby was 24 months of age which imposed a challenge for them to continue with EID services. They further reported that at that point the health system requires that they access their ARVs at the antenatal clinics and not at the mother baby care clinics which made them leave the other child home so that they proceed with ANC services alone. The connotation of ANC as a space for pregnant women with services for pregnant women creates a structural problem for such

women. In some instances, a pregnant woman experiencing some minor discomforts of pregnancy would opt to leave the child at home to ease off her discomfort. Furthermore PMTCT mothers reported that they feared being discriminated by the relatives for being HIV positive, as such, they would not do anything that may expose their status to their relations. Some activities that a mother would abandon would be the attendance of EID services as that would indirectly expose of her status

2.2 Health system /facility related factors influencing the uptake of Early Infant Diagnosis of HIV services among HIV Exposed Infants.

According to Douglas, et al.(2021), barriers to uptake of EID services include lack of integration of prevention of mother to child transmission services (PMTCT) with in the maternal and child health (MCH) clinics, supply chain management, referral and networking of specimen, blood collection to results turnaround time and inability to reach children who are not in the health care system due to loss to follow up of mothers and infants between the time HIV diagnosis of mothers and partum return for Early Infant Diagnosis services.

While access to EID testing for HIV Exposed Infants using centralized platforms has improved in the lasted decade, it continues to lag behind need. coverage has increased from 28% in 2011 to 60% in 2019 (UNAIDS AIDS info 2019).Multiple factors are responsible , including lengthy transport times to laboratories for processing and delays in test results being returned due to poor communication back to health facilities and caregivers. These factors can lead to loss to follow up of delayed initiation on life saving treatment. (The Journal of the international AIDS society March 22, 2021 on point of care early infant diagnosis of HIV improves treatment initiation).

According to Auma, Izudi and Alege (2016), revealed that mothers that took more than 1- hour to reach the nearest health facility to access EID services were less likely to have HIV Exposed Infants use EID of HIV test at six weeks compared to those that took less than 1- hour. The study further found out that health system factors such as inadequate staff with sample collection skills, unavailability of vehicles to convey samples to the reference laboratory for analysis, the long turnaround time for receipt of polymerase chain Reaction (PCR) results , inadequate and frequent breakdown of PCR machine hindered EID services delivery. On the other hand, adequate knowledge of health workers on EID, availability of Dried Blood spot (DBS) cards and the adoption of task shifting strategies facilitated EID service delivery.

According to Ankunda, Cumber, Atuhaire, et al. (2020), mothers pointed out waiting time as one of the reasons why they did not return their babies to the facility for follow up. Waiting time was also mentioned by one health worker as a hindrance to child follow up. A nurse who works with the HIV Exposed Infants clinic when quizzed on why mothers were not returning their children for follow up submitted that; " it might be the long queue at the clinic especially for working class mother's "

Throughout sub-Saharan Africa, early infant diagnosis (EID) services have been integrated into PMTCT programme since 2006 (Buchanan,*et al*., 2014 & UNAIDS, 2014). Other EID services included in the programme are provision of infant feeding advice; counseling and support; and cotrimoxazole and Nevirapine prophylaxis. However, despite the investment in safe and cost effective PMTCT interventions for HIV in the Region, the coverage of the interventions in infants and children remains unacceptably low (Coulibaly,*et al*., 2014). It has been shown that majority of mothers never received HIV test nor PMTCT interventions. Therefore, very few HIV-exposed children are identified and only a small proportion is known to have access to EID services, which

is the basis for timely initiation of ART (Bwana, et al. 2016). Currently, an estimated 39% of children born to HIV infected women in sub-Saharan Africa receive an HIV test within the first two months of life (UNAIDS, 2014). Only less than a quarter (22%) of children living with HIV in these countries accessed ART in 2013 (UNAIDS, 2014). This suggests that there are barriers that limit the availability and accessibility of these important services in the region. In most countries in sub Saharan Africa, EID services are still not available, and where available there are challenges of stock-out of supplies influencing the delivery of early infant diagnosis services (Bwana, et al. 2016). Moreover, weak infrastructures, inadequate human resources trained in DBS techniques and the laboratories to perform PCR analysis are limited (Bwana, et al. 2018)). In Tanzania, EID services are available in more than 507 sites but PCR analysis is available in four zonal laboratories (Chiduo,*et al.* 2013 & MoHSW, 2015). In Kenya, in more than 30% of health facilities, do not offer (dry blood spots) DBS collection for PCR test for children. In Malawi, Zimbabwe and South Africa, more than 90% of health facilities offer EID services and each country has at least more than one national referral laboratory for PCR analysis (Wiegert,*et al.* 2014).

The institutional factors included poor communication between antenatal, delivery and postnatal facilities, unavailability of HIV test guidelines and lack of training in DBS sample collection among health workers. In addition, inadequate human resource for health, poor quality of health care infrastructures and stock-outs of DBS kits were also identified (Coulibaly, *et al.*, 2014). Others include poor documentation of HIV status on infant's Road-to-Health Chart (infant register) and late return of HIV DNA PCR test results (Mugambi,*et al.*2013 & Woldesenbet, *et al.*2015). In Kenya, Uganda, South Africa, Zambia and Cameroon, the median time between

sample collection and receipt of the test result (turnaround time) to guardians/mothers was described to be between 1.3 and 7.7 months (Mugambi *et al.* 2013, & Wiegert,*et al.* 2014).

According to Makau, et al.(2015), factors associated with initiation of treatment were mainly health facility factors. Those who had delivered in public health facility were more likely to start treatment, Membership to a support group was associated with early treatment initiation, the factors that constrained adherence to EID included accessibility of the health facilities, long waiting times especially at the pharmacy, lack of training of staff on EID and ARV therapy, weak linkages and communications between children attending health facilities for prophylaxis or ART or cotrimoxazole prophylaxis for HEI. Regarding the timing of diagnosis of mother's HIV status, 39.9% had been diagnosed in the last 12-24 months, while 5.9% were diagnosed in the preceding 6 months. This meant that they were diagnosed after the index pregnancy, indicating missed opportunities to test pregnant women in perinatal period. Majority, 53.8% of respondents demonstrated low knowledge of PMTCT which could be the cause of none adherence to EID

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter explained the methods and techniques that the researcher used to determine factors influencing the uptake of early infant diagnosis (EID) services among Human immunodeficiency Virus (HIV). It described study design, study setting, study population, inclusion criteria, definition of variables, research instruments, data collection procedure, data management, data collection analysis, ethical considerations, limitations of study and dissemination of results.

3.2 Study design and rationale

The researcher used a cross sectional study design which employed both qualitative and quantitative methods of data collection. The design was selected because data would be collected at a single point in time without following respondents. Qualitative method of data collection would help respondents to express their views and quantitatively some responses would be predetermined

3.3 Study setting and rationale

The study was conducted at St. Francis Hospital Mutolere, a private not for profit (PNFP) hospital located in Gasiza parish Nyakabande sub county about 4kilometres from Kisoro district and about 500 kilometers from Kampala the capital city of Uganda. The hospital has a bed capacity of 210 and it offers maternity services, has outpatient department (OPD), and offers immunization services, HIV/TB clinic, surgical services and medical services.

Data was obtained from community based health care (CBHC), outpatient department (OPD), pediatric ward and ART clinic because they receive mothers/ care takers whose infants are exposed to HIV and on addition the facility provides promotive, preventive and curative services including maternal and child health services, prevention of mother to child transmission/ early infant diagnosis (PMTCT/ EID) services.

3.4 Study population

The study targeted mothers / care giver whose their infants are exposed to HIV and those who have HIV infected infants that come to health facility for follow up especially between 6 weeks to 18 months at St. Francis Hospital Mutolere, Kisoro district.

3.4.1 Sample size determination

The study included 45 respondents where by 30 respondents would be care takers with exposed infants and those that would bring infected HIV infants for follow up at the health facility. 15 respondents would be health workers working from the department that offers these services at St. Francis Hospital Mutolere, Kisoro district. The sample size selected was enough to generalize the findings.

3.4.2 Sampling procedure

Random sampling procedure was to select care givers with exposed infants and those ones that would bring infants for follow-up whereby the first respondent would be selected and then after the interval of 2 care givers another respondent would be selected.

The researcher used purposive sampling procedure to recruit health worker respondents to participate in the study following their working experience.

3.4.3 Inclusion criteria

All care givers with exposed infants ranging from 6 weeks to 18 weeks and those ones for follow up would be included in the study together with health workers with working experience of 2 years on EID department.

3.5 Definition of variables

Dependent variables

Uptake of early infant diagnosis (EID) services among human immunodeficiency virus (HIV) exposed infants.

Independent variables

1. **Care giver related factors influencing up take** are actions that can hinder or increase utilization of early infant diagnosis services (EID) among human immunodeficiency virus (HIV) exposed infants that is to say inadequate knowledge, long distance to health facility and stigma.

2. **Health worker or health care system related factors influencing the uptake** are actions that may hinder or increase provision of early infant diagnosis (EID) services that is to say lack of training, lack of drugs, and attitude of a health worker.

3.6 Research instruments

Self-administered pre-tested questionnaire containing both open and closed ended questions were prepared by the researcher to collect data from care givers with exposed infants and health workers at St. Francis Hospital Mutolere, Kisoro district. The questionnaires prepared comprised of 3 sections: section A: questions on demographic data, section B containing both care giver and health worker or health facility related factors influencing the uptake of early infant diagnosis (EID) services among human immunodeficiency virus (HIV) exposed infants at St. Francis Hospital Mutolere, Kisoro district.

3.7 Data collection procedures

Following successful recruitment of respondent's self-administered pretested questionnaires were distributed to care givers with exposed infants for filling in and the researcher would translate the questionnaires to care takers as they answer. Questionnaires were also distributed to health workers who work in these departments that offer (EID) services with working experience of 2 years since they would be knowledgeable and would answer by writing.

3.7.1 Data management

The numbers of questionnaires given out at the same time were recorded to ensure that they were all returned. Data editing and coding was also done for error correction and easy entry into the

computer respectively for proper analysis. The researcher managed the filled questionnaires under lock and key to be only accessible by the researcher to ensure privacy and confidentiality.

3.7.2 Data analysis

Data was computed using statistical package for social science (SPSS) and Microsoft Excel 2012 version. Quantitative statistics was presented in form of frequency tables, percentages and graphs to describe participants' responses on the variables under consideration. Qualitatively data was summarized in narrative statements so as to capture all relevant participants' responses.

3.8 Ethical consideration

An introductory letter from the research committee Mutolere School of nursing and midwifery was obtained and submitted to medical director of St. Francis hospital Mutolere who would sign and recommend the researcher to the research site and then was taken to in charges of various departments who would recommend the researcher to access wards. Informed consent was obtained from the respondents which was both verbal and written. To maintain confidentiality, privacy, anonymity, care takers were encouraged to use thumb print and all information were kept under lock and key only accessible to the researcher.

3.9 Limitations of the study

The researcher met challenges of limited interests and unwillingness of the care takers to participate in the study due to stigma which would be solved by explaining the purpose of the study and encouraging respondents that it was for academic purposes and their responses would be kept confidential.

The researcher also faced financial challenges in terms of transport, photocopying, printing, airtime, and binding. To overcome this, the researcher made a budget earlier to get a picture of how much would be needed and solicit it earlier to avoid inconveniences.

3.10 Dissemination of results

The results of the study were disseminated as follows; three copies of dissertation were produced; one copy to school library, second copy was submitted to Uganda Nurses and Midwives Examinations Board (UNMEB) for academic award and third copy to the researcher.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents findings, analysis and interpretation of data collected from the study on factors influencing the uptake of early infant diagnosis (EID) services among human immunodeficiency virus (HIV) exposed infants at St. Francis hospital Mutolere, Kisoro district.

Data was obtained gathered from 40 respondents of whom 25 were care taker respondents and 15 were health worker respondents. The researcher used a pretested self-administered questionnaire to collect data from both care takers and health workers. Data was analyzed using statistical package for socio science and Microsoft excel 2010 version. Responses from respondents were presented in form of frequency tables, graphs and percentages.

4.1 DISTRIBUTION OF SOCIO DEMOGRAPHIC DATA

Table 1:showing socio demographic data of care takers

Variable	**Frequency (N)=25**	**Percentage (%)**
Age		
Below 18 years	2	8
19-23 years	4	16
24-28 years	9	36
29 years and above	10	40
Sex		
Male	10	40
Female	15	60
Level of education		
Primary level	10	40
Secondary level	5	20
Tertiary level	3	12
None	7	28
Occupation		
Peasant	13	52
Business persons	11	44
House wife	1	4
Marital status		
Single	4	16
Divorced	1	4
Married	20	80
Widowed	0	0

Table 1 above shows that, most 15 (60%) of care taker respondents were females, 10 (40%) of respondents were males whereas majority of respondents 10 (40%) had 29 years and above, only 2 (8%) of respondents were below 18 years while majority 20 (80%) of care taker respondents were married, 13 (52%) of respondents were peasant and minority 1 (4%) of respondents were house wife.

Table 2:distribution of socio demographic data of health workers

Variable	**Frequency (N)=15**	**Percentage (%)**
Age		
18-24 years	4	26.7
25-31 years	6	40.0
32-38 years	3	20.0
39 years and above	2	13.3
Sex		
Female	4	26.7
Male	11	73.3
Cadre		
Enrolled nurse	8	53.3
Registered nurse	4	26.7
Medical officer	1	6.7
Doctor	0	0

Table 2 above revealed that most health worker respondent 11 (73.3%) were males and only 4 (26.7%) of respondent were females whereas majority 6 (40.0%) of respondent were in 25-31 years, only 2 (13.3%) of respondent had 39 years and above while most 8 (53.3%) of respondent were enrolled nurses

4.2 CARE TAKER RELATED FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HIV EXPOSED INFANTS AT ST. FRANCIS HOSPITAL MUTOLERE KISORO DISTRICT.

Table 3:3 showing care taker awareness of EID services, sources of information about EID, and what they heard about EID

Awareness of EID services (N)=25		
Variable	**Frequency**	**Percentage (%)**
Yes	25	100
No	0	0.0
Sources of information (N)=25		
Health workers	18	72
Radio	2	8
Friends	4	16
Family members	1	4
What they heard about EID (N)=25		
Initiation of child to ART	7	28
Test done to diagnose HIV in infants	14	56
Just heard and no more information about it	4	16

Table 3 above shows that all 25 (100%) of care taker respondents have ever heard about early infant diagnosis and majority 18 (72%) of respondents got information about early infant diagnosis from the health workers, minority 1 (4%) of care taker respondents got information from family members as well as most 14 (56%) of care taker respondents were told that EID is the test done to diagnose HIV in infants.

Table 4:showing whether infant was tested for HIV, initiation to ART and age appropriate for EID sample collection.

Whether infant was tested for HIV (N)=25		
Variable	**Frequency**	**Percentage**
Yes	20	80
No	5	20
Whether infant is initiated to ART (N)=20		
Yes	19	95
No	1	5
Age appropriate for EID sample collection (N)=25		
Between 6 to 8 weeks	6	24
Between 6 weeks to 18 months	14	56
19 months	3	12
Over 20 months	2	8

Table 4 shows that most 20 (80%) of care taker respondents revealed that their infants were tested for HIV, only 5 (20%) of respondents did not take their infants for testing whereas majority 19 (95%) of care taker respondents reported that their infants were initiated on ART as well as majority 12 (56%) of care taker respondents reported that the age appropriate for EID sample collection is between 6 weeks to 18 months.

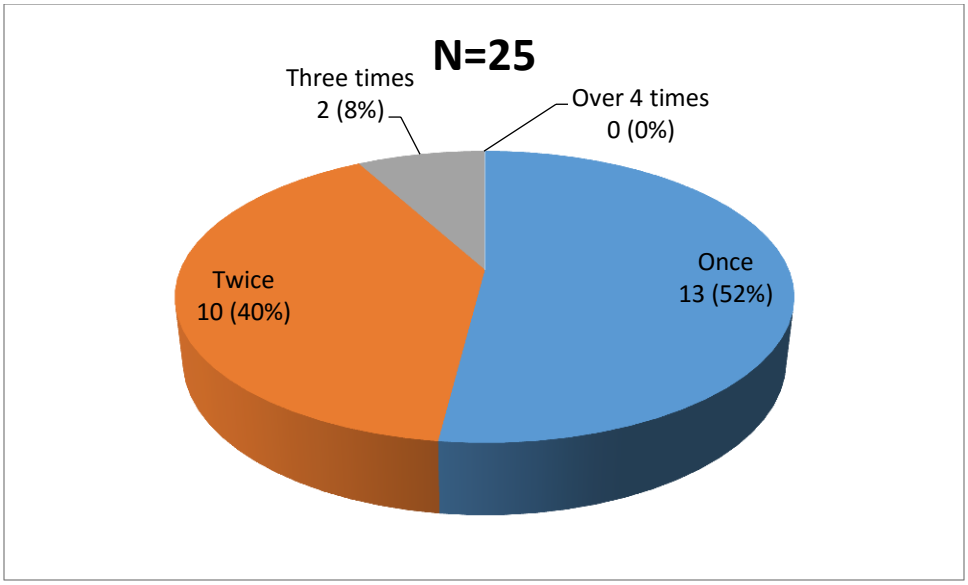

Figure 1:showing number of times the test is done

Figure 1 above shows that majority of care taker respondents 13 (52%) reported that test is done once and only 2 (8%) reported that the test is done 3 times.

Table 5:showing awareness of HIV status, type of HIV status, enrollment for ART and perception of HIV status results

Awareness of HIV status (N)=25		
Variable	Frequency	Percentage (%)
Yes	23	92
No	2	8
Type of HIV status (N) =23		
Positive	20	87
Negative	3	13
Enrollment for ART (N)=20		
Yes	20	100
No	0	0
Perception of HIV status (N)=25		
Very good	2	8
Good	1	4
Fair	0	0
Bad	22	88

Table 5 shows that majority of care taker respondents 23 (92%) were aware of their HIV status, 20 (87%) of care taker respondents were HIV positive, all 20 (100%) of care taker respondents were enrolled for ART and most 22 (88%) of care taker respondents felt bad when told their HIV status.

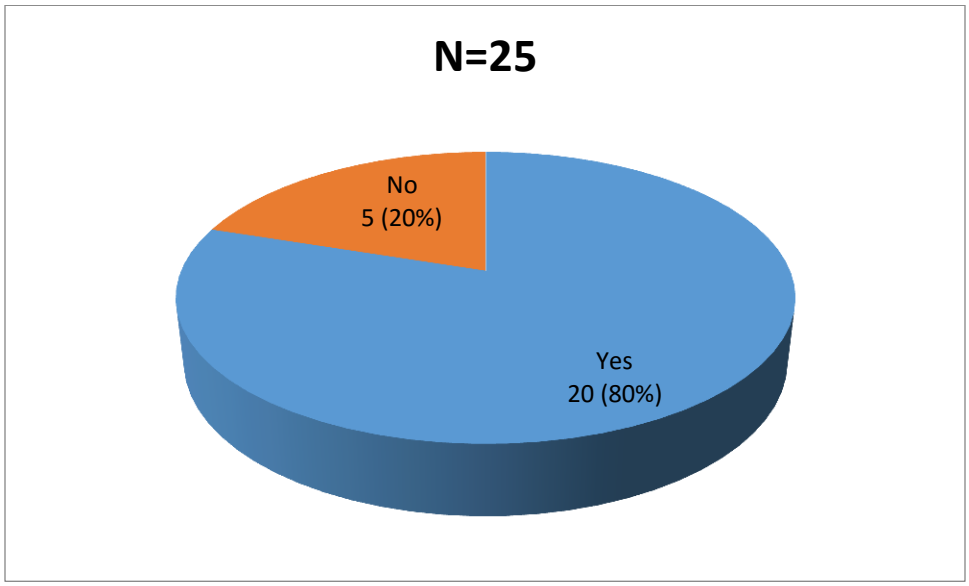

Figure 2:showing number of care takers that use family planning.

Figure 2 above shows that majority 20 (80%) of care taker respondents use family planning whereas minority 5 (20%) of care taker respondents did not use family planning.

Table 6:showing presence of a health facility that offers EID and family planning services, distance care takers take to reach at the health facility and other caretaker related factors influencing early infant diagnosis among HIV exposed infants.

Presence a health facility in the sub county (N)=25		
Variable	**Frequency**	**Percentage (%)**
Yes	25	100
No	0	0
Distance to the health facility (N)=25		
Less than or equal to 30 minutes	18	72
31 minutes to 1 hours	6	24
1 to 2 hours	1	4
More than 4 hours	0	0
Other care giver factors influencing uptake of EID services among HIV exposed infants (N)=25		
Financial stability	7	28
Education	1	4
Lack of transport means	2	8
Lack of paternal support	5	20
Religious beliefs	6	24
Non completion of EID processes due to frustrations encountered while accessing EID services	4	16

Table 6 above shows that all 25 (100%) of care taker respondents reported that there is presence of a health facility in there sub county, majority 18 (72%) of care taker respondents take less than or equal to 30 minutes to reach the health facility. Most 7 (28%) of the care takers reported financial stability, 6 (24%) of respondents revealed religious beliefs and only 1 (4%) indicated education were among other care taker related factors influencing uptake of EID services among HIV exposed infants.

Table 7:showing health workers that have ever tested infants for HIV, number of times the test is done, age appropriate for EID sample collection, accessibility of diagnostic equipment's and equipment's that are not accessible.

Whether health worker have ever tested infants for HIV (N)=25		
Variable	**Frequency**	**Percentage (%)**
Yes	15	100
No	0	0
Number of times test is done (N)=25		
Once	10	66.7
More than once	5	33.3
Infants age appropriate for EID sample collection (N)=25		
6 to 8 weeks	6	40.0
6 weeks to 18 months	8	53.7
19 months	1	6.7
Over 20 months	0	0.0
Accessibility of diagnostic equipment's (N)=25		
Yes	7	46.7
No	8	53.3
Diagnostic equipment's that are not accessible (N)=8		
PCR machine	2	25
Determine strips	4	50
Viral load	2	25

Table 7 above shows that all 15 (100%) health worker respondents have ever tested infants for HIV and Majority 10 (66.7%) of health worker respondents indicated that the test is done once, 8 (53.7%) of health worker respondents reported that age appropriate for EID sample collection is between 6 weeks to 18 months as well majority 8 (53.3%) reported that all diagnostic equipment's are not accessible whereas most 4 (50%) of respondents revealed that that determine strips are not always accessible.

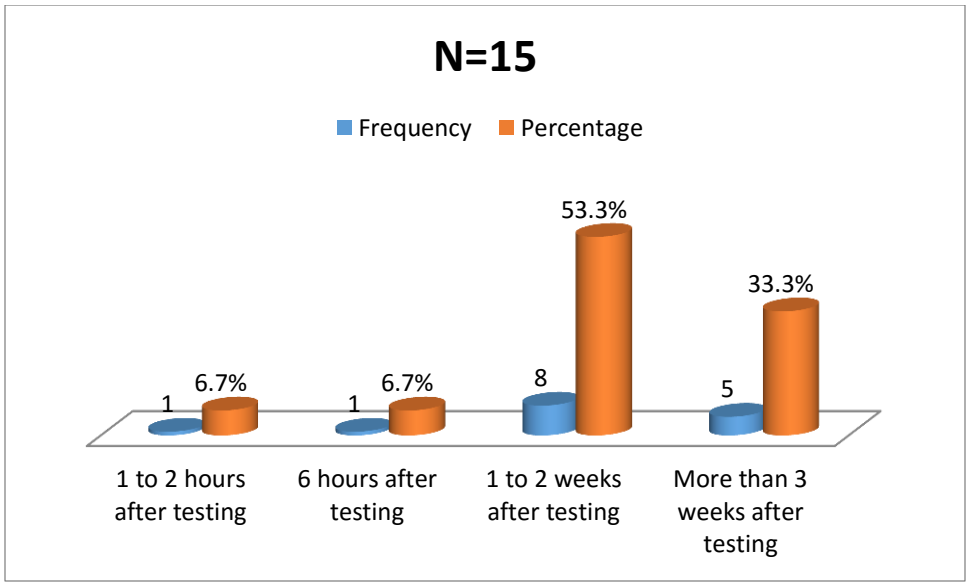

Figure 3:showing time taken by care takers before getting results

Figure 3 above shows that most 8 (53.3%) health worker respondents reported that care taker wait for results for 1 to 2 weeks and only 1 (6.7%) of health worker respondent reported care takers wait for 1 to 2 hours before getting results for their infants.

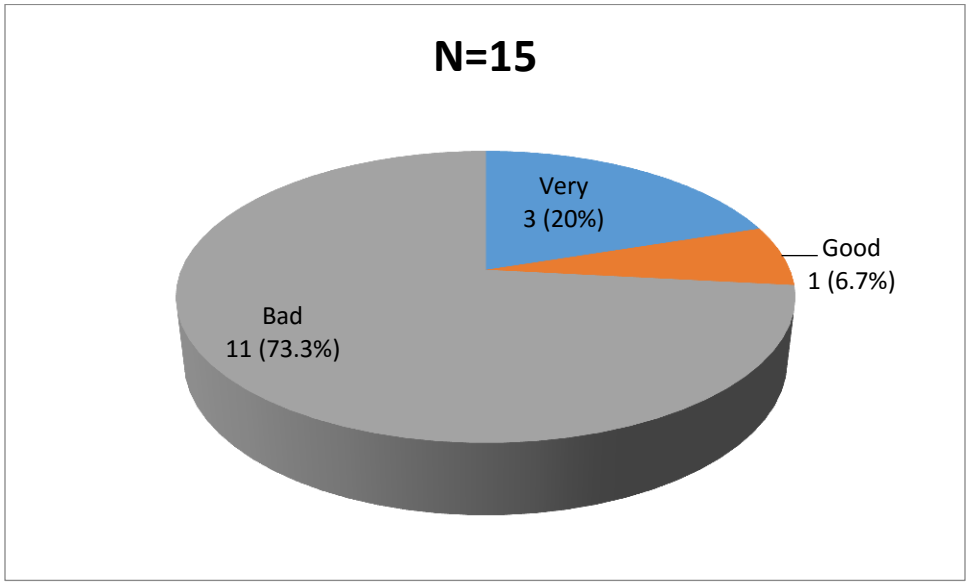

Figure 4:showing how care takers perceived to the information when given results

Figure 4 shows that most 11 (73.3%) of health worker respondent reported that care takers perceived information badly and only 1 (6.7%) reacted good when given their results of HIV.

Table 8:showing reasons of the care takers for lost follow up and other care taker related factors influencing up take of early infant diagnosis among HIV exposed infants.

Reasons of the care takers for lost follow up (N)=15		
Variable	**Frequency**	**Percentage (%)**
Lack of transport to health facility	6	40
Inadequate knowledge about EID	5	33.0
Long distance to health facility	4	26.7
Delay in receipt of PCR	0	0
Other care taker factors influencing uptake of EID services among HIV exposed infants (N)=15		
Age of 30 years	5	33.3
Financial stability	1	6.7
Religious beliefs	4	26.7
Lack of child spacing	3	20
Non completion of EID processes due to frustrations encountered while accessing EID services	1	6.7

Table 8 shows that majority 6 (40%) of health worker respondent reported lack of transport to health facility, 4 (26.7%) of respondents reported long distance to health facility were among the reasons of the care takers for lost follow up where as majority 5 (33.3%) of respondents indicated age of 30 years and above and only 1 (6.7%) of respondents reported financial stability is among other care taker related factors influencing up take of EID services among HIV exposed infants.

4.3 HEALTH FACILITY RELATED FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HIV EXPOSED INFANTS AT ST. FRANCIS HOSPITAL MUTOLERE KISORO DISTRICT.

Table 9:showing whether health facility offer EID services, services offered and waiting time at a health facility before seeing a health worker

Whether health facility offer EID service (N)=25		
Variable	**Frequency**	**Percentage (%)**
Yes	25	100
No	0	0
Services offered (N)=25		
Counseling on HIV	1	4
Screening and testing for HIV/AIDS	9	36
Family planning services	10	40
Initiation on ART	5	20
Waiting time at the facility before seeing a health worker (n)=25		
Less than or equal to 30 minutes	16	64
31 minutes to 1 hour	8	32
2 to 3 hours	1	4
More than 4 hours	0	0

Table 9 shows that all 25 (100%) of care taker respondents revealed that there is a health facility in their sub county, 8 (36%) of respondent indicated that screening and testing for HIV/AIDS is among services offered at their health facility and majority 16 (64%) of care taker respondents

Reported that they wait for less than or equal to 30 minutes before seeing a health worker to give them services.

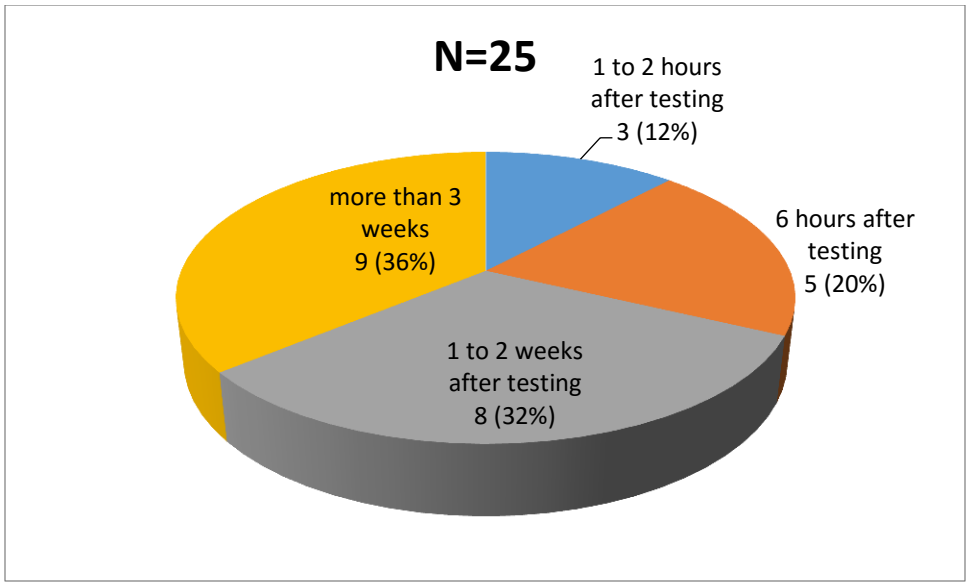

Figure 5:showing time taken to get child's results

Figure 5 above shows that 9 (36%) 0f care taker respondents reported they waited child's results for more than 3 weeks after testing whereas minority 3 (12%) of care taker respondents reported 1 to 2 hours after testing.

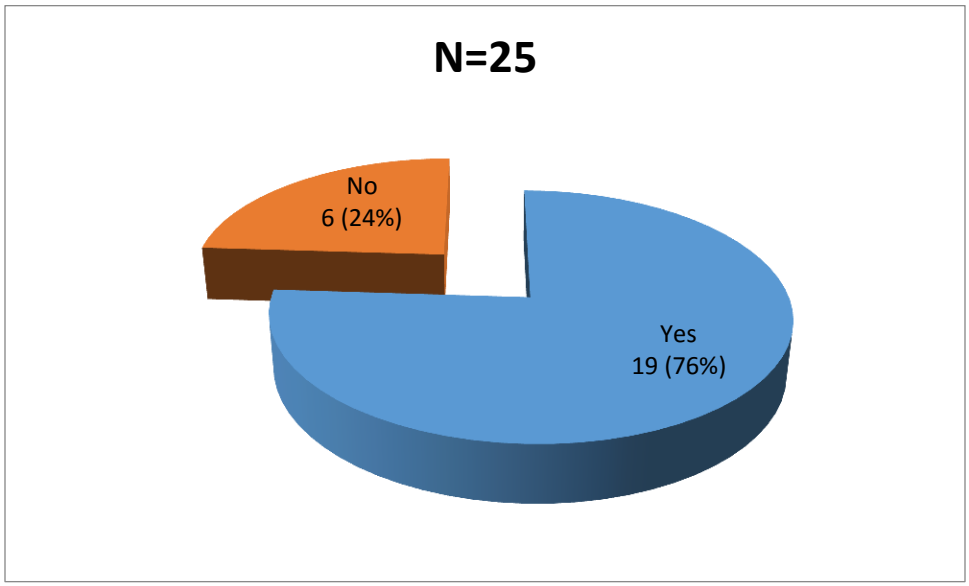

Figure 6:showing whether health workers refer care takers

Figure 6 above shows that most 19 (76%) of respondents reported health workers refer them to other hospitals in case of shortages in services whereas minority 6 (24%) of respondent reported that they are not referred to any health facility.

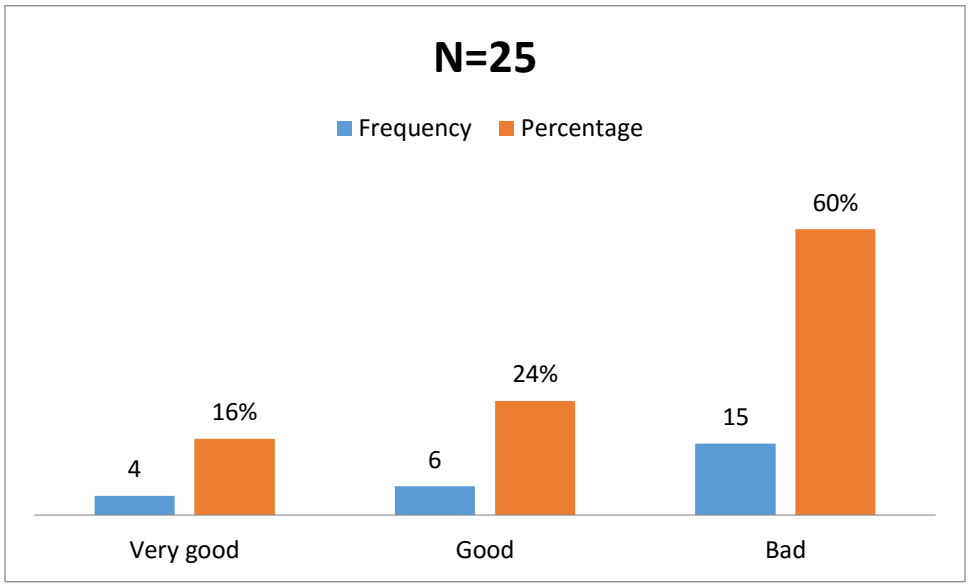

Figure 7:showing rating of the health workers when assessing the child brought back for follow up.

Figure 7 shows that most 15 (60%) of the care takers reported that health workers rated bad when assessing the infant brought back for follow up whereas only 4 (16%) of care takers indicated that health workers had good attitudes while assessing the child brought on follow up.

Table 10: showing other health facility related factors influencing the uptake of early infant diagnosis (EID) services among HIV exposed infants at St. Francis hospital Mutolere Kisoro district

Variable	Frequency (N)=25	Percentage (%)
Lack of training	2	8
Poor communication and weak linkages	5	20
Unavailability of HIV test guidelines	1	4
Poor documentation of HIV status of infants	1	4
Late return of HIV DNA PCR test results	4	16
Weak infrastructures	1	4
Inadequate human resource	3	12
Lack of laboratories to perform PCR analysis	2	8
Lack of integration of PCMTCT	1	4

Table 9 shows that majority 5 (20%) of respondents reported poor communication, 4 (16%) of respondents reported late return of HIV DNA PCR results and only 1 (4%) of respondent indicated unavailability of HIV test guidelines were among other health facility related factors influencing the uptake of early infant diagnosis among HIV exposed infants.

Table 11:showing whether health facility offer EID services, services offered and number of health workers on shift

Whether health facility offer EID services (N)=15		
Variable	**Frequency**	**Percentage (%)**
Yes	15	100
No	0	0
Services offered (N)=15		
Counseling on HIV	8	53.3
Screening and testing for HIV	6	40.0
Family planning services	1	6.7
Number of health workers on shift (N)=15		
1 to 2 health workers	3	20.0
3 to 4 health workers	9	60.0
5 to 6 health workers	2	13.3
More than 7 health workers	1	6.7

Table 10 shows that all 15 (100%) of respondents reported that their health facility offer EID services, 8 (53.3%) of respondents reported that counseling on HIV is among services offered whereas most 9 (60.0%) of respondents reported 3 to 4 health workers are always on duty.

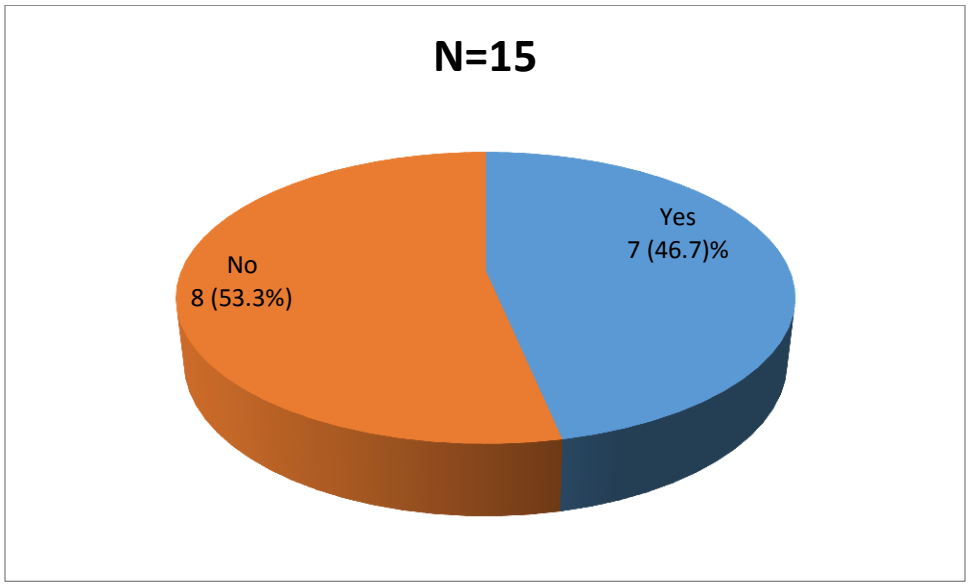

Figure 8:showing whether health workers experience stock out on DBS

Figure 8 above shows that most 8 (53.3%) of health worker respondents indicated that they do not experience stock out on DBS whereas 7 (46.7%) of respondents reported that they experience stock out on DBS.

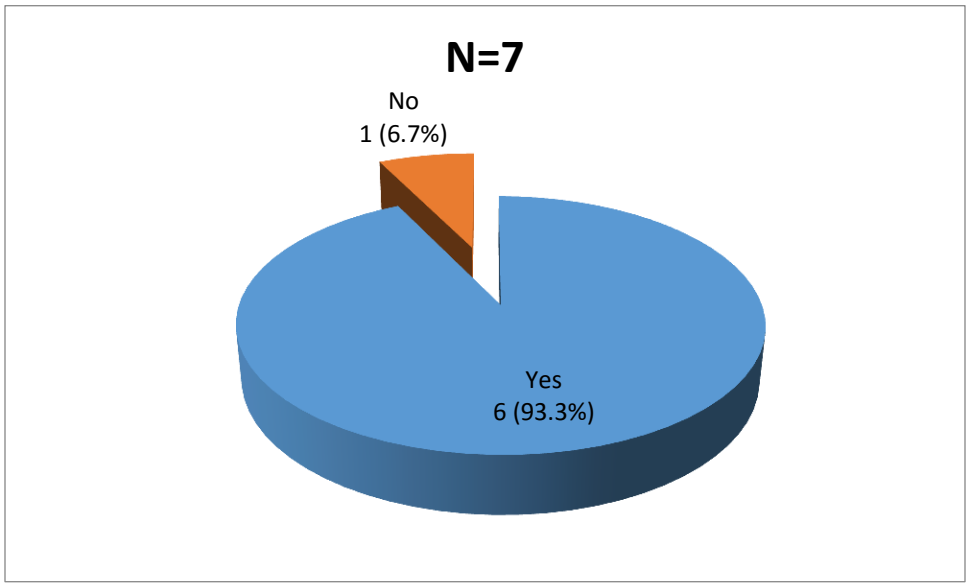

Figure 9:showing whether there is linkage to other hospitals where to refer care takers for services.

Figure 9 shows that nearly all 6 (93.3%) of respondents reported that there are linkages to other hospitals where to refer for services whereas only 1 (6.7%) of respondents reported there is nowhere to refer clients for services.

Table 12:showing whether health workers always get training on EID, how long they go for training, whether care takers that are positively diagnosed always initiated on ART and how health workers rate while giving services to care takers

Whether health workers get training on EID (N)=15		
Variable	Frequency	Percentage (%)
Yes	10	66.7
No	5	33.3
Number of times for training (N)=10		
Once a week	5	50.0
2 times a week	2	20.0
2 times a months	3	30.0
More than 3 times a months	0	0.0
Whether positively diagnosed care takers are initiated on ART (N)=15		
Yes	15	100.0
No	0	0.0
Rating of health workers to words giving services (N)=15		
Very good	0	0.0
Good	1	6.7
Bad	14	93.3

Table 11 shows that majority 10 (66.7%) of health worker respondents reported that they get training of EID as well as half 5 (50%) of health workers train once a week whereas all 15 (100%) of respondents when asked whether positively diagnosed care takers are initiated on ART they reported yes and more than half 14 (93%) of health workers rated bad while giving services to care takers with infants who are positively diagnosed HIV infants.

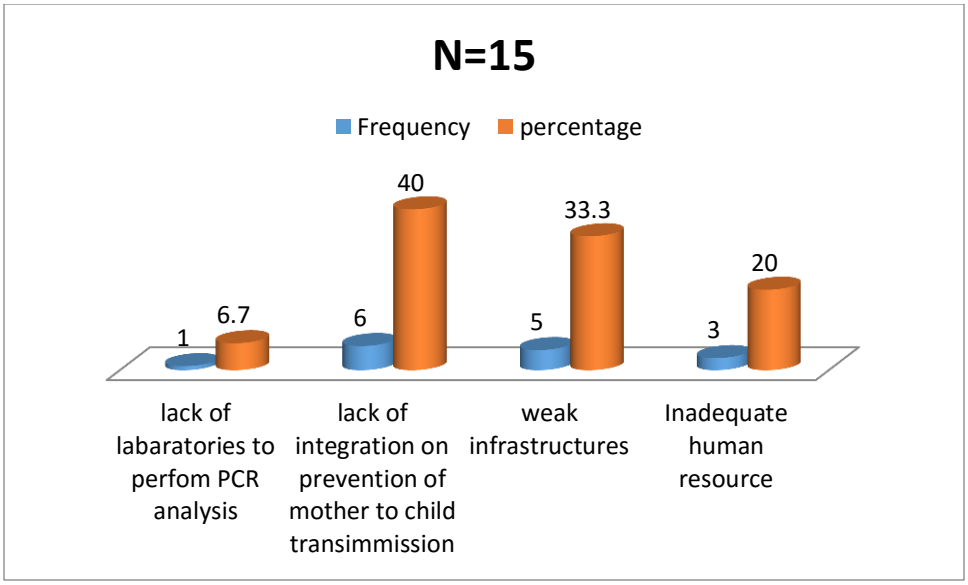

Figure 10:showing other care system related factors influencing the uptake of EID services among HIV exposed infants.

Figure 10 above shows that most 6 (40%) of health worker respondents reported lack of integration on prevention of mother to child transmission (PMTCT) and only 1 (6.7%) of respondents reported lack of laboratories to perform PCR analysis were among care system factors influencing uptake of early infant diagnosis among HIV exposed infants.

5.0 CHAPTER FIVE: DISCUSSION, CONCLUSSION AND RECOMMENDATIONS

This chapter discusses the study findings in relation to specific objectives and explains factors influencing the uptake of early infant diagnosis (EID) services among HIV exposed infants at St. Francis hospital Mutolere Kisoro district. It provides conclusions as well as recommendations.

5.1 DISCUSSION

The research findings are discussed under the following sub headings.

5.1.1 SOCIO DEMOGRAPHIC DATA

The study results revealed that 10 (40%) of care taker respondents had age of 29 years and above. This was also reported by 5 (33.3%) of the health worker respondents that age of 30 years influence uptake of early infant diagnosis among HIV exposed infants. This is similar to the study done by Auma an Sylivia (2016) about assessing factors associated with utilization of early infant diagnosis found out that mothers aged 40 years and older had almost two-fold higher likely hood of ensuring their HIV exposed infant accessed early infant diagnosis services of HIV test at six weeks compared to those below or equal to 30 years old. Furthermore Ankunda, Cumber, Atuhaire, et al. (2020) revealed that mothers with age greater than 30 years were least likely to have their infants lost follow up since young maternal age were identified as outstanding factor for lost follow up.

The study findings also revealed that more than half 8 (53.3%) of health worker respondents who participated in the study were enrolled nurses compared to 4 (26.6%) of health worker respondents were registered nurse because enrolled nurses tend to be active and are highly employed compared to registered nurses

5.1.2 CARE TAKER RELATED FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS AMONG HIV EXPOSED INFANTS.

According to study results, 72% of Care taker respondents revealed that distance to health facility is less than or equal to 30 minutes. This is because there is presence of a health facility to their sub county. This was contradicting with the study done by Ankunda,cumber, Atuhaire, et al. (2020) who reported that distance to the health facility was challenging and acting as a barrier to adhering to EID schedules whereby a mother said ‘ I came all the way from bushenyi with a child and spent whole day with nothing for the child to eat’. Similarly Ankunda and Sylvia (2016) contradicted with the study findings by reporting that mothers took more than one hour to reach the nearest health facility to access EID services were less likely to have HIV exposed infants use of EID of HIV test at six weeks compared to those that took less than one hour.

The study results also revealed that most 88% of care taker respondents felt bad with their HIV status due to failure to adapt and adjust with the situation. This was also reported 73.5% of health worker respondents that some cares perceived to the information concerning their status badly. This is due failure to cope up and adapt to live with the newly diagnosed status. This related to study done by Auma and Sylvia (2016) who reported that denial of HIV status leads to poor perception of respondents because of anxiety and fear of HIV treatment.

Study results revealed that 24% of care taker respondents reported that religious beliefs in accessing or utilizing EID services. This is also observed by 26.7% of health workers who reported that religious beliefs contribute much in influencing uptake of EID services among HIV exposed infants. This is because some religious do not support use of medications in during treatment because they always have a saying that God is above all and can perform miracles.

This is with the study done by Ndondoki, et al. 2013) who reported that religious beliefs are challenge to parents while seeking EID services.

According to study findings, 28% of care taker respondents reported financial stability, this was observed by 6.7% of health worker respondents who reported that financial stability make it difficult for care takers to utilize EID services. This is similar to the study done by Auma and Sylvia (2016) who reported that financial stability holds the highest percentage as a hindering factor for mothers to access and utilize EID services.

The study results show that 80% of care taker respondents use family planning and this was also revealed by 6.7% of health worker respondents that the health facility offers family planning services. This contradicts with the study done by Nkhonjera, et al. (2021) who revealed that lack of child spacing due to lack of awareness of the availability of family planning methods and their ignorance of caretakers where by some participants reported that they became pregnant before their baby was 24 months of age which imposed a challenge for them to continue with EID services.

Furthermore the study results revealed that 4% of care taker respondents lacked integration of prevention of mother to child transmission services and this was also observed and reported by 40% of health worker respondents who revealed that lack of integration of prevention of mother to child transmission is one of the reasons for lost follow-up. This corresponds with the study done by Nkhogera, et al. (2021) who revealed that mothers feared to be discriminated by their relatives for being HIV positive, as such, they would not do anything to expose their status to their relations thus lack of compliant with PMTCT services.

HEALTH SYSTEM / FACILITY RELATED FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS OF HIV SERVICES AMONG HIV EXPOSED INFANTS.

According to the study results 64% of care taker respondents waited for less than or equal to 30 minutes before seeing a health worker to give services. This was also observed by 6.7% of health worker respondents that care takers would wait for less than or equal to 30 minutes and this was due to availability of health workers on shift. This does not correspond with the study done by Ankunda, Cumber, Atuhaire, et al. (2020) who said that waiting time is one of the reasons for lost follow up and this was also mentioned by the health workers as a hinderance for follow up.

Study findings revealed that 12% of caretaker respondents reported inadequate human resource is among the factors influencing the uptake of EID services among HIV exposed infants. This was also reported by 20% of health worker respondents that inadequate human resource contributes to lost follow-up among HIV exposed infants. This corresponds to the study done by Coulibely, et al. (2015) who reported that inadequate human resource for health and poor quality infrastructures contribute to factors that influence uptake of EID services among HIV exposed infants where mothers took their children for follow-up and finds no or when the available health workers have overload of work which contributed to lost follow-up.

Furthermore study findings revealed that 6.7% of health worker respondents reported lack of laboratories to perform PCR analysis has increased late return of PCR results. This was also reported by 8% of care taker respondents that lack of laboratories to perform PCR analysis contributes to late return of PCR results and hence lost to follow up. This corresponds to the study done by Coulibaly, et al. (2014) who revealed that lack of laboratories where to perform

tests such as PCR analysis influenced up take of EID services because people would not get their results in time if tested for PCR analysis.

Study findings showed that 20% of care taker respondents reported poor communication and weak linkages to other health Centres and to care takers for easy access of EID services and other facilities like ARV retroviral therapy. This is similar to the study done by Makau, et al. (2015) who reported that weak linkages and communications between children attending health facilities for prophylaxis contributed on factors influencing uptake of EID services and hence lost to follow up.

5.2 CONLUSION

The study determined factors influencing the uptake of early infant diagnosis (EID) services among human immune deficiency virus (HIV) exposed infants at St. Francis hospital Mutolere, kisoro district. The study involved care givers and health system/ health workers factors influencing the uptake of early infant diagnosis (EID) services among human immune deficiency virus (HIV) exposed infants at St. Francis hospital Mutolere, Kisoro district. The study revealed that 100% of care taker respondents were aware of early infant diagnosis (EID) services and 72% of care taker respondents got information from health workers which imply that care takers were always up to date by their health workers. In addition the study revealed that 56% of care taker respondents heard that early infant diagnosis is the test done to diagnose HIV in infants. Furthermore the study revealed that 80% of care taker respondents had their infants tested for HIV as well as 95% of the infants were initiated on ART. Furthermore majority 56% of care taker respondents reported that the age appropriate for EID sample collection is between 6 weeks to18 months.

The study also identified that 100% of health worker respondents had ever tested infants for HIV because they usually get such clients and 66.7% of health workers reported that the test is done once.

According to the study results, 72% of Care taker respondents revealed that distance to health facility is less than or equal to 30 minutes and this improved on the uptake of early infant diagnosis (EID) services. In addition 88% of care taker respondents felt bad with their HIV status due to failure to adapt and adjust with the situation and was also reported by 73.5% of health

worker respondents that some cares perceived to the information concerning their status badly which implies that they almost denied their status.

The study findings also revealed that 36% of care taker respondents said patients could wait for more than 3 weeks without getting their results of PCR analysis. Furthermore 93.3% of the health worker respondents reported that linkage to other health centers where to refer client in case equipment's to use are not available to the health facility.

Furthermore the study established caretaker related factors as financial stability, non-completion of EID process due to frustrations encountered while accessing services, lack of transport, education, lack of paternal support, religious beliefs and lack of child spacing whereas health system/ health worker related factors include, lack of integration of PMTCT services in maternal departments, waiting time and supply chain management, negatives attitudes of health workers in following up infants with HIV. Therefore there should be sensitization about early infant diagnosis (EID) services and continuous professional development about HIV in infants and the guidelines of managing and preventing HIV.

5.3 RECOMMENDATIONS

In view of my study results the following recommendations were made;

To the ministry of health (MoH)

The ministry of health should provide guide lines about HIV management and prevention in infants and adults.

Ministry of health should improve on supply HIV drugs and prophylaxes and other requirements needed such as testing kits and other equipment's needed in laboratory for testing HIV to the unit and encourage stoking for easy provision of services to clients.

Ministry of health should also recruit a highly qualified staff and encourage training of health workers concerning HIV management and prevention.

To the hospital

The hospital management and the hospital administration including the staff will benefit from the study by understanding factors influencing the uptake of early infant diagnosis (EID) services and its management.

To the education and research

Similar studies in different setting should be carried out on the same topic to generate more supportive evidence. In addition similar studies using a larger sample size should be carried out to compare the findings.

5.4 IMPLICATIONS TO THE NURSING PRACTICE

Knowing factors influencing the uptake of early infant diagnosis (EID) services among human immunodeficiency virus (HIV) exposed infants at St. Francis hospital Mutolere, Kisoro district will help to reduce morbidity and mortality among infected infants and the exposed infants and the study will also reveal other measures and guidelines to follow during management

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APPENDICES

APPENDIX I: CONSENT FORM

Hello,

My name is Habiyaremye Julius, a student of diploma in nursing (Extension) at Mutolere School of nursing and midwifery. I am conducting a study entitled **"FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMMAN IMMUNODEFICIENCY VIRUS (HIV) EXPOSED INFANTS AT ST.FRANCIS HOSPITAL MUTOLERE KISORO DISTRICT".**

This study is purely academic. You have been selected to participate in this study, the views you present are important because they represent those of many other clients. The information will be kept confidential and you by using signatures to those who knows how to write and thumb print to those who do not know how to write. Your participation will be entirely voluntary. Although you might not benefit in the study, but the management will use the findings and improve on quality service.

If you have any question to ask regarding the study feel free to ask and you are free to withdraw from the study at any time.

Respondent signature: …… Date: ……

Researchers signature.....Date.....

APPEENDIX II: QUESTIONNAIRE FOR CAREGIVERS OF HIV EXPOSED INFANTS

My name is Habiyaremye Julius a student nurse in final at Mutolere School of nursing and midwifery conducting a study to determine factors influencing the uptake of EID services among HIV Exposed Infants at St. Francis hospital Mutolere Kisoro district. Yuo have been chosen to participate in the study and the information you will give will be kept confidential.

Instructions

- Do not write your name on this question paper.
- Circle the correct answer.

SECTION A: SOCIOL DEMOGRAMOPHIC DATA

1. What is your age?

A. Below 18 years

B. 19-23 years

C. 24-28 years

D. 29 years and above

2. What is your sex?

A. Male

B. Female

3. What is your level of education?

A. Primary level

B. Secondary level

C. Tertially institution

D. None

4. What is your occupation?

A. Peasant

B. Business person

C. House wife

D. Others specify

5. What is your marital status?

A. Single

B. Married

C. Divorced

D. Widowed

SECTION B: CARE GIVER FACTORS INFLUENCING UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMAN IMMUNODEFFICIENCY VIRUS (HIV) EXPOSED INFANTS.

6. Have you ever heard about early infant diagnosis (EID) services?

A. Yes

B. No

7. If yes from question 6 above, what is your source of information about early infant diagnosis (EID) services?

A. Health worker

B. Radio

C. Friends

D. Family members

8. What were you told about early infant diagnosis?

A. Initiation to ART

B. Test done to diagnose HIV in exposed infants

C. Just heard and no more information about it

D. Others specify

9. Did your child tested for HIV?

A. Yes

B. No

10. If yes to question 9 above, is your child initiated on ART?

A. Yes

B. No

11. At what age in years is appropriate for EID sample collection

A. Between 6-8 weeks

B. Between 6 weeks to 18 months.

C. 19 months

D. Over 20 months

12. How many times the test is done?

A. Once

B. Twice

C. Three times

D. Over 4 times

13. Do you know your HIV status?

A. Yes

B. No

14. If yes to question 13 above, what is your HIV status?

A. Positive

B. Negative

15. If positive, are you enrolled for art?

A. Yes

B. No

16. How do you perceive your status after receiving results for HIV/AIDS?

A. Very good

B. Good

C. Fair

D. Bad.

17. Do you use family planning?

A. Yes

B. No

18. Is there a health facility in your sub-county that offers EID and family planning services?

A. Yes

B. No

19. If yes from question 18 above, how long do you take to reach at the health facility?

A. Less than or equal to 30 minutes

B. 31minutes to1 hours

C. 2 to 3 hours

D. More than 4 hours

20. What are other care giver factors that influence uptake of EID services among HIV exposed infants (circle all appropriate)

A. Financial stability

B. Education

C. Lack of transport means

D. Lack of paternal support

E. Religious beliefs

F. Non completion of EID processes due to frustrations encountered while accessing EID services

SECTION C: HEALTH WORKER FACTORS INFLUENCINGUPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMAN IMMUNODEFFICIENCY VIRUS (HIV) EXPOSED INFANTS.

21. Does your health facility offer EID services?

A. Yes

B. No

22. If yes to question 21 above, which other services are offered at your health facility apart from early infant diagnosis?

A. Counseling on HIV

B. Screening and testing for HIV/AIDS

C. Family planning services

D. If others identify……

23. How long do you wait at the health facility before seeing a health worker a health worker to give you services?

A. Less or equal to 30 minutes

B. 31 minutes to 1 hour

C. 2 to 3 hours

D. More than 4 hours.

24. How long do you take to receive child results after removing a sample?

A. 1 to 2 hours after testing

B. 6 hours after testing

C. 1 to 2 weeks after testing

D. More 3 weeks

25. Do the health workers at your health facility refer you when services are not available?

A. Yes

B. No

26. How do health workers late to you when taking the infant for follow up.

A. Very good

B. Good

C. Bad

D. Others specify…….

27. What are other health worker factors influencing uptake of EID services among early exposed infants (circle all appropriate)

A. Lack of training

B. Poor communication and weak linkages

C. Unavailability of HIV test guidelines

D. Poor documentation of HIV status of infants

E. Late return of HIV DNA PCR results

F. Weak infrastructures

G. Inadequate human resource trained in DBS technique

H. Lack of laboratories to perform PCR technique

I. Lack of integration of prevention of mother to child transmission.

END.

THANK YOU FOR PARTICIPATION

APPENDIX III: QUESTIONNAIRE FOR HEALTH WORKERS

My name is Habiyaremye Julius a student nurse in final year at Mutolere School of nursing and midwifery conducting a study to determine factors influencing the uptake of EID services among HIV Exposed Infants at St. Francis hospital Mutolere Kisoro district. You have been chosen to participate in the study and the information you will give will be kept confidential.

Instructions

- Do not write your name on this question paper.
- Circle the correct answer.

SECTION A: SOCIAL DEMOGRAPHIC DATA

1. What is your age?

A. 18 to 24 years

B. 25 to 31 years

C. 32 to 38 years

D. 38 years and above

2. What is your sex?

A. Male

B. Female.

3. What is your cadre?

A. Enrolled nurse

B. Registered nurse

C. Medical officer

D. Others identify……..

SECTION B: CARE GIVER RELATED FACTORS INFLUENCING UPTAKE OF EID SERVICES AMONG HIV EXPOSED INFANTS.

4. Have you ever tested infant or child for HIV/AIDS?

A. Yes

B. No

5. If yes to question 4 above, how many times test is done?

A. Once

B. More than once

6. Which infant's age is appropriate for EID?

A. 6 to 8 weeks

B. 6 weeks to 18 months

C. 19 months

D. Over 20 months

7. Do all diagnostic equipment's always accessible?

A. Yes

B. No

8. If no to question 7, which equipment's are not always accessible at your health facility?

A. PCR machine

B. Viral load machine

C. Determine strips

D. Others specify…….

9. How long do care takers wait before getting results?

A. Less or equal to 1 hour after testing

B. 6 hours after testing

C. 1 to 2 weeks after testing

D. More than 2 weeks.

10. How do care takers perceive to the information when given results?

A. Very good

B. Good

C. Fair

D. Bad

11. Are there reasons of the care takers for lost follow up?

A. Yes

B. No

12. If yes to question 11, what are those reasons?

A. Long distance to health facility

B. Lack of transport to health facility

C. Inadequate knowledge about EID

D. Delay in receipt of PCR results

13. What are other care takers factors influencing uptake of EID services among HIV exposed infants

A. Age of 30 years

B. Financial stability

C. Religious beliefs

D. Lack of child spacing

E. Non completion of EID processes due to frustrations encountered while accessing services

F. Lack of paternal support

SECTION C: HEALTH WORKER RELATED FACTORS INFLUENCING UPTAKE OF EID SERVICES AMONG HIV EXPOSED INFANTS.

14. Does your health facility offer EID services?

A. Yes

B. No

15. If yes to question 14, what are other services offered apart from early infant diagnosis?

A. Counseling on HIV

B. Screening and testing for HIV/AIDS

C. Family planning services

D. Others specify…….

16. How many health workers are always on shift?

A. 1 to 2 health workers

B. 3 to 4 health workers

C. 4 to 5 health workers

D. More than 6 health workers

17. Do you experience stock out on DBS?

A. Yes

B. No

18. If yes to number to 17, do you have any linkage with other hospitals to refer for services?

A. Yes

B. No

19. Do health workers always have training on DBS?

A. Yes

B. No

20. If yes to question 19, how long do you go for training?

A. Once a week

B. 2 times a week

C. 2 times a month

D. More than 3 times a month

22. Do care takers who are always positively diagnosed always initiated on ART?

A. Yes

B. No

23. If yes to question 20, as a health worker how do you rate giving services to positively diagnosed mother/child

A. Very good

B. Good

C. Fair

D. Bad

24. What are other care systems factors influencing up take of EID services among HIV exposed infants?

A. Lack of laboratories to perform PCR analysis

B. Lack of integration of PMTCT

C. Inadequate human resource

D. Weak infrastructures

E. Others specify……

END

THANK YOU FOR PARTICIPATION

APPENDIX IV: APPROVAL FORM

Name of the student: **HABIYAREMYE JULIUS**

Tittle of research study: **FACTORS INFLUENCING THE UPTAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXPOSED INFANTS AT ST FRANCIS HOSPITAL MUTOLERE KISORO DISTRICT**

I hereby accept this proposal for the above research study and approve it for submission to the school of nursing and other concerned organization's institution review board/research and ethics committee.

Name: MR. NSEKUYE PASCHAL

SIGNATURE: .....

DATE: 29/03/2023

Approved by

Principal: SR.KEMIGISHA CATHELINE

SIGNATURE: .....

DATE: 29/3/2023

MUTOLERE SCHOOL OF NURSING & MIDWIFERY ST. FRANCIS HOSPITAL 28 MAR 2023 P.O.BOX 26 KISORO

APPENDIX V: INTRODUCTORY LETTER

MUTOLERE SCHOOL OF NURSING
AND MIDWIFERY
P.O. BOX 26, KISORO
Email: mutolerehti@ucmb.co.ug

Keep the Candle Burning and Pass on the Light
WE TRAIN FOR QUALITY CARE

Your Ref: .....
Our Ref: **NMT/023**

DATE: 3/5/2023

TO:
THE MEDICAL DIRECTOR,
ST. FRANCIS HOSPITAL MUTOLERE,
PO BOX 26,
KISORO.

3/5/2023

Dear Sir,

RE: RESEARCH PROJECT FOR DIPLOMA NURSING EXTENSION:

This is to introduce **HABIYAREMYE JULIUS** who is a student Nurse at Mutolere school of Nursing and Midwifery in his final year of study.

He is required to prepare an individual research project as part of the requirements for the award of Diploma in Nursing Extension. He has written his research proposal and is at the stage of data collection. He is interested in the area of "**FACTORS INFLUENCING UP TAKE OF EARLY INFANT DIAGNOSIS (EID) SERVICES AMONG HUMAN IMMUNO DEFICIENCY VIRUS (HIV) EXPOSED INFANTS AT ST. FRANCIS HOSPITAL MUTOLERE.**

He seeks to collect data in your health facility/Department and therefore requests for your support.

I will be grateful for any relevant support you shall accord him regarding his research study.

Thank you.

Yours Sincerely,

MUTOLERE SCHOOL OF NURSING & MIDWIFERY ST. FRANCIS HOSPITAL 03 MAY 2023 P.O. BOX 26 KISORO

.....

SR. KEMIGISHA CATHELINE
PRINCIPAL

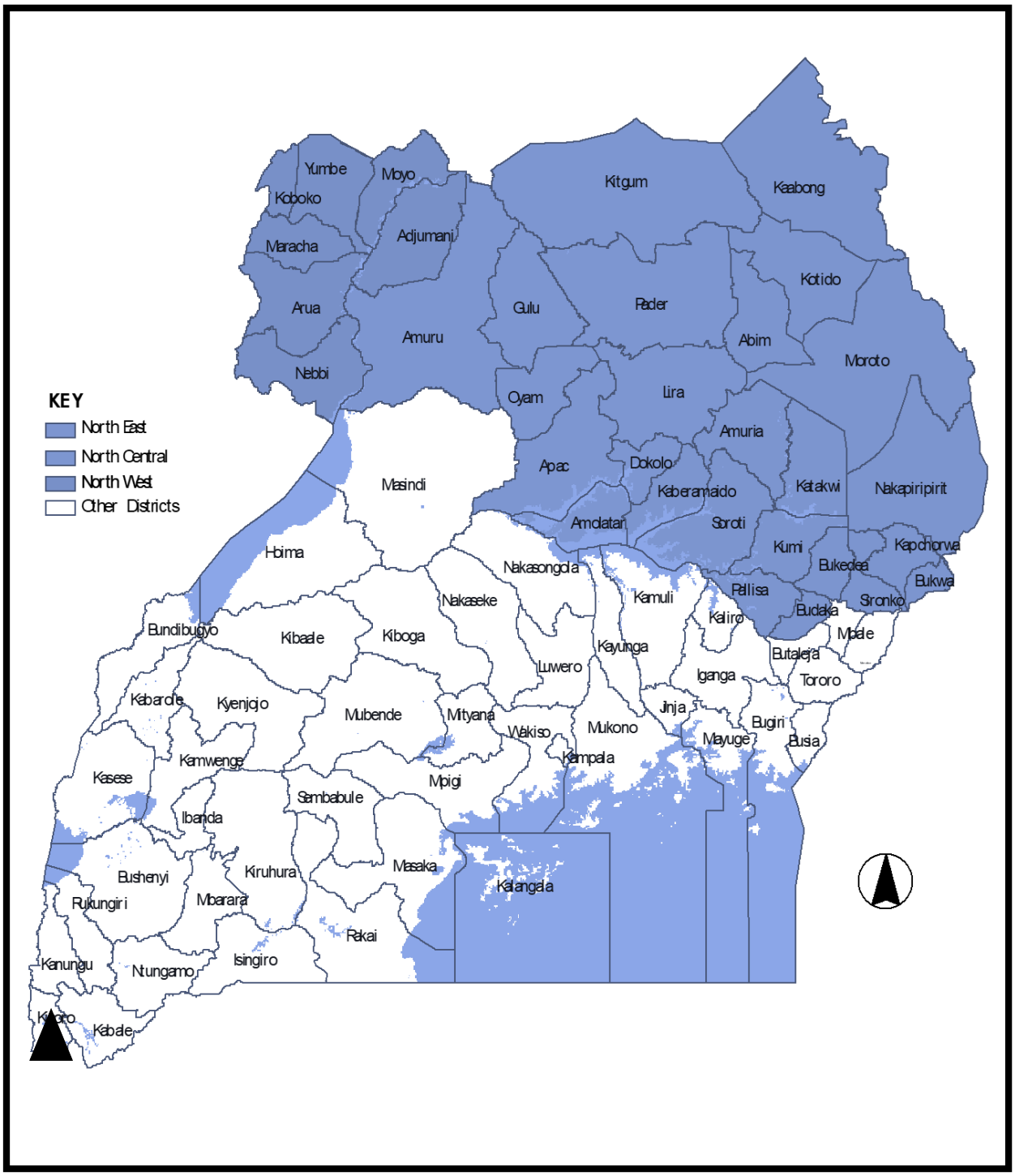
APPENDIX VI: RESEARCH BUDGET

ITEM	QUANTITY	UNIT COST (Ug shs)	TOTAL COST(Ugshs)
STATIONARY			
Reams of ruled papers(A4)		17, OOO	51,000
Calculator	1	50,000	56,000
Pens	4	700	2,800
A flash disk(16GB)	1	20,000	30,000
COMMUNICATION			
Internet			90,000
Transport			50,000
SECRETARIAL			
Typing and Printing Proposal			35,000
Printing questionnaires	40 copies	600	14,000
Binding Proposal books	2 Copies	5,000	20,000
Printing dissertation	3 Copies	35,000	105,000
Bidding dissertation	3 Copies	5,000	20,000
Research Supervisor			200,000
Miscellaneous			15,000
SUB-TOTAL			**409,000**
GRAND TOTAL			**658,800**

APPENDIX VII: RESEARCH PLAN

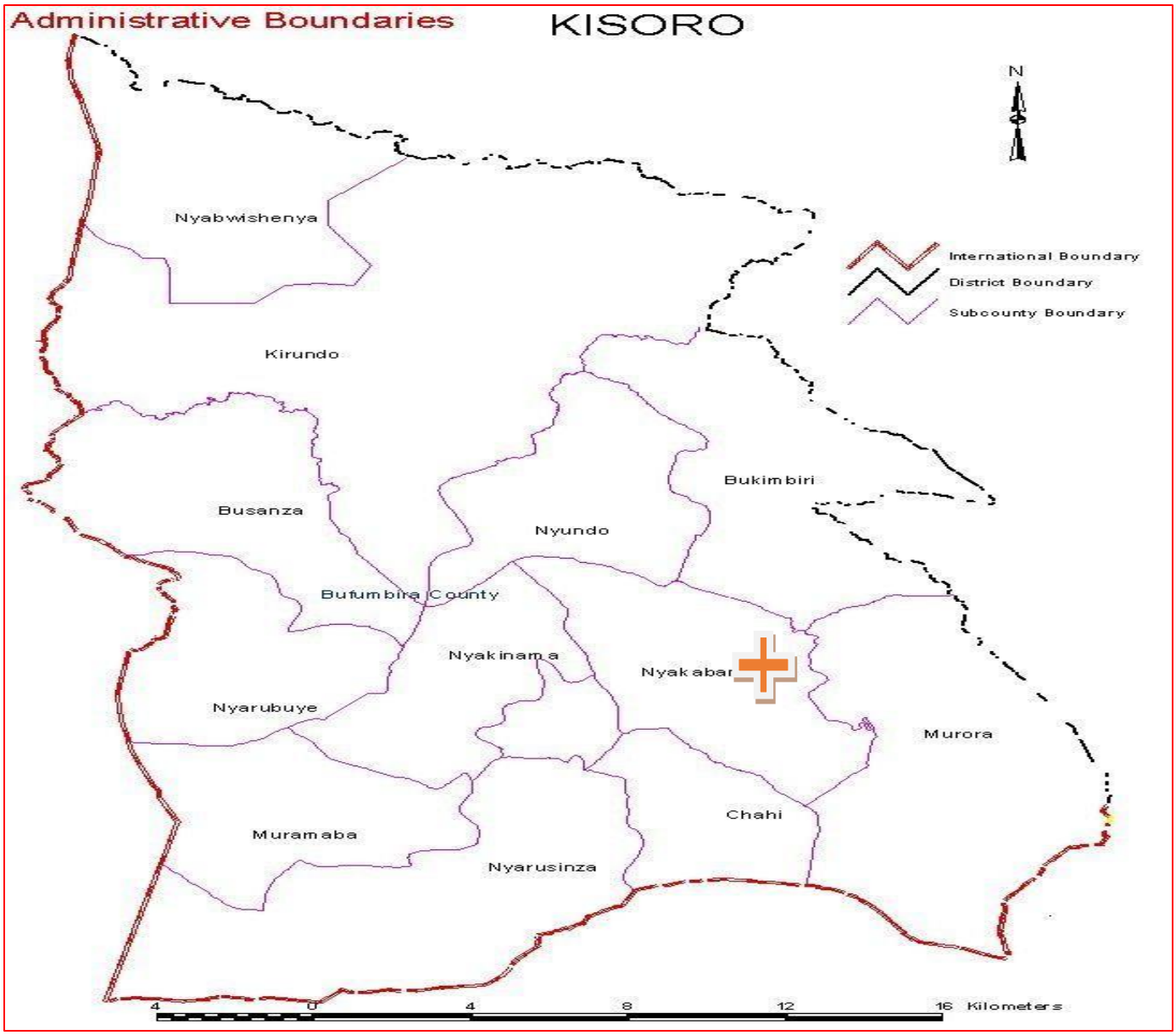
ACTIVITY	**JUNE 2023**	**JUL 2023**	**AUG 2023**	**SEPT 2023**	**OCT 2023**	**NOV 2023**	**Responsible person**
Topic identification and approval							Researcher and supervisor
Proposal writing							Researcher and supervisor
Proposal defense and submission							Researcher and research committee.
Data collection							Researcher
Data entry and analysis							Researcher
Report writing							Researcher and supervisor
Report approval and submission							Researcher, supervisor and school administration

APPENDIX VIII: A MAP OF UGANDA SHOWING KISORO DISTRICT



KEY: ▲ - KISORO DISTRICT.

APPENDIX IX: MAP OF KISORO SHOWING ST. FRANCIS HOSPITAL MUTOLERE



- ST.FRANCIS HOSPITAL MUTOLERE