DETERMINANTS OF INFANT MORTALITY RATE AMONG INFANTS ATTENDING ISHAKA ADVENTIST HOSPITAL IN THE MONTHS OF APRIL- JULY 2017 IN ISHAKA MUNICIPALITY, BUSHENYI DISTRICT

BY

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DCM/ 0025/143/DU

A RESEARCH REPORT SUBMITTED TO THE SCHOOL OF ALLIED HEALTH SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR AWARD OF DIPLOMA IN CLINICAL MEDICINE AND COMMUNITY HEALTH OF KAMPALA INTERNATIONAL UNIVERSITY

JULY, 2017

DECLARATION

I **Mugaaga Paul, Reg. no DCM/0025/143 /DU** declare that this is my original work and it has never been published or submitted to any other University for any academic award.

Sign: …….

Date: ……

SUPERVISOR APPROVAL

This is to certify that the research report titled **"Determinants of infant mortality rate among children aged one year and below attending Ishaka Adventist Hospital in the months of April- May 2017, in Ishaka municipality- Bushenyi district"**, has been submitted for examination with my approval as the supervisor.

Supervisor's name:Mr. Mwakio Warrenlee

(BSc. Public Health, DCM&CM)

Signature: ……

Date: ……

DEDICATION

I dedicate this work to my father, Mr. Mubiru Fred., my mother, Mrs. Kyomuhangi Mauda and my brothers and sisters for being a great inspiration in my life.

ACKNOWLEDGEMENT

First and foremost I am thankful to the almighty God for the gift of life and good heath that has enabled me to reach this far in my studies and work as well.

Special appreciation to my research supervisor Mr. Mwakio Warrenlee for all the help and guidance he has accorded me throughout my research and without whose efforts this work would be in vain.

My sincere gratitude also goes to the entire academic staff, School of Allied Health Sciences, Kampala International University- Western Campus, for their coordinated effort and commitment to ensure that we acquire necessary competences both in class and in the field.

Last but not least I do extend my infinite gratitude to my father Mr. Mubiru Fred my mother Mrs. Kyomuhangi Mauda and my beloved brothers and sisters whose prayers, moral, social and financial support has brought me this far.

Thank you all and May the almighty God reward you abundantly.

LIST OF ABBREVIATIONS

HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAH	Ishaka Adventist Hospital
IMR	Infant Mortality Rate
ITNS	Insecticide Treated Mosquito Nets
MDGS	Millennium Development Goals
SIDS	Sudden Infant Death Syndrome
UMFPED	Uganda Ministry of Finance Planning and Economic Development
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
UPPAP	Uganda Participatory Poverty Assessment Project
WHO	World Health Organization

DEFINITION OF TERMS

Asphyxia: The loss of consciousness due to the interruption of breathing making the body unable to deliver oxygen to its tissues.

Co-morbidity: The presence of one or more disorders in addition to a primary disease or disorder.

Contraceptive: A mechanism or means by which conception as a result of sexual intercourse can be prevented or made less likely.

Fertility: The average number of births per woman within a population.

Handicapped: Being Limited by an impediment of some kind.

Immunity: Fully protective resistance against infection.

Immunization: The process by which an individual is exposed to a material that is designed to prime his or her immune system against that material.

Infant: A very young human being, from birth to somewhere between six months and two years of age.

Malnutrition: A lack of adequate Nourishment.

Morbidity: The occurrence of a disease or illness.

Mortality: The condition of being susceptible to death.

Poverty: The quality or state of being poor, want or, scarcity of need.

Pregnancy: The condition of being pregnant that covers the period from progression stages to birth.

Prenatal: Being or happening after Birth.

Preterm birth: A premature birth, less than 37 weeks of gestation.

Sudden infant death syndrome: The sudden and unexpected death of a baby with no known illness.

Vulnerable: More or most likely to be exposed to the chance of being attacked or harmed.

Contents

LIST OF TABLES

ABSTRACT

INTRODUCTION: Infant mortality is defined as the death of an infant before his or her first birthday, mainly caused by dehydration, diseases, congenital malformations and infections.

AIM: The main objective was to establish the determinants of infant mortality in IAH in the months of April- July 2017, in Ishaka municipality in Bushenyi district.

METHODS: A descriptive cross sectional study design was used to determine the determinants of infant mortality in the study area.

RESULTS: Majority of respondent (98%) were female and among them, 25.5% reported to have lost at least an infant and most of these respondents (70%) were married while 5% was widowed and among these, 40% reported to have lost an infant. Religiously, majority of the respondents (80%) were Christians, while 13% were Muslim and 7% constituted other religions including paganism, which showed the greatest infant mortality rate (71.4%). Most of the respondents (65%) attained primary level of education while 5% did not go to school at all, and the highest Infant Mortality rate (40%) was reported among these. The respondents who reported to have had preterm births appeared to have a higher infant mortality rate (65%) than those who did not report preterm births. A higher Infant Mortality rate (32.2%) was realized among respondents who reported their infants to have had such co morbidities than those who didn't report any co morbidities like malaria and also a higher Infant mortality rate (50%) was realized among infants who had not exclusively breastfed. Majority of respondents (80%) did not have children with birth defects while only 20% had children with birth defect, and a higher infant mortality rate of 70% was realized among these.

CONCLUSION: Demographically, infant mortality rate is high among teenagers, the unemployed, the widowed, the pagans, and the uneducated. Direct determinants of infant mortality rate included preterm birth, birth defects, co morbidities and failure to breastfeed exclusively. Proximate determinants associated with infant mortality rate included teenage pregnancies, source of water, means of delivery and irregular immunization.

RECOMMENDATION: Exclusive breast feeding for 6 month, mass immunization campaign up to grass root, intensive health education on health seeking behaviors and highlighting on dangers associated with risky behaviors and high quality monitoring and evaluation for quick action particularly for emergencies. There is also need for intersectional collaboration and initiation of income generating activities to boost their standards of living.

CHAPTER ONE

1.0 INTRODUCTION

Reduction of infant and child mortality by two thirds by the year 2015 is one of the millennium development goals [MDGs], unfortunately, despite all efforts to achieve this, the infant mortality rate has remained high and its one of the powerful indicators of socioeconomic development of the nation therefore this cross sectional research study is aimed at establishing the determinants of infant mortality in Ishaka municipality, Bushenyi district,

1.1 BACKGROUND

Infant mortality is defined as the death of an infant before his or her first birthday. It is a useful indicator of the nation's health because it is often associated with other factors such as maternal health .quality and accessibility of medical care and social economic conditions. The leading causes of infant mortality are dehydration, diseases, congenital malformation, Infection, drugs and alcohol, sudden infant death syndrome. Other factors that cause and/ or contribute to infant mortality are prenatal care, mother marital status, social and income status, poverty race, smoking and substance abuse, air pollution and environmental factors.

Infant mortality is also defined as the number of newborns dying under a year divided by the number of live births during a year (bennef *et al.,* 2006).

One of the millennium development goals (MDGs) is the reduction of infant and child mortality by two thirds by 2015, in order to achieve this goal, efforts are concentrated at identifying cost effective strategies as many international agencies have advocated for more resources to be directed to health sector and yet the leading causes of infant death have not changed in the last several years despite the advanced technology and increased focus on parental care (UNICEF report, 2006).

High infant mortality rates are much more prevalent in developing nations .Many of the relevant variables can be classified as demographic or socioeconomic. A higher level of economic development leads to an improved standard of living with better nutrition and advanced medical technology (moaddel, 2010).

Education level, employment, income, family and social support and community safety are all components of social and economic determinants of health (United Nations report, 2010)

Amouzou, 2004 suggested that the increase in the mortality in sub-Saharan Africa is due to the impact of HIV/AIDS epidemic especially in this region and the continuous economic crisis, in sub-Sahara region of east and North Africa.

According to Adlakha *et al,* 2002 demographic factors such as maternal age and birth intervals generally have more of an impact in nations with the lowest level of industrialization and economic development however, with increasing social economic development, these demographic factors tend to have less impact particularly when compared to social and economic factors such as education and access to health facilities.

Infant mortality is an important indicator of successful implementation of poverty eradication action plan(PEAP), infant mortality is therefore an important health issue but it must be stressed from the beginning that the health sector is not the only sector responsible for the infant mortality outcome (Uganda ministry of finance, planning and economic development report,2002).

1.2 PROBLEM STATEMENT

Infant mortality rate (IMR) is one of the most important sensitive indicators of social economic and health status of the community. This is because more than any other age group of a population, infants' survival depends on social economic conditions of their environment. It`s one of the united nations (UN) human development index. Hence its description is very vital for evaluation and planning of public health strategies. In Kenya approximately eight out of each 100 live births die before their first birth day representing a huge wastage of potential man power so achieving the MDG means simply reduction in Kenyan IMR to about 22.0 per1000 live births by 2015. Amongst regions making insufficient progress of this goal, sub Saharan Africa remains the most troubling region. In the United States infant mortality rate is about 6.86 per 1000 births .The loss of babies remains a sad reality for many families and takes a serious toll on health and wellbeing of families as well as the nation.

Uganda infant mortality rate; total 62.47 deaths /1000 live births. Male; 72 deaths /1000 live births Female; 52 deaths /1000 live births. Majority of deaths have been due to infectious diseases such as malaria, measles, AIDS and malnutrition (UNICEF report 2006).

The lower probability of dying in infancy period for females compared to males is consistent with many studies all over the world. It has been reported that for biological reasons males are more prone to die in the first month of life .the probability is almost the same after overcoming the executive breast feeding period (Bobak *et al,* 2004)

Despite concerns over the most recent poverty numbers, Uganda has exp2erienced rapid economic growth over the past fifteen years with concomitant reduction in poverty numbers, despite this progress, there is concern in Uganda that living standards are not improving by anything like quantitative analysis of house hold expenditure suggests.

Other dimensions of wellbeing especially health are not improving in particular infant mortality rate. (Sarah Ssewanyana and Stephen d yourger, 2005)

Infant mortality in Uganda has stagnated at a high level over the last 5 years without improving much over the last 30 years ,an obvious question is there for to examine why this is happening .(Uganda ministry of finance ,planning and economic development report,2002).

Infant mortality rate can be associated with the wellbeing of the population .high infant mortality rates could reflect improper childcare .A population with diseased and un healthy individuals who grow up to form sickly adults prone to disease , dampens economic progress in many ways ;it decreases work productivity ,it does not allow utilization of natural resources that would otherwise be accessed under good health conditions ,it harms the next generation by decreasing enrollment of children in school and finally it increases medical care expenditure(world development report,2000).

1.3 STUDY OBJECTIVES

1.3.1 GENERAL OBJECTIVES

To assess the determinants of infant mortality among infants attending IAH in the months of April-May 2017, Ishaka municipality in Bushenyi, district.

1.3.2 SPECIFIC OBJECTIVES

1. To find out how the socio-demographic factors relate to infant mortality in IAH, Ishaka municipality in Bushenyi district.

2. To assess how direct determinants relate to infant mortality in IAH, Ishaka municipality in Bushenyi district.

3. To determine how proximate determinants relate to infant mortality in IAH, Ishaka municipality in Bushenyi district.

1.4 RESEARCH QUESTIONS

1. How are the socio-demographic factors related to infant mortality in IAH, Ishaka municipality?

2. How are the direct determinants related to infant mortality in IAH, Ishaka municipality?

3. How are the proximate determinants related to infant mortality in IAH, Ishaka municipality?

1.5 STUDY JUSTIFICATIONS

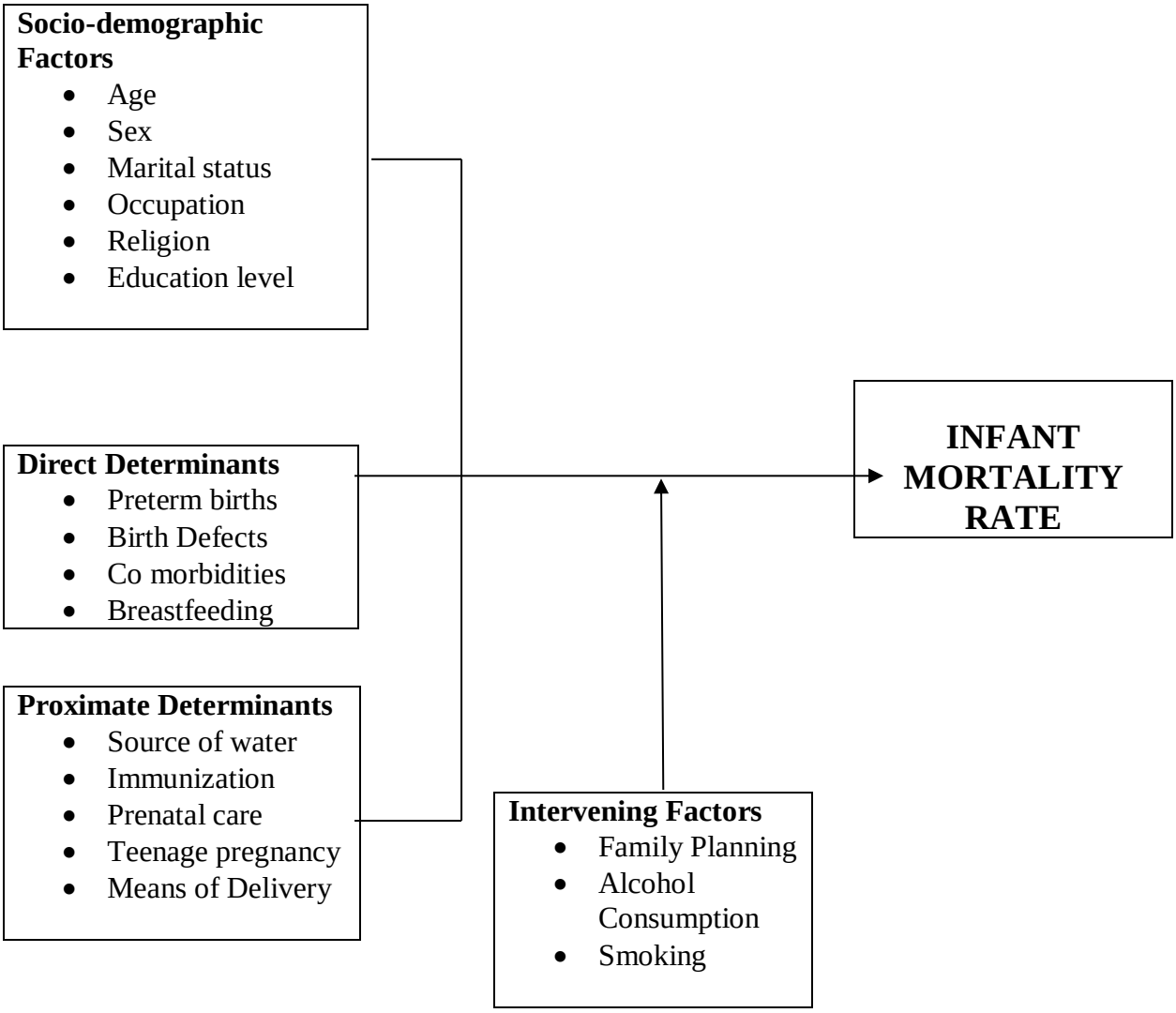
Infant mortality rate is a factor that that can be associated with the wellbeing of the population. A population with diseased and unhealthy individuals who grow up to form sickly adults prone to disease dampens economic development in many ways. (World development report 2000).

Therefore, this research study will be beneficial to the parents and guardians to learn how to care for their infants very well right from prenatal period.

It will benefit the district health office Bushenyi district to get information about the determinants of infant mortality in the district. The community will benefit from health education on sanitation, nutrition and early detection of diseases like malaria using signs and symptoms.

The community will also be advised to always seek for treatment for their infants from the nearby health facility and avoid self-administering medications.

1.6 CONCEPTUAL FRAMEWORK.



1.7 SCOPE OF THE STUDY

In this study, the independent Variables included the Socio-demographic factors, the Direct and the proximate determinants of Infant mortality rate, while the intervening factors were Family Planning and Breastfeeding Practices and the dependent/outcome variable of the study was Infant Mortality. However in this study, attention was put on only selected factors like age, sex, marital status, occupation, level of education, direct and proximate determinants as listed above.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 SOCIO-DEMOGRAPHIC FACTORS AND INFANT MORTALITY.

Gender can determine health inequality and particular diseases men and women suffer from. Poor women tend to have diabetes, cancer and infant mortality (Huisman, 2003).

Most people attain primary education after which they cannot proceed to secondary school as they cannot afford school fees among other reasons low level of education has an impact on the reasoning capacity of an individual and hence parental care offered to the children, education level as one of the determinants of health (UN report, 2010).

Marriage indirectly influences the survival of an infant as there is collective responsibility of rising up the infant. These findings are with line with the ministry of finance, planning and economic development report, 2002 which stated that in marital status matters, mothers who are widowed, divorced or separated experience higher infant mortality than the married ones being one of the factors affecting infant mortality (benenet *et al.,* 2006).

Christians and Muslims generally do not believe in human sacrifice to their gods of fortunes while other religions do believe in human sacrifice to their gods of fortunes or to appease them. In turn their may sacrifice their infants or even for other people in order to get fortune like riches, good harvest among other things which states that Christianity/ Islam may be associated with low mortality while traditional religions or atheism may associate with high mortality (WHO report 2000).

High level of unemployment makes most residents to have little income and as such unable to overcome daily challenges including treatment costs in case the infant fells sick and therefore infants from this kind of family are at risk of dying any time should there contract a medical or surgical emergency. High infant mortality rates are prevalent in developing nations than industrialized nations, many of the relevant variables beings social economic factors (moadel. 2010). Some personal household factors such as living conditions are more unstable in the lives of

the impoverished and represent the determining factors for health amongst poverty gradient. These factors prove challenging in individuals in poverty and are responsible for health deficits amongst the general population. Access to sufficient amounts of quality water for drinking, bathing and food preparation determines health and exposure to disease. Having sufficient access to minimum amount of food that is nutritious and sanitary play important parts in building health and reducing disease transmission.

Housing including size, quality, ventilation, crowding, sanitation and separation prove paramount in determining health and spread of disease. Hygienic and preventive care including soap, contraceptives and insecticides are necessary for maintaining health. Differential access to these life essentials depending on ability to afford with a given income results in a differential health (WHO report, 2008)

2.2 DIRECT CAUSES OF INFANT MORTALITY IN THE STUDY AREA

Co-morbidities for example Malaria and Severe malnutrition put children at greater risk malaria due to reduced immunity. In addition being infected with malaria parasites can rapidly push children into dehydration and malnutrition as the anemia caused by hemolysis quickly depletes children's` nutrition reserves. Children are therefore more likely to die if they are already malnourished and come in contact with malaria parasites and vice versa, being infected with the malaria parasites can cause children to become malnourished leading to higher mortality (UNICEF 2003).

Preterm birth complications; preterm birth is rising in most countries and is now the second leading cause of death globally for children under five years. Pneumonia is the prime cause of death in infants; the major risk factors include malnutrition and indoor air pollution. Diarrheal diseases which are major cause of sickness and death among children in developing countries.

Measles which is another leading cause of childhood death in many developing countries, poverty, poor health systems and a lack of information can make it difficult for families to secure preventive vaccination for each of their children.

Malaria; Malaria kills a child everywhere in the world every minute with an estimate of 660000 mostly children in Africa. Malaria infection during pregnancy is associated with low birth weight

among newborn infants and is one of the leading risk factor of infant mortality and sub optimal growth and development. Malaria has the serious economic impact in Africa, solving economic growth and development and perpetuating the vicious cycle of poverty. Malaria is truly a disease of poverty, affecting mainly the poor who tend to live in rural poorly constructed dwellings that offer a few, if any, barriers against mosquitoes.

Malaria is both preventable and treatable and effective preventive and curative tools have been developed. Such as sleeping under insecticide treated mosquito nets (ITNs), prompt access to effective treatment can further reduce death and intermittent preventive treatment of malaria during pregnancy can significantly reduce the proportion of low birth infants and anemia. Unfortunately many children especially in Africa continue to die from malaria and they do not sleep under treated mosquito nets and are unable to access life saving treatment within 24 hours onset of symptoms (UNICEF report 2013).

HIV/AIDS; Despite falling HIV prevalence rates, the cumulative number of people living with HIV/AIDS in Uganda is around 1.1million. HIV/AIDS has continued to cause infant mortality due to this accumulation of HIV/AIDS infected persons through mother to child transmission.

Malnutrition which makes children more vulnerable to severe diseases and is underlying factor is about one third of all child deaths. Most infants could survive these threats if they had access to simple affordable interventions (www.harrisburghealthystart.com).

Sudden infant death syndrome, (SIDS) is defined sudden death of an infant within 1year of age which is UN expected by any medical history. The exact cause of SIDS although unknown, are various risk factors that may be associated to the death of an infant; Exposure tobacco smoke, alcohol use by the parent (mother) especially in the first trimester, use of certain illegal drugs, Improper care during pregnancy, short interval during pregnancy, side or prone sleeping position, thermal stress or over heating or over wrapping, lack of breast feeding and soft sleeping surface or bedding

The risk factors may directly or indirectly lead to sudden death of an infant. Apart from these factors such as low socioeconomic status of parents, low levels of education, young age and single marital status also contribute to this condition to a certain extent. (www.healthplus.com).

2.3 PROXIMATE DETERMINANTS OF INFANT MORTALITY

a) Source of water

Access to sufficient amounts of quality water for drinking, bathing and food preparation determines health and exposure to disease. Having sufficient access to minimum amount of food that is nutritious and sanitary play important parts in building health and reducing disease transmission. The sanitary environment in which a child lives contributes to its survival chances as illustrated by associated infant mortality levels of different types of toilet facility and approximation of household sanitation standards (UMFPE 2002).

b) Teenage Pregnancy.

Teenage pregnancy has a higher risk of leading to infant mortality as well as marital status. Mothers, who are widowed, divorced or separated experience higher infant mortality than the married mothers.

Fertility rate; Uganda has one of the highest fertility rates in the world, this is unfortunate because high infant mortality and vice versa while HIV/AIDS exacerbate this viscous circle. Low use of contraceptives which would reduce the number of risky pregnanciesHouseholds without access to safe water are twice as likely to experience infant mortality as households with access to safe water

c) Means of Delivery.

Home deliveries and unsupervised deliveries are more likely to cause complications and put the mother and her infant at risk, unfortunately, the proportion of unsafe deliveries has remained constant over the last ten years (Uganda Ministry of Finance, Planning and Economic Development report, 2002).

d) Prenatal care

Prenatal care plays a role in the life of infants with excess infant mortality in impoverished populations and nations. Poverty is the strongest predictor of insufficient prenatal care which is caused by three factors which include socio-demographic factors (such as age, ethnicity, marital status and education), systematic barriers and barriers based on lack of knowledge attitudes and life styles (Mirowsky J and Catherine E, 2003).

CHAPTER THREE
METHODOLOGY

3.0 INTRODUCTION

This chapter describes the methods being used in the study, it includes the following;

3.1 STUDY AREA.

Ishaka Adventist Hospital is located in the Ishaka-Bushenyi municipality in Bushenyi District. It is composed of 3 divisions i.e. Ishaka, Nyakabirizi and Central Division and each division is divided into wards which are further divided into cells. Ishaka town council which is the area of study is in Igara County- Bushenyi district in the South Western of Uganda. It's bordered by Kasese in the North, Kamwenge in the North East, Mbarara in the East, Rukungiri in the West and Ntungamo in the South. The district has a total land of 3949 square kilometer and a population density of 181 persons per square kilometer and a total population of 738,355 (as per 2002 population and housing census). It's mainly inhibited by Banyankore but others tribes like Bakonjo, Batooro, Bakiga and other tribes' especially from the foreign students studying at Kampala International University-Western campus who also live there.

Bushenyi has a tropical type of climate with rain season in January, April, May, June, September, October, November and half of December. Dry season is in February, July and August. The soils are fertile for food crops like Matooke, Beans, Maize, Tea, Coffee, Cotton are main cash crops for the District.

The hospital is a 110-bed community hospital that is owned and administered by the Seventh Day Adventist Church in Uganda. It primarily caters to the health needs of the people who live and work within Ishaka-Bushenyi region as well as people from the neighboring districts. As of May 2017, the hospital's professional staffs included: 1 Chief Executive Officer, I Human Resource and Administration officer, 4 Medical Doctors, 8 Clinical Officers and about 70 nurses, midwives, nurse's aides and other subornate staffs. The hospital runs two health training schools; a nursing and medical laboratory training school.

3.2 STUDY POPULATION

The study was done in IAH in Ishaka Municipality, Bushenyi district among parents or guardians who brought their children to the hospital.

3.3 STUDY DESIGN

A descriptive cross sectional study design was used to determine the determinants of infant mortality in the study area.

3.4 SAMPLE SIZE

This was calculated using Fisher`s formula

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

Where

n= defined sample size

z = standard deviation of desired degree of accuracy

p= population proportion with the desired characteristics

r= amount of error acceptable

q= population proportion without desired characteristics

z= 1.96

p=0. 92

q= (1-p)

r= 0.05

$$n= \frac{(1.96)^2 \times 0.92 \times 0.08}{(0.05)^2}$$

n=100

3.5 SAMPLING METHODS

Simple random sampling method was used to select respondents among parents who brought their children to the health facility visited by the investigator.

3.6 DATA COLLECTION METHOD

Data was collected using questionnaires.

3.7 DATA ANALYSIS AND PRESENTATION

Data was analyzed manually using tallies and electronic calculator. Then the data was presented in the form of bar graphs, tables and pie charts.

3.8 DATA QUALITY CONTROL AND PRETEST

The questionnaire was written in simple and ordinary English that could easily be understood. The questionnaire was pretested to ensure clarity and translated to local language. Respondents were randomly picked to avoid bias.

3.9 LIMITATIONS TO THE STUDY

Uncooperative or unwilling respondents, transport to reach the participants, time and language barrier.

3.10 ETHICAL CONSIDERATION

i. An introductory letter was sought from the SAHS administrator.
ii. The letter was given to IAH administrator to permit me to conduct and collect data from the hospital.
iii. Participants were explained about the study in the language they best understood and a signed consent obtained from them before being enrolled for the study. Confidentiality was maintained by coding the questionnaires.

3.11 INCLUSSION CRITERIA

Parents who brought their children during the month of April-May 2017 were given questionnaires and were included in the study.

3.12 EXCLUSSION CRITERIA

Parents and guardians who were coming back for review to IAH, Parents and guardians who brought their children before and after the months of April and May 2017.

CHAPTER FOUR

4.0 INTRODUCTION

This chapter dealt with data presentation and analysis (Results).

4.1 SOCIO-DEMOGRAPHIC DATA

In this study, majority of the participants (60%) were in the age range of 25-34 years while majority were female by sex 98% and majority reported to be married (70%) while majority (80%) were Christians and majority were found to be peasants (85%). The study also revealed that the biggest number of participants had at least attained a primary level of education (65%) and lastly majority of the participants reported to be Banyankore by tribe (80%), all these details are shown in the table below.

Table I: shows socio-demographic characteristics of respondents (n=100)

Characteristics	Category	Number	Percentage
Age	15-24	20	20
	25-34	60	60
	35-44	16	16
	Above 45	4	4
Sex	Male	2	2
	Female	98	98
Marital Status	Married	70	70
	Single	1	1
	Divorced	24	24
	Widowed	5	5
Religion	Christian	80	80
	Muslim	13	13
	Others	7	7
Occupation	Business	5	5
	Employed	7	7
	Peasants	85	85
	Others	3	3
Level of education	Primary	65	65
	Secondary	20	20
	Tertiary	5	5

	None	10	10
Tribe	Banyankole	80	80
	Bakiga	15	15
	Baganda	4	4
	Others	1	1

Table II: Showing how socio-demographic factors associate to infant mortality (n=100).

Characteristics	**Category**	**Number**	**Percentage**	**Have lost an infant**	**Have not lost an infant**
Age	15-24	20	20	12(60%)	8(40%)
	25-34	60	60	6(10%)	54(90%)
	35-44	16	16	5(31.1%)	11(68.9%)
	Above 45	4	4	2(50%)	2(50%)
Sex	Male	2	2	0(0%)	0(0%)
	Female	98	98	25(25.5%)	73(74.5%)
Marital Status	Married	70	70	14(20%)	56(80%)
	Single	1	1	1(100%)	0(0%)
	Divorced	24	24	9(37.5%)	15(62.5%)
	Widowed	5	5	2(40%)	3(60%)
Religion	Christian	80	80	18(22.5%)	62(77.5%)
	Muslim	13	13	2(15.4%)	11(84.6%)
	Others	7	7	5(71.4%)	2(28.6%)
Occupation	Business	5	5	1(20%)	4(80%)
	Employed	7	7	1(14.2%)	6(85.8%)
	Peasants	85	85	23(27%)	62(73%)
	Others	3	3	0(0 %%)	3(100%)
Level of education	Primary	65	65	19(29%)	46(71%)
	Secondary	20	20	2(10%)	18(90%)
	Tertiary	5	5	0(0%)	5(100%)
	None	10	10	4(40%)	6(60%)
Tribe	Banyankole	80	80	22(27.5%)	58(72.5%)
	Bakiga	15	15	3(20%)	12(80%)
	Baganda	4	4	0(0%)	4(100%)
	Others	1	1	0(0%)	1(100%)

4.2 DIRECT DETERMINANTS OF INFANT MORTALITY

The study revealed that, few of the participants (20%) reported to have ever had a preterm birth while majority (62%) reported that their infant had ever had co-mobidities at one time and majority of participants also reported to have exclusively breastfed their infants while only 20% of the participants reported their infants had birth defects, all these deatails are as shown in the table below.

Table III: shows distribution of the direct determinants of infant mortality (n=100) among the study participants at IAH, Ishaka-Bushenyi District.

Characteristics	Category	Number	Percentage
Preterm Birth	Yes	20	20
	No	78	78
Co morbidities	Yes	62	62
	No	38	38
Exclusive Breastfeeding	Yes	70	70
	No	30	30
Birth defects	Yes	20	20
	No	80	80

Among the participants that reported preterm births, majority of these (65%) reported to have lost an infant, while of those that reported to their infants to have had co-morbidities, majority of these

Table IV: shows how direct determinants relate to infant mortality (n=100).

Characteristics	Category	Number	Percentage	Have lost an infant	Have not lost an infant
Preterm Birth	Yes	20	20	13(65%)	7(35%)
	No	78	78	12(15.4%)	66(84.6%)
Co morbidities	Yes	62	62	20(32.2%)	42(67.8%)
	No	38	38	5(13.2%)	33(86.8%)
Exclusive Breastfeeding	Yes	70	70	10(14.3%)	60(85.7%)
	No	30	30	15(50%)	15(50%))
Birth defects	Yes	20	20	14(70%)	6(30%)
	No	80	80	11(13.8%)	69(86.2%)

4.3 PROXIMATE DETERMINANTS OF INFANT MORTALITY

The various proximate determinants of infant mortality got from the participants were as follows as represented in table V.

Table V: shows the direct determinants of infant mortality (n=100)

Characteristics	Category	Number	Percentage
Source of water	Tap water	50	50
	Other sources	50	50
Teenage Pregnancy	Yes	70	70
	No	30	30
Prompt Immunization	Yes	80	80
	No	20	20
Mode of delivery	From home	35	35
	From Health facility	65	65

Table VI: shows how proximate determinants associate to infant mortality (n=100).

Characteristics	Category	Number	Percentage	Have lost an infant	Have not lost an infant
Source of water	Tap water	50	50	7(14%)	43(86%)
	Other sources	50	50	18(36%)	32(64%)
Teenage Pregnancy	Yes	70	70	20(28.6%)	50(71.4%)
	No	30	30	5(16.7%)	25(83.3%)
Prompt Immunization	Yes	80	80	13(16.3%)	67(83.7%)
	No	20	20	12(60%)	8(40%)
Mode of delivery	From home	35	35	15(42.9%)	20(57.1%)
	From Health facility	65	65	10(15.4%)	55(84.6%)

CHAPTER FIVE

5.0 DISCUSSION

This chapter deals with discussion of research findings in relation to the literature review.

5.1 DEMOGRAPHIC DATA

Most of the respondent age factors especially maternal age lays an impact in child care. These are in line with findings of impact in nations with low levels of industrialization, age as one of the factors that have (60%) were between ages of 25-34 years.

Majority of respondent (98%) were female and among them, 25.5% reported to have lost ateast an infant. This is attributed to the fact that in Africa, the art of looking after children is mostly bestowed up on women especially among the low educated communities. The practice of irresponsibility by the male partner puts infants at a greater risk of mortality from the course as women get overwhelmed with the burden of meeting the treatment costs. This finding concurs with finding of Huisman, 2003 who stated that gender can determine health inequality and particular diseases man and women suffer from. Poor women tend to have diabetes, cancer and infant mortality.

Most of the respondents (70%) were married while 5% was widowed and among these, 40% reported to have lost an infant. This is attributed to the high rate of early marriages in the study area. Marriage indirectly influences the survival of an infant as there is collective responsibility of rising up the infant. These findings are with line with the ministry of finance, planning and economic development report, 2002 which stated that in marital status matters, mothers who are widowed divorced or separated experience higher infant mortality than the married ones. These findings are also concurring with the finding of benenet *et al.*, 2006 who stated marital status as being one of the factors affecting infant mortality.

Majority of the respondents (80%) were Christians, while 13% were Muslim and 7% constituted other religions including paganism, which showed the greatest infant mortality rate (71.4%). Religious morals influence the type of care parents give to their infants. This may increase or decrease infant mortality for example Christians and Muslims generally do not believe in human sacrifice to their gods of fortunes while other religions do believe in human sacrifice to their gods of fortunes or to appease them. In turn their may sacrifice their infants or even for other people in order to get fortune like riches, good harvest among other things. These findings concur with WHO

report 2000 which stated that Christianity/ Islam may be associated with low mortality while traditional religions or atheism may associate with high mortality (WHO, 2000).

Majority of respondents (85%) were peasants while 3% engaged in other activities like fishing, and offering occasionally manual labor in unsafe areas and these showed the highest infant mortality rate (27%). These results show that there is high level of unemployment in the study area. This makes most residents to have little income and as such unable to overcome daily challenges including treatment costs in case the infant fells sick and therefore infants from this kind of family are at risk of dying any time should there contract a medical or surgical emergency. These findings agree with findings of Moadel who stated that high infant mortality rates are prevalent in developing nations than industrialized nations, many of the relevant variables beings social economic factors (Moadel m, 2010).

Most of the respondents (65%) attained primary level of education while 5% did not go to school at all, and the highest Infant Mortality rate (40%) was reported among these. many respondent s at least attained primary education after which there could not proceed to secondary school as they could not afford school fees among other reasons low level of education has an impact on the reasoning capacity of an individual and hence parental care offered to the children, this concurs with UN report, that cited education level as one of the determinants of health.

Majority of the respondent (80%) were Banyankole while only 20% constituted other tribes like Bankozo, Iteso, and Bagishu. Infant mortality rate was highest among the Banyankole (27.5%) since most of the respondents (80) were of this tribe. Cultural practices also impacts on the health of infants such as tattooing, false teeth extraction to mention but few (UN report, 2010).

5.2DIRECT DETERMINANT OF INFANT MORTALITY

All of the female respondents (100%) had ever been pregnant. Most of respondents (70%) had pregnancies lasting for nine months while 20% had pregnancies for less than seven months. Almost all 99% the respondents who stated that their pregnancies lasted for less than seven months stated that their infants didn't grow up well. The respondents who reported to have had preterm births appeared to have a higher infant mortality rate (65%) than those who did not report preterm births. Preterm birth is associated with several complications including infections and birth asphyxia, hypothermia. This predisposes infants to early death. Preterm birth is rising in most countries and is now the leading cause of death in children under five (www.harrisburg healthstart.com)

Most of the respondents (60%) said that their infants suffered from malaria while only 2% constituted others that included chicken pox and constipation malaria is the study area. The weather conditions in the study are favor the breeding of mosquitoes as there are two seasons that is rainy and dry season. The mosquitoes breed well in stagnant water, none use of insect sides treated nets makes family members more vulnerable to mosquito bites and hence malaria infection. A higher Infant Mortality rate (32.2%) was realized among respondents who reported their infants to have had such co morbidities than those who didn't report any co morbidities like malaria. These findings are in line with UNICEF report that stated that malaria kills a child every , where in the world every minute with an estimated 660,000 death mostly in Africa and its one of the most leading risk factors for infant mortality and sub optional growth and development. Malaria is has a serious social and economic impact in Africa, slowing economic growth and development and perpetuating the viscous circle of poverty (UNICEF 2003).

A big number (70%) said that they breastfed their infants as often as possible while a few did not. A higher Infant mortality rate (50%) was realized among infants who had not exclusively breastfed. Such infants are prone to infections or even malnutrition and this carries a great risk of infant mortality. These findings concur with findings in www.harrisburg health start.com which states that malnutrition makes children more vulnerable to severe diseases and is underlying factor in about one third of child death (www.harrisburg health start.com).

Majority of respondents (80%) did not have children with birth defects while only 20% had children with birth defect, and a higher infant mortality rate of 70% was realized among these ones. Congenital birth defects such as congenital heart defect predispose infants to early death especially in our setting (Africa), where majority of families are financially handicapped and cannot meet the costs cardiac operations. Those whose families grew up well could have been having minor birth defects such as cleft lip, cleft palate, clubfoot among others. This is in line with Angella Morrow and RN who stated that congenital defect also known as birth defect occur while a fetus is developing in womb and that the most severe congenital defect prove fatal and lead to infant death (Angella Morrow and RN, 2009).

5.3 PROXIMATE DERMINATS OF INFANT MORTALITY.

Proximate determinants of infants mortality, most of the respondents (70%) had their pregnancies before 20years of age while 30% had their first pregnancy after 20years of age, nearly half of the respondents 49% experienced complications during pregnancy while 51% didn't experience complications.

Teenage pregnancy is always at high risk of pregnancy and birth complications and this predisposes to infant mortality. Complications like cephalopelvic disproportion could lead to assisted deliveries such as vacuum extraction of caesarian delivery and this also may cause injury to the infant and hence predispose them to infections. The respondents who reported to have had teenage pregnancies were seen to have a higher infant mortality rate (28.6%) compared to those who did not reprt any teenage pregnancy. These findings are in line with Uganda ministry of finance, planning and economic development, which stated that teenage pregnancies have a higher risk of leading to infant mortality. This is also in line with the findings of Angella Morrow. (Angella Morrow, RN, 2009).

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Half of the respondents [50%] obtain water from the tap while the rest (50%) obtained water from other sources which included rain water. Usage of water from other sources was seen to be associated with a higher infant mortality rate (36%) compared to usage of tap water. These results indicate that most of the respondents do not still have access to safe water and this is also a risk factor for diarrheal diseases .this is worsened by poor human excreta disposal .this also means that the risk of fecal contamination is high, all these factors tantamount high rate of morbidity and mortality more so to infants as their immunity is still developing (www.healthpus24.com).

Majority of the respondents [80%] took their children for prompt immunization while only 20% did not. The greatest percentage took their children for prompt immunization, this is attributed to increased mass campaign drive by government of Uganda such as `kick polio out of Uganda` and free cost of immunization to the public offered by the government. The infant mortality rate was seen to be highly associated with those who did not promptly receive immunization (60%) compared to those who promptly received immunization. The few, 20% who did not take their children for immunization could be still having false local belief about the vaccines or biasness

towards health workers. Immunization helps to prevent fatal diseases like diphtheria, measles, polio, tetanus, meningitis hepatitis, influenza among others. Therefore if the infants are not immunized then they are at increased risk of dying from these diseases. These findings are in line with UMFPE report, which stated that immunization if mothers and children can help to prevent morbidity and infant mortality caused especially by measles and tetanus unfortunately some people still continue to avoid completing doses (UMFPE, 2002).

Most of the respondents (65%) delivered from health facilities while (35%) delivered from home. Infant mortality rate was seen to be highly associated with home deliveries (42.9%) than hospital deliveries. Home deliveries are always associated with conditions which can predispose to infections such as un sterile instruments for cutting the cord and improper care of the umbilical cord its self since the delivery is in most cases conducted by unskilled person and this generally puts mother and infant at risk of dying since the un skilled person cannot recognize signs indicating emergency requiring urgent attention such as resuscitation, blood transfusion, rehydration among others. These findings also agree with UMFPE, report 2002 which stated that home deliveries and unsupervised deliveries are likely to cause complications and puts the mother at risk. Unfortunately the proportion of unsafe deliveries has remained high and constant over the last 10 years.

CONCLUSIONS

From the study findings the following can be concluded;

According to the results from this study, it can be concluded that, demographically, infant mortality rate is high among teenagers, the unemployed, the widowed, the pagans, and the uneducated. Direct determinants were found to be having a big impact on the infant mortality rate and these included preterm birth, birth defects, co-morbidities and failure to breastfeed exclusively. Proximate determinants were also found to be playing a big role in the infant mortality rate among infants at IAH and these included teenage pregnancies, source of water, means of delivery and irregular immunization.

RECOMMENDATION

i. Exclusive breast feeding for 6 months should be encouraged at every level of health delivery

ii. Government of Uganda should continue with mass immunization campaign and this should be extended up to grass root to avoid the risk of some people missing due to long distance or un awareness

iii. Ministry of health in conjunction with district health office Bushenyi should carry out intensive health education on health seeking behaviors and high lighting dangers associated with risky behaviors like smoking, alcoholism, to mention but a few.

iv. Ministry of health should institutionalize high quality monitoring and evaluation with feedback loops allowing for quick action particularly for emergency response .this therefore calls for equipping every hospital with basic necessary equipment's and ambulances.

v. There is also need for intersectional collaboration by elucidating bottle necks experienced in trying to reduce infant mortality for example malnutrition should be prevented by improved agricultural l practices introduced by ministry of agriculture and fisheries.

vi. Government should help people initiate income generating activities to boost their standards of living.

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APPENDIX 1: CONSENT FORM

ENGLISH VERSION

Mr. Mugaaga Paul is carrying out a research on the determinants of infant mortality rate among children aged one year and below between the month of May- April 2017, attending Ishaka Adventist Hospital in Ishaka municipality, Bushenyi district.

He has explained to me in the language I understand best the purpose of his study and I have understood that the study will be used to help improve health care delivery. I have agreed to participate in the study by filling in the questionnaire he has provided. In addition, I have been made aware that the information that I provide are strictly confidential and will not be used for any other purpose apart from this study. In case of anything arising from the study am free to contact Mr. Mugaaga Paul on contact number 0753794943 / 0773906703

Consent

I have agreed to participate in this study by signing or attaching my thumb below

…… ……

Names/signature Date

…… …….

Name/signature of researcher Date:

APPENDIX II: QUESTIONAIRE

Code no……..

PART A

1 DEMOGRAPHIC DATA

a. Age……
b. Sex…….
c. Marital status
    i. Married……..
    ii. Divorced……..
    iii. Single……
    iv. Widowed……
d. Religion
    i. Christian……..
    ii. Muslim……..
    iii. Others [specify] ……
e. Occupation
    i. Peasant……
    ii. Business…….
    iii. Employed…….
    iv. Others [specify]……..

f. Level of education

    i. Primary……..
    ii. Secondary……
    iii. Tertiary…….
    iv. None of above….....

g. Tribe

i. Munyankole……..
ii. Mukiga…….
iii. Muganda……..
iv. Others [specify]……

PART B

2. DIRECT DETERMINANT OF INFANT MORTALITY

A. Have you ever had a pregnancy?

i. Yes
ii. no

B. If yes, what was the length of pregnancy?

i. Nine months…….
ii. Seven months……
iii. Less than seven months……

C. If less than seven months, did your child grow up normally

i. Yes
ii. No

D .Has your child ever been diagnosed to be having any of the following diseases

i. Measles……
ii. Pneumonia……..
iii. Malaria…….
iv. HIV/AIDS…….
v. Others…….

E. How often were you breast feeding your infant

i. Once a day
ii. Twice a day

iii. Thrice a day as often as possible

iv. Others specify…….

F.Have you ever had a child with birth defects?

i. Yes

ii. No

G. if yes, did it grow up well

i. No

ii. Yes

H. Which of the following do you take?

i. Alcohol……..

ii. Tobacco

iii. None

PART C

3. **APROXIMATE DETERMINANTS OF INFANT MORTALITY**

A.what age did you become pregnant?

i. After 20 years of age

ii. Before 20 years of age

B.Did you experience any complications during pregnancy?

i. Yes

ii. No

C.Do you practice family planning?

i. Yes

ii. No

D. If no to 2c above, what is your child spacing gap?

i. Two years
ii. One year
iii. Six months
iv. Others[specify]

E. Do have facility for safe disposal of human waste at home?

i. Yes
ii. No

F. Where do you obtain water that you use at home?

i. Unprotected well
ii. Protected well
iii. Bore hole
iv. Others[specify]

G. Did you receive all the five doses of tetanus toxoid [tt] vaccine before you delivered your first child?

i. Yes
ii. No

H. Do you always take your children for immunization?

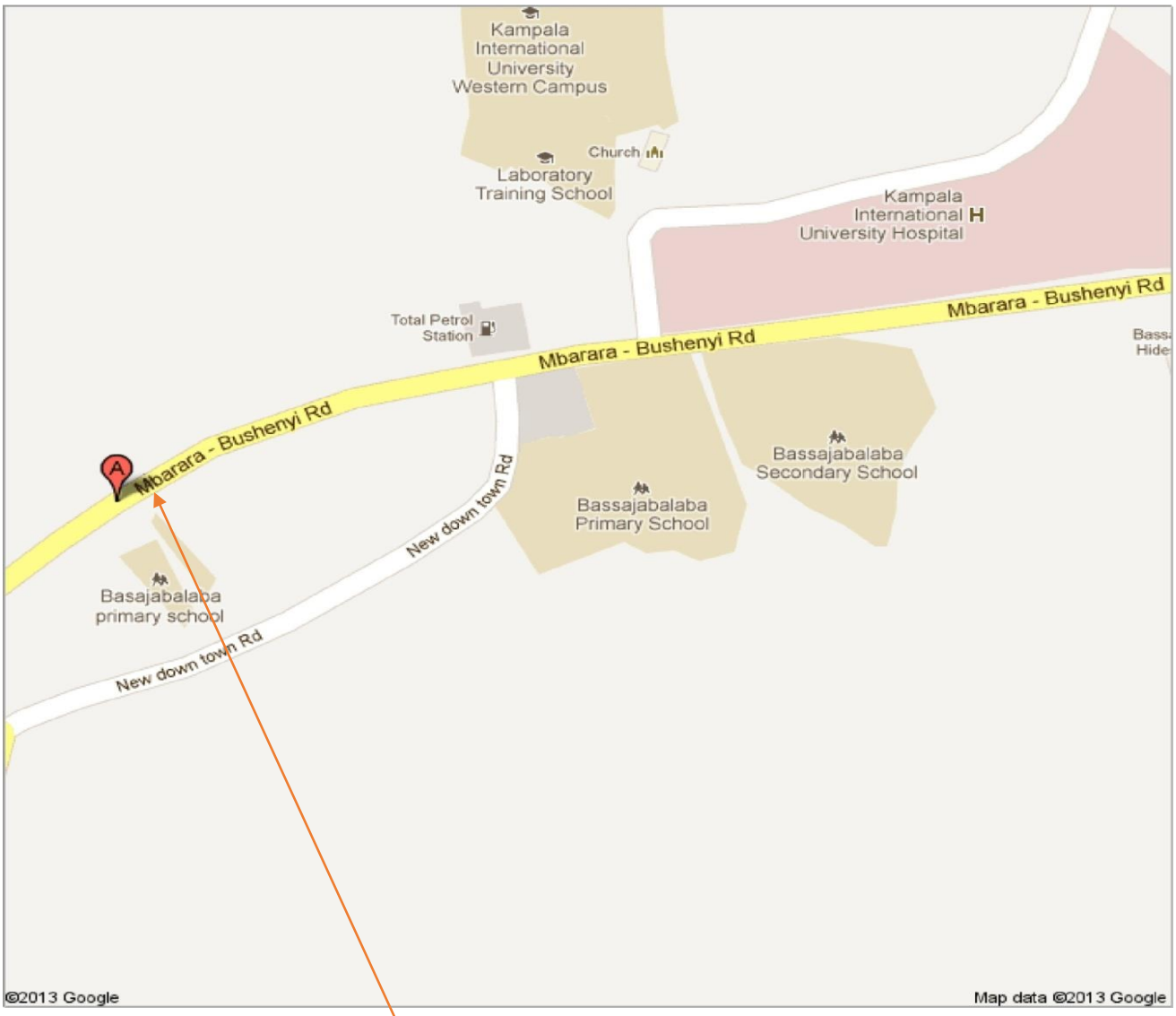
i. Yes
ii. No

I. Where do you always deliver from?

i. Health facility

APPENDIX III: MAPS

MAP OF MBARARA-BUSHENYI ROAD, ISHAKA, UGANDA SHOWING THE SITE OF THE STUDY



Ishaka Adventist Hosital

MAP OF BUSHENYI DISTRICT SHOWING ISHAKA TOWN

MAP OF UGANDA SHOWING BUSHENYI DISTRICT

Bushenyi