

**IMMUNIZATION AND INFANT MORTALITY RATE IN LIRA
DISTRICT A CASE STUDY OF LIRA REGIONAL
REFERRAL HOSPITAL**

BY:

MANANA LOYCE KUSOLO

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DECLARATION

I **Manana Loyce Kusolo** hereby declare that this report is a true piece of my work., it has never been submitted to any institution for any award of any kind. I stand responsible for inconsistencies identified.

Signed: 

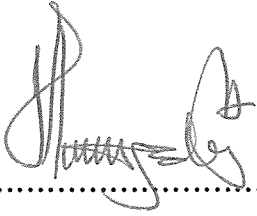
MANANA LOYCE KUSOLO

RESEARCHER

Date: 

APPROVAL

This report entitled “ immunization and infant mortality rate in lira district” was carried out under my supervision.



Signed:

Mr Odongo Mike

Supervisor



Date:

DEDICATION

This Research is dedicated to my father and my late mother, my husband, my brothers and sisters, children Godfrey, Ritah, Andrew, Noelyn and Mary.

For you all it was worthwhile

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LIST OF ACRONYMS

UNEPI	=	Uganda National Expanded Program for Immunization
IMR	=	Infant mortality rate
MDG	=	Millennium Development goals
EPI	=	Expanded Program on Immunization
Epi- info	=	Epidemiological information
WHO	=	World Health Organization
UNICEF	=	United Nations International Children's Educational Fund
BCG	=	Bacillus Calmette – Guerin Vaccine
DPT	=	HEPB + Hib – Diphtheria, Pertussis, Tetanus, Hepatitis B, and Heamophilus influenza type B Vaccine.
HPV	=	Human Papilloma Virus.
UNMHCP	=	Uganda National Minimum Health Care Package
YCC	=	Young Child Clinic
OPV	=	Oral Polio Vaccine
GAVI	=	Global Alliance for Vaccines and Immunization
H/E	=	Health Education
H/W	=	Health Worker
IMCI	=	Integrated Management of Childhood Illnesses
Ads	=	Auto – Disabling Syringes
ATS	=	Anti- Tetanus Serum
HSSP	=	Health Sector Strategic Plan
AEFI	=	Adverse Events Following Immunization
DVS	=	District Vaccine Store
WCBA	=	Women of Child Bearing age

M.O.P	=	Ministry of Health
MM.R	=	Maternal Mortality Rate
NGO	=	Non Governmental Organization
UDHS	=	Uganda Demographic Health Survey
NDP	=	National Development Plan
IV	=	Independent Variable
DV.	=	Dependent Variable
UCBHCA	=	Uganda Community Based Health Care Association

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ABSTRACT

Infant mortality rate has continued to be a threat even with the drive towards modernization of the economy. Despite all the attention and efforts to curb down causes of infant mortality by government, the incidents are still many.

The purpose of the study was to examine the influence of immunization on infant mortality rate in Lira.

The study was conducted through case study design. It investigated the relationship between immunization and infant mortality rate. This study design was selected because it enabled the researcher study smaller sample in depth analysis by the researcher. Case studies generally entail extensive and holistic analysis.

The study was conducted in Lira Regional Referral Hospital and central division in Lira district in Northern Uganda. Lira borders Kole, Oyam, Dokolo and Alebtong districts. Lira district was selected because it is among one of the districts not doing well in immunization and the infant mortality rate is high.

The research findings report confirms that: - All vaccines and equipments used for immunization are being stored according to manufacturers instructions; The fridge temperature are being controlled between +2 - +8°C; Temperature charting are being done twice a day; The Decision whether to discard the vaccine after the session depends on the condition at which its kept; All caretaker/mothers must be communicated the possible effects of each vaccine; Caretakers/mothers should be communicated the next date of return for the next doze and vaccine

From the findings, the following recommendations can be made: - Health workers who manage and handle immunization should be train; More staff should be recruited and trained to handle and manage immunization sessions; Immunization training should be incorporated into the health workers training curriculum; The caretakers/community should be sensitized on the importance of immunization to reduce ignorance; There should be prompt submission of monthly, quarterly and annual report by HMIS for proper planning by government.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study was done on the effect of immunization on infant mortality rate in Lira District. The chapter covers background, statement of the problem, objectives, research questions, significance of the study, scope of the study, limitations of the study and conceptual framework.

1.1 Background of the study

The origin of immunization dates back to small pox vaccine which was the first successful vaccine to be developed [<http://en.wikipedia.org/smallpox-vaccine>]. The process of vaccination was discovered by Edward Jenner in 1796, who acted upon his observation that milkmaids who caught the cowpox virus did not catch smallpox. Historical records show that a method of inducing immunity was already known [<http://en.wikipedia.org/wiki/smallpox-vaccine>]. A process called inculcation, also known as insufflation or variolation was practiced in India as early as 1000BC [Ibid]. Variolation was also practiced throughout the latter half of the 17th century by physicians in Turkey, Persia and Africa [Ibid]. Every year, more than 10million in low and middle income countries die before they reach their fifth birth days. Most die because they do not access effective interventions that would combat common and preventable childhood illnesses [J W Lee 2003]

Infant immunization is considered essential for improving infant and child survival. Although global immunization coverage has increased during the past decade to the levels of around 78%, Africa and Uganda inclusive has consistently fallen behind, reaching only 69% [WHO,2004]

UNDP, Human Development report 2007/2008 statistics show that infant mortality rate in 2005, per 1000 live births, was as below;

Iceland 2. Japan 3. Argentina 15. Algeria 34. Botswana 87. Uganda 79. Angola 154 and sierra-Leone 165.

In response to challenges in global immunization, WHO and United Nations Children's Fund [UNICEF] set up the global immunization vision and strategy [GIVS] in 2003 [WHO 2005]. The chief goal of GIVS is to reduce illness and death due to vaccine-preventable diseases by at least two thirds by 2015 or earlier. The taskforce outset the need for high vaccination coverage to encounter the disproportionate burden from vaccine-preventable diseases in the African region.

The findings of a 1998 review of the expanded programme on immunization [EPI] formed the basis for the first EPI regional strategic plan [2001-2005] [WHO2001]. This plan set five key objectives to be met by 2005; Circulation of wild polio virus to be interrupted in all countries; Maternal and neonatal tetanus to be eliminated in all high risk districts; Hepatitis B vaccine to be introduced in all countries; Yellow fever vaccine to be in all countries at risk and Hemophitus influenza type B vaccine to be introduced in all or at least countries. Hepatitis B vaccine, measles to be controlled.

Uganda infant mortality rate [IMR] of 79 per 1000 live births is very high. It is of public health concern [UDHS 2001]. UNEPI has tried to ensure that all targeted beneficiaries who are the children and women of child bearing age [WCBA] are reached with high quality and effective vaccine against the vaccine-preventable disease; reach every district and reach every child. This is to be achieved through increasing access to vaccination services, building capacity for delivery of immunization services, monitoring disease incidence trends and programme performance. Attempt by government of Uganda to develop sector strategic plan decentralization strategy on immunization seems not to be bearing much fruit as infant mortality rate is still very high and Lira district inclusive. Although house hold income –

proxied by asset-holdings is negatively correlated with the IMR, its actual impact is relatively very small. Doubling the house hold asset holding would only reduce the IMR by 20-24 deaths per 1000 live births [UNDP, Uganda's progress report 2007]. Given the slow growth of household income during the 1990's, especially rural income, future effects on IMR are predicted to be very small [Ssewanyana and Younger 2005]

1.2 Problem Statement.

Lira like any other district in Uganda has faced challenges of high infant mortality rate. The problem has affected the society in several ways. Many children have died due to preventable diseases like, malaria, malnutrition, meseales, pneumonia, diarrhea and others.

A good number of mothers do not attend antenatal clinics when they are pregnant.

As part of government efforts to reduce infant mortality, many strategies have been set, these include; training of health workers, sensitization of communities about health living, immunization programmes, provision of mosquito nets, provision of vitamin A supplements, expanding and construction of more health units.

The first target was to reduce IMR to 75 deaths per 1000 live births by 2002 which was not attained. On the other hand, the date for achieving the next target of 68 deaths was shifted from 2005 to 2009 [GOU 2005]. This particular millennium development goal [MDG] target seems unattainable.

Furthermore, in Lira, despite the organized country wide immunization, hospitals, health centers and villages, there is still a high IMR of 136 per 1000 live births [Lira district development plan 2008-2011].

Despite the above solutions and ministry of health interventions, the problem of high infant mortality rate still continues in Lira district.

That is why the researcher intends to investigate effects of immunization program on infant mortality rate in Lira district.

1.3 General Objectives

The purpose of this study was to examine the influence of immunization on infant mortality rate in Lira.

1.4 Specific Objectives

1.4.1 To examine how vaccine equipment affects infant mortality rate in Lira.

1.4.2 To assess the influence of training of health workers on infant mortality rate in Lira

1.4.3 To find out the extent to which communication affects immunization in Lira

1.5 Research Questions

The study were guided by the following questions

1.5.1 How does immunization equipment affect infant mortality in Lira?

1.5.2 What are the influences of training health workers on infant mortality in Lira?

1.5.3 To what extent does communication affect immunization in Lira?

1.6 Significance of the study

The study yielded data and information that will be useful for planning immunization, services and measures of reducing infant mortality rate by the government, UNICEF, WHO and other supporting organizations involved in children welfare.

It is also hoped that the findings and recommendations would enable local leaders and the local communities to appreciate their roles in mobilization for immunization or vaccination sessions.

The findings are expected to help policy makers in making policies concerning health care services as to reduce the infant mortality rate and increase the life expectancy period.

The gap created by the research will associate further research by other researchers and organizations to improve the knowledge on immunization and infant mortality.

It is also hoped that the findings will provide literature for academicians which will bring out better knowledge and strategies for reducing infant mortality rate from a rural and urban perspective.

Through the study, the local community appreciated the importance of immunization in relation to infant mortality in their community

As well, the findings will benefit the management of Lira Referral hospital and will act as a basis for the provision of better mechanism to solving the escalating problems of immunization in Lira district

1.7 Scope of the study

Geographical scope: the study was focused on immunization and infant mortality in Lira district, Northern Uganda. It covered Lira Regional Referral hospital and Municipality health center. These are places where immunization practices are well covered and yet infant mortality looks high.

Content scope: the study analyzed the influence on infant mortality rate in order to understand how local people benefit from immunization and

investigate factors which influence or affect immunization in Lira district like the equipment and vaccines, training and communication.

1.8 Limitations of the study

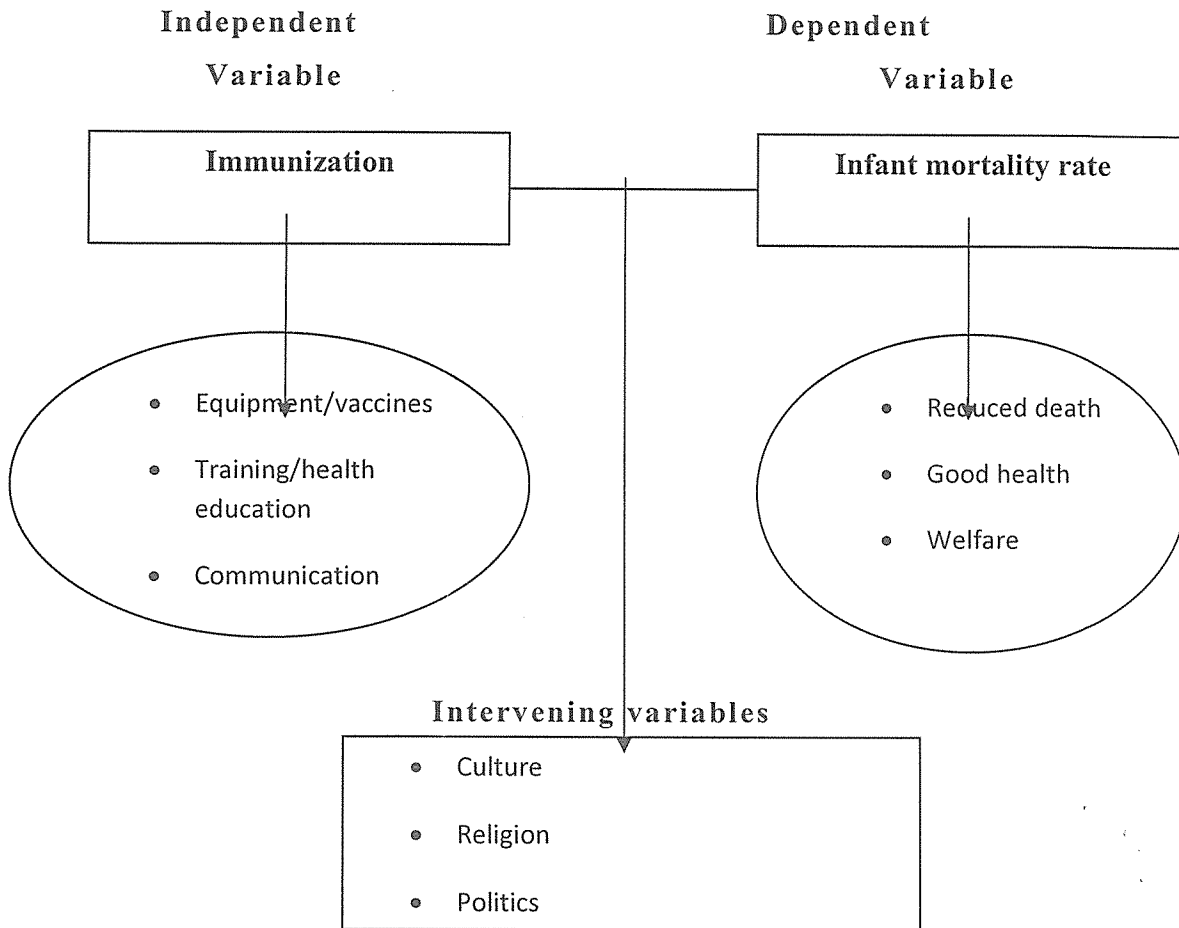
The escalating problem of immunization in Lira district has increased infant mortality rate. The study was expected to face problems of limited time as a result; few samples were covered to represent others. This problem however was addressed by the following the work schedule.

However, because of the conflict in northern Uganda, Lira inclusive, non-governmental organizations have changed the attitude of people because they used to give people some money and other material support when collecting baseline data. The researcher is expecting to face it and it may affect the response rate due to financial implications. The researcher however intends to solve this challenge by focusing on the professional ethics

Language barrier was also discovered have a significant effect on the findings because the researcher was not quite familiar with the local language /dialect although native research assistants were employed.

1.9 Conceptual Framework

It is showing the relationship between immunization and infant mortality rate in Lira



Source: Adopted from Herd theory by Hendrich and modified by the researcher.

The conceptual framework above conceives immunization as independent variable with the dimensions of vaccines, training and communication. It is believed that these significantly affect infant mortality rate, which is taken here as dependent variable. The outcomes of these are reduced death rate and improved welfare.

Furthermore, this explains the relationship between communication activities which if properly utilized can reduce infant mortality rates and vice versa. The theory further proposes that in contagious diseases that

are transmitted from individual to individual, chain of infection are likely to be disrupted when large number of population are immunized or less susceptible to the disease. Vaccination acts as a sort of fire wall in the spread of the disease slowing or preventing further transmission of the disease.

1.10 Operational Definitions of terms

Infant:	Young child from birth to one (1) year
Mortality Rate:	the probability of dying of specific disease or condition in a defined population over a specified period of time.
Coverage rate:	The proportion of a target population who receive a specified service within a given period of time – usually expressed as a percentage
Immunization:	is the process of developing body defense mechanism following the administration of a particular Vaccine or exposure to specific antigen.
Health Problem:	disease or health condition e.g. measles, Tuberculosis (T.B), Diphtheria, Pertusis, Polio, and Diarrhea.
Vaccination:	administration of vaccine, vaccination/immunization is interchangeably used.
Service Problem:	Inadequate resources of various types. E.g. Budget, Staff, facilities operational equipment, drugs and transportation.
Target:	Desired service performance achievement in terms of output, coverage, quality, efficiency of process, etc for example 1000% of all children to be immunized by age of one year.
Prevalence:	the proportion of the population who are affected by the disease or condition point in time or during a specified interval.

Incidence: the probability that health people will develop a disease during a specified period of time hence the number of new cases of a disease or condition in the population over a specified time period.

Indicators: indicators are variables that help to measure changes directly or indirectly. Indicators are used as alarms to let us know that a situation may have a problem. They include a numerator and a denominator, although some measure a number of events and have only a numerator.

Goal: large overall expectation such as social improvement.

Objective: Health improvement and /or problem reduction for example reducing immunizable diseases.

Health Literacy: is a measurable outcome of Health Education interventions (Nut bean 1996).

Health literacy represents the cognitive and social skills which determine the motivation and ability of individual to gain access to understanding and use the information in ways which promote and maintain good health (WHO 1998)

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter focuses on the review of related literature. It intends to throw more light on theoretical and actual literature.

2.1 Theoretical Framework

A healthy start to life is important to every new born baby. The first 28 days, called the neonatal period, is especially critical. It is during this time that fundamental health and feeding practices are established. It is also during this time that the child is at highest risk of death. [<http://odphd.osophs.dhhs.gou>]

Immunization is the process of strengthening the internal system of the body to fight against diseases and other harmful external agents that are capable of affecting the human body. [<http://www.kosmix.com/topic/immunization#1×2215×28u2n>]The internal system of the body is known as the immune system and a weak immune system may result in the body falling prey to the diseases. The immunization programme is run on a large scale in all countries to strengthen the immune system of the children [Ibid]. Influenza, Pneumonia, Hepatitis, Polio, and chick pox are major threats to the life of infants and young children. Immunization and vaccines are provided at the different age periods and dosage of the vaccines is very important to safeguard the immune system of human beings. Immunization is usually done in two stages; Active and passive immunization. Active immunization means the injection of foreign particles that initiates the internal system to produce anti-bodies to fight against the disease [ibid]. The body develops a natural resistance against the first instance of

microbe and next time when the same microbe enters the body, the body recognizes it and does not allow it to affect the body. Passive immunization includes transferring the pre-synthesized elements of the immune system so that the body does not need to produce these elements itself [ibid]

The Herd immunity was originally coined in 1933 by Hendrich. He had studied measles patterns in the US between 1900-1931 [years before any vaccine was invented for measles], he observed that the epidemics of the illness only occurred when less than 68% of children had developed a natural immunity to it [Baltimore 1931]. This was based on the principle that children build their own immunity after suffering with or being exposed to the disease. So the Herd immunity theory was, in fact, about natural disease processes and nothing to do with vaccination. [<http://www.digitaljournal.com/pr/224630#i×22iefrornoc>]

Later on, vaccinologists adopted the phrase and increased the figure from 68% to 95% with no scientific justifications as to why, and then stated that there had to be 95% vaccine coverage to achieve immunity [ibid]

The root of disparity in world healthcare is an imbalance of resources. Infant mortality rate varies tremendously among less developed nations [Frey et al 2000]. Frey and Field enumerate five theories that can explain the variations of infant mortality across less developed countries. This study therefore is pegged on a triangulation of theories as identified below:

The first being modernization theory which supports the belief that industrialization reduces infant mortality through increased economic output [Frey et al 2000]. Economic growth improves education, housing, nutrition, healthcare, sanitation and various public services that reduce infant mortality.

The second dependency/world system theory which argues that dependent countries that extract goods from alpha countries, the dependent country keeps losing while the alpha country keeps winning [ibid]. This theory is grounded on exploiting the poor countries by the core industrialized nations.

One of the most convincing theories is the gender stratification theory. As the female gender is appreciated, so is her role as a mother. Female education is one of the most important ways of reducing infant and child mortality [ibid]. Educated mothers are more likely to seek healthcare for their children; a literate mother is more likely to communicate to healthcare providers and female education as positive effects on the balance of the family relationship regarding child care [ibid].

Another is economic desertification theory in which the idea is that a country's disarray is based upon the disjointed economy and the uneven development. "in fact economic desertification reduces human and increases infant mortality because of economic stagnation and the unequal nature of economic development that accompanies economic disartification. " [Frey et al 2000]

The intention of the researcher is to identify the effects of immunization programs as a positive gesture in curbing down the high infant mortality rate in Lira district. If this is achieved, then a number of problems shall be avoided as postulated theories identified.

2.2 Actual review of related literature

Immunization is a vital public health strategy and it impacts on the burden of acute and chronic diseases. Some vaccine preventable diseases such as Poliomyelitis and diphtheria, once common, are now rare in developed countries [Australian immunization hand book 2008]. In fact

mortality is a global public issue. Historically, IMR has declined throughout 21st century [Mac Dorman MF et al 2001].

Angola in Africa has the highest IMR [180.21 deaths per 1000 live births] The United States has 6.26 deaths per 1000 infants and Singapore has the lowest IMR of 2.31 deaths per 1000 infants. It has been estimated that about four million new born babies die each year, which represents 40% of all deaths of children under the age of five. [<http://www.nichd.nih.gov>].

If Uganda is to retain one course to meet the MDG target of 31 deaths per 1000 live births by 2015, the IMR must reduce by more than 6 years [2009-2015] Uganda's progress report 2007]

2.2.1 Equipment, Vaccines and infant mortality rate

Vaccines according to their nature can only survive under temperature conditions specified by the manufacturer. The cold chain system is therefore important for maintaining the vaccine under the necessary conditions so as to ensure their potency.[UNEPI 2007]. Vaccine potency once lost cannot be regained even if they are later stored at the right temperature.

Equipment used in the expanded programme for immunization [EPI] cold chain system. Different levels of health care system require different equipment for storage and transportation of vaccines and diluents [UNEPI 2007]. The cold chain equipment system includes; cold rooms, freezers, refrigerators, cold boxes, vaccine carriers and ice packs. Managers at all levels should attach high priority to the maintenance of the cold chain equipment [UNEPI 2007]. To maintain cold chain, there must be a responsible skilled person at all levels to; care for the equipment, monitor

vaccine temperatures, estimate and order vaccine and receive and store vaccine.

WHO/UNICEF (2007) states; the cold chain shall be maintained at a temperature of +2 degrees to +8 degrees at all times. In the facility, cold chain equipment and supplies (Fridges, electric, solar and gas) shall be used exclusively for EPI services. The health worker on duty shall maintain the EPI refrigerator at all times and a functional thermometer shall be placed in the middle of the refrigerator at all times and temperatures read in the morning and afternoon of every day (including weekends and public holidays) and the temperature shall be recorded on the temperature chart. Gas/electricity/solar of the refrigerator must be checked every day to ensure that its functioning and four (4) ice packs (minimum depending on the size of the fridge) placed in the freezing chambers of the EPI fridge. (UNEPI standards 2nd edition, June 2005 page 10)

Dr. Sam Sazamba, Director of Health Services (clinical and community), ministry of health states that maintaining standards of vaccines and materials, equipment is very essential for effective and quality implementation of immunization services at all levels.

WHO/UNICEF state that the purpose of cold chain and vaccine monitoring tools is to keep track of the temperature for which vaccines and diluents are exposed during transportation and storage. These tools include; thermometers, temperature monitoring charts, vaccine vial monitoring (VVM) and freeze tag. This ensures potency of vaccines to be administered to children to protect them from vaccine preventable diseases and thus reduce morbidity and mortality.

The Republic of Uganda – MOH (1991) formulated a medical equipment policy and appointed an Advisory committee on medical equipment with the objective of ensuring quality services.

2.2.2 Health Providers/Workers and infant mortality rate

Expected competencies and for EPI managers and service providers necessitate skilled medical personnel [UNEPI 2007]. Four out of five vaccines used currently in Uganda are administered through injection. This places the health provider at the fore front of the immunization service delivery.

Developing countries' effort to meet immunization targets are hampered by poorly functioning health service delivery systems [WHO 2003]. In a country where health services barely exist outside urban areas, governments are often unable to meet the basic health needs of the population.

As part of the implementation of the first health sector strategic plan [HSSP], government of Uganda undertook multiple interventions such as; immunization, integrated management of child illness [IMC], implementation of child days and home based management of fever [HBMF]

Specific to the IMC, the programme entailed the improvement of the skills of the health workers in the immunization, diagnosis and management of child illness [Uganda's progress report 2007]. With regard to child days, government of Uganda designated the months of may and November for the implementation of child days where children are provided with routine immunization, vitamin A supplementation and de worming in addition to other services. However, preliminary findings from Uganda demographic and health survey [2006] indicate that fully

immunized children aged 12-23 months constituted only 46.2% although 93% had been given one of the antigens [Uganda progress report 2007]

Community based health workers lack appropriate communication skills and updated information for behavior change on immunization, to effectively mobilize and sensitize the communities for routine immunization. Thus urgent need to provide updated and appropriate information and skills to the community health workers who reach remote villages to immunize the children and the mothers. Furthermore, there is to be increased information availability and accessibility to mothers in simple languages for easy interpretation and action. (Immunization training manual for community health workers by Uganda Community Based Health Care Association – UCBHCA)

Ministry of health – Annual Health Sector Performance Report (2003) outlines under integrated management of childhood illness the three main complaints namely;

- Improvement of health workers' skills
- Improvement of health systems support
- Improvement of community and household practices

MOH (2002) revitalized the IMCI pre service working group in the IMCI coordination main stream to actively monitor pre service training in implementing schools

2.2.3 Communication and infant mortality rate

Improving the knowledge, attitudes and communication skills of the health workers to ensure that every mother/caretaker is told the vaccine given, disease it prevents, number of doses needed to complete the schedule, possible side effects and their management and return date

[UNEPI, 2007]. The date when the child should be brought back for the next dose should be always written on the child health card and told to the mother/caretaker. On exit, the mother/caretaker should be asked to recite the return date.

In Ethiopia, the coverage has varied from below 10%-80% because of the difficulty in reaching nomadic population. The difficulties apply in war torn areas in developing countries [GAVI, 2000]

Furthermore, reaching the unreached in urban areas where immunization coverage is sometimes lower than the rural areas. And again the basic health services in towns/cities are often stretched beyond their capacity by the vast number of people they are expected to serve [WHO, 1997]

A study by WHO/UNICEF (1990) stated that immunized children get fewer episodes of communicable diseases which are mild in nature and in most case pass over without medical interventions.

In a joint WHO/UNICEF (1990) statement, it was reported that in spite of the intensive move to immunize all children under the age of one year, incidences of vaccine immunizable diseases due to the communication gap.

Margaret F. Myles (1981) Bailey R R (1974) elat, viewed immunization and breastfeeding as the foundation of immunity in all children below five years of age.

UNICEF (1993) states; Breast milk, immunization is the best in all countries. In industrialized countries, immunization has proved to reduce infant hospitalization, protect babies from common childhood illnesses including reducing lower and upper respiratory infections, diarrhea, measles, tuberculosis and nutritional disorders.

Children Health Dialogue 2nd quarter (1997) outlines: Promote immunization for good childhood survival and give children a healthier start in life. Children who are not immunized are at a risk of disability. Communicating to communities is vital in achieving the goal

AMREF (OPL)/UCBHCA – immunization Training Manual states that; Immunization is used as a vehicle to deliver other services like growth monitoring, de-worming and insecticide treated nets for malaria control. Tetanye et al (1991)

When the coverage is good (less than 80% for polio), immunization prevents the out breaks and confers “Herd immunity to the community. In this process, even the unimmunized get protected.

Counseling mothers/caretakers/community and even health workers are reluctant to discuss health issues openly especially HIV, STDs and immunization. The problem will not be solved as long as there is secrecy, stigma and misconceptions surrounding the topic. The community gives a lot of barriers and excuses towards these government programs. All health workers must be equipped with the knowledge and the ability to discuss HIV, ask questions and give appropriate counseling. (MOH/UNICEF integrated management of childhood illness. Module 3)

Communication is the most important part of any health program. Effective communication improves the patients’ knowledge about the disease and knowledge about the health services and benefits

Communication coupled with counseling helps people to set goals, to develop positive beliefs and perceptions and also to increase self efficacy

According to Dr. Issa Makumbi – project manager, UNEPI; Immunization 0-11 months against the eight preventable diseases is the key strategy to child survival since it greatly reduces child mortality and disability thus improving house hold stability and income.

Despite the above achievement from the immunization of children, the community has less value towards immunization resulting into low turn up for immunization and less coverage, therefore increasing mortality and disability in the communities

Christopher Bakiika Sengendo – Executive secretary UCBHCA states that there is a communication strategy for behavior change in immunization and its believed that if followed appropriately, we shall achieve increased demand for immunization by the mothers right in their villages, thus increased coverage and reduced mortality and disability among the children.

The government of Uganda under UNEPI program has intensified strategies to reduce the impact of the 8 immunisable diseases through immunization activities country wide implemented by both government, NGOs and CBOs. The purpose of routine child immunization against the 8 immunizable diseases is to stimulate the child's immunity at an early age/stage before the disease strikes so as to fight against immunizable diseases.

There are 8 diseases immunized against, that contribute significantly to the increase of infant mortality, mortality and disability in Uganda. These include; Tuberculosis, Poliomyelitis, Diphtheria, Whooping cough, Tetanus, Measles, Hepatitis B and Haemophilus influenza b.

In Uganda, the target population for routine immunization are the children below the age of one (0-11 months) and women child bearing age (15 – 45 years). These two categories are targeted because they are the most vulnerable members of society. Infants are vulnerable because they have not developed their own immunity to fight diseases while women of child bearing age are vulnerable because their role in bearing children. (WHO 2008, UNEPI updates)

UNEPI updates (WHO2008) outlines benefits of immunization as;

Being cost-effective – providing a cheaper option as compared to treatment, prevents disease- hence strategic to reduce morbidity and mortality

It prevents disability hence it improves the quality of the people

Improves economic prosperity. People who are not sick, crippled or who do not die early in life will have high productivity.

Improves social harmony. A crippled child is not a source of pride to his/her parents.

Financial savings to the family, community and government. Funds to buy drugs to treat immunizable diseases like measles have led to closure of former isolation wards, which has reduced on hospital congestion.

Confidence building for other primary health care interventions

Norman Scotney (2000) states that: Effective communication is the key to changing people's health behavior, prevention of diseases depends on how effective information is communicated to the target group.

In conclusion, effective implementation of the immunization program will depend on the well equipped health units with a functioning cold chain system. Capacity building for staff in technical areas of the program, intensified health education and sensitization of community members.

Although health care is one of the state care public responsibility, it suffers some setbacks like poor communication, poorly trained, inadequate numbers of health workers, and improper equipment maintenance and inadequate vaccine hence high rate of infant mortality.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter explains the study design which the study will employ. These include; The study design, area of the study, population of the study, sample size selection, research instruments, validity and reliability of the instruments, data collection methods, procedure of data collection, ethical consideration and data management.

3.1 Study Design.

The study was conducted through case study design. It investigated the relationship between immunization and infant mortality rate. This study design was selected because it enabled the researcher study smaller sample in depth analysis by the researcher. Case studies generally entail extensive and holistic analysis.

Quantitative and qualitative research methodologies of data collection were used. Quantitative methodologies established the extent of participation in immunization while qualitative methods analyzed people's knowledge and experience in immunization and infant mortality. Although this design may have a weakness of generalization from the resultant analysis and 'internal sampling', that shortcoming was insignificant compared with its expected contributions to the study.

3.2 Area of study

The study was conducted in Lira Regional Referral Hospital and central division in Lira district in Northern Uganda. Lira borders Kole, Oyam, Dokolo and Alebtong districts. Lira district was selected because it is among one of the districts not doing well in immunization and the infant mortality rate is high.

3.3 Population of the study

Lira district is predominantly occupied by the Lango tribe and most of them are peasants. The population has high infant death rate compared to other areas in Uganda. Therefore, the population is considered appropriate for the study.

3.4 Sample size

The sample consisted of 110 respondents selected from the target population which will comprise of;

Key informants – consultants, doctors, specialists and heads of departments. Nurses, mothers/caretakers and local community.

3.5 Sample selection

Two areas were randomly selected for the study. These consisted of Lira regional referral hospital and municipal health center. Purposive sampling techniques were used for the key informants. Systematic sampling was used for nurses. Simple random sampling was used for mothers/caretakers and local community using interview guides. The questionnaires were used for the mothers/caretakers and local community because it helps in getting so many people in a short time and it is also time saving. Focus group discussion [health service providers] was

selected using purposive sampling because of their potentiality and knowledge on immunization and infant mortality.

Table 1: Showing the selection of respondents

Respondents.	No.	Sample size.
Key informants.	10	10
Nurses.	30	28
Mothers/caretakers.	130	44
Local community.	30	28
Total.	200	110

3.6 Sampling methods

Purposive sampling was used for key informants while systematic sampling was used for nurses and simple random sampling for mothers/caretakers and local community as illustrated in table 2.

Table 2: Shows the sample size and methods of sampling.

Respondents.	Sample size.	Method of sampling.
Key informants.	10	Purposive sampling.
Nurses.	28	Systematic sampling.
Mothers/caretakers.	44	Simple random sampling.
Local community.	28	Simple random sampling.
Total.	110	

3.7 Data collection methods

Interviews – this was done by directly talking to the respondents and asking them questions as well as providing appropriate responses where required.

Questionnaire – this was done by using a set of guiding questions which the researcher shall employ. The same questions were administered to every respondent guided by the researcher and the research assistants.

Focus Group Discussions – this was employed in such a way that the researcher talked to the respondents about their knowledge on immunization.

Observation – this was employed to identify physical/tangible materials/equipment and also review unit records.

Documentation – this were used to collect secondary materials/existing information about the phenomenon under investigation. This shall include HIMS, minutes after the meetings, brochures, trucks, posters and registers.

3.8 Data collection instruments

This research involved obtaining people's opinions and feelings as well as generating on immunization and IMR. It was thus qualitative and quantitative in nature. As a result, it applied both structured and unstructured instruments. These were;

- i. Questionnaire; this was designed for collecting quantitative and qualitative data and extracting information concerning all the aspects of the study. It collected adequate information over a short period of

time. It was suitable because the target population was illiterate. Other information was presented in writing.

- ii. Interview guide; this was designed to generate information on the aspects of the study. This allowed the researcher to obtain information from local people that could not be directly observed or obtained factually over the line of questioning.
- iii. Focus group discussion; this instrument was designed to collect data from a group of people. The researcher took the topic out for discussion and also moderated the discussion. Observation checklist was be used.

Table 3: Showing the collection instruments

Respondents.	Sample.	Selection methods.
Key informants.	10	Interview.
Nurses.	28	Questionnaires.
Mothers/caretakers	44	Questionnaires.
Local community	28	Questionnaires.
Total.	110	

3.9 Validity and reliability of the instruments

The researcher pre-tested the tool for validity and reliability. All these instruments were scrutinized and modernized. The method triangulation, involving the use of different methods of data collection was employed, where multiple sources of data were used. To enhance reliability, internal consistency of the questionnaire and the interview guide was crosschecked.

3.10 Primary sources of data

The study used two methods in collecting data. That is structured and unstructured questionnaire. The structured questionnaires were administered to the local community and the key informants. With these, the researcher obtained data and information on immunization and infant mortality. The other method of data collection was focus group discussions which were conducted in Lira referral hospital. It enriched the study with a broader view of the issues that could not be understood by the use of the structured questionnaire only.

3.10.1 Secondary data

This entailed examining and analyzing of written documents such as reports, unpublished theses and dissertations, news papers and other relevant documents obtained from the authorities and other institutions. This data was obtained from hospital, health centers, district administration offices, libraries, archives and internet.

3.11 Procedure of data collection

The researcher obtained a letter of introduction from Kampala International University and thereafter, she sought permission from the director Lira Regional Hospital and the District Health Officer of Lira. She then organized the execution of her research program

3.12 Data analysis

1. The data collected from record reviews was edited, cleaned, coded and analyzed manually.
2. Some of the coded data was entered and analyzed in EPI info computer package

3. The information was summarized in form of tables, bars and pie charts. Responses from the key informants was recorded in transcripts, data was edited carefully for consistence, incompleteness and missing information. Responses from focus group discussions was recorded on a check list, summarized and entered in a computer

3.13 Data Management

The data and information was entered into SPSS coding sheet, cleaned and edited after coming back from the field. The data and information were categorized into themes consistent with the research objectives. They were tabulated and frequency counts made. Further, statistical analysis was carried out using statistical package for social scientists [SPSS] to determine the percentage measures on data collected. The data was entered into SPSS editor with variable names, level and value level and the data was then summarized in tabular form and followed by the presentation of data in percentage form. Quantitative data was analyzed before, during and after data collection. Open ended questions were thematically analyzed. During qualitative data analysis, the researcher searched for patterns of data in form of recurrent events, and then interpreted them moving from description of empirical data. The researcher finally wrote the research report of the study.

3.14 Ethical Consideration

The researcher abided by the ethical code of conduct, social responsibility, proper collection of data and reporting correctly as well as respect of the dignity of the respondents. The respondents decided to participate basing on their adequate knowledge of the study. They were informed about the procedure of the study, purpose, issue of privacy and confidentiality. All the respondents in research have the right to remain anonymous. They were told that their identities would not be revealed. The participant has the right to keep from the public certain information about themselves.

CHAPTER FOUR

ANALYSIS, DISCUSSION AND PRESENTATION

4.0: Introduction

This chapter presents an analysis of the findings that was coded and presented in terms of tables and graphs objective by objective and statement by statement.

4.1: Background Information

The category of respondents that participated in the study was grouped by gender and age as indicated by table 4 and 5 respectively.

Table 4: Showing the number of respondents by gender

No	Gender	No. of Respondents	Percentages (%)
1	Male	27	24.5
2	Female	83	75.5
	Total	110	100

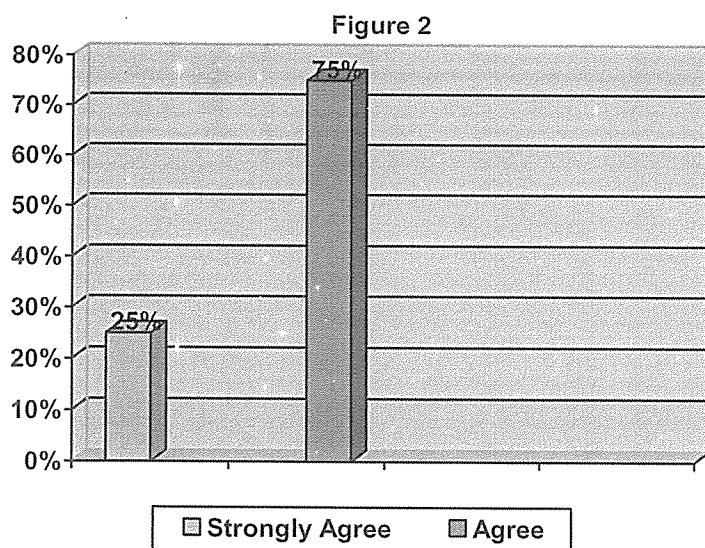
Table 5: Showing the number of respondents by age group

No	Age	No. of Respondents	Percentages (%)
1	20-30	55	50
2	31-40	32	29.1
3	41-50	-	-
4	51 & Above	23	20.9
	Total	110	100

4.2: Vaccines/Equipments and Infant Mortality

1. To Ascertain whether all vaccines and equipments used for immunization are stored according to manufacturer's instructions

Figure 2: Showing respondent's responses ascertaining whether all vaccines and equipments used for immunization are stored according to manufacturer's instructions

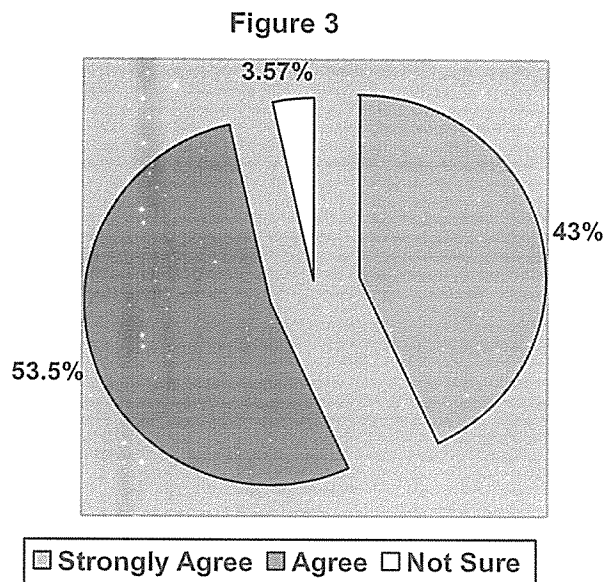


Source: Researcher, September, 2011

Training on vaccines/equipments for immunization seems to have been properly done by relevant stakeholders. According to the respondents (health workers) interviewed, all agreed and confirmed that all the all vaccines and equipments used for immunization were being stored according to manufacturer's instructions. They both strongly agreed and agreed as indicated by figure 2 above.

2. To assess as to whether health workers ensure fridge temperature read between +2 - +8°C

Figure 3: Showing respondents responses assess as to whether health workers ensure fridge temperature read between +2 - +8°C



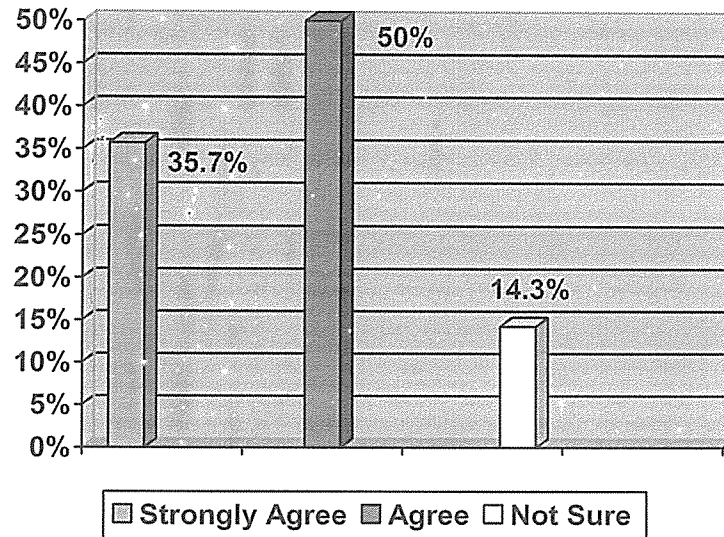
Source: Researcher, September, 2011

The reason as to why some of the vaccines may not be effective is the temperature at which vaccines are stored. The results of the study reveals that health workers (especially cold chain technicians) were ensuring that fridge temperature do not go beyond +8°C or below +2°C. Among the health workers interviewed, 53.5% agreed whereas 43% strongly agreed as shown by figure 3 above.

3. To investigate whether temperature charting should be done two times a day

Figure 4: Showing respondents responses investigating whether temperature charting should be done two times a day

Figure 4



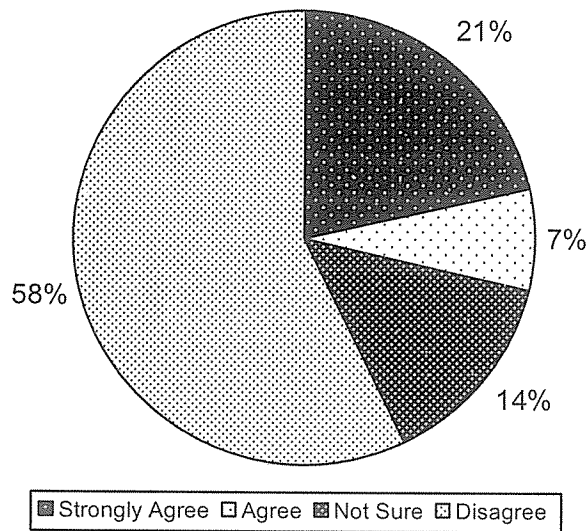
Source: Researcher, September, 2011

The findings of the research indicated that health worker try as much as possible to ensure that temperature charting are done at least twice a day. 35.7% of the respondents interviewed strongly agreed to the statement whereas 50% agreed. Although 85% of the respondents agreed to the statement, 14.3% were not sure. These were possibly the students enrolled to health training within various healths' training institution of learning and were not yet well conversant with the profession.

4. To ascertain whether un used vaccine should be discarded after immunization session

Figure 5: Showing respondents responses ascertaining whether unused vaccine should be discarded after immunization session

Figure 5



Source: Researcher, September, 2011

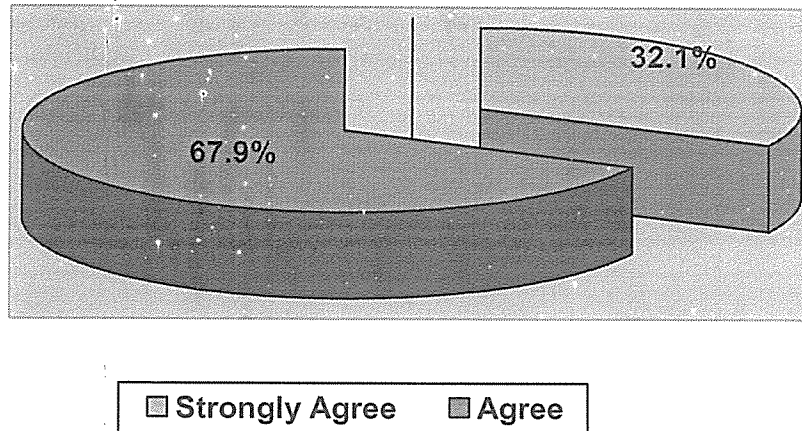
There are factors that determines as to whether unused vaccines should be discarded or not after immunization. This perhaps explains the reasons as to why greater percentage of the respondents had to disagree. Among the respondents interviewed, 57.2% denied discarding immunization after use, 14.3% were unsure whereas 21.4% and 7.1% both accepted that unused immunization vaccine should be discarded after use as indicated by Figure 5 above.

4.3: Training and Infant Mortality

1. To establish as to whether those who manage and handle immunization session must only be trained health workers

Figure 6: Showing respondents responses establishing as to whether those who manage and handle immunization session must only be trained health workers

Figure 6

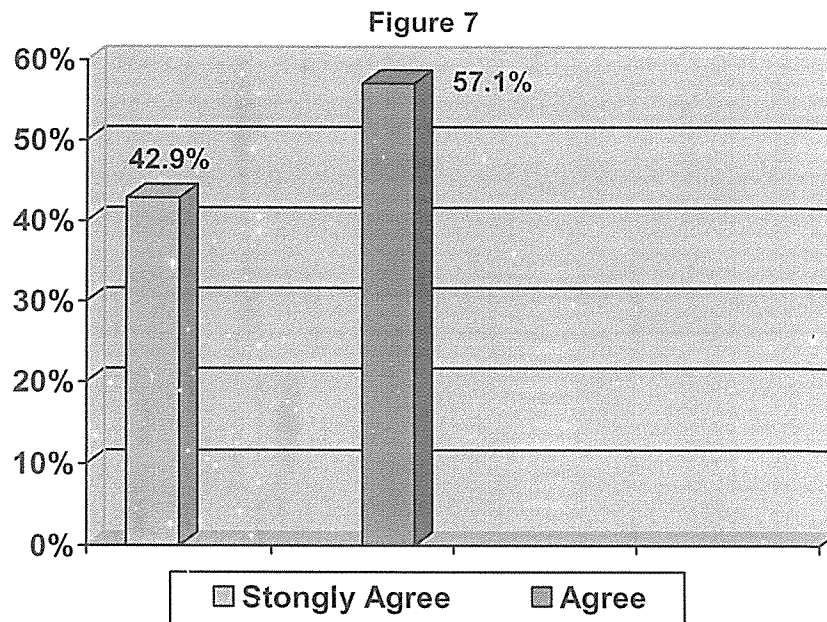


Source: Researcher, September, 2011

The management and handling of immunization vaccines/equipments requires training. The result of the research indicated and confirmed that it should only be a fully trained health worker who should be made to handle and manage immunization session as well as equipments. Out of the respondents interviewed, 32.1% and 67.9% both strongly agreed and agreed respectively to the statement as shown by figure 6 above.

2. To asses as to whether immunization is included in the training curriculum for health workers

Figure 7: Showing respondents responses establishing as to whether immunization is included in the training curriculum for health workers



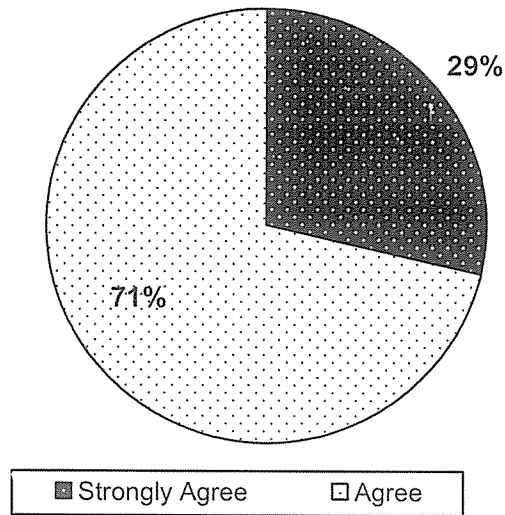
Source: Researcher, September, 2011

Immunization is an effective way used to protect unborn and newly born children against the now eight killer diseases. The respondents interviewed stressed that the inclusion of immunization into the health workers training curriculum is of great importance. This was confirmed by their 100% confirming the statement as indicated by figure 7 above.

3. To ascertain as to whether health units face inadequate numbers of staff

Figure 8: Showing respondent's responses ascertaining as to whether health units face inadequate numbers of staff

Figure 8

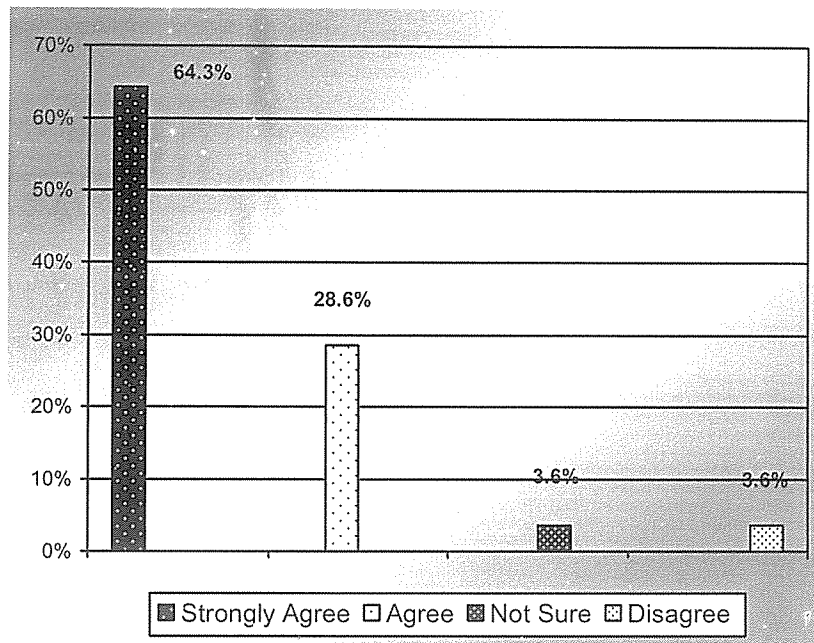


Source: Researcher, September, 2011

The high rate of infant mortality and maternal mortality has been blamed on inadequate staff in health units. This was also confirmed by results of the research. Among the respondents interviewed, 71.4% agreed whereas 28.6% strongly agreed as shown by figure 8 above.

4. To investigate as to whether immunization prevent most diseases

Figure 9: Showing respondents responses establishing as to whether immunization prevent most diseases



Source: Researcher, September, 2011

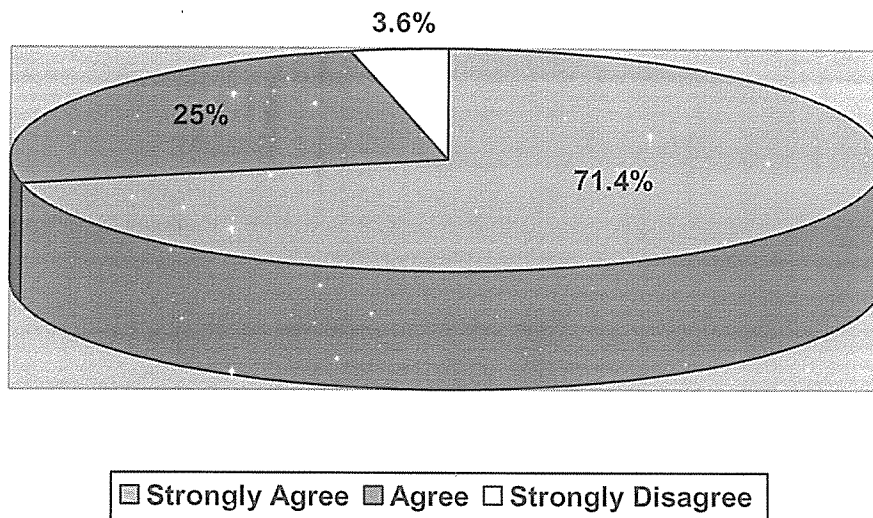
Prevention of disease through immunization is not only known by health workers but also by the caretaker/mother. During the research, results indicated that respondents were aware that immunization controls most of the disease. This was confirmed by 64.3% strongly agreeing, 28.6 agreeing and 3.6 not sure and 3.6% disagreeing as shown by figure 9 above.

4.4 Communication and Infant Mortality

1. To establish as to whether all children complete their vaccine by the age of one year

Figure 10: Showing respondent's responses establishing as to whether all children complete their vaccine by the age of one year

Figure 10

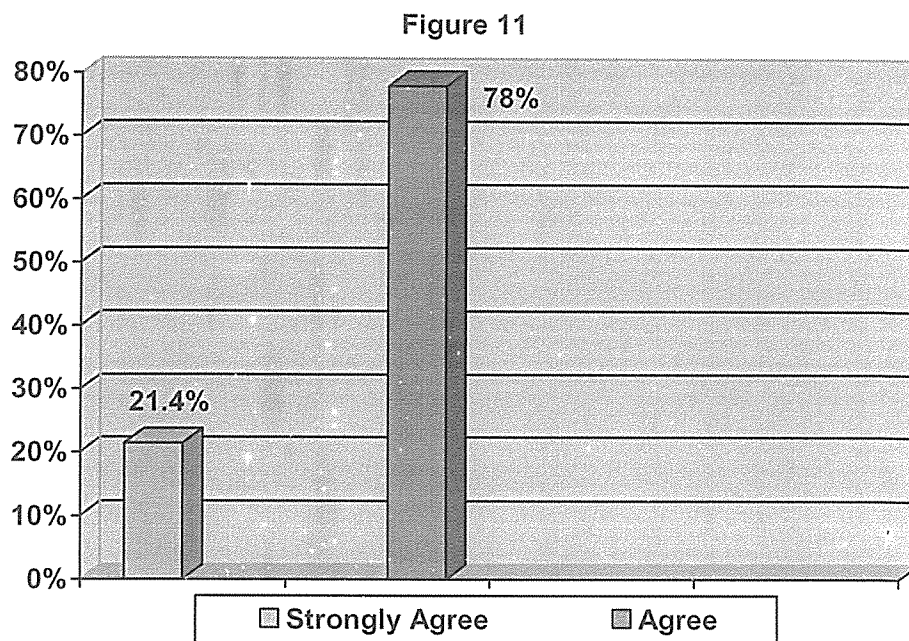


Source: Researcher, September, 2011

Although some parents/caretakers/mothers are still ignorant about immunization, majority always strive hard to ensure that their children complete their vaccine by the age of one year. This was evidenced by 71.4% of respondents agreeing with the statement. Although about 96.4% agreed with the statement, 3.6% totally disagreed confirming that there exists the ignorant class in the community (Please refer to figure 10 above)

2. To examine as to whether all caretakers/mothers must be told the possible side effects of each vaccine.

Figure 11: Showing respondents responses determining as to whether all caretakers/mothers must be told the possible side effects of each vaccine



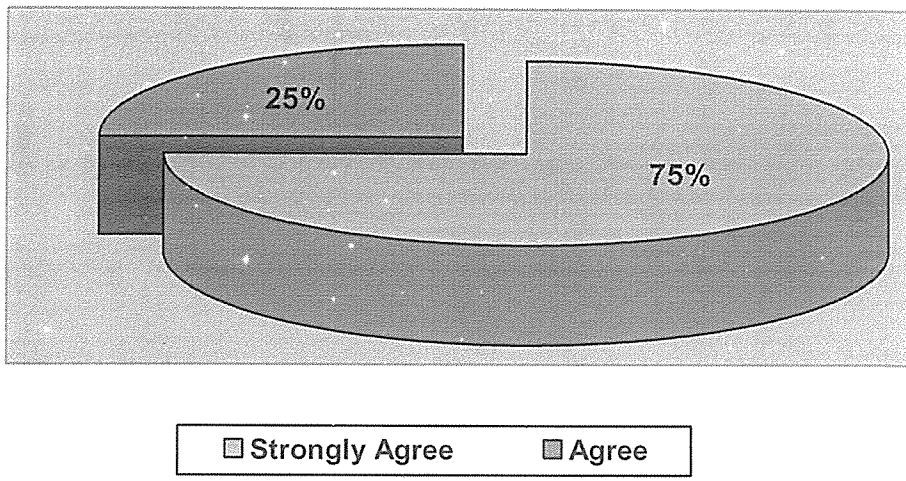
Source: Researcher, September, 2011

Because of fear of low turn up during immunization exercise, some health workers may fear to explain to the caretakers/mothers, the side effects of immunization vaccines. During the research, respondents confirmed that it is right for health workers to communicate to caretakers/mothers the possible effects of each vaccine. (Refer to figure 11 above)

3. To ascertain as to whether the return dates for the next vaccine should be communicated to caretakers/mothers

Figure 12: Showing respondents responses ascertaining as to whether the return dates for the next vaccine should be communicated to caretakers/mothers

Figure 12



Source: Researcher, September, 2011

Certain immunization vaccines (e.g. T.T) don not provide maximum protection if the recommended doze is not completed. The only way to ensure its effectiveness and maximum protection is to complete its doze. During the research, respondents confirmed that it is right for health workers to communicate to caretakers/mothers the next date to receive the next vaccine. (Refer to Figure 13 above)

CHAPTER FIVE

SUMMARY, CONCLUSION & RECOMMENDATION

5.1 Introduction

This chapter presents the summary, conclusion and the recommendation basing on the findings guided by the research objectives.

5.2.0 Conclusion

5.2.1 Caretakers/mothers knowledge on vaccines and immunization

The findings on caretakers/mothers knowledge on vaccines and immunization indicates that greater percentages of caretakers/mothers knows when and at what time should they take back their children to receive the next doze for a particular vaccine.

5.2.2 Keeping of child's health record by caretakers/mothers

Among the respondents interviewed, 91% and confirmed that the T.T (Tetanus) cards and child's health care cards were being kept safe by them respectively as indicated by the table 6 below: -

No	Health Record	No. of Respondents		% of Respondents	
		Yes	No	Yes	No
1	T.T Card	40	4	91	9
2	Health Card	41	3	93	7

5.2.3 Caretakers/mothers/community knowledge on immunization

From the research among caretakers/mothers/community, the following conclusion can be made. That: -

- (i) Immunization protects children from attack from other diseases
- (ii) Most deliveries were and are being made at the health facility, under supervision of a trained health worker (Midwife, TBA etc)

5.2.4 Health Workers knowledge on Immunization

The research findings report confirms that: -

- (i) All vaccines and equipments used for immunization are being stored according to manufacturer's instructions
- (ii) The fridge temperature are being controlled between +2 - +8°C
- (iii) Temperature charting are being done twice a day
- (iv) The Decision whether to discard the vaccine after the session depends on the condition at which its kept
- (v) All caretaker/mothers must be communicated the possible effects of each vaccine
- (vi) Caretakers/mothers should be communicated the next date of return for the next doze and vaccine

5.3 Recommendation

From the findings, the following recommendations can be made: -

- (i) Health workers who manage and handle immunization should be trained
- (ii) More staff should be recruited and trained to handle and manage immunization sessions
- (iii) Immunization training should be incorporated into the health workers training curriculum

- (iv) The caretakers/community should be sensitized on the importance of immunization to reduce ignorance
- (v) Village health teams (VHT) should be trained and made to handle and manage immunization sessions
- (vi) Close and frequent monitoring and supervision of immunization activities be ensured by the District Health Team (DHT)
- (vii) There should be prompt submission of monthly, quarterly and annual report by HMIS for proper planning by government

5.4 Summary

Lira like any other district in Uganda is still being faced with challenges of high infant mortality rate. Many children have died due to preventable diseases like, malaria, malnutrition, meseales, Tetanus, pneumonia, diarrhea, tuberculosis, heamophilus influenza and others.

As part of government efforts to reduce infant mortality, a good number of mothers have started attending antenatal clinics when they are pregnant because of incentives such as mosquito nets, mama kits among others.

The study finding highlights improvements in the immunization services on vaccines and equipments, training and communication of service providers thus:

All vaccines and equipments used for immunization are being stored according to manufacturer's instructions; the fridge temperature are being controlled between +2 - +8°C; Temperature charting are being done twice a day

Health workers/service providers who manage and handle immunization session are being trained either in-service or on job. The District Health Teams (DHT) provides them with updates on immunization.

All caretakers/mothers must be communicated the possible effect of each vaccine and the next date of return for the next dose.

In conclusion, there is basic knowledge on immunization to health workers, caretakers/mothers and the community.

APPENDIX 1

QUESTIONNAIRES

Section A:

Key informants/health provider Questionnaire

Personal data

Please tick in the appropriate box.

1. Gender:

- (a) Male.
- (b) Female.

2. Age category.

- (a) 20 – 30.
- (b) 31 – 40.
- (c) 41 – 50.
- (d) Above 50.

3. Which institution do you work with?

- (a) Hospital – Public.
- (b) Hospital – Private.
- (c) Hospital – Faith based.
- (d) Health center – Public.
- (e) Health center – private.
- (f) Health center – Faith based.
- (g) Health training institute – Public.
- (h) Health training institute – Private.
- (i) Health training institute – Faith based.
- (j) Non Governmental institution involved in clinical service delivery and training of healthcare workers.
- (k) Others (*specify*).....

4. Which department do you work with?

- | | |
|----------------------|----------------------|
| (a) Medicine. | (b) Surgery. |
| (c) Pediatrics. | (d) Maternity. |
| (e) Family Planning. | (f) Training school. |
| (g) Administration. | (h) Pharmacy. |
| (i) X – ray. | (j) Nutrition. |
| (k) T.B | (l) Psychiatry. |

- (m) LICD. (n) OPD.
 (o) ANC
 (p) Others (*specify*).....

5: Which of the following describe your professional cadre?

- (a) Enrolled Nurse.
 (b) Enrolled Midwife.
 (c) Enrolled Comprehensive Nurse.
 (d) Registered Nurse.
 (e) Registered Midwife.
 (f) Registered Comprehensive Nurse.
 (g) Allied health professional

6. Is it important to tell mothers/fathers/caretakers about the vaccines and possible side effects?

- (a) Yes
 (b) No
 (c) At times

7. Have you recently attended any course/seminars/workshops related to immunization services in the past 12 months?

- (a) Yes
 (b) No

8. If yes, list the course/seminar/workshops related to immunization you attended, indicate when and how long these were in the table below:

Course/seminar/workshop	Date/month/year	Duration
(a)		
(b)		
(c)		
(d)		
(e)		
(f)		

9. Have you undertaken a course on pediatrics/child health before?

- (a) Yes
 (b) No

10. If yes, which course/courses did you attend?

(*specify*).....

11. Are you currently involved in training health workers on immunization?

(a) Yes.

(b) No

12. What are the major areas of your training responsibility?

(a) In service training.

(b) Pre service training.

(c) Training of trainers.

Others

(specify).....

13. Do you have access to monitoring/immunization equipment?

(a) Yes

(b) No

14. What challenges do you see in effective implementation of immunization service?

.....
.....
.....
.....
.....

15. Suggest ways of how efficiently and effectively there can be improved implementation of immunization services.

(1).....

(2).....

(3).....

END

Thank you for your participation in completing this questionnaire

Caretakers/Mothers/Community checklist information

At what age are children supposed to get the under listed vaccines?

VACCINES	AT BIRTH	6 WEEKS	10 WEEKS	14 WEEKS	9 MONTHS	1 YEAR	15-45 YEARS
BCG							
OPV							
DPT- HEB+HIB							
MEASLES							
VITAMIN							
T.T	TT1...	TT2.....	TT3.....	TT4.....	TT5.....		

T.T cards available?Yes/No.

Child health care cards available..... Yes/No.

Growth monitoring.....Done/ partially done /not done

N.B: Any recent illness wit in the last 2 months?.....Yes/No

What disease did the child suffer from?

Malaria, Respiratory infection, Diarrhea, TB, Measles, Tetanus, Acute flaccid Paralysis,

Neonatal tetanus

Others (*specify*).....

Place where you received treatment

Hospital.....Health center.....Clinic.....Drug shop

Others (*specify*).....

FACILITY EQUIPMENT/VACCINES STORAGE

Hospital.....

Date.....

General state: (a) well organized.
(b) Poorly organized.

Defrosting: (a) done.
(b) Partially done.
(c) Not done.

Arrangement of vaccines

FEFO: (a) done.
(b) Partially done
(c) Not done

FIFO: (a) done
(b) Partially done
(c) Not done

Temperature: (a) done
(b) Partially done
(c) Not done

Labels: (a) intact
(b) Missing

MDVP observed (a) Yes
(b) Not

VVM color in center box (a) clear
(b) Lighter than the outer circle
(c) Color matches/darker than outer circle

Thermometer: (a) Present
(b) Absent

Ice packs freezed: (a) Yes
(b) No

Current temperature:Degrees centigrade.

Temperature charting for the last three months: (a) done
(b) Partially done
(c) Not done.

Indicate areas of concern if any.....

VACCINE CONTROL BOOK

Batch No: (a) done
(b) Partially done
(c) Not done

Stock in: (a) done
(b) Partially done
(c) Not done

Stock out (a) done
(b) Partially done
(c) Not done

Balances (a) done
 (b) Partially done
 (c) Not done

Other HMIS records (*specify*).....

BACKGROUND INFORMATION

Tick in the appropriate box

Gender: Male ☐ Female ☐

Age – bracket:

15-20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ Above 50 ☐

VACCINES / EQUIPMENTS AND INFANT MORTALITY

Responses

Strongly agree (SA) Not sure (NS) Agree (A) Disagree (DA)
Strongly disagree (SD)

Statement	SA	A	NS	DA	SD
All vaccines and equipments used for immunization are stored according to manufactures instructions					
FEFO/FIFO rules is important					
Defrosting is done whenever necessary					
Fridge temperature read +2-+8					
Labels must be intact					
VVM must be checked for colour changes					
Temperature charting should be done two times a day					
HMIS records are important					
Un used vaccines after immunization session should be discarded					

TRAINING AND INFANT MORTALITY

State your professional centre

☐ NA ☐ N ☐ E ☐ ERN ☐ RM ☐ CN ☐
☐ CO ☐ O ☐s Specify....

Statement	SA	A	NS	DA	SD
People who manage and handle immunization session must be trained					
Monitoring and record in immunization services is a H/W responsibility					
Growth monitoring is part of immunization services					

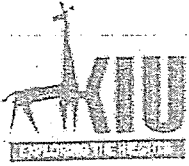
COMMUNICATION AND INFANT MORTALITY

Statement	SA	A	NS	DA	SD
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By one year of age, a child should have completed immunization					
BCG is given at birth or first contact below 5 years					
OPV is given four (4) times in the month					
DPT – HEB+HIB is given three (3) doses on the upper thigh					
Measles is given at 9 months					
T.T is given to women of child bearing age 15-49 years five (5) doses					
Vitamin A and deworming tabs is given to children at every immunization sessions					
Children's weight is taken at all immunization visits					
All caretakers/mothers must be told the possible side effects of each vaccine					
Return dates for next vaccines should be communicated to caretakers/mothers.					

APPENDIX 2

INTRODUCTORY LETTER



Kampala International University
Institute of Open and Distance Learning
P O Box 20000 Kansanga, Kampala, Uganda
256 41 373 498/ 256 41 373 889 (Ug) 254 20246275 (Ke)
e-mail: efagbamiye@yahoo.com Tel: 0753142725

Office of the Director

LIRA R-R HOSPITAL

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: INTRODUCTION LETTER FOR MS/MRS/MR. MANANA JOYCE KUSOLO

REG. # BGE/20562/72/IDU-LA

The above named is our student in the Institute of Open and Distance Learning (IODL), pursuing a ~~Diploma~~/Bachelors degree in Education.

He/she wishes to carry out a research in your Organization on:


IMMUNIZATION AND INFANT MORTALITY RATE IN

LIRA DISTRICT

The research is a requirement for the Award of a ~~Diploma~~/Bachelors degree in Education.

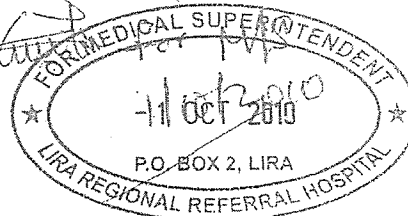
Any assistance accorded to him/her regarding research will be highly appreciated.

Yours Faithfully,


MUHWEZI JOSEPH
HEAD IN SERVICE

Inst. of Open and Distance Learning
Kampala, Uganda

*Permission granted
Please give her all the
necessary support*



- 10 Baltimore [1993] “monthly estimate of the child population” susceptible to measles, 1900-1931: A journal of epidemiology, Oxford University press, London.
- 11 WHO/UNICEF [2007] United Nations pre qualified vaccines.
- 12 WHO – [2007] a pocket hand book of HOSPITAL CARE FOR CHILDREN; Guidelines for the management of common illnesses with limited resources.
- 13 Rotavirus. Available Programme. Available at <http://www.rotavirusvaccine.org/>
- 14 Streptococcus pneumonia disease. Available at http://www.cdc/ncidod/dbmd/diseaseinfo/streppneum_t.htm.