



MOTHERS AWARENESS AND ATTITUDE ON THE CARE OF THEIR PRETERM INFANT
AT DISCHARGE FROM A NEONATAL INTENSIVE CARE UNIT IN A SELECTED
REFERRAL HOSPITAL IN THE NORTH PROVINCE OF RWANDA.

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July, 2017

DECLARATION

This dissertation entitled:

" Mothers awareness and attitudes on the care of their preterm infant at discharge from a neonatal intensive care unit in a selected referral hospital in the north province of Rwanda"

is my original work and has not previously been submitted for the award of a degree in any other university or published somewhere else.

AKIMANA M.THERESE

Signature.....

Date.....

DEDICATION

I dedicate this dissertation to my husband, Safari Leonidas, who has been a constant source of support and encouragement. Also I dedicate this work to my beloved children: Nshuti Delphin and Sine Michelle.

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I wish to acknowledge and thank all those who assisted me in my research work. Special thanks goes to my supervisors, Ms. Olive Tengera, Dr Marcella Gowan, and Professor Busisiwe Benghu for their guidance, support and encouragement during the study period.

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I extend my sincere thanks to all i have not mentioned and whose contribution to the completion of this study was valuable.

ABSTRACT

Background: Every year worldwide 15 million preterm infants are born and one out of ten is a preterm infant. Sixty percent of preterm infants are born in developing countries. The infant mortality rate has decreased from an estimated rate of 63 deaths per 1000 live births in 1990 to 32 deaths per 1000 live births in 2015.

The aim of the study is to assess maternal awareness and attitude of the care of their preterm infant at discharge from the selected referral hospital.

Study design: A cross- sectional descriptive approach was used.

Population: mothers of preterm babies who were admitted and cared for at the selected referral hospital. **Materials:** Standard questionnaire adapted for Rwanda context. A five-point linkert scale **Analysis:** Data entry and quantitative descriptive statistics with SPSS version 16.

Results: The mean score of mothers awareness about preterm infant care was 59.3% and the mean score of mothers attitude on preterm infant care was 85.2%, 41(43.6%) of the participants said that they could use cow's milk to feed their baby and 44(46.8%) of participants should use formula. However; exclusive breastfeeding knowledge was high with 87(92,6%) and 84(89.4%) opted for breastfeeding on demand .Among participants, 53(56%) said that they should keep their baby warm in skin to skin contact while 40(42) said they will put the baby in warm cloth. Knowledge of jaundice, sign of seizures, excessive crying and immunization of the preterm infant was low.

Conclusion: Maternal attitudes toward care of their preterm infants were mostly positive. There are specific gaps in knowledge regarding danger signs.

Key words: Awareness, attitude, Preterm infant, mothers, Neonatology.

KEYS WORDS.

Awareness	<p>Awareness and knowledge are two words that can be used interchangeably in certain contexts. However ,there is a distinct between awareness and knowledge. awareness is perceiving, knowing, feeling or being conscious of events ,objects, thoughts or sensory patterns (Hasan,2016)</p> <p>In this study, awareness is Knowledge, understanding and appreciation of mothers at discharge in order to be able to care for their preterm baby at home.</p>
Knowledge	<p>Knowledge is facts, information, and skills acquired through experience or education. The key difference between awareness and knowledge is that knowledge is associated with deep understanding and familiarity with a subject whereas awareness does not imply a deep understanding (hasan, 2016)</p>
Attitude	<p>The way a person views something or tends to behave towards it, often in an evaluative way. (British dictionary, 2005)</p> <p>In this study :Mothers thinking and feeling on the care of their premature newborn at discharge. Attitude refers to a mothers' overall evaluation of a particular behavior. It is assumed to have two components which work together: beliefs about consequences of the behavior and the corresponding positive or negative judgment about the behavior.</p>
Mothers	<p>Mothers who delivered preterm infant and who have approved babies at discharge home from neonatology department of Ruhengeri referral hospital.</p>
Preterm infant	<p>Preterm infant defined as babies born alive before 37weeks of pregnancy are completed (Anon., 2016)</p>

Neonatology

A branch of medicine concerned with the care, development, and diseases of newborn infants(Medical dictionary)

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LIST OF SYMBOLS AND ACRONYMS

RHMIS	Rwanda health management information system
ENC	Essential newborn care
DHS:	Demographic and health survey.
EBF	Exclusive breastfeeding
MDGs:	Millennium development Goals.
NICU:	Neonatal intensive care unit.
SPSS:	Statistical package for the social sciences.
UNICEF:	United nations children's Fund.
USAID:	United states government agency, which is primarily responsible for administering civilian foreign aid.
WHO:	World health organization .

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Through this chapter, the investigator gave background of the study where the problem statement had been developed and based on this problem statement, the research questions emerged, the research objectives have been carried out with the aim of using the research process to meet them.

1.1 Background.

Neonatal mortality remains high even though a declining proportion of deaths among children less than five year (UNICEF, 2015) According to WHO, the infant mortality rate has decreased from an estimated rate of 63 deaths per 1000 live births in 1990 to 32 deaths per 1000 live births in 2015. Globally, every year, nearly 44% of all deaths in children under five are among newborn infants(Unicef,2013) . Every year worldwide 15 million preterm infants are born and one out of ten is preterm infant and 60 % among them are in developing countries (lawn, 2013).

Worldwide, prematurity is the main source of death and major reason of possible extensive period of loss in infants among survivors as well, many complications of preterm birth are responsible of 3.1million deaths every year(blencowe, cousens,s., chou, D.,oestergaard, 2013).

In high-income countries because of sophisticated health systems they have a chance of survival, which can arrive at 50%, so that there is a gap between preterm survivals around the world. The extreme preterm births which need intensive care represent 5% of premature infants (Lawn, Davidge, et al., 2013).

According to WHO (2012) 8,2 million under five child deaths per year, about 3.3 million occur during the neonatal period in first four weeks of life, almost 3 million of all babies who die each year can be saved with low tech and low cost care

In low income and middle income almost all (99%) of these neonatal death occurred with the highest rates occurring in sub-Saharan Africa (34 death per 1000live births)accounts for 38percent of global neonatal deaths.(UNICEF,2015)

Sub-Saharan countries are among the highest neonatal mortality rates in the world, more than 98% of neonatal deaths occur in low and middle income countries and about 70 occur in community settings,

often the home .These deaths frequently take place outside the formal health system and are not included in the vital registration process(Engmann, 2011).

Aware of the magnitude of the problem, the world health organization has come up with a set of guidelines about the essential newborn care practices which are evidence based cost effective measures to improve neonatal outcomes. This guideline is to be used by health care provider and mothers, community and government. These care practices include: thermal protection, early and exclusive breastfeeding, clean delivery and clean cord care, immunization, care for the low birth weight newborn and management of newborn illness.

Neonates who are between 32 and 37 weeks are more than 80 % of preterm births; a good number can survive only with essential newborn care. but in low and middle income countries infants still die due to few health and maternal facilities, the chance of survival for preterm infant is not just based on premature level but generally on the place of birth (loftin, R.W.,habili ,M., snyder,C,C.,cormier,, 2010).

The third sustainable development goal of United Nation aim to end preventable deaths of newborns and children under five years of age, with the targets of under-five mortality(25 deaths per 1000live births from 33 deaths per 1000 live births) and neonatal mortality (12 deaths per 1000live births from 22deaths per 1000 live births) but still most of the low income resource countries are far from the target. causes of neonatal deaths are complications of prematurity(35%), neonatal infection 23%,intrapartum complication 24% and diarrhea among other causes of neonatal deaths.

The mother of preterm child has an important role in promoting its health, being the primary agent of direct care, providing access to health care services and modeling attitudes and behaviors that influences the child care. Poor awareness among mothers about the needs of preterm child are an important cause for immediate readmissions to NICU after discharge. The awareness of mothers about special aspects of care of preterm babies is very important to prevent complications in the child. As these aspects influence the long term outcome . the mother can play a vital role in preventing chronic disabilities in her child .Educating mothers regarding special home care aspects for their preterm babies will play a major role in reducing neonatal morbidity as well as mortality. (Lavanya Subhashini1, Radha MS2, Baby GK3, 2014)

Education involves providing information and raising awareness in order to change the behavior and attitude of a target audience. Preliminary investigation of families has demonstrated that primary education should be provided near the time of delivery since at this point, parents are highly motivated to participate in the life of the infant. Infant health requires parental education and awareness in this regard, which could effectively prevent diseases in children. Nevertheless, this issue is of particular importance in the parents who are expecting their first child. (Maryam Bagheri¹, Mahin Tafazoli², Zahra Sohrabi³, 2016)

Child care is mostly the responsibility of mothers, therefore the mother's awareness about child care influences the nature and quality of care that is given to the child. Several studies have revealed that the mother's level of education has a positive impact on her knowledge and how she deals with child health care issues. Experience in pediatric practice has revealed significant gaps pertaining to child issues in mother's knowledge. Health care institutions play a limited role in health education. There should be proper affective practical means of disseminating information on child matters among mothers in our community. (Al-Ayed, I.H., 2010)

In Rwanda, the current infant mortality rate is 32 deaths per 1000 live births. (DHS, 2014/2015)

Rwanda has achieved most of its millennium development targets for health; the major mechanisms for implementation have been the provision of local health centers, payment of health providers by results, setting up inexpensive health insurance scheme with support for those most in poverty. The MDGs were set as eight goals with targets for 2015 and a series of indicators for measuring progress.

Three of the Goals were specifically related to health and Rwanda have made a considerable reduction in child mortality and maternal mortality but neonatal mortality still remains a major public health problem and the leading cause of mortality in children below five years of age in Rwanda.

Rwanda demographic and health survey in 2014 estimated neonatal mortality rate at 32 per 1000 live births and third sustainable development goal of United Nations aim to achieve 12 per 1000 live births. Therefore interventions, studies are needed to continue combating against neonatal mortality in low and middle income including our country.

1.2 Problem statement

Newborns are the most vulnerable population in the world, preterm or infants born too early, less than 37 weeks of gestational age are particularly at risk. Currently, prematurity is the leading cause of death among children under five around the world and a leading cause of disability and ill health later in life. (USAID, 2015)

According to WHO,(2015) the majority of the neonatal deaths that occur especially in developing countries are avoidable or preventable causes. Major causes for more than 85% of newborn death are complications of prematurity, intra-partum related neonatal deaths and neonatal infections. Complications of prematurity are currently the second leading cause of deaths.

In Rwanda, the most frequent of death in health facilities were neonatal illness with 70% (RHMIS, 2014).

Ruhengeri hospital takes care of a large number of neonates coming from the various district hospitals and health centers. Ruhengeri hospital is the largest referral hospital in Northern Province and the number of preterm infant has increased from 450 preterm infant in 2012 to 656 in 2016 and prematurity is the leading (Ruhengeri hospital statistical department report, 2016)

The aim of the study is to assess maternal awareness and attitude of the care of their preterm infant at discharge from the selected referral hospital.

When the time to go home approach, parents may have problems about their skills to care their premature infant without the support of NICU health professionals and equipment. The complete, well planned discharge of stable infant helps ensure a positive shift to home, safe and effective care after discharge. Involving and supporting parents in discharge process give them self confidence in caring for their infants at home. (Ann l, 2014)

The role of nurse is to prepare families from the beginning to the end by discharge planning process, to obtain full time care of their infant and ensure they get the skills necessary to do this .(Hockenberry et al,2010)

Having a premature baby is a stressful situation for parents. During the period of hospitalization mothers need to be prepared and to be involved in the care of their baby and to be able to continue the care after discharge (lopez,G. L., Anderson, K.H and feutchinger, J., 2012) .

Educating mothers to care for their newborn during the semi acute stage of their newborn illness, helps them to learn normal and abnormal conditions through assessment which enhance their ability to care their infant after staying from the hospital (Agata, 2015).

Involving parents in discharge process in neonatal intensive care unit is very important because it can decrease the risk of readmission and with that parents have confidence to care for their premature newborn. (Mills et al. 2006)

Best information for identifying infant's needs are from parents and consequently using their experiences and opinions is significant in ensuring the best discharge process for the family. (Loughren, 2012)

In Ruhengeri hospital protocols are available regarding preterm infant care during hospitalization in order to help them to be able to care for their infant at home but we still found readmissions with neonatal infections which are about 2% of discharged preterm infant and many of them have no sufficient weight gained during follow up, this may be related to the level of awareness and attitude of mothers of preterm infant care.

Limited study has been conducted on mothers' knowledge about caring preterm infants in Rwanda, however mothers preparedness and sufficient education before discharge is needed in order to improve weight gain, to reduce readmission, morbidity and mortality of Rwandan neonates.

Therefore, this study intended to assess mothers' awareness and attitudes about caring for premature newborns at discharge in Rwanda especially in Ruhengeri hospital.

1.3 The Aim of the study

The aim of this study is to assess maternal awareness and attitude on the care of their preterm infant at discharge from Ruhengeri hospital.

1.4 Specific objectives

1. To determine mother's awareness of the care of their preterm infant towards breastfeeding, thermoregulation, infection prevention and danger signs in neonatal department.
2. To determine mother's attitude of the care of their preterm infant towards breastfeeding, thermoregulation, infection prevention and danger signs in neonatal department
3. To identify factors associated with maternal awareness and attitude on preterm infant care.

1.5 Research questions

1. What is the level of mother's awareness towards care of preterm infant at discharge from Ruhengeri hospital neonatal department?
2. What are mother's attitudes towards care of preterm infant at discharge from Ruhengeri hospital neonatal department?
3. What are factors associated with maternal awareness and attitudes on preterm infant care.

1.6 Significance of the study

Several research conducted worldwide have revealed poor maternal knowledge and negative attitude and practices on newborn care. This study, aimed to identify the gaps in awareness and good attitude of newborn care among mothers of preterm infant at Ruhengeri hospital at the point of discharge from the hospital

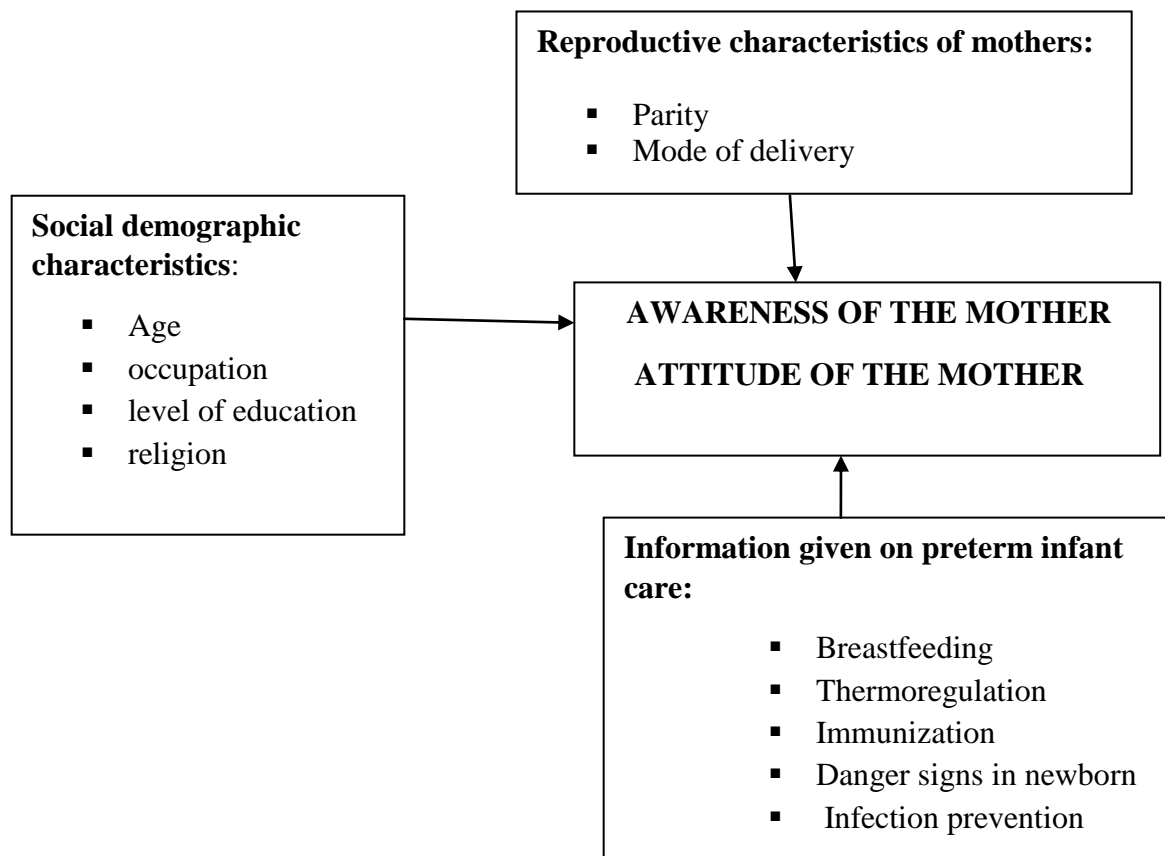
The study will benefit to the following area:

- 1. Hospital:** provide suggestions to hospital policy makers to improve practices and management of preterm babies regarding helping mothers to care for their infant .
- 2. Education:** Findings from this study served as the basis for review of neonatology curriculum in pre-services and in-service trainings.
- 3. Research:** The findings from this study inspired for further research.
- 4. Community:** In this study the purpose is to enhance the quality of care provided to the babies at home by mothers and inspire community health workers to improve their work regarding helping mothers to care for infants in the community: help mothers to prevent infection, to identify early signs of serious illness.
- 5. Nursing care:** The study provide a way of proper preparedness of parents prior to discharge and provided useful approaching into parents awareness level about care of preterm babies and offers a way for health education.

1.7 Subdivision of the project

The project have six chapters: the chapter one is the introduction which includes definitions and key terms, background of the study, problem statement, objectives, research questions and significance of studies and subdivision of the project. The chapter two is the Literature review and the chapter three is the methodology ,the chapter four is the result presentation ,the chapter five is the result discussion and then chapter six is the conclusion and recommendations.

Figure 1. CONCEPTUAL FRAMEWORK.



Conceptual framework adapted from Essential newborn care(ENC) developed by WHO

This conceptual framework was proposed after wide review of different literature which are mentioned as determinant of mothers 'knowledge about essential newborn care. The three main factors: the socio-demographic, reproductive characteristics of mother and education given about infant care may affect directly or indirectly the knowledge and attitude of preterm infants mothers.

The above conceptual frame work was adapted from essential newborn care(ENC) from WHO (2012)

Essential newborn care is the care that every newborn baby needs regardless of where it is born or its size. Essential newborn care(ENC) should be applied immediately after the baby is born and continued for at least the first 7 days after birth. ENC aims to ensure health workers have the skills and knowledge to provide appropriate care at the most vulnerable period in a baby's life (World vision international, 2013)

ENC should be applied immediately after the baby is born and continued for at least the first 7 days after birth. Many ENC interventions are simple and can be provided by a skilled birth attendant or trained

community health worker or traditional birth attendant or by a family member supporting the mother in health facility or at home (WHO,2015).

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.0 INTRODUCTION

Through this chapter there is detailed review of the literature linked to the topic.

The review is organized based on the objectives and research questions the study wants to answer. The following key words are used: thermoregulation, breastfeeding, infection prevention, immunization, danger signs.

WHO (2012) recommends bathing after six hours of life and preferably on the second or third day of life, skin to skin contact, breastfeeding, bathing and measuring weight postponed, appropriate clothing, warm transportation, training and awareness raising .All those techniques must be maintained by mothers at home

At the time of discharge home parents of preterm infant in neonatal intensive care are anxious and have difficult in caring for their baby. Connecting parents in discharge process provide to them self assurance in caring their preterm infant at home. Parents should be able to be familiar with signs and symptoms of illness and response adequately, particularly in urgent situations and understand the importance of infection prevention procedure (Jefferies , A. L. , 2016.).

2.2 GENERAL AWARENESS ON SELECTED ESSENTIAL NEWBORN CARE FOR PRETERM INFANT

2.2.1 Thermoregulation

Newborn regulates temperature less efficiently than adult and loses heat more easily; low birth weight and preterm infant are at greater risk. Hyperthermia is auxiliary temperature above 37.5°C and hypothermia below 36.5°C (WHO,2013)

Mothers as close care givers of neonates are supposed to be knowledgeable about thermoregulation of their neonates, bathing after six hours of life and preferably on the second or third day of life, skin to skin contact, breastfeeding, bathing and measuring weight postponed, appropriate clothing, warm transportation, training and awareness raising .all those techniques must be maintained by mothers at home (Albarraq,A.A., ,2014)

Hypothermia remains a problem especially after birth and through the first weeks of life. Recommendations for practice are given to minimize heat loss during care and promote thermal stability

for low birth weight infants. It is essential to continue to focus on thermal stability and eliminate hypothermia in the low birth weight population (Albarraq,A.A., 2014).

According to Lawn, Kinney, *et al.*, (2013), the simple methods to maintain the temperature of the baby after birth include the following procedures: increasing environmental temperature , delaying the first bath ,skin to skin contact with the mother and covering both with a blanket. Kangaroo mother care has demonstrated the effect on mortality for infant less than 2kg.

2.2.2 Breastfeeding

Breastfeeding is a normal way of giving to infants the nutrients they need for healthy growth and development. The breast milk is the best for neonates. Exclusive breast milk is recommended until to 6moths of age and continues with complementary foods up to two years of age or beyond. (WHO, 2014)

Early initiation of breastfeeding within one hour after birth has been discovered to decrease neonatal mortality. Lack of exclusive breast feeding significantly increases the risk of poor newborn and childhood outcome. Preterm infant benefit from breast milk nutritionally, immunologically and developmentally. The short term and long term benefits compared with formula feeding are well established with lower incidence of infection and necrotizing enter colitis and better neuro-developmental outcome. The majority of preterm infant require extra support for feeding with cup, spoon or gastric tubes. Routine supplementation of human milk given to preterm infant is not presently recommended by WHO (Lawn, Kinney, *et al.*, 2013).

In low- income and middle -income countries ,children younger than 6 months of age are exclusively breastfed only in 37%. Breast milk provides the superlative nourishment for infants. It has a nearly perfect variety of vitamins, protein, and fat, everything which a baby desires to nurture. Breast milk encompasses antibodies that aid the baby attack off viruses and bacteria. Babies who are breastfed exclusively for the first 6months,have scarcer ear infections, respiratory illnesses, and stretches of diarrhea.

The American Academy of pediatrics says breastfeeding also plays a role in the prevention of SIDs(sudden infant death syndrome). It's been supposed to lower the risk of diabetes, obesity and certain cancers as well and for mothers breastfeeding scalds extra calories, so it can aid to lose pregnancy weight faster. It releases the hormone, the oxytocin which helps uterus reappearance to its pre-pregnancy size and may reduce uterine bleeding after birth. It is well recognized that breastfeeding has a significant effect on birth spacing. When maternal breast milk is not obtainable in adequate quantity for reasons such

as baby being at risk of getting diseases and infections from a mother with certain diseases or for the sick, hospitalized newborn, pasteurized human donor breast milk should be recommended as a bridge to satisfy the needs of these infants and compensate for the inadequate supply of their mothers.

(Yasmin Jahan , 2017)

In different infants receive various types of diet like animal milk in most of the poor societies and formula in middle income and high income populations. Available evidence shows that compared with formula, donor human milk is associated with lower incidence of the severe disorder, necrotizing enterocolitis and other infections during the initial hospital stay after birth. (Yasmin Jahan , 2017)

2.2.3 Recognition of danger signs

The important step towards improving newborn survival is early detection of neonatal illness.

Every year about 3.07 million die during their first month of life and about one third of these deaths occur during the first 24hours. Majority of these deaths occur at home indicating that few families recognize danger signs of newborn illness, and or majority of the neonate are not taken to the health care facilities when they are sick. Ninety eight percent of all neonatal deaths occur in low and middle –income. Poor knowledge of newborn danger signs delays care seeking.(UNICEF,2013)

WHO (2014) focuses on assessment of general danger signs of severe illness which includes convulsions, difficulty in breathing, and difficulty in feeding, hypothermia, fever and jaundice on day one of life.

2.2.4 Immunization

According to WHO (2017), Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against infection.

It is the most effective public health intervention that reduces morbidity and mortality from vaccine preventable diseases, therefore it plays a greater role to the attainment of Millennium Development Goal 4 (MDG4).The Expanded Program of Immunization was established by World Health Organization 1974 to ensure universal access to the routine recommended childhood vaccine include BCG, Polio, DTP, measles vaccine preventable against tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles (Keja K, Chan C, Hayden G, 2010)

Preterm babies are at increased risk of infections, there is a need for timely vaccination of preterm infants, using the same schedules as recommended for term infants (WHO, 2013)

Vaccination is often delayed in preterm infants, lack of knowledge about safety and effectiveness of vaccines in preterm infants among healthcare workers and parents may explain this delay. Fear or adverse events could also explain this delay, as an increase in cardio respiratory events following immunization in very preterm. The information given to parents during hospitalization of preterm infants is an important stage in the understanding of the vaccination process for their children (Gagneur , A., pinquier, D.and Quach, C.,2015)

2.2.5 Infection prevention

Preterm infant have a higher risk of bacterial sepsis. However basic hygienic practices such as hand washing and maintaining a dirty free environment are well known but poorly done(Lawn, Davidge, *et al.*, 2013).well done hand washing is the most important procedure that must be encouraged in caring for preterm infant. In addition the best food is vital to improve the weight of preterm newborn (Sweet et al, 2011)

2.3 MOTHERS AWARENESS ON PRETERM INFANT CARE

Neonatal hypothermia is a major condition of public health importance in countries of sub-Saharan Africa. Awareness of the burden of the diseases is still low in some communities. Risk factors for neonatal hypothermia in the region include poverty, home delivery, low birth weight, early bathing of babies, delayed initiation of breastfeeding and inadequate knowledge among health workers. Low-tech facilities to prevent heat losses and provide warmth are available in sub-Saharan Africa and are thus recommended as well as continuous efforts at sensitizing caregivers on the thermal needs of newborns (Onalo, 2013)

In srilanka (2014),a study done on mothers 'knowledge and practices on thermoregulation of neonates. by Pramuditha showed that the majority of mothers had satisfactory level of knowledge (65%) about hypothermia and its preventive methods but practical application of mothers 'knowledge (34%) were very poor in contrary to Priyadarshanie and Pethiyagoda, (2015) in their study entitled mothers' knowledge regarding neonatal Baby care founded in majority of mothers, adequate knowledge and practices regarding neonatal care were lacking especially in prevention of neonatal hypothermia and care for the neonatal umbilical cord.

In Cameroon, a cross sectional study conducted by Monebenimp, Mongo, chelo, foumane, kamta & kuaban (2011) on three hundred and forty seven mothers revealed that mothers were not knowledgeable on danger signs and they had poor practice on breastfeeding this was argued by sand berg et al (2013) in Uganda on knowledge of neonatal danger signs among recently delivered women in southwestern Rural Uganda which showed poor knowledge of key newborn danger signs: 58.2% could identify one and 14.8% could identify two. Poor knowledge associated with delay in care seeking.

A study conducted in Saudi Arabia in 2013 on parents' knowledge and attitudes on childhood immunization by Yousif, M., et al 2013 on 731 parents found that parents have good knowledge on aspects related to the general role of vaccination in prevention of infectious diseases 672(91.9%), timing of the first dose in vaccination Schedule 635(86.9%). Poor knowledge was documented among parents in other aspects like the importance of administration of multiple doses of the same vaccine immunity and administration of multiple vaccines at the same time have no negative impacts on child immunity.

In South Africa in eastern sub-district of Cape Town, a cross sectional descriptive study conducted on knowledge and attitude of nursing and mothers towards kangaroo mother care shows that the majority of the mothers (83.3%) did not have prior knowledge of kangaroo mother care, sixty per cent of the nursing staff did not have any kangaroo training, mothers were committed to kangaroo mother care (KMC) and indicated that they would continue to practise KMC at home, most of mothers lacked prior knowledge of KMC and were only informed about it when they were admitted to KMC ward. (Solomons, N. and Rosant, C., 2012)

Awareness and knowledge of parents about problems of their premature infant are related to their age and being a mother or father. Parents have little knowledge about some NICU principles and premature infant's needs and care. Mothers have higher awareness and knowledge than fathers. The most awareness in parents are doing hygienic principle. (Khalesi, N., Anjom, F.S., Rezaeizadeh, G. and Farahani, Z., 2015)

A study done by Dongre, et al in India showed poor awareness of mothers regarding newborn danger sign and recommend the need for raising awareness building for early recognition and prompt treatment. (Dongre AR, Deshmukh PR, Garg BS., 2009)

Different tools to facilitate identification of these health problems and to reduce neonatal mortality have been introduced into health program in several countries. Integrated Management of Newborn and Childhood Illness (IMNCI) developed by WHO focuses on assessment of general danger signs of severe illness which includes difficulty feeding, hypothermia, fever, convulsions, difficulty in breathing, jaundice on day one of life (WHO. Essential Newborn care .Report of Technical Working Group, 2014)

A community survey study done in south-western Uganda showed poor knowledge on key newborn danger signs where 58.2% of mothers could only identify 1 and 14.8% could identify 2 danger signs. Poor knowledge also associated with delay in care seeking. (Sandberg J, Odberg Pettersson K, Asp G. , 2014)

Waiswa et al in Uganda noted delay in primary caregivers bringing newborns to hospital contributed significantly to the newborn mortality (Waiswa P, Peterson S, Tomson G et al . , 2010 Feb 23)

An assessment of the breastfeeding practices and infant feeding pattern among mothers in Mauritius founded that many mothers understand the importance of breastfeeding, others are less knowledgeable on the benefits of breastfeeding and weaning. the aim in here is to assess breastfeeding pattern, infant formula feeding pattern, and weaning introduction in Mauritius and to investigate the factors. 500 mothers were interviewed using a questionnaire which was designed to elicit information on infant feeding practices. statistical analyses were using SPSS, whereby chi-square tests were used to evaluate relationships between different selected variables. The prevalence of breastfeeding practices in Mauritius has risen from 72% in 1991 to 93.4% as found in this study, while only 17.9% breastfed their children exclusively for the first 6 months ,and the mean duration of EBF(exclusive breastfeeding) is 2,10 months. Complementary feeding was more commonly initiated around 4-6 months(75.2%)(**Ashmika Motee,1 Deerajen Ramasawmy,2 Prity Pugo-Gunsam,3 and Rajesh Jeewon1, 2013**)

A cross sectional descriptive study on knowledge of danger signs among mothers attending well baby clinic in Nakuru central District in Kenya ,414 mothers attending well baby clinics were interviewed. information on neonatal dangers was not provided to the postnatal mothers during their antenatal clinic attendance by the health care providers. Majority of mothers 84.5% identified less than three neonatal danger signs. fever was the commonly recognized danger sign by 310(74.9%) postnatal mothers. out of 414 mothers 193(46.6%),166(40.1%) ,146(35.3%) and 24(5.8%) identified difficulty in breathing, poor sucking, jaundice and lethargy/unconsciousness as new born danger signs respectively. Only 46(11.1%) and 40(9.7%) identified convulsion and hypothermia as new born danger signs respectively (ELizabeth Gathoni, Kabaru & Amos magembe, 2016)

A study done in north of Ethiopia, a community based study ,the results of the study showed that mothers who had knowledge of three more neonatal danger signs(good knowledge) were found to be 18.2% ,having good knowledge was positively associated with mother's higher educational achievement .Furthermore ,access to television was also associated with mothers' good knowledge about neonatal

danger signs. In general maternal knowledge about neonatal danger signs was low. Therefore, intervention modalities that focus on increasing of parental education ,access to antenatal and postnatal care and PNC service , and advocating the use of television was pinpointed. (Solomon , Nigatu, AG Worku, AF Dadi, 2015)

2.4 MOTHERS ATTITUDE ON PRETERM NEWBORN CARE

A study done in Amino kano Teaching hospital on knowledge, attitude and practice of Exclusive breastfeeding shows that there is a positive attitude of mothers toward exclusive breastfeeding as 69.6% of them agreed that breast milk alone is sufficient to the baby during the six months of life as well as believed that exclusive breastfeeding has benefits to both the infants and the mother.(Abdulmaleek Musa Aliyu, 2012)

A study done in Zambia on Prevention and Management of Neonatal Hypothermia shows that Mothers, grandmothers and health workers all believe that the baby should be kept warm to imitate the conditions and thermal environment in utero. Respondents said that newborns used to be bathed immediately after birth, but this is now usually late until the day after delivery. Education has helped to propagate delayed bathing as a thermo protective measure. drying and wrapping are part of newborn routine care. Both caretakers and health workers emphasize the importance of keeping babies warm with this simple measure. Respondents did not mention breastfeeding in the context of neonatal hypothermia but newborns are commonly breastfed in rural Lufwanyama. However, in consideration of the strain a delivery puts on a mother, breastfeeding is not consistently immediately after birth(Karsten , 2012).

A study done in Ethiopia by Tadele *et al.*, (2016) on knowledge ,attitude and practices towards exclusive breastfeeding among lactating mothers founded that 89.5% had positive attitude, the majority of mothers knew about EBF(exclusive breastfeeding) and had a positive attitude towards EBF but did not know the recommendation duration or that EBF is sufficient for six months contrary to the above a study on knowledge, attitude and breastfeeding practices of post natal mothers conducted by Vijayalakshmi and T Susheela (2015) indicated neutral attitudes towards breast feeding, Mothers who were currently breastfeeding had more positive attitudes than no breastfeed mothers.

In Saudi Arabia a study done on parents' knowledge and attitudes on childhood immunization by Yousif et al.,(2013) on Parents attitudes towards immunization was positive expect in some aspects related to vaccination side effects 316(34.2) and the probability of occurrence of diseases against which the child was vaccinated.

A total of 272 mothers with the Immunization concerns participated in the study,after review of the materials, mothers in all groups were significantly more likely to respond positively to questions and

statements support the safety and importance of vaccines. Mothers who received this information at earlier visits were not significantly more likely to respond positively than mothers who received the information at the child's 2 months vaccination visit, however, participating mothers did indicate a preference for receiving vaccine information before the first vaccination visit. Distribution of the vaccine information brochure and vaccine information statements significantly improved attitudes about vaccination regardless of at what visit they were provided. Allowing adequate time to review vaccine information, even if done at the vaccination visit, may benefit concerned mothers. (Kirsten S. Vannice, MHS,a Daniel 2011)

A study done in Italy on knowledge, attitudes and behaviors of parents towards varicella and its vaccination, a total of 414 parents responded to the questionnaire , a history of varicella was reported in 163 children(39.6%).Only 26.6% parents knew that the vaccine was available and the number of doses and this knowledge was significantly higher in those who had a university degree, in those who had received information on the vaccination from a health care provider, and in those who vaccinated their child. the positive attitude towards the utility of vaccination was higher in parents with a level of education not higher than middle school, in those who had vaccinated their child, in those who considered the varicella a dangerous disease and in those who had received information from a health care provider. More than one - third vaccinated their child, Immunization was more frequent in parents who had knowledge about the vaccination, who beliefs that the immunization was useful who believed that the disease was not dangerous, and who had not a history of varicella among their children. Educational programs are needed among parents as support to improve knowledge about vaccination and immunization coverage.(Luigi vezzosi,Gabriel santagati & Italo F.Angellillo,2016)

2.5 FACTORS ASSOCIATED WITH MATERNAL AWARENESS AND ATTITUDES ON PRETERM INFANT CARE.

A study done in a selected area of rural Bangalore shows that Mothers' education, occupation, source of information has major significant relationship with their knowledge. But, religion and family income of the mothers are not associated with their knowledge. The mother's knowledge ,education, occupation and source of information have significant association with their knowledge on home based neonatal care , in a study conducted in Gondar town, North of Ethiopia also founded that having good knowledge newborn danger signs was positively associated with mothers' higher educational achievement.

A study done in Saudi Arabia (2013) by Yousif, M., et al on parents attitudes towards immunization revealed that gender, residence and educational level were found to be significant associated with both parents' knowledge and attitudes towards immunization.

A study done in Iran on pregnant mothers knowledge about breastfeeding as well as to study its associated factors. results shows that mothers had very poor, average, good and very good level of knowledge about breastfeeding. There was a significant association between mothers knowledge and mothers education, breastfeeding history and parity, however, no significant association was found with age and the month of pregnancy .The most frequent source of obtaining information was health centers personnel(34.3%) followed by family and friends. A significant number of pregnant mother had average knowledge that indicating necessity of interventional programs by health system, particularly for pregnant mothers with lower education level. (Batool Karimi and Melika Zarei ,2013)

A study done in Ajman, UA on adequate knowledge about most of breast feeding facts and benefits was identified, except for the statements that lactation helps losing weight that was gained during pregnancy, the hormones released during breast feeding help in bringing back the uterus to its normal physiology after child birth, and the ideal duration of exclusive breastfeeding is six months. More than 60% of the participants responded positive to all attitudes questions except the one on their willingness to attend classes for education on breast feeding. 77.9% of the participants did not want to attend. Only 46% of the participants exclusively breastfed their babies in the first six months. Higher proportion of women who had recieved antenatal education during their pregnancy exclusively breast fed their babies, but the association was not statistically significant. a higher frequency of exclusive breastfeeding was observed with low parity, higher frequency of breast feeding was noticed among women who had not experienced any difficulties in breastfeeding and who had not sought medical advice on problems during breast feeding.(Shatha Al Sharbatti², Rizwana B Shaikh², 2014)

A descriptive cross- sectional study done by Susmita nepal and Smita Thapa on knowledge and practice of newborn care among mothers of infants in kavrepalanchok District on 96 mothers founded that approximately 78% have inadequate knowledge and 7.3% mother have unsafe practice on newborn care, respondents were highly aware of interval of breastfeeding(33%) and thermal protection(78.1%) of babies. Regarding practice, approximately one in four respondents initiate breastfeeding within one hour after birth, more than 80% practice rooming in, all most all respondents postpone bath for first 24hours of birth. The association was founded between parity of mother and place of birth to knowledge on

newborn care and parity of mother to the practice of newborn care. study findings conclude that there was a huge gap between knowledge and practice on newborn care.(Susmita Nepal¹, Smita Thapa²,2017)

CHAPTER TREE: RESEARCH METHODOLOGY

3.0 INTRODUCTION

In this study the methodology described a design chosen to answer the research question, target population and sample size as well as the procedure for data gathering. Data analysis, ethical consideration and measures used to ensure methodological rigor also highlighted

3.1 RESEARCH DESIGN

This is a cross sectional descriptive study.

3.2 RESEARCH APPROACH

Quantitative approach have been used. The data gathered have been analyzed using statistical methods.

3.3 RESEARCH SETTING

This research was carried out at Ruhengeri referral hospital located in north province, Musanze district. The facility has various departments and has a total beds capacity of 385. Neonatal unit has 23beds, 12 incubators, staffed by 3 clinical officers, 15 nurses; all are trained in neonatal care. Health facilities transfer neonatal complicated cases to Ruhengeri hospital. The hospital receives also neonates delivered at home with various illness including preterm infants.

According to Ruhengeri hospital annual report the total population for January, February and March in (2016) was 123 preterm newborn. The average of preterm infant received every month in 2016 was 41 preterm infants.

3.4 POPULATION

The target population consisted of mothers, whose delivered premature babies admitted and cared for at Ruhengeri hospital neonatal intensive care unit before they are discharged home.

According to the Ruhengeri hospital Annual report in 2016, the average of premature baby discharged home every month was 41 preterm infants. In this study the estimated population was 123 mothers.

3.4.1 Inclusion criteria

All mothers of preterm neonates admitted in neonatology during the period of study and willing to consent were included in our study. Mothers of preterm neonates born in Ruhengeri hospital, or referred by health facility or admitted in neonatology from home

3.4.2 Exclusion criteria

Mothers of preterm infant who died, mothers of premature neonate at the time of data collection but do not volunteer to be part of the study will not be included in our study.

3.5 SAMPLING STRATEGY

A consecutive sampling method was used to choose mother of preterm infant, Medical record was used to determine the list of mothers of preterm infant to be discharged from the neonatal unit. Participants were enrolled during the period of research in a day time including weekend.

This procedure of sampling was constant until sample size was obtained.

3.5 SAMPLING SIZE

Sample for this study was obtained using formula given by Taro Yamane 1967.

$$n = \frac{N}{1 + N*(e)^2}$$

n= the sample size

N= the size of the population (based on Ruhengeri hospital annual report, the average of discharged preterm infant every month was 41, so that the estimated population for three month was 123.

e= the error of 5 percentage points

$$n = \frac{123}{1 + 123*(0.05)^2}$$

= 94 Mothers.

3.7 DATA COLLECTION

3.7.1 Data collection tools

A standard questionnaire developed by saving newborn Lives tool was adapted for this study. The questionnaire had three parts. Part one includes socio-demographic data. Part two comprises questions on assessment of mothers' awareness and attitude on preterm infant care. The questionnaire was pretested on 10 sample population to ensure validity and reliability of the questionnaire before commencement of the study. The study tool were revised accordingly and internal consistent reliability was statistically computed and Cronbach's alpha 0.760 was obtained which acceptable value for reliability of the tool.

The questionnaire was translated in Kinyarwanda in order to facilitate every participant to respond in mother language.

The questionnaire consisted of both close and open ended questions addressing the following:

1. Mothers and neonate's socio- demographic data.
2. Antenatal and birth history of neonate
3. Mother's awareness and on preterm infant care, Awareness was assessed by closed ended and open ended questions
4. A five point Likert scale was used to assess maternal attitude on preterm infant care. The ratings included: strongly agree, Agree, neutral, Disagree and strongly disagree.

3.7.2 Data collection procedure

Data were collected from mothers of premature neonate using a questionnaire. For mother who doesn't know to read and write, have been assisted for filling the questionnaire. During the period of data collection every week the researcher had collected all completed questionnaire for data entry and analysis.

3.8 DATA ANALYSIS AND DATA MANAGEMENT

The collected data were coded, verified and analyzed using SPSS version 16. A scoring system was used to analyze responses to closed ended questions on awareness:

1: correct answer (reliable with WHO essential newborn care guidelines)

0: incorrect answer (not in agreement with WHO essential care guidelines), any mother who did not know the response was considered to have an incorrect response. The answers for the open ended were

summarized and descriptive statistics was carried out. For factors associated with maternal awareness on preterm infant care, the mean score was used as a cutoff point to differentiate poor awareness and good awareness. A total of 15 questions were asked to assess awareness of mothers of preterm infant on selected aspects of WHO essential newborn care.

Those scoring under the mean are considered to have poor awareness and over or equal the mean are considered good awareness. Similar studies have been conducted where the mean score was used as cut of point to differentiate poor awareness and good awareness.

Those scoring under the mean are considered to have negative attitudes and over or equal the mean are considered positive attitudes.

The association between dependent variables (awareness and attitudes) and independent ones (mothers demographics) were tested using chi-square test.

Responses for attitude are based on 5 point likert scale, these Responses were put into parts representing agreement neutral and disagreement for ease interpretation. Statistical testing was done using chi square tests for categorical data during analysis of factors associated with poor awareness. Data is presented using Pie charts and tables.

3.9 ETHICAL CONSIDERATIONS

In this study an ethical clearance to conduct research have been obtained from IRB research committee of university of Rwanda, the permission to carry out the study have been obtained from Ruhengeri hospital administration. Mothers were assured of the confidentiality of the results. Mothers obtained the consent form to sign for those who were volunteer to participate, no remuneration, and participation was voluntary. All mothers who signed the consent participated in our study. The eligible mothers were identified by the researcher and then the interviewer explained the purpose of the study.

3.10 DATA DISSEMINATION

The findings will be presented to Ruhengeri hospital administration and more specifically in department of neonatology. The data will be also disseminated through thesis defense at college of medicine and health sciences. The results will be made available to policy makers and health workers within the hospital. The data will be also disseminated through in service education.

The data will be published to use as literature for the other researchers those expected to assess mother's awareness and attitude towards essential newborn care.

3.11 Limitations and challenges

The study was done among preterm mothers in Ruhengeri hospital; findings will not be generalized to the entire country.

The study was based on reported rather than observed awareness and attitude towards preterm infant care.

Lack of general agreement on the definition of good or poor knowledge and attitude was a defy in the study. Similar studies conducted used the mean as cut off point to differentiate poor knowledge and satisfactory knowledge which was applied in this study.

CHAPTER IV: RESULTS

4.1 INTRODUCTION:

A total of 94 mothers were interviewed. This chapter presents social demographic characteristic of participants as well as awareness and attitudes of mothers about thermoregulation, breastfeeding ,vaccination , infection prevention ,danger signs for premature baby and then factors associated with maternal awareness on preterm infant care.

SECTION A: SOCIAL DEMOGRAPHIC CHARACTERISTICS OF MOTHERS.

Table 1. Mother's Characteristics

Variables	Characteristics	Frequency	Percentage
Mother's age in years	20-30	49	52.1
	31-40	36	38.3
	41-50	5	5.3
	under 20	4	4.3
Marital status	Single	20	21.3
	Married	72	76.6
	Separated	2	2.1
Mother's occupation	Agriculture	83	88.3
	Public profession	2	2.1
	Business	2	2.1
	Domestic services	7	7.4
Mother's level of education	No formal education	6	6.4
	Primary complete	39	41.5
	Primary incomplete	34	36.2
	Secondary complete	4	4.3

	secondary incomplete	11	11.7
Mother's religion	Christian	93	96.8
	Islam	3	3.2
Pregnancy	G1-G6	89	94.6
	G7-G9	5	5.3

The socio-demographic characteristics of participants are presented above in table 1. The majority 49(51.2.) of respondents were between 20-30 of age, 72 (76.6) of them were married while 22(23.4) were single. Concerning mothers occupation 83(88.3) were involved agriculture while 7(7.4) were doing domestic services, 2(2.1) was doing business and 2(2, 1) were in public profession. The majority of mothers were between Gestivity 1 and Gestivity 6 (94.6%) and Gestivity 7-9 were (5.3%), Christian accounted for 89(94, 7) of respondents while Islam accounted for 3(3, 2).

Table 2. Neonates' history (n=94)

Variables	Characteristics	Frequency	Percentage
Neonate's gestation age	30-33	15	16.0
	34-36	79	84.0
Neonates' sex	Male	40	42.6
	Female	54	57.4
Mode of birth	Normal delivery	63	67.0
	Caesarean section	31	33.0

Table 2 above show that the majority 79(84) of neonate in our study were delivered between 34- 36weeks of gestational age while 15(16) were delivered between 30-33 gestation age. The majority 63(67.0) delivered normally compared to 31(33.0) delivered by Caesarean section. The proportion of normal deliveries was 67% while 33% was for caesarean section. Male neonates accounted 40 while 54 were for female.

SECTION B: MOTHERS AWARENESS ON PREMATURE NEWBORN CARE.

All participants recognized that they received from health providers the information on premature newborn care during hospitalization.

Table 3. Information on preterm newborn care (N: 94)

Variable	Frequency (%)
Mothers educated on preterm newborn care	
Yes	94 (100)
No	0(0.0)
Provider of the information	
Doctors	31(32.9%)
Nurses	63(67.02%)
Others	0(0.0)
Type of information received	
Breastfeeding	75(79.8%)
Thermoregulation	84(89.4%)
Immunization	9(9.6%)
Infection prevention	39(41.5%)
Danger signs in preterm newborn	23(24.5%)

The table 3 shows that the majority of information was provided by nurses at 63 (67.02%) while doctors were at the low level 31(32.9%). Breastfeeding 75(79.8) and thermoregulation 84(89.4) information about premature newborn care were provided to mothers at the high level,75(79.8) about breastfeeding and 84(89.4) about thermoregulation while danger signs information was low at 23(24.5%).

Table 4. Awareness on selected aspects on preterm infant care. (N: 94)

Variable	Aspect level	Frequency (%)
Thermoregulation		
First bath after delivery	<6hours	84(89%)
	>6hours	10(10.6%)
Method of keeping the preterm baby warm at home	Skin to skin contact	54(57.4%)
	Wrapped the baby in a cloth	40(42.6%)
Preterm infant nursed in the same room with her mother	Yes	82(82.7%)
	No	12(12.8%)
Breastfeeding		
Giving fluid or feeds to preterm newborn	Yes	20(21.3%)
	No	57(60.6%)
	Don't know	17(18.1%)
Exclusive breastfeeding	6months	87(92,6%)
	Others	7(7.4%)
Breastfeeding at delivery	Within 1hour	33(35.1%)
	Over 1hour	61(64.9%)
Vaccination		
Is it recommended to Give vaccination at a preterm infant at birth.	Yes	37(39.4%)
	No	13(13.8%)
	Don't know	44(46.8%)
Raison of giving vaccine to a preterm newborn	To prevent diseases	91(96.8%)
	Don't know	3(3.2%)

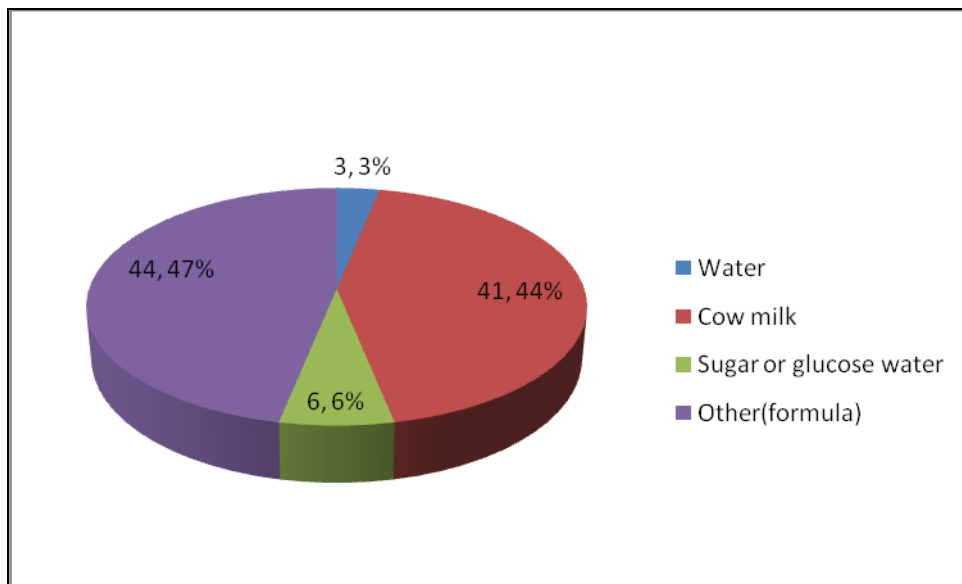
The table 4 above show that the majority 89(94.7) of mothers initiated the first bath at 48hours while 5(5.3) have done the first bath at 24hours.

According to the above table, 53(56) of participants said they should keep their baby warm in skin to skin contact while 40(42) said they will put the baby in warm cloth.

The majority of participants 82(87.2) said no about put the baby in the separate room from the mothers. While 12(12.8) said that they should separate the baby with the mother. 33(35.1%) initiated the breastfeeding within 57(60.6) said that they should not give any fluid or feeds to the premature baby , 20(21.3) said yes concerning giving fluid or feeds to the premature baby while 87(92.6) said that they should exclusively breastfeed their baby during six month , 37(39.4) said that the premature baby need vaccination at birth ,13(13.8) said that the premature baby don't need any vaccination at birth while 33(35.1) said that they don't know about giving vaccine to the premature baby at birth.

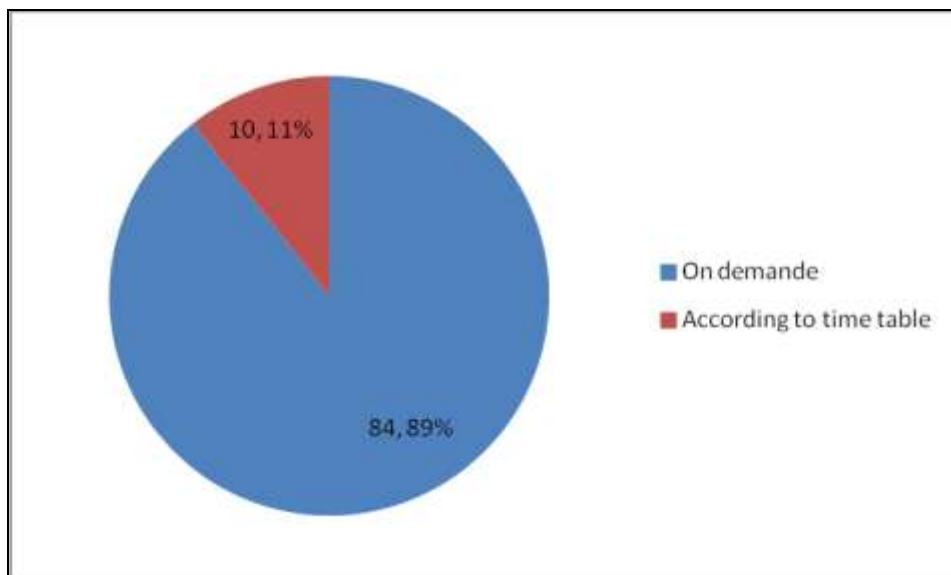
The majority of participants 91(96.8) know that vaccines prevent babies to get diseases and 3(3.2) don't know why neonates must receive vaccines.

Figure 2: Awareness on pre-lacteal feeds given to preterm infant N: 94



The figure 2 above show that if it is necessary to feed the baby when the mother have no or insignificant breast milk, 41(43.6) of participants said that they should use cow milk to feed the baby while,44(46.8) of them said that they should use formula and 6(6.4) said that they should use sugar or glucose water.

Figure 3: Breastfeeding method



Among participants, 84(89%) opted for breastfeeding on demand while 10 (11) opted for breastfeeding according to timetable.

Table 5. Awareness on Vaccines provided to newborn at birth (n=94)

Variables	Yes (%)	No (%)
Tuberculosis	58 (61.7)	36(38.3)
Polio	37(39.4)	57(60.6)
don't know	37(39.4)	57(60.6)

According to the table 4 above, 58(61.7) of participants recognized that one vaccine provided at birth is against tuberculosis while 37(39.4) recognized that the other vaccine provided at birth is against polio. The other participants 37(39.4) said that they don't know any diseases which vaccines given at birth against on.

Table 6. knowledge on hand washing while caring for preterm infant (N: 94)

Variable	Factor level	Frequency (%)
Moment of washing hand	Before and after care	59(62.8)
	Other(only before)	35(37.2)
Means used to wash hand	Water and soap	83(88.3%)
	Water	11(11.7%)

According to the table 5 above, 59(62.8) declared that they should wash hand before and after caring the premature baby, others 35(37.2) said that they wash hand before caring their premature babies but not after the care. The majority 74(78.7) of participants wash hand with water and soap while 19(20.2) wash hand with water only.

Table 7. Awareness of mothers on danger signs among preterm infant in Ruhengeri hospital

Variables	Frequency	Percent
One serious illness	10	10.63%
Two serious illness	21	22.34%
Tree serious illness	40	44.68%
Four serious illness	20	21.27%
Five serious illness	3	31.19%

The table 6 above shows that 60 participants can identify 3 to 4 danger signs among 13, 31 mothers identified 1 to 2 danger signs. 3 identified 5 danger signs..

Table 8. Level of Awareness (N: 94)

Awareness score	Frequency	Percent
33	1	1.1
40	12	12.8
47	13	13.8
53	15	16.0
60	14	14.9
67	17	18.1
73	13	13.8
80	7	7.4
87	2	2.1
Total	94	100.0

Mean of awareness: 59.3617, STD: 13.00929

The table 7 above shows that the highest score of awareness was 87% and the lowest 33%, the mean of awareness was 59.3 %.

SECTIONC: ATTITUDES OF MOTHERS.

Table 9. Mothers' attitudes on thermoregulation, breastfeeding, vaccination and infection prevention.

VARIABLE	Strongly agree (%)	Agree (%)	Neither agrees nor disagree (%)	Disagree (%)	Strongly disagree (%)
Babies with normal birth weight lose heat faster than low birth weight babies	5(5.3)	8(8.5)	4(4.3)	5(5.3)	72(76.6)
Mother or father baby skin to skin contact prevents the premature baby from getting cold	61(64.9)	20(21.3)	3(3.2)	1(1.1)	9(9.6)
Your baby can be bathed in cold water	5(5.3)	4(4.3)	5(5.3)	5(5.3)	75(79.8)
Prevention of hypothermia in newborn contribute to weight gain of premature newborn	29(30.9)	43(45.7)	17(18.1)	0(0.0)	5(5.3)
Your premature baby should be breastfed at night	63(67.0)	27(28.7)	1(1.1)	2(2.1)	1(1.1)
Your premature baby should be given other feeds/fluids aside from breast milk	3(3.2)	11(11.7)	7(7.4)	51(54.3)	22(23.4)
Well breastfeeding your baby contribute to weight gain of premature newborn	61(64.9)	31(33.0)	0(0.0)	2(2.1)	0(0.0)
vaccines are harmful to your baby	9(9.6)	8(8.5)	27(28.7)	39(41.5)	11(11.7)
Washing hand while caring for a premature baby is a key strategy for protecting premature baby for getting infections	69(73.4)	22(23.4)	3(3.2)	0(0.0)	0(0.0)

The table 8 above show that 72 (76.6) disagreed on the statement that babies with normal birth weight lose heat faster than low birth weight babies while 81(86.2) of participants have positive attitude that skin to skin contact prevent the baby for getting cold. Mothers disagreed that premature babies should get other feeds or fluids aside from breast milk. Mothers disagreed that vaccines are harmful to babies. Participants have a positive attitude that washing hand is a key strategy for protecting premature baby for getting infections.

Table 10. Danger signs signifying serious illness for preterm infant.

	Very important (%)	Important to some level (%)	Not sure (%)	Not really important (%)
Yellowish discoloration of eyes, palms, soles	36 (38.3)	18(19.1)	38(40.4)	2(2.1)
Umbilicus red, discharging pus, surrounding skin red	87(92.6)	3(3.2)	4(4.3)	0(0.00)
Baby stops breastfeeding	89(94.7)	3(3.2)	2(2.1)	0(0.0)
Abnormal jerking movement of limbs and eyes	63(67.0)	3(3.2)	25(26.6)	3(3.2)
Difficulty in breathing	93(98.9)	0(0.0)	1(1.1)	0(0.0)
Fever	93(98.9)	0(0.0)	1(1.1)	0(0.0)
Baby cold to touch	91(96.8)	1(1.1)	2(2.1)	0(0.0)
Baby previously active becomes lethargic	87(92.6)	4(4.3)	3(3.2)	0(0.0)
Abdominal distension	94(100)	0(0.00)	0(0.00)	0(0.00)
Diarrhea	92(97.9)	0(0.00)	0(0.00)	2(2.1)
Vomiting	88(93.6)	2(2.1)	2(2.1)	2(2.1)
Cries excessively/irritable	29(30.9)	26(27.7)	20(21.3)	19(20.3)

The table 9 above show that on 12 danger signs 9 are appreciated by participants as serious signs at high level while 1 danger signs: Abnormal jerking movement of limbs and eyes is moderately appreciated as dangers sign. Jaundice and Cries excessively/irritable are appreciated by participants as danger sign at a low level.

Table 11. Level of Attitude (N: 94)

Attitude score	Frequency	Percent
78	2	2.1
79	7	7.4
80	4	4.3
81	5	5.3
82	7	7.4
83	6	6.4
84	7	7.4
85	10	10.6
86	8	8.5
87	9	9.6
88	4	4.3
89	13	13.8
90	5	5.3
91	3	3.2
92	2	2.1
93	2	2.1
Total	94	100.0

Mean of attitude: 85.2872, STD: 3.82865

The table 10 above shows that the highest score of attitude was 93% and lowest 78%, the mean score 85.2%

FACTORS ASSOCIATED WITH MOTHERS LEVEL OF AWARENESS ON PRETERM INFANT CARE.

Table 12. Associations of awareness and attitude.

		Level of awareness	Attitude
Level of knowledge	Correlation Coefficient	1.000	.303
	Sig. (2-tailed)	.	.003^{**}
	N	94	94
Attitude	Correlation Coefficient	.303	1.000
	Sig. (2-tailed)	.003^{**}	.
	N	94	94
** . Correlation is significant at the 0.01 level (2-tailed).			

The table 11 above shows that there is a significant association between mothers’ awareness and mothers attitude on preterm infant care with p=0.003

Table 13. Association between social demographic data with knowledge.

Factors	Statistical test	Value	Sig P.value
Mother’s age in years	Fisher's Exact Test	2.504	.497
Marital status	Fisher's Exact Test	.346	1.000
Mothers occupation	Fisher's Exact Test	1.229	.867
Mother’s level of education	Fisher's Exact Test	5.717	.214
Mothers parity	Linear-by-Linear Association	9.259 ^b	.002^{**}
Hospital stay	Fisher's Exact Test	16.230	.393

The table 12 above shows that only mothers 'parity have the association with mothers awareness on preterm infant care with p=0.002

CHAPTER FIVE: DISCUSSION

5.1 MOTHER'S AWARENESS

To decrease preterm infant mortality and morbidity, mothers need to be informed on accurate knowledge about newborn care practices. Our study found that all mothers recognized that they received from health providers the information on newborn care during hospitalization

The most source of information on preterm care were from nurses comparatively to medical doctors .This is because of not enough medical personnel. The significance of this was supported by Oyetunde, et al, (2014) who confirmed that nurse's experiences, work place culture, lack of time, heavy workload; insufficient staffing and complexity of patients' condition were important factors that influenced the practice of patient education.

The awareness on the care of preterm newborn components studied on, were thermoregulation, breastfeeding, immunization, infection prevention, and recognition of danger signs. The majority of preterm newborn care information received by mothers in this study was breastfeeding and thermoregulation.

5.1.1 Breastfeeding awareness.

According to WHO and UNICEF breastfeeding is a natural act and also a learned behavior. A wide body of research has confirmed that mothers and other caregivers need active support for establishing and sustaining appropriate breastfeeding practices.

In this study the breastfeeding knowledge was high with the majority aware about exclusive breastfeeding (92.6%) and breastfeeding on demand (77.08%), these findings are similar to the study done in Ghana by More et al., (2014) founded that the majority (92.6%) of mothers felt good to exclusive breastfeeding and breastfeed on demand at (99.5%). This Contradict to the study done in Indian by Vijayalaskshmi, et al., (2015) that showed the level of exclusive breast-feeding which was low, 7% of the mothers were exclusive breast feeders and only 36.9% initiated breastfeeding within an hour, indicate neutral attitudes towards breast feeding.

Current study shows that 33(35.1%) of mothers initiated breastfeeding within 1hour ,this is supported by the study done in Nigeria on determinants of early initiation of breastfeeding in Nigeria in 2013 by Anselm S.Berde , founded that the proportion of infants who initiated breastfeeding within 1hour was 34.7% .

Current study revealed that (44.1% of mothers said that they should give cow milk ,formula 47% and 6.6% water if mothers have no breast milk, a similar study conducted by Misgan Less on pre-lacteal

feeding practices and associated factors among mothers of children shows that the prevalence of pre-lacteal feeding was 38.8% ,mothers who gave birth at home were seven times more likely to practice pre lacteal feeding as compared to mothers who delivered at health institution. Late initiation of breastfeeding was also associated with pre lacteal feeding practice. Therefore breastfeeding within 1hour after birth must be promoted to avoid pre lacteal feeding practice.

5.1.2 vaccination awareness

In this study mothers scored poorly when asked about vaccines provided at birth are against which diseases, 37(39.4) said polio and for tuberculosis the score was moderately good 58(61.7%). Similar study was done in Ethiopia (2015) by Yeshe kume, on assessment of knowledge and attitude of postnatal mothers towards essential newborn care practices at governmental health institution and shows that only 31% of mothers were aware of disease prevented by vaccine given orally at birth (OPV) to newborns. These may be because of information gap on the name and advantage of each component of vaccine.

5.1.3 Recognition of signs of serious illness.

Recognition of the signs of serious illness in newborn by the mothers had been shown to be a great concern in several developing countries (Dongre, 2008).

In current study, the most danger sign identified by mothers was fever, difficulty breathing, abdominal distension and diarrhea ,this is comparable to the study done by Maseka (2016) in South Sudan, on knowledge and practices on essential newborn care among postnatal mothers at Juba teaching hospital where mothers identified the same danger signs similar to current study .

Jaundice was identified by mothers 36(38.3) as signifying serious illness at a low level ,this result is comparable to the result of the study done by Manjubala dash in india,(2014) , on the assessment of knowledge and attitude on neonatal jaundice among the 50 mothers results shows that only 1(2%) of mother had adequate knowledge. In relation to their attitude it showed that 15(30%) of mothers had positive attitude towards the management of the baby on jaundice.

5.1.4 Thermoregulation awareness.

In this study to prevent hypothermia, 54(57.4%) of mothers of preterm infant said that skin to skin is better, 40(42.6%) opted for wrapping the baby in the cloth, a similar study done in Sri Lanka, on mothers' knowledge and practices on thermoregulation of neonates, shows that mothers had satisfactory level of knowledge(65%) about hypothermia and its preventive methods, practical application of mothers knowledge (34%) were very poor. Therefore more emphasis are needed on application of preventive methods of hypothermia.

5.2 MOTHERS ATTITUDES ON PRETERM INFANT CARE

In current study 61(64.9%) of mothers were strongly agree about that mother and father skin to skin contact prevent the premature baby from getting cold, this is similar to the study done in Zambia on prevention and management of neonatal hypothermia shows that Mothers and grandmothers believe that the baby should kept warm to imitate the conditions and thermal environment in utero.

Both caretakers and health workers emphasize the importance of keeping babies warm with this simple measure.

In current study 61(64.9%) of mothers were strongly agree about that well breastfeeding a baby contribute to weight gain of premature newborn while 31(33%) agreed this is similar to the study done in Aminu kano Teaching hospital on knowledge, attitude and practice of Exclusive breastfeeding which shows that there is a positive attitude of mothers toward exclusive breastfeeding as 69.6% of them agreed that breast milk alone is sufficient to the baby during the six months of life as well as believed that exclusive breastfeeding has benefits to both the infants and the mother.(Abdulmaleek Musa Aliyu, 2012) A other study similar to our study done in Ethiopia on knowledge, attitude and practices towards exclusive breastfeeding among lactating mothers founded that 89.5% had positive attitude, the majority of mothers knew about EBF(exclusive breastfeeding) and had a positive attitude towards EBF.

In this study results show that 39(41.5%) of participants disagreed that vaccines are harmful to babies while 11(11.7%) were strongly disagreed, this is similar to the study done in Saudi Arabia on Parents attitudes towards immunization was positive expect in some aspects related to vaccination side effects 316(34.2) and the probability of occurrence of diseases against which the child was vaccinated.

A total of 272 mothers with the Immunization concerns participated in the study, mothers in all groups were significantly more likely to respond positively to questions and statements support the safety and importance of vaccines. Another study done in Italy on knowledge, attitudes and behaviors of parents

towards varicella and its vaccination, a total of 414 parents responded to the questionnaire . the positive attitude towards the utility of vaccination was higher in parents .

5.3 FACTORS ASSOCIATED WITH MOTHERS AWARENESS AND ATTITUDE.

In the current study awareness was associated with parity among mothers of preterm infant care, a similar study conducted by Susmita Nepalal (2017) on knowledge and practice of newborn care among mothers , shows that there is association between parity of mother and knowledge on newborn care. This study also revealed that there is an association between mothers' awareness and attitude on the care of preterm newborn.

However, in agreement with our Findings were Weiner et al(2011) showed that education increases mothers understanding on basic newborn care , In conclusion, providing an opportunity to educate mothers on preterm infant care during hospitalization results in sustained knowledge after discharge and very useful for infant health.

CHAPTER SIX :CONCLUSION AND RECOMMENDATIONS

6.1. CONCLUSION:

Educating mothers to create awareness about essential obstetric and neonatal care are key steps in achieving the goals of reproductive and child health program. Awareness on postnatal and early neonatal care is a fundamental requirement to effective community participation.(R, S & PM, 2014). This study revealed the presence of knowledge gap. The existing knowledge gap in key area of preterm infant care can greatly affect the success of child care services:

- Some maternal education on preterm infant care was received during hospitalization.
- Mothers of preterm infant were most aware on exclusive breastfeeding, breastfeeding on demand and on infection prevention (washing hand)
- Mothers of preterm infant had positive attitude on danger signs, thermoregulation, and breastfeeding and infection prevention.
- The major findings in this study were that 59.3% of mothers have adequate awareness on preterm infant care and 85.2% % have positive attitude towards preterm infant care.
- There is the association between parity and the level of awareness among mothers of preterm infant, there is also association between level of awareness and the level of attitude.

6.2 RECOMMENDATIONS:

To Ruhengeri hospital administration:

1. More emphasis is needed in maternal education during hospitalization in NICU prior to discharge.
2. In neonatal department , certain components of essential newborn care package need more emphasis during education program : recognition of the following as danger signs: signs of convulsions, prevention of hypothermia ,immunization and the effect of pre-lacteal food on preterm infant health.
3. A qualitative research is recommended to elaborate more on newborn care knowledge and attitude in Ruhengeri hospital.

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ANNEXES

Annex 1. QUESTIONNAIRE

Code:

Dear sir/madam,

The aim of this study is to assess the awareness and attitudes of parents at the time of discharge of their premature newborn in Ruhengeri hospital. The purpose of the study is also to enhance the quality of care provided to the babies at home and proper preparedness of parents prior to discharge. The study will provide useful approaching into parents' knowledge level about care of preterm babies and offer a way for health education. It will also provide suggestions to policy makers to improve practice and management of preterm babies in Rwanda. Findings from this study will serve as the basis for review of neonatology curriculum in pre-services and in-service trainings. Finally the findings from this study will inspire for further research.

This questionnaire will take about 10 minutes to complete, the respondent privacy is protected because the survey data is anonymous.

There is no remuneration for the respondent, participant who accepts to respond give their contribution to enhance the quality of care provided to neonates in Ruhengeri hospital.

Thank you very much for your contribution.

A. SOCIODEMOGRAPHIC CHARACTERISTICS OF PARENTS:

1. Mother's age in years
2. Marital status: Single Married Separated Divorced
3. Father's age in years
4. Mother's occupation: Agriculture Public profession Business
Domestique services other (specify)
5. Father's occupation: Agriculture Public profession Business
Domestique services Other (specify)
6. Mother's level of education: : No formal education Primary complete
Primary incomplete Secondary complete secondary incomplete tertiary

7. Father's level of education: : No formal education Primary complete
Primary incomplete Secondary complete secondary incomplete tertiary

8. Mother's religion: Christian Islam Other (specify)

10. Neonate's gestation age in week

11. Neonate's birth weight in kilograms

12. Neonate's sex: Male Female

13. Mother's parity

15. How did you deliver? : Normal delivery Caesarean section

6. How long from the day of delivery your baby stayed in neonatology before discharge?

B. PARENT'S EDUCATION ON PREMATURE NEWBORN CARE.

1. Did you receive any information on premature newborn care during hospitalization?: yes No

2. What information were you provided on?

Breastfeeding Thermoregulation Danger signs in premature newborn

Sustain weight gain Infection prevention other (specify)

3. Who provided you the information? Doctor Nurses other (specify)

C. THERMOREGULATION AWARENESS AND ATTITUDE

1. How should you keep your baby warm at home?

Skin to skin contact Wrapped the baby in a cloth other (specify)

2. How long should you take before you give your premature baby the first bath after delivery?

Hours Days don't know

3. At home your premature baby should be nursed in a separate room from you.

Yes No

4. Babies with normal birth weight lose heat faster than low birth weight babies.

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

5. Mother or father baby skin to skin contact prevents the premature baby from getting cold.

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

6. Your baby can be bathed in cold water.

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

7. Prevention of hypothermia in newborn contributes to weight gain of premature newborn:

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

D. BREASTFEEDING AWARENESS AND ATTITUDE

1. How soon after delivery should you take to breastfeed your premature baby?

Minutes Hours Don't know

2. Should you give any fluid or feeds to your premature baby before breastfeeding for

the first time? Yes No Don't know

3. How often should you breastfeed your premature baby?

On demand (when baby is crying or looking for breast) According to metabolic
other (specify)

4. How long should you exclusively breastfeed your baby?

5. Your premature baby should be breastfed at night.

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

6. Your premature baby should be given other feeds/fluids aside from breast milk.

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

7. If you feel your baby should get other feeds, what would you give?

water Cow milk Sugar or glucose water Other(specify

8. Well breastfeeding your baby contribute to weight gain of premature newborn

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

E. IMMUNIZATION AWARENESS AND ATTITUDE

1. Does your premature baby require any vaccination at birth? yes No other(specify)
don't know

2. why do we give vaccines to the baby after birth?

To prevent diseases Don't know other(specify)

3. Vaccines provided to newborn at birth prevent against which diseases?

Tuberculosis polio don't know other(specify)

4. vaccines are harmful to your baby

Strongly agree Agree Neither agree nor disagree
Disagree Strongly disagree

F. INFECTION PREVENTION AWARENESS AND ATTITUDE

1. when do you wash hand while caring for premature baby?

Before and after care Don't know Other (specify)

2. With what do you wash hand?

Water water and soap other(specify)

3. why is it necessary to wash hand before to breastfeed the baby especially for premature baby.

To prevent the baby for having infections Don't know Other (specify)

4..Washing hand while caring for a premature baby is a key strategy for protecting premature baby for getting infections.

Strongly agree Agree Neither agree nor disagree

Disagree Strongly disagree

G. DANGER SIGNS AWARENESS AND ATTITUDE

1. Are you aware of any signs that will tell you that your preterm infant has serious illness?

yes No

2. Which of the following signs would consider signifying serious illness in newborn?

1. Convulsions 2. Fever 3.poor feeding and sucking 4. lethargy 5.difficult/fast breathing
6.vomiting 7.yellow palms, soles and eyes 8.Unconscious 9.redness and discharge at cord
10.Diarrhea

3. Which of the following signs would consider suggesting serious illness for premature newborn?

In a scale of 5 in order of perceived importance by the mother.

1. Yellowish discoloration of eyes, palms, soles:

Very important Important to some level Not sure Not really important

Not important at all

2. Umbilicus red, discharging pus, surrounding skin red

Very important Important to some level Not sure Not really important

Not important at all

3.Baby stops breastfeeding

Very important Important to some level Not sure Not really important

Not important at all

4. Abnormal jerking movement of limbs and eyes

Very important Important to some level Not sure Not really important

Not important at all

5. Difficulty in breathing

Very important Important to some level Not sure Not really important

Not important at all

6. Fever

Very important Important to some level Not sure Not really important

Not important at all

7. Baby cold to touch

Very important Important to some level Not sure Not really important

Not important at all

8 Baby previously active becomes lethargic

Very important Important to some level Not sure Not really important

Not important at all

9. Abdominal distension

Very important Important to some level Not sure Not really important

Not important at all

10. Diarrhoea

Very important Important to some level Not sure Not really important

Not important at all

11. Vomiting

Very important Important to some level Not sure Not really important
Not important at all

12. Cries excessively/irritable

Very important Important to some level Not sure Not really important
Not important at all

13 Which health provider or facility would you go to seek care for very important symptoms.

CHW Nurse/health center Doctor/hospital other(specify)

CHW Nurse/health center Doctor/hospital other(specify)

h. Major challenges of discharge readiness about caring premature newborn .

Which of the following challenges would you consider to be major about discharge readiness from neonatal department.

Incapacity to remember discharge directions Lack of inclusion in discharge processes

Family don't have the ability to care for infant at home

Return home with no information needed for good care of premature newborn

Thank you for your participation!

PARENTS CONSENT FORM

I.....after details explanations i want to participate in the research project "parents awareness and attitudes at discharge of premature newborn in Ruhengeri hospital " I understand that the project will help to know the capacity and attitudes of parents to care premature infant at discharge home ,in ordre to help the hospital to improve parents preparedness before discharge and that project will help also to maintain the well being of premature infant by enhancing the capacity of parents in caring premature baby , I understand that the procedure for data collection will be done without the names of parents.

.....

Parents signature and date

IBIBAZO BIGENEWE ABABYEYI BABYAYE ABANA BADASHYITSE

Babyeyi,

Intego y'ubu bushakashatsi n'ukumenya urugero rw'ubumenyi n'imyunvire y'ababyeyi babana bavutse badashyitse mu gihe cyo gutaha mu bitaro bya Ruhengeri. ibi bizafasha mu kuzamura uburyo abana bitabwaho n'ababyeyi babo igihe bageze mu rugo ndetse bizafasha kuvugurura uburyo dutegura ababyeyi gutahana abana bavutse badashyitse , bivuze ko ibizava buri buno bushakashatsi bizafasha mukuvugurura uburyo bwo kwigisha ababyeyi baje bagana ibitaro bya Ruhengeri babyaye abana badashyitse.

bizafasha kandi abakora za politiki zijyanye n'abana badashyitse kubona ibyo baheraho bashyiraho ingamba.ubu bushakashatsi kandi bwafasha abategura ibyigishwa byabanyeshuli kubivugurura bashingiye kubizava muri ububushakashatsi.ubundi bushakashatsi bushobora gukorwa bashingiye kubizava muri ubungubu.

Gusubiza ibibazo bifata iminota icumi,nta zina rijyaho.Ntabihembo biteganyijwe kuzemera kwinjira mu bushakashatsi, uwemeye kujyamo aba atanze umusanzu we mu kwita kubana bavutse batashyitse mu bitaro bya Ruhengeri.

Murakoze mu gutanga umusanzu wanyu mu kwita bu bana bavutse badashyitse.

Mugire amahoro.

A. IMIBEREHO BWITE:

Imyaka ya nyina w'umwana

2. Marital status : Ingaragu arubatse ntibabana Baratandukanye

3. Imyaka ya se w'umwana

4. icyo nyina w'umwana akora : ubuhinzi akazi ka leta arikorera

akazi ko murugo ibindi(bivuge):

5.icyo se w'umwana akora: ubuhinzi akazi ka leta arikorera

akazi ko murugo ibindi(bivuge):

6. Amashuri ya nyina w'umwana : ntamashuri yize Nti yarangije Amashuri abanza

y arangije amashuri abanza intiyarangije amashuri yisumbuye

yarangije amashuri yisumbuye kaminuza

7. Amashuri ya se w'umwana : ntamashuri yize Nti yarangije Amashuri abanza

y arangije amashuri abanza intiyarangije amashuri yisumbuye

yarangije amashuri yisumbuye kaminuza

8 : idini rya nyina na se w'umwana :Umukirisitu Umusilamu ibindi(bivuge)

9. Yavukiye ibyumweru bingahe?

10. Yavukanye ibiro bingahe?

11. Igitsina cy'umwana: Gabo Gore

12. Umubare w'imbyaro za nyina w'umwana

15. How did you deliver? : Normal delivery Caesarean section

6. umwana wawe yamaze mu bitaro igihe kinganiki?

B. Kwigishwa kubijyanye no kwita kuruhinja rwavutse rudashyitse.

Hari amasomo wahawe ajyanye nuburyo wakwita kuruhinja? Yego Oya

Ni ibihe biganiro wahawe bijyanye no kwita ku ruhinja ?

konsa Gushyuha cyangwa gukonja by'umubiri w'uruhinja rwavutse rudashyitse

ibimenyetso mpuruza kwiyongera ibiro buhoraho by'uruhinja/kutagabanuka kw'ibiro

kwirinda indwara ibindi (bivuge)

3. Ninde wakwigishije? umuganga Umuforomo Abandi(bavuge)

C. UBUMENYI N' IMYUMVIRE AFITE KUBIJYANYE N'UBUSHYUHE N'UBUKONJE BY'URUHINJA .

Nigute warinda uruhinja rwawe ubukonje bw'umubiri ? GUHEKA URUHINJA KU GITUZA GUSHYIRA URUHINJA MU KIGOMA/UBURINGITI BISHYUSHYE Ibundi Buryo (buvuge)

2.Ninyuma y'igihe cyinganiki nyuma yo kubyara uzoza umwana wawe wavutse adashyitse How

Amasaha iminsi ntabwo mbizi

3. Murugo umwana wawe azajya aba kandi yitabweho mu cyindi cyumba cyitari icyawe.

yego Oya

4. Abana bavukanye ibiro bikwiye batakaza ubukonje vuba kurusha abavukanye ibiro bicye.

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

5.umugabo cyangwa umugore uheka umwana kugituzza bimirinda ubukonje kandi bigatuma ahumeka neza.

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

6.Umwana wawe ushobora kumwoza amazi akonje.

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

7.Kurinda umwana ubukonje bigira uruhare mu kwiyongera kw'ibiro by'umwana

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

D. UBUMENYI N'IMYUNVIRE KUBIJYANYE NO KONSA.

1. N'igihe kingana iki nyuma yo kubyara ugomba gutangira konsa umwana?

Iminota Amasaha Ntabwo mbizi

2. ushobora guha umwana wawe ibindi bitari amashereka mbere y'uko utangira kumwonsa? yego
oya

3. Nikangahe uzajya wonsa umwana wawe ku munsu ?

Igihe cyose uruhinja rushakiye konka nzajya Nwonsa nkurikije igihe/ buri masaha atatu
ibindi(bivuge)

4. umwana uzatangira kumuvangira/kumugaburira hashize igihe kingana iki?

5. Uruhinja rukwiye konswa no mu musaha y'ijoro.

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

6. uruhinja rushobora guhabwa ibindi biribwa/ibyonywa hamwe n'amashereka

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

7. Bibaye ngombwa ko umwana afata ibindi bintu bitari amashereka wamuha icyi?

Amazi Amata y'inka isukari ibindi(Bivuge)

8. Waba uzi uko uzafasha uruhinja rwawe kwiyongera ibiro? yego oya

9. konsa neza uruhinja rudashyitse bigira uruhare mu kwiyongera kw'ibiro by'umwana

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

E.ubumenyi n'imyunvire kubijyanye no kwirinda no kurinda umwana wavutse adashyitse uburwayi.

1.Niryari ukaraba intocyi mugihe urimo kwita ku mwana wawe.

Mbere ya nyuma yo kumwitaho Ntabwo mbizi ibindi (bivuge)

2.ukaraba intoki ukoresheje iki?

Amazi amazi n'isabune ibindi(bivuge)

3. Kubericyi ari ngombwa gukaraba intocyi mbere yo konsa cyane cyane ku bana bavutse badashyitse? kurinda umwana kwandura uburwayi ntabwo mbizi

Ibindi(Bivuge)

4.Gukaraba intoki mbere yo kwita ku mwana wavutse adashyitse n'ingenzi cyane mukurinda umwana kwandura uburwayi.

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

F.Ubumenyi n'imyunvire y'ababyeyi kubijyanye no Gukingira indwara.

1.umwana wavutse adashyitse akenera urukingo akivuka? yego oya don't know
ibindi(bivuge)

2.kuki umwana w'uruhinja agomba kuhabwa urukingo? kumurinda uburwayi

ntabwo mbizi ibindi(bivuge)

3.Nubuhe bwoko bw'inkingo umwana w'uruhinja abona akivuka?

urwigituntu urwimbasa ntabwo mbizi

4. Inkingo zitera ibibazo bikomeye ku bana bazihawe.

Ndabyemera cyane ndabyemera simbyemera kandi simbihakana/ ntacyo mbiziho
Simbyemera simbyemera na gato

G. Ibimenyetso mpuruza :

Mubimenyetso bikurikira n'ibihe byakwerekaga ko uruhinja rufite uburwayi bukomeye.

I.1. Umuhondo mu maso, kugihimba ,mu ntoki no munsu y'ibirenge :

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimyenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.2. Umukondo watukuye, uvamo amashyira, uruhu ruzengurutse umukondo rutukuye

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimyenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.3. Kugagara.

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimyenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.4. Uruhinja rwananiwe konka

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimyenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.5. Kunyeganyega kw'amaso n'umunwa bidasanze

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimyenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.6. Guhumeka nabi

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimyenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.7. Umuriro

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.8 Gukora ku ruhinja ukumva rukonje

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.9 Uruhinja rwabuze imbaraga kandi atariko byari bisanzwe

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.10 Kubyimba inda

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.11 Guhitwa

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.12kuruka

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.13 Kurira cyane bidasanzwe.

Ikimenyetso gikomeye ikimenyetso gikomeye gahoro Ntabwo mbizi

Ntabwo ari kimenyetso gikomeye Ntabwo gikomeye na busa/nagato

1.14 Umuvuzi cyangwa icyigo cy'ubuvuzi wajya kuvuzaho umwana wawe wavutse udashyitse igihe afite imimenyetso by'uburwayi.

Igiye afite ibimenyetso bikomeye: umujyanama w'ubuzima ikigonderabuzima ibitaro

Igihe afite ibimenyetso bidakomeye: umujyanama w'ubuzima ikigonderabuzima ibitaro

H. Ibibazo ababyeyi bahuye nabyo mugihe bari mu bitaro kubijyanye n'umwana wavutse udashyitse.

Nibihe mu bibazo bikurikira ubona bikomeye mubijyanye no kwita ku mwana wavutse adashyitse.

Nta bushobozi nfitse buhagije bwo kwibuka ibyo nigishijwe mbele yo gutaha

Ntabwo namenyeshajwe ngo nanjye ngire uruhare mu bijyanye no kwitegura gutaha

umuryango wanjye ntabwo ufite ubushobozi bwo kwita ku mwana udashyitse mu rugo

Ntashye ntigishijwe bihagije mubijyanye no kwita ku mwana udashyitse

Murakoze ku musanzu mutanze!

KWEMERA KUJYA MU BUSHAKASHATSI

Njyewe.....Maze gusobanurirwa bihagije nemeye kujya mubushakashatsi kubijyanye" nubumenyi n'imyitwarire y'ababyeyi babana bavutse badashyitse ku munsu wo gutaha murugo bava mu bitaro bya Ruhengeri".numvise neza ko ubu bushakashatsi buzafasha ibitaro kongera uburyo kwo gutegura ababyeyi babana bavutse badashyitse mu bijyanye nubumenyi bwo kubitaho murugo , no kumenya imyunvire n'imyitwarire yabo babyeyi igihe cyo gutaha , numvise kandi ko bizafasha mu bijyanye n'imibereho myiza y'abana bavutse badashyitse kuberako ababyeyi bazaba babitojwe kurushaho.

numvise kandi ko izina ryanjye ritazagaragara ku mpapuro zizakoreshwa mwibazwa.

Umukono w'umubyeyi.

.....

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 16/01/2017
Ref: CMHS/IRB/057/2017

AKIMANA Therese
School of Nursing and Midwifery, CMHS, UR


Dear AKIMANA Therese

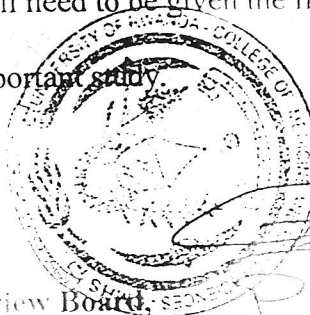
RE: ETHICAL CLEARANCE

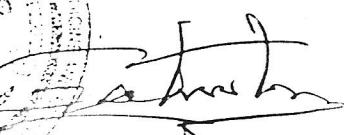
Reference is made to your application for ethical clearance for the study entitled "*Parents Awareness And Attitude On Discharge Of Premature Newborn In Ruhengeri Hospital*".

Having reviewed your protocol and found it satisfying the ethical requirements, your study is hereby granted ethical clearance. The ethical clearance is valid for one year starting from the date it is issued and shall be renewed on request. You will be required to submit the progress report and any major changes made in the proposal during the implementation stage. In addition, at the end, the IRB shall need to be given the final report of your study.

We wish you success in this important study.

 Professor Kato J. NJUNWA
Chairperson Institutional Review Board
College of Medicine and Health Sciences, UR




Prof. JB Gahwira
IRB Vice-Chair

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate studies, UR

REPUBLIC OF RWANDA



NORTHERN PROVINCE
MUSANZE DISTRICT
RUHENGERI HOSPITAL
P.O BOX 57 MUSANZE
ruhengerihospital@gmail.com

Musanze, February 9th, 2017

Ref. 0128 /HDR/HR/2017

Mrs. AKIMANA M. Therese
University of Rwanda/CMHS

RE: Authorization to conduct a study

Mrs.,

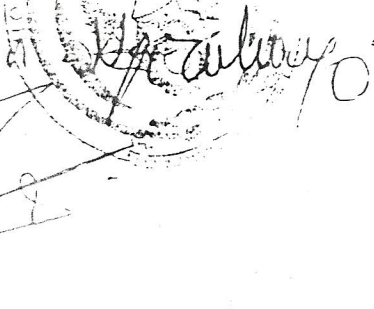
We acknowledge receipt of your letter requesting for conducting a study entitled "*Parents awareness and attitudes at discharge of premature newborn in Ruhengeri hospital*"

We have the pleasure to inform you that you are allowed to conduct the above mentioned study. However you are requested the guaranty of confidentiality of medical data.

Best regards,

Dr. AYINGENEYE Violette

The Director of Ruhengeri Hospital

P. O. Di Leo 



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Akimana therese** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 10/03/2016.

Certification Number: 2198567.