USE OF HERBAL MEDICINES IN PREPARATION FOR LABOUR AND ITS DETERMINANTS AMONG PREGNANT WOMEN AT KIGANDA HEALTH CENTER IV – MUBENDE DISTRICT

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DECLARATION

I **Buyondo Banalaba Frank** hereby declare that apart from references to other people's work which have been duly acknowledged, this dissertation is as a result of my own independent work under supervision of **prof. Okiria John-Charles.** I further declare that this dissertation has not submitted for the award of any diploma at this institution or any other universities elsewhere.

…… DATE……

BUYONDO BANALABA FRANK

[STUDENT]

APPROVAL

This report is submitted to International Health Sciences University (IHSU) and the research committee board of IHSU and the ethics committee with my approval as a supervisor.

Sign……..... **Date**……

Professor: **Okiria John Charles.**

DEDICATION

This research report is dedicated to my parents Mr and Mrs Ssempuuma leonard,my wife madam Lwanga Lydia and the whole family at large, for their continuous support throughout the completion of my course. May almighty God protect them for me all the time.

ACKNOWLEDGEMENT

I acknowledge my parents Mr and Mrs Ssempuuuma Leonard for their love and financial support they offered to me ever since i was born on this planet, earth. I thank the almighty God to protect and guide me in maneuvering this work.

Secondly, I thank the administration of IHSU as a whole to impact me with the knowledge and skills that i have applied to produce this work.

Special thanks goes to my supervisor, parent and a friend Professor Okiria John Charles, for his tireless effort and precious time he spent on me to ensure that i produce such original work. May the almighty God keep him safe all the time.

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TABLE OF CONTENTS

DECLARATION i
APPROVAL ii
DEDICATION iii
ACKNOWLEDGEMENT iv
LIST OF TABLES v
LIST OF FIGURES vi
LIST OF ACRONYMS vii
OPERATIONAL DEFINITIONS viii
ABSTRACT x
CHAPTER ONE: INTRODUCTION 1
1.0 Introduction 1
1.1 Background of the study 1
1.2 Statement of the problem 4
1.3 Objectives of the study 5
1.3.1 General objective 5
1.3.2 Specific objectives 5
1.4 Research questions 5
1.5 Justification of the study 5
1.6 Significance of the study 6
1.7 Conceptual framework 7
CHAPTER TWO: LITERARURE REVIEW 8
2.0 Introduction 8
2.1 Herbal medicines use among pregnant women 8
2.2 Individual determinants of herbal medicines use in preparation for labor 12
2.3 Socio demographic determinants of herbal medicines use in preparation for labor 15
CHAPTER THREE: METHODOLOGY 18
3.0 Introduction 18
3.1 Study design 18
3.2 Study area 19
3.3 Study population 19
3.4 Sources of Data 20

3.5 Sample size calculation 20
3.6 Sampling procedures 21
3.6 Data collection methods 22
3.7 Data collection tools 23
3.8 Quality control 24
Training of research assistants 24
Field editing and supervision 25
3.11 Data analysis 25
3.12 Ethical considerations 26
3.13 Dissemination plan 27
CHAPTER FOUR: RESULTS 28
4.0 Introduction 28
4.1 Respondent bio data 28
Table 1.1: Socio demographic characteristics of the pregnant women 28
Table 1.2: Persuasion, residence, nature of family and male involvement 29
4.2 Herbal medicines use in preparation for labor 30
Table 2: Herbal medicine use characteristics in preparation for labour in Mubende district 30
Figure 2: The proportion of pregnant women who use herbal medicine in preparation for labour in Mubende district 31
4.3 Individual characteristics 32
Table 3: Individual characteristics of the pregnant women 32
Table 4: The individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district 34
4.3 Socio demographic characteristics and herbal medicine use 35
Table 5: The socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district 35
CHAPTER FIVE: DISCUSSION 37
5.0 Introduction 37
5.1 The proportion of pregnant women who use herbal medicine in preparation for labour in Mubende district 37
5.2 The individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district 38
5.3 The socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district 39

CHAPTER SIX: CONCLUSION 41
6.0 Introduction 41
6.1 Conclusion 41
6.2 Recommendations 42
6.3 Recommendations for further studies 42
APPENDIX A: CONSENT FORM 52
APPENDIX B: QUESTIONNAIRE 55
APPENDIX C: LETTERS 60

LIST OF TABLES

Table 1.1: Socio demographic characteristics of the pregnant women 28

Table 1.2: Persuasion, residence, nature of family and male involvement..... 29

Table 2: Herbal medicine use characteristics in preparation for labor in Mubende district 30

Table 3: Individual characteristics of the pregnant women 32

Table 4: The individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district 34

Table 5: The socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district 35

LIST OF FIGURES

Figure 1: The proportion of pregnant women who use herbal medicine in preparation for labour in Mubende district 31

LIST OF ACRONYMS

ANC	Antenatal Care
CAM	Complementary and alternative medicine
CDC	Centers for Disease Control
CHM	Complementary and Herbal Medicine
CR	Cochrane Review
ERC	Ethical Review Committee
HM	Herbal Medicines
OTC	Over-the-counter
SPSS	Statistical Package for Social Scientists
US	United States
USA	United States of America
USD	United States Dollar

OPERATIONAL DEFINITIONS

Herbal medicine: Herbal medicines in this study were defined according to the World Health Organization's as any medicinal product based on herbs, herbal materials, herbal preparations and finished herbal products, that contain as active ingredients parts of plants, other plant materials, or combinations thereof (WHO, 2011). Medicinal products based on animal components, vitamins, minerals or homeopathic products were not considered as herbal medicines

Determinants: A factor which determines the nature or outcome of something. In this study it referred to the factors which determine the use of herbal medicines in preparation for labor

Pregnant woman: A woman having a child or other offspring developing in her body

Perception: The ability to see, hear, or become aware of something through the senses.

Perceived severity: This involves assessment of the seriousness of the condition, and its potential consequences. If one perceives a condition to be critical and its consequences grave, the individual is likely to engage in behaviors that will avert such condition.

Perceived benefits: This describes an individual's assessment of the positive consequences of adopting a particular behavior. If a particular behavior proves favorable, there is tendency for continuous adoption of that behavior.

ABSTRACT

This study is to asses the use of herbal medicines in preparation for labor and its determinants among pregnant women attending Kiganda health centre IV.

Background: Pregnancy related ailments and the need to have a vaginal birth usually result in some pregnant women self-medicating using over-the-counter (OTC) medications, seeking prescribed medications, or using herbs. Often, herbal medicines have been used as a complementary therapy, concurrent with pharmaceutical drugs rather than strictly as an alternative. One of the greatest obstetric risks of using herbal medicines in preparation for labor and/or inducing labor is precipitate delivery. Precipitate labour may result in complications such as extensive tearing of the birth canal leading to extensive bleeding after birth (post-partum haemorrhage), failure of the uterus to contract back to normal size. Sometimes uteral rapture occurs and if not detected early, the woman may bleed to death. Despite the effect of herbal medicines use in labor induction, use of traditional and complementary medicines for maternity related health complaints is very common. Although international estimates vary considerably, there appears to be increasing herbal medicines use in maternity with research from many regions showing that up to 87% of women are using some form of traditional and complementary therapies, with more conservative estimates ranging between 20 and 60.

Method: A cross-sectional design was for this study that was done among pregnant women in their third trimester, receiving antenatal care services from Kiganda health center IV. Kiganda health center IV was purposively sampled. The pregnant women sampled using a random sampling method. This study used structured interviews and structured questionnaires. For data processing and analysis, SPSS version 20.0 was used.

Results: The proportion of pregnant women at Kiganda health center IV who use herbal medicines in preparation for labour in Mubende district, is 42.9% (n = 81).

Only one individual characteristic significantly influenced herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district. It is the history of use of herbal medicine in any previous pregnancies (x^2 = 11.295, 0.001). Two socio demographic characteristics of the pregnant women had a significant association with herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV. They included; Residence of the pregnant woman (x^2 = 5.152, P = 0.023), and reception of any formal education (x^2 = 4.101, p = 0.043).

Conclusion: The proportion of pregnant women at Kiganda health center IV who use herbal medicines in preparation for labor in Mubende district, is 42.9%, implying that about 4 out of every 10 pregnant women who seek Antenatal care services from Kiganda health center IV in Mubende district use herbal medicine in preparation for labor. Herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district is determined by only the history of use of herbal medicine in any previous pregnancies, residence and education of a pregnant woman

Recommendations: Health care service providers working in the Antenatal department of Kiganda health center are urged to conduct routine screening exercises meant to identify multigravida women, with an aim of finding out which of them has ever used herbal medicines in their previous pregnancies. Secondly, as part of the focused antenatal care health education sessions, the administration of Kiganda health center IV should incorporate and/or strengthen the content of herbal medicine use during pregnancy, including its effects on the fetus.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter presents the background of the study, a statement of the problem, the study objectives, research questions and justification of the study. The chapter further presents the significance of the study and a conceptual framework.

1.1 Background of the study

Pregnancy is a condition associated with immense physiological alterations resulting in many pregnancy- related problems, including nausea, vomiting, constipation, and heartburn (Lindzon, 2014). Pregnancy symptoms and complications can range from mild and annoying discomforts to severe that can sometimes be life-threatening. Every now and then it can be difficult for a woman to determine which symptoms are normal and which are not (CDC, 2018), althoughmany of them problems are mild and do not progress. Some of the most common pregnancy related illness include; anemia, urinary tract infections, nausea, hypertension (CDC, 2018), and besides them, all pregnant women are usually anxious about the ultimate outcomes of pregnancy, which is child birth. For the majority of the women, spontaneous vaginal delivery is one they usually look forward to, and would do whatever possible to avoid a cesarean birth.

The aforementioned pregnancy related ailments and the need to have a vaginal birth usually result in some pregnant women self-medicating using over-the-counter (OTC) medications, seeking prescribed medications, or using herbs. Often, herbal medicines have been used as a complementary therapy, concurrent with pharmaceutical drugs rather than strictly as an alternative (John, 2015; Nordeng, 2011). Herbal medicines, defined as plant-derived preparations claimed to have therapeutic benefits are the most popular and used by the general population as

well as pregnant women around the globe (WHO, 2015).The most popular herbal remedies used by pregnant women in the world include ginger (*Zingiber officinale),* garlic (*Allium sativum),* green tea (Camellia sinensis), peppermint (Mentha piperita) and fenugreek (Trigonella foenum-graecum) (Mekuria, 2017; Hall, 2011). Although all medicines can have different effects in pregnancy depending on the trimester in which they were taken (Lutoti, 2018; John, 2015; Jones, 2010), herbal medicines have been found to have greater effects. Herbal products which are preferred over prescription medications due to the belief that herbs are safer for the fetus than modern medicine, have been found to have far reaching negative effects on the mother and fetus especially when used to induce labor (Lutoti, 2018).

One of the greatest obstetric risks of using herbal medicines in preparation for labor and/or inducing labor is precipitate delivery. Precipitate delivery refers to childbirth after an unusually rapid labor (combined 1st stage and second stage duration is under two hours) and culminates in the rapid, spontaneous expulsion of the infant. Delivery often occurs without the benefit of asepsis. Normally, the birth of a baby occurs in three stages, active labour, birth of the baby, and delivery of the placenta. On average, the stages of labour last for 6 to 18 hours but precipitate labour is characterized by a sudden of intense, closely times contractions and a delivery that occurs very shortly after labour has begun; less than 5 hours, or as little as 3 hours (Mothibe, 2018). Precipitate labour may result in complications such as extensive tearing of the birth canal leading to extensive bleeding after birth (post-partum haemorrhage), failure of the uterus to contract back to normal size (Mothibe, 2018). Sometimes uteral rapture occurs and if not detected early, the woman may bleed to death.

Precipitate labour does not only harm the mother, but it also harms the baby. Due to the rapid exit through the birth canal, the baby may experience difficulty in breathing. The heart activities

of the baby may also be affected, leading to foetal distress (Mothibe, 2018). The prevailing opinion has been that too rapid a labor can result in maternal injury and place the fetus at risk for traumatic or asphyxia insults (Suzuki, 2014). For example, the uterus that contracts with unusual vigor before labor may be likely to be hypotonic after delivery, with hemorrhage from the placental implantation as the consequence. Postpartum hemorrhage associated with uterine atony following short labor in multiparous women seems to be experienced often in the clinical setting (Suzuki, 2014). In addition, precipitous labor has been observed to be associated with the higher rate of placental abruption.Other possible hazards following precipitous laborinclude abortion, perinatal toxicity, pre- and postnatal developmental abnormalities, and an increased risk for carcinomas for the child later in his or her lifetime (Wiebrechta, 2014; Dou, 2012).

Despite the effect of herbal medicines use in labor induction, use of traditional and complementary medicines for maternity related health complaints is very common (Johnson, 2016; Frawley, 2015; Frawley, 2013). Although international estimates vary considerably, there appears to be increasing herbal medicines use in maternity with research from many regions showing that up to 87% of women are using some form of traditional and complementary therapies, with more conservative estimates ranging between 20 and 60% (Hall, 2014; Sibbritt, 2011).Previous studies of traditional medicine use in Africa use have conservatively reported rates between 6.5% to 80% in Ghana, Nigeria, Tanzania, Zambia, Malaysia, Zimbabwe and Uganda (Catherine, 2017). In a systematic review by Shewamene (2017) among studies done in African countries, the prevalence of herbal medicines use was as high as 80%.

In Uganda the use of herbal medicines is widespread and Ministry of Health Statistics indicates that about 60% of Ugandans seek care from Traditional and Complementary Medicine Practitioners (MoH, 2012).

1.2 Statement of the problem

The issue of herbal medicines use during pregnancy among Antenatal care clinic attendants has for the past three years received a lot of attention from the administration of Kiganda health center IV, given its reportedly increasing rampancy among those women. Most importantly however, it is anecdotally reported by the skilled birth attendants at the health center that the majority of the pregnant women who use herbal medicines for any reason during pregnancy, proceed to use those medicine until the third trimester for the sole purpose of ensuring a spontaneous delivery. As such, it is reported that many women who seek skilled birth attendance at Kiganda health center IV are experiencing precipitate labor. According to the health center HMIS (2018), of the estimated 187 child deliveries that were conducted at the facility, 27% of them went through precipitation, which is a typical occurrence when labor inducing or manipulating herbal medicines are used during pregnancy. As such, cases of postpartum hemorrhage associated with uterine atony following short labor and cases of fetal distress have increased among women and children to women who possibly use herbal medicines for the purpose of inducing or ensuring a spontaneous vaginal birth. However, the actual proportion of pregnant women who use herbal medicines in preparation for labor at Kiganda health center has not been established and neither the determinants.

That is despite of the fact that the practice has been reported to be existent among pregnant women who seek ANC from Kiganda health center IV and despite of the fact that, the health care providers have endeavored to sensitize pregnant women against use of herbal medicines use during pregnancy. Continued use of herbal medicines use in preparation for labor among pregnant women at Kiganda health center IV, implies that the prevalence of precipitate deliveries will increase, which might also lead to an increment in maternal mortality cases at the center.

1.3 Objectives of the study

1.3.1 General objective

To assess use of herbal medicines in preparation for labour and its determinants among pregnant women at Kiganda health center IV – Mubende district

1.3.2 Specific objectives

1. To determine the proportion of pregnant women who use herbal medicine in preparation for labor in Mubende district
2. To analyze the individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district
3. To establish the socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district

1.4 Research questions

1. What is the proportion of pregnant women who use herbal medicine in preparation for labor in Mubende district?
2. What are the individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district?
3. What are the socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district?

1.5 Justification of the study

Herbal medicines use during pregnancy has been reported to very much widespread globally and especially in Africa, for a variety of purposes especially the treatment and management of certain pregnancy related ailments. Although some have been reported to be effective in doing so, with

no life-threatening side effects, the reverse is true when it comes to use of herbal medicines in preparation for labor. Doing so has been related to numerous complications for both the mother and baby, some of which are life threatening for instance postpartum hemorrhage and fetal distress. However, although such cases have been reported in Uganda and at Kiganda health center IV in particular, yet concurrently herbal medicines use in reported to be high in the country (Lutoti, 2013), the determinants of herbal medicines in preparation for labor have not been exhaustively studied in the Ugandan context. Most of the current studies in the Ugandan context have tackled herbal medicines use during pregnancy (Kaadaaga, 2014; Kyegombe, 2016), but not precisely herbal medicine use in preparation for labor

1.6 Significance of the study

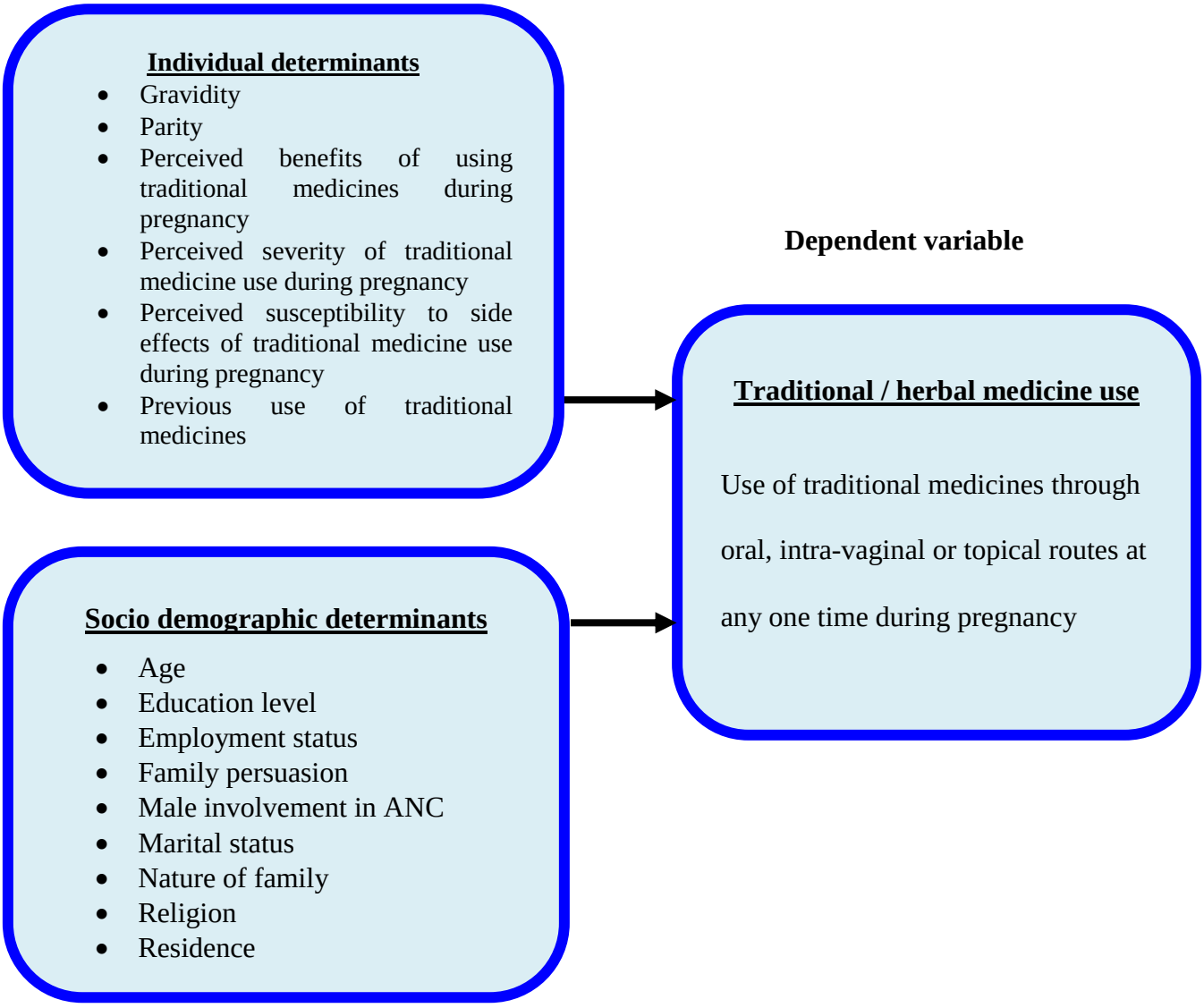
The findings of this study will inform the administration at Kiganda health center IV about the level of use of herbal medicines in preparation for labor, among pregnant women who seek ANC at the center. That information might trigger or stimulate management to come up with interventions meant to reduce the level of use of those medicines so as to reduce the prevalence of precipitate deliveries

The results obtained by this study will be used in health education delivery in antenatal clinics, enlighten the health providers about the magnitude of herbal medicines use so that they don't attribute all poor fetal outcomes to herbs and therefore improve obstetric care. Knowledge of the extent and nature of use of herbal medicine in preparation for labor is necessary for proper guidance in the health interest of both the mother and fetus. Further, the results of the study will help inform public health address the use of alternative systems of care in the presence of a modern health care system.

The study will be important for future researchers who would want to embark on studying traditional herbal medicine use during pregnancy in other districts of Uganda or elsewhere in the world as it will be a great source of literature for the researchers.

1.7 Conceptual framework

Determinants (Independent variables)



CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of literature related to the study and its objectives, for which the sectioning of the chapter has followed. The chapter has been organized in three headings that is; (1) The proportion of pregnant women who use herbal medicine in preparation for labour, (2) the individual determinants of herbal medicine use in preparation for labour among pregnant women, and (3) the socio demographic determinants of herbal medicine use in preparation for labour among pregnant women. The literature search was conducted in a number of data bases and journals, including BMC, PubMed, Scopus, and PLOSONE. The journals include; The Journal of Maternal-Fetal & Neonatal Medicine, Journal of Women's Health, the Journal of Obstetrics & Gynecology and Reproductive Biology Journal of Obstetrics and Gynaecology, The internet journal of Gynecology & obstestrics, Journal of ethnobiology and Enthnomedicine, Journal of Natural Pharmaceutical Products and the Journal of Health Research

2.1 Herbal medicines use among pregnant women

Herbal medicines are used in all countries of the world and are included in the top CAM therapies used (Robinson, 2011). In the past two decades the use of complementary and alternative medicine (CAM) has grown considerably worldwide (Kennedy, 2013). In the European Union for instance, the prevalence of herbal medicine use ranges from 5.9% to 48.3%, whereas herbal medicine use in the USA and Canada is estimated to be 17.9% and 12%, respectively (Eardley, 2012). Surveys on the use of herbal medicines in pregnancy have reported a wide range of herbal medicine use even during pregnancy. In the Western world, prevalence estimates of herbal medicine use in pregnancy varies considerably across countries, ranging from

52- 58% in Australia and the United Kingdom (Frawley, 2013), to 40- 48% in Norway and Italy (Lapi, 2010) and 6-9% in Canada and the US (Moussally, 2010; Saf 2009).

Kennedy (2013) conducted a multinational study on how women treat disease and pregnancy-related health ailments between October 2011 and February 2012 in Europe, North and South America and Australia. Fifty-four percent of respondents in that study were pregnant at the time of completion of the questionnaire with the remainder (46.2%) having delivered their babies within the previous year before the study. The use of herbal medicines in pregnancy was reported by 2,735 out of the 9,459 responders (28.9%). Australia, Poland and Russia had the highest reported rates of herbal medicine users. In total, 5,023 herbal me0dicines were reported by 2,735 women (overall average 1.6 herbal medicines each). The five most frequently used herbal medicines among pregnant women in that study were ginger, cranberry, valerian, raspberry and chamomile.The use of herbal medicines, overall, was 28.9%, and ranged from a low of 4.3% in Sweden to 69% in Russia.

In another study by Dika (2017), which involved women who had delivered at Bugando Medical Centre and Sekou Toure Hospital in Mwanza, north-western Tanzania, forty-one (23.0%) of 178 study participants reported to use herbs during the index delivery. Twenty-three (56.1%) of the subjects who used herbs, ingested them shortly before onset of active labour while 18 (43.9%) used after onset of active labour. Most of the herbs used during delivery could not be identified by generic names but by local names. Out of 41 subjects who used herbs in that study (68.3%) used for the purpose of shortening duration of labour, (36.6%) avoiding caesarean section while (17.1%) for the easing pain and (4.9%) gave other different reasons, namely strengthening the baby and increasing milk. The herbs which were reported to be used included ginger, onions and neem. Pregnant women in that study only identified traditional herbs by local names and they

were ekakwingili, matola, makarekambona, akabindizi, ekinunulizi, enyabashumi, binzari nyembamba, mgagani, mshana and msuana.

Lawan (2017) conducted a descriptive cross-sectional study to study a random sample of 189 mothers. About three-quarters of the mothers, 144 (76.2%) used herbal and/or spiritual remedies at a stage or throughout their last perinatal period and beyond (pregnancy, childbirth and up to 6 weeks after delivery). About two-thirds of those mothers (63.2%) used the remedies in combination with orthodox medicines. Less than half 77 (40.7%) received advice on using the remedies: (27.0%) by parents or close relatives; 23 (12.2%) from spouses; 2(1.1%) from friends/close associates and one (0.5%) from an Islamic scholar The remedies were commonly administered via the oral route (97.9%), and more than one-fifth used the remedies in the third trimester only (21.5%), but 27.1% and 23.6% used them throughout pregnancy and labour; and from pregnancy, through labour to postpartum period respectively.

Mothupi (2014) also conducted a cross-sectional study which included 333 women attending a childcare clinic in a district public health hospital in Nairobi, Kenya, during January and February, 2012, and who had delivered a baby within the past 9 months. His findings showed that forty respondents (12.0%) had used herbal medicine during the index pregnancy (less than 9 months ago), while the number of respondents who had ever used herbal medicine was 41.4%.

Mansoor (2017) conducted out a systematic review in which he concluded that 1283 out of 2729 (47.01%) women had used at least one herbal medicine any time during their last pregnancy. A long list of herbal medicines was identified from the reviewed articles. The most frequently used herbal medicines included peppermint (292), aniseed (188), olibanum (166) and flixweed seed

(156). Nearly all of the herbal medicines were administered via oral route, whereas only two were used topically, one as an inhalation and one through vaginal route.

In Ethiopia, more than 80% of the population is said to be using traditional medicine, the majority of which are pregnant women. A study done in Nekemte Hospital, Western Ethiopia showed that 69.8% of pregnant women use herbal medicines and the most common herbs used were ginger (44.4%), garlic (37.3%), and eucalyptus (9.1%) (Bayisa, 2014).

An institutional-based cross sectional study was conducted by Mekuria (2017) on 364 pregnant women attending ANC clinic from March to May 2016 at University of Gondar referral and teaching hospital, northwest Ethiopia. Of the total respondents (48.6%) used herbal medicine during current pregnancy, with two third of them (68.4%) used during their third trimester. The most common herbal preparations used were ginger (Zingiber officinale) (40.7%) and damakasse (Ocimum lamiifolium) (38.4%) The most common indications for use were common cold (66%), and inflammation (31.6%).

Abdollahi (2017) conducted a cross-sectional study investigate the prevalence of and characteristics related to use of Herbal Medicines (HM) among 320 pregnant women. Data were collected via a self-report questionnaire, including herbs used during pregnancy and demographic, socioeconomic and pregnancy-related factors. The findings of that study showed that nearly half (48.4%) of the women reported taking one or more HM during pregnancy. The most frequently used herbs were Sour orange (30.97%), Peppermint (19.81%) and Borage (19.46%). Most women (29.20%) were advised by their relatives to take these and did not disclose this use to their health care providers (50%) because they perceived their use as safe (39.7%).

Kyegombe et al (2016) in a study done in Kiryandongo general hospital in Masindi District, revealed that three hundred and fifty (87.5%)of the respondents reported to have ever heard about the use of herbal medicines during pregnancy, with 169 (48.3%) reporting having used herbal medicines during previous pregnancies or in the months prior to the study. One hundred and thirty two (37.7%) were found to be using herbal medicines at the time of the study, with the majority of them one hundred and eleven (84.1%) admitting that they will be using herbal medicines again in subsequent pregnancies.

2.2 Individual determinants of herbal medicines use in preparation for labor

A previous review summarized the reported motivations for a woman's use of Complementary and Alternative Medicine (CAM) therapies in pregnancies which included: the belief that these therapies provided safe alternatives to pharmaceutical drugs, an appreciation of a holistic potential afforded by these therapies and a desire to have control and satisfaction in their pregnancy experience (Hall, 2011).

In a study by Tamuno (2010), herbal medicine use by pregnant women showed a statistically significant association with use in first and second trimesters of pregnancy but not with third trimester ($P>0.05$) (Tamuno, 2010). Research demonstrates that women who use traditional medicines during pregnancy are more likely to have used traditional medicines prior to pregnancy, possibly indicating that women are more confident to utilise certain CAM remedies and methods familiar to them (Kalder, 2010; Lapi et al., 2010). Herbal medicine use prior to pregnancy appears to be predictive of herbal medicine use during pregnancy (Holst, 2009b).

The study by Olowokere (2013) showed that majority of the women had positive perception about safety of herbal remedies during pregnancy. Over sixty percent of respondents perceived

herbal remedies to be safe (66.0%) and efficient (62.7%) for managing common ailments during pregnancy (Olowokere, 2013). The findings from the study also showed that many of the respondents (62.7%) perceived herbal remedies to be effective in promoting health during pregnancy while the majority (72.7%) were satisfied with the outcomes of using herbal remedy. It is also important to note that close to fifty percent (45.3%) recommended that herbal remedy should be used by all pregnant women (Olowokere, 2013).

Use of Complementary and Alternative Medicines (CAM) during pregnancy appears to be mediated, at least in part, by a desire for a natural approach that is nontoxic and effective (Holst, 2009b). Many women believe that CAM is as safe as conventional medicine to during pregnancy (Lapi, 2010) with some women believing it is less harmful (Bercaw, 2010); (Holst, 2009 b; Lapi, 2010) determined, in a study of 485 Hispanic women living in the US, that 20% of the women surveyed felt CAM products were safer or more efficacious than conventional medications during pregnancy (Bercaw, 2010).

Women often cite concern related to loss of control and the desire for a holistic approach as reasons for using CAM during pregnancy. Childbirth in viewed as a stressful experience for some women that evoke feelings of vulnerability and loss of control (Mitchell, 2010); CAM may offer a sense of control and choice by enabling women to make some maternity health care decisions themselves (Warriner, Bryan, & Brown, 2014). During a focus group discussion, designed to explore women's reasons for using CAM during pregnancy, participants described feeling that their pregnancies were closely watched, resulting in a loss of control and the sense that you "hand your body over" once you fall pregnant (Warriner et al., 2014). Women explained that the use of CAM gives a degree of autonomy and a sense of active participation in some health care decisions during pregnancy

A study by Law (2013) revealed that 77.2% of women perceived herbal medicines as being safe and effective because herbs are “natural” substances and do not contain any dangerous chemicals and also because the practice of using medicinal herbs has been going on for many generations. It is therefore considered safer than conventional medications during pregnancy. More than a half (51.9%) of the women found the herbal medicines to be effective (Law, 2013). Only 10.1% of women felt that herbal medications were not effective 31% of women were unsure or did not notice any beneficial effects while taking herbal medications during pregnancy. Ten percent of the childbearing women strongly agreed and 73.3% agreed with the integration of traditional medicines/herbs with modern medications (Law, 2013).

A study in Malaysia found that majority of the mothers who used herbal medicines during pregnancy perceived and believed that herbal medicines are effective and safe during pregnancy (Azriani, 2008). Mothupi (2014) also found that majority of the mothers who used herbal medicines during pregnancy perceived and believed that herbal medicines are effective and safe during pregnancy among women in Nairobi, Kenya (Mothupi, 2014). The respondents in respondents Mothupi's study used herbal medicine during pregnancy because of perception that western medicine was ‘not working’ and that herbal medicine was better or more effective for their illness. Similar findings have been reported by other authors (Laelago, 2016; Titilayo, 2009) and could be explained by the fact that perception on the effectiveness of herbal medicines in solving problems will tend to influence whether mothers might use them again in the next pregnancy (Nyeko, 2016).

A qualitative study that was carried out in Cape Town found that majority of their Xhosa speaking participants follow indigenous health practices for both themselves and their babies because of the perceived need to “strengthen” the womb against witchcraft and to prevent

childhood illnesses. They also followed indigenous practices to treat symptoms that the biosciences cannot treat. In fact, during pregnancy, herbs and minerals are often used as atonic to clean the womb, to ease delivery, to induce labour, and to protect the child from evil and have a healthy child, as well as for pain, sickness or discomfort (Razafindraible, 2013).

Kyegombe et al (2016) in his study done in Kiryandongo general hospital in Masindi District, One hundred and fifty three (43.7%) considered herbal medicines to be safe during pregnancy and preferred them to conventional medicines because they have low side effects, are cheap and easy to access, and it is part of their tradition to use them during pregnancy. One hundred and ten (31.4%) believed that these herbs are neither dangerous to the mother nor the foetus.

2.3 Socio demographic determinants of herbal medicines use in preparation for labor

Many studies have found significant relationships between socio demographic characteristics and herbal medicine. In a study by Anyanechi (2014) a statistically significant relationship between the level of education attained by participants and use of herbal/traditional medication prior to seeking professional oral health care was found; with a reduction in use of herbal/traditional medication as level of education attained increased.

In general, studies of (Frawley,2013) have found that herbal medicine users are women over the age of 35, with a higher education and prior pregnancy. Many sources have suggested that women who use CAM medicine are characterized as being between the ages of 31-40 years, having higher education and income levels and used CAM in a previous pregnancy . Overall, the study participants in a study by Frawley (2013)who used herbal medicines were having their first child, more often students and less likely to work as healthcare providers, with an educational level other than high school, non-smokers, using both folic acid and alcohol during pregnancy.

Kennedy (2013) conducted a multinational study on how women treat disease and pregnancy-related health ailments were conducted between October 2011 and February 2012 in Europe, North and South America and Australia. The findings of that study showed that overall, maternal age was not a significant determinant of herbal use during pregnancy apart from Western and Eastern Europe. In the former region use of herbal remedies was less prevalent among women younger than 20 years of age than the 21- 30 year counterpart, whereas in the latter it was less prevalent among women of 31-40 years of age and more common among younger women (less than 20 years). Across the regions, there were also differences in the characteristics of herbal users with respect to parity and employment status. In fact, while parity and employment status were not significant determinants of herbal use during pregnancy in either North or South America or Australia, they were so in both Western and Eastern Europe. According to the author, one consistent characteristic across Europe and North America, which had not been reported previously, is that herbal users were more likely to continue to consume alcohol once they were aware they were pregnant.

Abdollahi (2017) conducted a cross-sectional study investigate the prevalence of and characteristics related to use of Herbal Medicines (HM) among 320 pregnant women. Data were collected via a self-report questionnaire, including herbs used during pregnancy and demographic, socioeconomic and pregnancy-related factors. The findings of that study showed that nearly half (48.4%) of the women reported taking one or more HM during pregnancy and the use of herbs was greater among pregnant women with upper secondary level education, living in their own house and from higher socioeconomic classes

Koc (2017) also carried out a study among a total of 285 women who had been referred to the gynaecology clinic of the Maternity Hospitalin Samsun, Turkey between October 15, 2010 and

January 31, 2011 participated in the study.The results of the regression analysis which was conducted for determining the association between CAM usage and socio-demographic characteristics showed a correlation between the level of CAM usage and age, family type, and accommodation unit. A negative significant association was found between CAM usage and various socio-demographic characteristics including education and socioeconomic levels. Level of CAM usage decreased as the education and socioeconomic levelsof women increased.

The use of herbal medicine hasbeen also found to be higher among women having a low level of education in some previous studies(Mothupi, 2014), and in other studies, the usage of CAM methodswas found to be much higher in older women (Lapi et al., 2010), women with a high education level (Bayisa et al.,2014; Birdee et al., 2014; Bishop et al., 2011; Frawley et al., 2013;Frawley et al., 2015; Hall and Jolly, 2014; Kalder et al., 2011; Pallivalappila et al., 2014; Pallivalappilaet al., 2015), married women (Bishop et al., 2011), women with ahigh income level (Birdee et al., 2014; Kalder et al., 2011), working women (Bishop et al., 2011; Frawley et al., 2013; Frawley et al.,2015), women living in the city centre (Frawley et al., 2015) andwomen whose friends or family members were using CAM meth-ods (Pallivalappila et al., 2015)

In an institutional-based cross sectional study by Mekuria (2017), the odds of herbal medicine use during pregnancy were 3.15 times higher among rural residents as compared to urban residents. Pregnant women who were illiterate (no formal education) were 4.05 times more likely to use herbal medicine than those who attended tertiary education. It also showed that pregnant women who had average monthly income less than 100 USD were 3.1 times more likely to use herbal medicine than those who had average monthly income of greater than 200USD.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter presents a description of the methodology that was used to obtain and manage data that was used to answer the research questions, The methodology have been described in the following sections: study design, study area, data sources, sample size calculation, sampling procedures, data collection methods, data collection tools, quality control techniques, the data analysis plan, ethical considerations and the dissemination plan

3.1 Study design

A research design is a procedure that explains how data will be collected, analyzed, interpreted and reported in a research undertaking (Burns 2000; Kumar 2011). This study used a descriptive cross-sectional design. A cross-sectional design was considered to be an appropriate method for this study because of its ability in collecting data from respondents of different characteristics and backgrounds within a short period of time (Cohen, *et al.,* 2011; Edmonds and Kennedy 2013). In addition, the nature of the research questions required an assessment of herbal medicines use and its determinants from a relatively large number of participants with different variables of interest. In this regard, the focus was the representative sample from a particular population and not an in depth investigation of individuals (Yin 2014). Therefore, this could best be achieved through questionnaires-based cross sectional design than other potential research design approaches. With that design therefore, the researcher targeted a representative sample of pregnant women seeking antenatal care from Kiganda health center IV and studied them at one point in time to obtain quantifiable data

3.2 Study area

The study was carried out at Kigada health center IV, in Mubende district. Mubende district borders the districts of Kiboga and Luwero in the North and north East separately, Kibale in the north-West, Kyenjojo in the West and Sembabule and Mpigi in the South. The District has 18 sub-counties, 3 Municipal Divisions and A municipality. In totality, the District has149 parishes and 1002 villages, 3 town boards, 3 Counties and 6 Constituencies. The district has eighteen sub-counties include; Bagezza, Bukuya, Butoloogo, Kalwana, Kasambya, Kassanda, Kibalinga, Kiganda,Kigando, Kitenga, Kitumbi, Kiyuni, Madudu, Makokoto, Mannyogaseka, Mubende Town Council, Myanzi, Nabingoola, Naluntuntu. The district health system is comprised of 27 Government dispensaries (II), 11 Government health centres(III), 14 private dispensaries, 42 clinics. It also has 1 Government hospital in with 100 beds, Mityana hospital with 100 beds and 5 health centres. The rationale for choosing kiganda is due to reported number of mothers delivering from traditional birth attendants from village heath teams, few health facilities at standard levels and low social standards of the people in the communities.

3.3 Study population

Welman and Kruger (2001) opines that "Population as a full set of elements that may include individuals, groups, organizations, human products and events from which a sample can be drawn to generalize results for the entire population". In this study, the population was pregnant women in their third trimester, receiving antenatal care services from Kiganda health center IV in Mubende district

Eligibility criteria

The study included; pregnant women who were in the third trimester. This is because, consumption of herbal medicines in preparation for labor usually happens more intensively during the third trimester**.** The study included pregnant women who were above the age of 18 years, because it them that could legally consent to participate in the study

Exclusion

- The study excluded pregnant women who reported that they were in pregnancy related pain, and those who reported that they were not in position to sustain a 30 minute interview

3.4 Sources of Data

In this study, only primary data sources were employed to obtain reliable information about the determinants of herbal medicines use in preparation for labor among pregnant women. Primary data was obtained from pregnant women by means of interviews that were held with the pregnant women

3.5Sample size calculation

According to Kumar (2008), sample size is one which fulfills the requirements of efficiency, representativeness, reliability and flexibility for the research work. Therefore, in order to determine an appropriate and fair sample of this study, the formula by Krejcie and Morgan (1970) will be used given that the estimated number of pregnant mothers in Municipality will be available.

The formula is given by;

$S = x^2 NP (1-P) \div d^2 (N-1) + X^2P (1-P)$

Where; S = required sample size

x^2= the table value of chi-square for 1 degree of freedom at the desired confidence level (1.96 × 1.96 = 3.8416)

N = Population size (estimated number of pregnant women in their third trimesters who seek ANC from Kiganda health center IV within a two months period = 360 [Health center HMIS, 2017)

P = Population proportion (assumed to be .50 since this would provide the maximum sample size).

d = degree of accuracy expressed as a proportion (i.e. 0.05).

$S = 3.8416 \text{ x } 370 \text{ x } 0.5 (1-0.5) \div 0.05^2 (370 -1) + 3.8416 \text{ x } 0.5 (1 - 0.5)$

S = 189 pregnant women

3.6 Sampling procedures

Kiganda health center IV was purposively sampled on the premise that it is one of the health centers that provides Antenatal care services to a relatively high number of pregnant women in Mubende district, who have been reported to use herbal medicines during pregnancy for reasons to do with labor induction and management.

At the health center, before sampling commenced, the researcher and his assistant first contacted the health worker who was in charge of the respective ANC clinics so that they would introduce the research team to the mothers. Once we had been introduced, the researcher briefed the women about the study, and how the sampling was going to be done. All this was done in the waiting areas of the respective ANC clinics, and after those preliminaries, sampling commenced.

The pregnant women sampled still using a random sampling method (Simple random sampling). This was done by writing two words (SAMPLED and NOT SAMPLED) on separate pieces of paper in a ratio of 1:1 so as to give equal sampling chance to all mothers. Given that each health facility had a different number of pregnant women in attendance, the papers were written out in such a way that each woman could either pick the paper with SAMPLED or NOT SAMPLED in equal chance. Therefore, a pair of these papers was made for each available woman. The pregnant women available were presented with the folded pieces of paper placed in box, and told to pick any piece of paper blindly.

After all the women had picked a piece of paper, they were told to unfold the pieces of paper to check the words inscribed thereon. Those who had picked papers with the word "SAMPLED" were told that they have been sampled, while the rest were thanked for their participation in the study. The sampled women were requested to relocate to another room / area which had been provided by the respective health facility management for further briefing and interviews.

3.6 Data collection methods

This study used structured interviews to collect quantitative data. The structured interview is a form of interview in which the interviewer asks a question to the interviewee and follows t up with response options from which the respondent can choose. It is basically a close ended type of

interviewer. This type of interview was used in this study because of its major advantage of being relatively quicker to conduct and being less taxing to a respondent, both of which were key in this study given the nature of the study population. All the potential respondents were found at in the waiting area where they were waiting for services, and so there was need for a data collection that could be executed in a fast but efficient manner, hence the use of the structured interviews. The interview method allowed the researcher to explain the purpose of the interview so as to gain cooperation which was essential in order to get the required information from the respondents. The interviewees were informed of the details of the study and any potential ethical issues related to the study.

3.7 Data collection tools

Following the data collection method described in the previous section, one data collection toolwas used. The instrument used for quantitative data collection in this study was the structured questionnaire, the questionnaires were self-administered. The questionnaire was structured about the research objectives, and the research questions (Mugenda and Mugenda, 2003) based on close-ended questions aimed at generating brief and specific answers from the participants. A well-defined research question, and clearly defined objectives, ensured the relevance of questions in the questionnaire, and each question was thus directly linked to the research question and the intended objectives, as recommended by Eiselen and Uys (2005:3). Questions were arranged in a logical order starting with biographical information (non-threatening questions), and questions were grouped into sections based on the research problem, hypothesis and aims and objectives of the study. As such, questions were grouped according to demographics (PART A), herbal medicines use (PART B), and individual characteristics (PART C) Care was taken to keep the length of the questionnaire at the absolute minimum, with only

necessary questions, as the length of the questionnaire has a bearing on the response rate (Eiselen & Uys, 2005).

3.8 Quality control

Training of research assistants

One research assistant with experience in survey data collection was recruited and oriented about the study for one day. The assistant was taken through the training which covered the aims of the study, terms used, the sampling procedures that were to be used in the field, interview skills, how to use the research instruments and the easier way to collect data from respondents. The training was mainly focused on how to fill the questionnaire, make effective interviews and field exercise was conducted. The issues which were of relevance of the study, about confidentiality of the information, seeking of informed consent were also a part of the training. During training the principal investigator endeavored to take the assistant through each and every question in the structured questionnaires.

Pretest

Prior to the study, the developed questionnaires were pre-tested among 20pregnant women at Kalonga health center III. The researcher intended to pretest the questionnaires in an area where the targeted people had almost similar characteristics with those in the main study to ensure clarity of questions and consistence in methods of questioning and data collection procedures. After the pretest, slight modifications were made on the adolescent questionnaire including deletion of two questions that required similar responses. The data that was obtained from the

pretest was not used in the main study, but was used to only inform quality assurance before the main study was done. The pretest sample was also not re sampled in the main study.

Field editing and supervision

Field supervision was one of the most emphasized quality control techniques that were used during the study. Although I took part in the interview processes, I also took on the supervisory role. At the end of each field day, I sat down with each supervisor and went through the filled questionnaires to look out for any missing responses, skipped questions and inappropriately responded to questions. If any were found, the tool was discarded and compensated for the following data during the field exercise

3.11 Data analysis

For data processing and analysis, SPSS version 20.0 was used. Data was checked for completeness and consistency. Frequency distribution tables were used to describe most of the findings and graphs were plotted for some accordingly; and other descriptive summaries were calculated. Simple frequencies were run to determine socio-demographic characteristics of the respondents, the herbal medicine use patterns and other individual characteristics.

At bivariate level, relationships were run to find out whether any independent variables were related to the dependent variable. This was done using cross tabulation analysis coupled with the use of Chi square tests to find out the strength of association between the categorical variables. All statistical tests were performed using two-sided tests at the 0.05 level.

3.12 Ethical considerations

Approval

Ethical approval was sought from the Ethical Review Committee (ERC) of International Health Sciences University. Administrative clearance was sought in person by the investigator from the district health officer of Mubende district, and then from the in charge of Kiganda health center IV

Informed consent

Study participants were given verbal and written information about the study in English. An information sheet (Appendix A) was attached to each questionnaire describing the objective and relevance of the study and included information of confidentiality, voluntary participation and the right to withdraw from the study at any time before handing in the questionnaire. Written informed consent was obtained by each study participant.

Privacy

Pregnant women were interviewed in a private room / area which was asked for and provided by the health facility administration so as to allow for the conduction of interviews in privacy and create an atmosphere that would not make the respondents hold back on sensitive information.

Confidentiality

Completed questionnaires were kept confidential in sealed envelopes. Questionnaires and consent sheets was only handled by the investigator and assistants during data collection and

later stored in a locked cabinet, only accessible for the investigator during analysis. Questionnaires and consent forms are to be destroyed after thesis defense.

Voluntary participation

All participants was informed that participation in this study was voluntary and that they could withdraw from the study at any time without and consequences

Risks and benefits

Since the topic was not that sensitive there was no risk of participants feeling worried after completing the questionnaire. The participants were told that there would not be direct benefits to the participants of this study but it they were informed that in the long run, their participation in the study would primarily help inform maternity health professionals about pregnant women's utilization of herbal medicines in pregnancy

3.13 Dissemination plan

After this research paper is completed & approved by the University, a copy will be prepared for dissemination to the University, to the Ministry of Health, District Health Office of Mubende, and other concerned bodies. The findings from the study will also be published in peer-reviewed journal to make it available for those who can benefit from the study.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the findings of the study, tabulated following the order of the objectives, at both univariate and bivariate level

4.1 Respondent bio data

Table 1.1: Socio demographic characteristics of the pregnant women

Variable	Frequency [n = 189]	Percent (Valid) [%]
Current age (in years)		
18 - 28 years	149	78.8
29 - 39 years	34	18.0
40 - 50 years	6	3.2
Marital status		
Single	36	19.0
Married	98	51.9
Cohabiting	55	29.1
Religious denomination		
Catholic	68	36.0
Muslim	43	22.8
Anglican	54	28.6
SDA	9	4.8
Born again	15	7.9
Got any formal education		
Yes	170	89.9
No	19	10.1
Level of formal education achieved		
Primary level (Lower, P1 - P4)	16	9.4
Primary level (Upper, P5 - P6)	106	62.4
Secondary (O level)	21	12.4
Secondary (A level)	17	10.0
Post-secondary / tertiary education	10	5.9

The table above shows that socio demographic characteristics of the pregnant women who were interviewed at Kiganda health center IV. The findings show that more than three quarters of the pregnant women were young mothers in the age range of 18 - 28 years (n = 149, 78.8%). Slightly more than half of the pregnant women were single (n = 98, 51.9%). Slightly more than a third of the pregnant women were Catholics (n= 68, 36.0%), and more than three quarters of the pregnant women had received some form of formal education (n = 170, 89.9%) and among those, the majority of had been educated to upper primary level (n= 106, 62.4%).

Table 1.2:Persuasion, residence, nature of family and male involvement

Variable	Frequency [n = 189]	Percent (Valid) [%]
Family member persuasion to use herbal medicines		
Yes	102	54.0
No	87	46.0
Residence description		
Rural	113	59.8
Urban	76	40.2
Employed		
Yes	80	42.3
No	109	57.7
Nature of the family stayed in		
Nuclear	72	38.1
Extended	117	61.9
Husband ever escorted or come with you during ANC		
Yes	75	39.7
No	114	60.3

In addition, the findings in table 1.2 above shows that more than half of the pregnant women who were interviewed reported that they had ever been persuaded by their family members to use herbal medicines (n = 102, 54.0%). More than half of the pregnant women interviewed

reported that they were residing in rural residences (n = 113, 59.8%), and were not employed (n = 109, 57.7%). The majority of the pregnant women reported nature of the families they stayed in were extended (n = 117, 61.9%).The majority of women reported that their husbands had never escorted or come with them during ANC (n = 114, 60.3%).

4.2 Herbal medicines use in preparation for labor

Table 2: Herbal medicine use characteristics in preparation for labor in Mubende district

Variable	Frequency [n = 189]	Percent (Valid) [%]
So far used any form of herbal medicine in preparation for labor		
Yes	81	42.9
No	108	57.1
If no, might use herbal medicines for labor preparation in the next few weeks before birth		
Yes	16	13.8
No	100	86.2
Motivated for use herbal medicines		
Fast Labor induction	55	29.1
Reduction of labor time	110	58.2
Normal delivery	24	12.7

Table 2 above shows the findings pertaining to the use of herbal medicines in preparation for labor among pregnant women at Kiganda health center IV. The findings show that the majority of the pregnant women not to be using herbal medicines in preparation for labor (n= 108, 57.1%).Among those who reported not to be using herbal medicines in preparation for labor, more than three quarters of them reported that they might still not use herbal medicines for labor preparation in the next few weeks before birth (n = 100, 86.2%). More than half of those who reported that they had taken herbal medicines in preparation for labor (n= 110, 58.2%) reported that what had motivated them to use herbal medicines was the need to reduce labor time or duration.

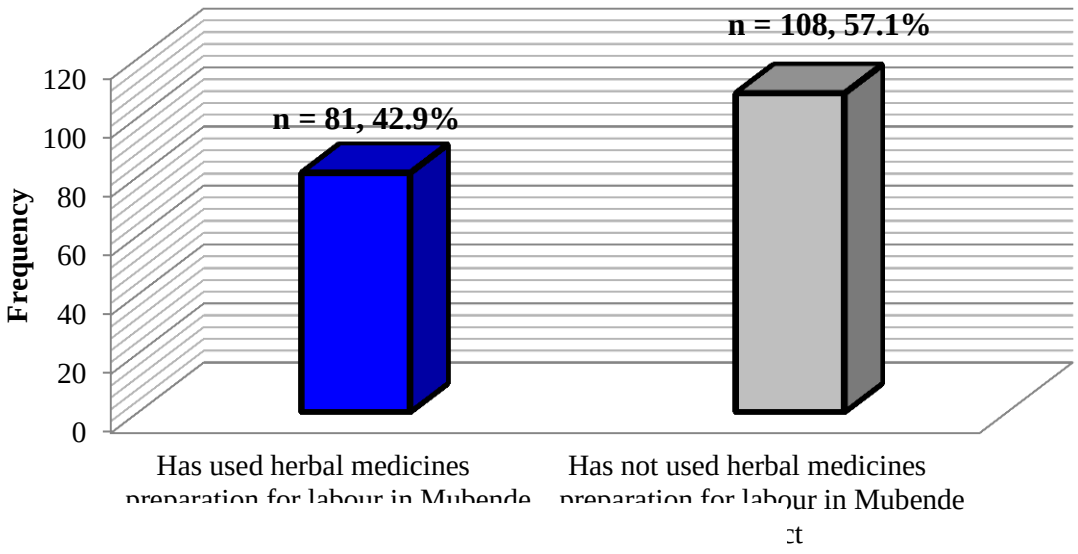


Figure 2: Above shows the proportion of pregnant women who use herbal medicine in preparation for labor in Mubende district

The proportion of pregnant women at Kiganda health center IV who use herbal medicines in preparation for labor in Mubende district, is 42.9% (n = 81).

4.3 Individual characteristics and herbal medicine use.

Table 3: Individual characteristics of the pregnant women

Variable	Frequency [n = 189]	Percent (Valid) [%]
Parity currently		
One	51	27.0
Two	104	55.0
Three	28	14.8
Four	6	3.2
Number of pregnancies have you carried so far		
One	50	26.5
Two	107	56.6
Three	26	13.8
Four	6	3.2
Used herbal medicine in any previous pregnancies		
Yes	97	51.3
No	92	48.7
Used herbal medicines before (even if not pregnant)		
Yes	75	39.7
No	113	60.3
Attended ANC in during most recent pregnancy		
Yes	183	96.8
No	6	3.2
Frequency of ANC attendance		
Once	2	1.1
Twice	19	10.4
Thrice	34	18.6
Four times	128	69.9
Herbal medicines are more effective than modern medicines during labour		
Agree	97	51.3
Disagree	92	48.6
Herbal medicines make the fetus (baby) healthy		
Agree	76	40.2
Disagree	113	59.8
Herbal medicines can ensure that a pregnant women delivers the baby normally		
Agree	117	61.9
Disagree	72	38.1
With herbal medicines, contractions (labor pains) start at the right time and are very fast		
Agree	138	73.0
Disagree	51	27.0
Herbal medicines cannot cause any side effect to a pregnant woman or her baby		
Agree	91	48.1
Disagree	98	51.9
Herbal medicines can cause deformities in a baby		
Agree	96	50.8
Disagree	93	49.2
Herbal medicine use in pregnancy can cause birth of a premature baby		
Agree	72	38.1
Disagree	117	61.9
Herbal medicines can cause sudden contractions or miscarriages to a pregnant woman who takes them		
Agree	47	24.9
Disagree	142	75.1

The findings in table 3 above show the individual characteristics of the pregnant women who were interviewed. The findings show that more than half of the women had given birth to two children by study time (n = 104, 55.0%), and had carried two pregnancies (n = 107, 56.6%).Slightly above half of the women who had been pregnant before reported that they had used herbal medicines in their previous pregnancies (n = 97, 51.3).

The majority of the pregnant women reported that they had never used herbal medicines (n = 113, 60.3%), for any form of treatment.

The majority of the women interviewed reported that they had attended ANC attendance four times (n = 128, 69.9%) by study time. About half of the women agreed that Herbal medicines are more effective than modern medicines during labour (n = 97, 51.3%), however, more than half of them disagreed that herbal medicines make the fetus (baby) healthy (n = 113, 59.8%). The majority of the women interview reported that herbal medicines can ensure that a pregnant women delivers the baby normally (n = 117, 61.9%). Almost three quarters of the women interviewed reported thatwith herbal medicines, contractions (labor pains) start at the right time and are very fast (n = 138, 73.0%), and half of them disagreed that herbal medicines cannot cause any side effect to a pregnant woman or her baby (n = 98, 51.9%).

Half of the pregnant women interviewed reported that herbal medicines can cause deformities in a baby (n = 96, 50.8%), although the majority disagreed that herbal medicine use in pregnancy can cause birth of a premature baby (n = 117, 61.9%). Three quarters of the women disagreed that herbal medicines can cause sudden contractions or miscarriages to a pregnant woman who takes them Disagree (n = 142, 75.1%)

Table 4: The individual determinants of herbal medicine use.

Variable	Herbal medicines use			
	So far used any form of herbal medicine in preparation for labor [n = 92]	Haven't used any form of herbal medicine in preparation for labor [n = 116]	x^2	P value
Parity currently				
One	24 (47.1%)	27(52.9%)		
Two	46(44.2%)	58(55.8%)		
Three	9(32.1%)	19(67.9%)	1.982	0.576
Four	2(33.3%)	4(66.7%)		
Number of pregnancies have you carried so far				
One	22(44.0%)	28(56.0%)		
Two	43(40.2%)	64(59.8%)		
Three	14(53.8%)	12(46.2%)	1.842	0.606
Four	2(33.3%)	4(66.7%)		
Used herbal medicine in any previous pregnancies				
Yes	53(54.6%)	44(45.4%)		
No	28(30.4%)	64(69.6%)	11.295	0.001*
Used herbal medicines before (even if not pregnant)				
Yes	34(45.3%)	41(54.7%)		
No	47(42.0%)	67(58.0%)	1.724	0.422
Attended ANC in during most recent pregnancy				
Yes	77(42.1%)	106(57.9%)		
No	4(66.7%)	2(33.3%	1.434	0.231
Frequency of ANC attendance				
Once	2(100.0%)	0(.0%)		
Twice	9(47.4%)	10(52.6%)		
Thrice	12(35.3%)	22(64.7%)	3.693	0.297
Four times	57(44.5%)	71(55.5%)		
Herbal medicines are more effective than modern medicines during labour				
Agree	43 (44.3%)	54(55.7%)		
Disagree	38(41.8%)	54(58.2%)	0.881	0.644
Herbal medicines make the fetus (baby) healthy				
Agree	30(39.5%)	46(60.5%)		
Disagree	51(45.1%)	62(54.9%)	0.594	0.441
Herbal medicines can ensure that a pregnant women delivers the baby normally				
Agree	53(45.3%)	64(54.7%)		
Disagree	28(38.9%)	44(61.1%)	0.748	0.378
With herbal medicines, contractions (labor pains) start at the right time and are very fast				
Agree	59(42.8%)	79(57.2%)		
Disagree	2(43.1%)	29(56.9%)	0.002	0.962
Herbal medicines cannot cause any side effect to a pregnant woman or her baby				
Agree	43(47.3%)	48(52.7%)		
Disagree	38(38.8%)	60(61.2%)	1.385	0.239
Herbal medicines can cause deformities in a baby				
Agree	48(50.0%)	48(50.0%)		
Disagree	33(35.5%)	60(64.5%)	4.065	0.054
Herbal medicine use in pregnancy can cause birth of a premature baby				
Agree	33(45.8%)	39(54.2%)	0.421	0.517
Disagree	48(41.0%)	69(59.0%)		
Herbal medicines can cause sudden contractions or miscarriages to a pregnant woman who takes them				
Agree	19(40.4%)	28(59.6%)	0.151	0.698
Disagree	62(43.7%)	80(56.3%)		

Findings in table 4 above show that only on individual characteristic had a significant association with herbal medicine use in preparation for labor among pregnant women at Kiganda health

center IV – Mubende district. It is having a history of use of herbal medicine in any previous pregnancies (X^2 = 11.295, 0.001), and the perception that herbal medicines can cause deformities in a baby (X^2 = 4.065, 0.044). More than half of the pregnant women who had a history of use of herbal medicine in any previous pregnancies (54.6%) had used herbal medicine use in preparation for labour, compared to less than a third (28(30.4%) of those who had no history of use of herbal medicine in any previous pregnancies.

4.3 Socio demographic characteristics and herbal medicine use

Table 5: The socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district

Variable	Herbal medicines use			
	So far used any form of herbal medicine in preparation for labor [n = 92]	Haven't used any form of herbal medicine in preparation for labor [n = 116]	x^2	P value
Current age (in years)				
18 - 28 years	64(43.0%)	85(57.0%)		
29 - 39 years	14(41.2%)	20(58.8%)	0.165	0.921
40 - 50 years	3(50.0%)	3(50.0%)		
Marital status				
Single	12(33.3%)	24(66.7%)		
Married	48(49.0%)	50(51.0%)	3.224	0.190
Cohabiting	21(38.2%)	34(61.8%)		
Religious denomination				
Catholic	32(47.1%)	36(52.9%)		
Muslim	18 (41.9%)	25(58.1%)		
Anglican	24(44.4%)	30(55.6%)	2.502	0.644
SDA	3(33.3%)	6(66.7%)		
Born again	4(26.7%)	11(73.3%)		
Got any formal education				
Yes	77(45.3%)	93(54.7%)	4.101	0.043*
No	4(21.1%)	15(78.9%)		
Level of formal education achieved				
Primary level (Lower, P1 - P4)	5(31.2%)	11(68.8%)		
Primary level (Upper, P5 - P6)	48(45.3%	58(54.7%)		
Secondary (O level)	12(57.1%)	9(42.9%)	2.675	0.614
Secondary (A level)	7(41.2%)	10(58.8%)		
Post-secondary / tertiary education	4(40.0%)	6(60.0%)		
Family member persuasion to use herbal medicines				
Yes	43(42.2%)	59(57.8%)		
No	38(43.7%)	49(56.3%)	0.044	0.833
Residence description				
Rural	56(49.6%)	57(50.4%)	5.152	0.023*
Urban	25(32.9%)	51(67.1%)		
Employed				
Yes	40(50.0%)	40(50.0%)		
No	41(37.6%)	68(62.4%)	2.880	0.089
Nature of the family stayed in				
Nuclear	27(47.4%)	30(52.6%)	0.678	0.410
Extended	54(40.9%)	78(59.1%)		
Husband ever escorted or come with you during ANC				
Yes	31(41.3%)	44(58.7%)	0.118	0.731
No	50(43.9%)	64(56.1%)		

It is shown in table 5 above that still; two socio demographic characteristics of the pregnant women had a significant association with herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV. They included; Residence of the pregnant woman ($x^2 = 5.152$, P = 0.023), and reception of any formal education ($x^2 = 4.101$, p = 0.043). The cross tabulations show that almost half of the women interviewed were residing in rural areas (49.6%), had used herbal medicines in preparation for labour among pregnant women at Kiganda health center IV – Mubende district. Almost half of the women interviewed who had received formal education (45.3%), had used herbal medicines in preparation for labour among pregnant women at Kiganda health center IV – Mubende district.

CHAPTER FIVE: DISCUSSION

5.0 Introduction

This chapter presents the discussion of the study, based on the significant findings that were obtained from each objective.

5.1 The proportion of pregnant women who use herbal medicine in preparation for labour in Mubende district.

The proportion of pregnant women at Kiganda health center IV who use herbal medicines in preparation for labor in Mubende district, is 42.9% (n = 81). This is in line with, Abdollahi (2017) conducted a cross-sectional study investigate the prevalence of and characteristics related to use of Herbal Medicines (HM) among 320 pregnant women. Data were collected via a self-report questionnaire, including herbs used during pregnancy and demographic, socioeconomic and pregnancy-related factors. The findings of that study showed that nearly half (48.4%) of the women reported taking one or more HM during pregnancy. The most frequently used herbs were Sour orange (30.97%), Peppermint (19.81%) and Borage (19.46%). Most women (29.20%) were advised by their relatives to take these and did not disclose this use to their health care providers (50%) because they perceived their use as safe (39.7%).

Kyegombe et al (2016) in a study done in Kiryandongo general hospital in Masindi District, revealed that three hundred and fifty (87.5%)of the respondents reported to have ever heard about the use of herbal medicines during pregnancy, with 169 (48.3%) reporting having used herbal medicines during previous pregnancies or in the months prior to the study. One hundred and thirty two (37.7%) were found to be using herbal medicines at the time of the study, with the

majority of them one hundred and eleven (84.1%) admitting that they will be using herbal medicines again in subsequent pregnancies.

5.2 The individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district

The individual characteristic had a significant association with herbal medicine use in preparation for labor among pregnant women at Kiganda health center IV – Mubende district. It is having a history of use of herbal medicine in any previous pregnancies (x^2 = 11.295, 0.001), and the perception that herbal medicines can cause deformities in a baby (x^2 = 4.065, 0.044). More than half of the pregnant women who had a history of use of herbal medicine in any previous pregnancies (54.6%) had used herbal medicine use in preparation for labour, compared to less than a third (28(30.4%) of those who had no history of use of herbal medicine in any previous pregnancies. This is in line with Kyegombe et al (2016) in his study done in Kiryandongo general hospital in Masindi District, One hundred and fifty three (43.7%) considered herbal medicines to be safe during pregnancy and preferred them to conventional medicines because they have low side effects, are cheap and easy to access, and it is part of their tradition to use them during pregnancy. One hundred and ten (31.4%) believed that these herbs are neither dangerous to the mother nor the foetus.

5.3 The socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district

They are two socio demographic characteristics of the pregnant women that are significantly association with herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV. They include; Residence of the pregnant woman (x^2 = 5.152, P = 0.023), and reception of any formal education (x^2 = 4.101, p = 0.043). The cross tabulations show that almost half of the women interviewed were residing in rural areas (49.6%), had used herbal medicines in preparation for labor among pregnant women at Kiganda health center IV – Mubende district. Almost half of the women interviewed who had received formal education (45.3%), had used herbal medicines in preparation for labour among pregnant women at Kiganda health center IV – Mubende district. This is in line with,(Mothupi,2014) The use of herbal medicine hasbeen also found to be higher among women having a low level of education in some previous studies and in other studies, the usage of CAM methodswas found to be much higher in older women (Lapi et al., 2010), women with a high education level (Bayisa et al.,2014; Birdee et al., 2014; Bishop et al., 2011; Frawley et al., 2013;Frawley et al., 2015; Hall and Jolly, 2014; Kalder et al., 2011; Pallivalappila et al., 2014; Pallivalappilaet al., 2015), married women (Bishop et al., 2011), women with ahigh income level (Birdee et al., 2014; Kalder et al., 2011), working women (Bishop et al., 2011; Frawley et al., 2013; Frawley et al.,2015), women living in the city centre (Frawley et al., 2015) andwomen whose friends or family members were using CAM meth-ods (Pallivalappila et al., 2015)

In an institutional-based cross sectional study by Mekuria (2017), the odds of herbal medicine use during pregnancy were 3.15 times higher among rural residents as compared to urban residents. Pregnant women who were illiterate (no formal education) were 4.05 times more likely

to use herbal medicine than those who attended tertiary education. It also showed that pregnant women who had average monthly income less than 100 USD were 3.1 times more likely to use herbal medicine than those who had average monthly income of greater than 200USD.

CHAPTER SIX: CONCLUSION

6.0 Introduction

This chapter presents the conclusions and recommendations of the study, based on the significant findings that were obtained from each objective

6.1 Conclusion

Objective 1: The proportion of pregnant women who use herbal medicine in preparation for labour in Mubende district

The proportion of pregnant women at Kiganda health center IV who use herbal medicines in preparation for labour in Mubende district, is 42.9%, implying that about 4 out of every 10 pregnant women who seek Antenatal care services from Kiganda health center IV in Mubende district use herbal medicine in preparation for labor

Objective 2: The individual determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district

Herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district is determined by only the history of use of herbal medicine in any previous pregnancies.

Objective 3: The socio demographic determinants of herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV – Mubende district

Two socio demographic characteristics determine herbal medicine use in preparation for labour among pregnant women at Kiganda health center IV. They are the residence of the pregnant woman, and reception of any formal education.

6.2 Recommendations

Health care service providers working in the Antenatal department of Kiganda health center are urged to conduct routing screening exercises meant to identify multigravida women, with an aim of finding out which of them has ever used herbal medicines in their previous pregnancies. Once those are identified, the providers could consider providing them with focused health education and counseling meant to perpetuate behavior change in them, so that they can desist from using traditional medicines in their current pregnancies, in preparation for labor

Secondly, as part of the focused antenatal care health education sessions, the administration of Kiganda health center IV should incorporate and/or strengthen the content of herbal medicine use during pregnancy, including its effects on the fetus. That education should be started during the first trimester, so that the chances of especially primigravida women using herbal medicines in subsequent trimesters are reduced or eliminated. Doing so will ensure that once the primigravida women become multigravida women, they will not be affected by a history of herbal medicine use since it would have been prevented during their first pregnancies.

Antenatal care service providers at Kiganda health center IV also have a duty of identifying pregnant women hail from rural settings, and those who have been formally educated, so that they can be sensitized on the potential dangers of herbal medicines use in preparation for labor. That should be more so for pregnant women who stay in rural residences since they are more prone to using the herbs, given their higher availability in villages

6.3 Recommendations for further studies

Other studies should be done to assess the determinants of actual use of herbal medicine use among postpartum mothers at Kiganda health center IV

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APPENDIX A: CONSENT FORM

TITLE: USE OF HERBAL MEDICINE DURING LABOUR AND ITS DETERMINANTS AMONG PREGNANT MOTHERS ATTENDING KIGANDA HEALTH CENTRE IV, MUBENDE DISTRICT

Purpose of the study

The purpose of this study will be to assess use of herbal medicine during labour and its determinants among pregnant mothers attending Kiganda health Centre Iv, Mubende district

PROCEDURE

The study procedure involves completion of a structured interview schedule. After signing the consent form, the researcher will read and collect all necessary information from you. Approximated time for the completion is about 15 to 25 minutes for ``each respondent**.**

RISK AND MITIGATION

The anticipated risk is that the data collection process is interrupting the key informant working schedules. It will be mitigated by scheduling appointment when the key informant interview is available.

BENEFITS

There may be no direct benefits associated with your participation in the study, but the need for evidence based information that will be obtained will support the health facility of kiganda and its partners to understand the factors contributing to use of herbal medicine in labor among pregnant mothers attending kiganda h/c iv, to be able to address them and take cost effective interventions for its reduction.

COMPENSATION

No research participants will be compensated.

CONFIDENTIALITY

We will keep your study records private and confidential. Certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

The research team, including the Principal Investigator and those involved with the study.

I may publish what I have learnt from this study. If l do, l will not include your name. l will not publish anything that would let people know who you are.

VOLUNTARY PARTICIPATION/ WITHDRAWAL

Your participation in this study is personal and voluntary. You are not under obligation to participate. You at liberty to refuse participation and free to withdraw. If you decline to participate, no privileges will be taken away from you. If you agree to participate, you will be required to sign a consent form from in the presence of witness.

YOU CAN GET THE ANSWERS TO YOUR QUESTIONS, CONCERNS, OR COMPLAINTS

If you have any questions, concerns or complaints about this study, or experience an adverse event or unanticipated problem, contact the researcher on 0779398555.

If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the

IHSU-REC Chairperson Dr. Samuel Kabwigu on (0779610100) & the executive secretary of UNCST on (0414 -705500) respectively.

ASSESSMENT OF UNDERSTANDING

Please tick which box best describes your assessment of understanding of the above informed consent document:

□ I have read the above informed consent document and understand the information provided to me regarding participation in the study and benefits and risks. I give consent to take part in the study and will sign the following page.

□ I have read the above informed consent document, but still have questions about the study; therefore I do not give yet give my full consent to take part in the study.

_____ _____

Signature of Person Taking Part in Study Date

_____

Printed Name of Person Taking Part in Study

_____ _____

Signature of Person Obtaining Informed Consent / Research Authorization Date

_____

Printed Name of Person Obtaining Informed Consent / Research Authorization

APPENDIX B: QUESTIONNAIRE

PART A: Socio demographic characteristics

S.No	Question	Response
1	What is your current age (in years)	1. 18 - 28 years 2. 29 - 39 years 3. 40 - 50 years
2	What is your marital status (currently)	1. Single 2. Married 3. Cohabiting 4. Other.....
3	To what religious denomination do you subscribe,	1. Catholic 2. Muslim 3. Anglican 4. SDA 5. Born again 6. Other.....
4	Do you get any formal education?	1. Yes 2. No
5	If yes above, what level of formal education did you achieve	1. Primary level (Lower, P1 - P4) 2. Primary level (Upper, P5 - P6) 3. Secondary (O level) 4. Secondary (A level)

		5. Post-secondary / tertiary education
6	Has any of your family members ever persuaded you to use herbal medicines	1. Yes 2. No
7	How would you describe you residence	1. Rural 2. Urban
8	Are you employed	1. Yes 2. No
9	What is the nature of the family you are staying with now	1. Nuclear 2. Extended
10	Has your husband ever escorted or come with you during ANC?	1. Yes 2. No
11	Have any of your family members ever persuaded you to use herbal medicines during labor	Yes No

PART B: Traditional Herbal Medicine Use

S.No	Question	Response
12	Have you so far used any form of herbal medicine in preparation for labor	1. Yes 2. No
13	What have you been specifically targeting in labor, that motivated you to use herbal medicines	1. Fast Labor induction 2. Reduction of labor time 3. Normal delivery

PART C: Individual characteristics of the respondents

S.No	Question	Response
14	What is your parity currently	1. One 2. Two 3. Three 4. Four 5. More than four
15	How many pregnancies have you carried so far	1. One 2. Two 3. Three

		4. Four 5. More than four
16	If you have been pregnant before, did you use herbal medicine in those previous pregnancies	1. Yes 2. No
17	Have you used herbal medicines before (even if not pregnant)	1. Yes 2. No
18	Did you attend ANC in during most recent pregnancy?	1. First 2. Second 3. Third
19	If yes, how often did you do so?	1. Once 2. Twice 3. Thrice 4. Four times 5. More than four times

Perceptions

S.No	Statement	Agree	Disagree
20	Herbal medicines are more effective than modern medicines during labour		
21	Herbal medicines make the fetus (baby) healthy		
22	Herbal medicines can ensure that a pregnant women delivers the baby normally		

24	Herbal medicines do not have any side effects as opposed to modern medicines		
25	With herbal medicines, contractions (labor pains) start at the right time and are very fast		
26	Herbal medicines cannot cause any side effect to a pregnant woman or her baby		
27	Herbal medicines can cause deformities in a baby		
28	Herbal medicine use in pregnancy can cause birth of a premature baby		
29	Herbal medicines can cause sudden contractions or miscarriages to a pregnant woman who takes them		

APPENDIX C: INTRODUCTORY AND CORRESPONDENCE LETTER

IHSU INTERNATIONAL HEALTH SCIENCES UNIVERSITY
sanitas per scientiam

making a difference to health care

Dean's Office-Institute of Allied Health Sciences
Kampala, Monday, 25th June 2018

TO:
.....
INCHARGE KIGANDA HCIV
.....
.....
.....

SCB DISTRICT HEADQUARTERS
Jude no objection
13 SEP 2018 2018
KIGANDA H/C IV
P.O. BOX 93, MUBENDE

Dear Sir/ Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

This is to introduce to you **Buyondo Banalaba Frank,** Reg. No. **2018-DCM-FT-FEB-015** who is a student of our University. As part of the requirements for the award of a Diploma in Clinical Medicine & Community Health of our University, the student is required to carry out a research in partial fulfillment of his award.

His topic of research is: **The Use of Herbal medicine during Labor among Pregnant Mothers attending Kiganda Health Centre IV, Mubende District.**

This therefore is to kindly request you to render the student assistance as may be necessary for his research.

I, and indeed the entire University are grateful in advance for all assistance that will be accorded to our student.

Sincerely Yours,

IHSU INTERNATIONAL HEALTH SCIENCES UNIVERSITY
25 JUN 2018

Dr. Okiria John Charles (PhD)
Associate Professor / Dean IAHS
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APPENDIX D: WORK PLAN AND BUDGET.

Month/2018	Activity
March – April	Development of research proposal
May	Submission of Research proposal
June-July	Data collection
August	Data Analysis
September	Report development
October	Submission of the Research Report

TENTATIVE BUDGET;

S/N	Item	Quantity	Unit Cost	Total
1	Typing and printing	11 copies	5,000=	55,000=
2	Photocopying	1100 pages	100= / page	110,000=
3	Rim of papers	1	15,000=	15,000=
4	Pens	5	500=	2,500=
5	Transport		200,000=	200,000=
6	Others		42,500=	42,500=
	Total			**425,000=**

APPENDIX E: A MAP OF MUBENDE LOCATING KIGANDA HEALTH CENTRE IV