

**FACTORS INFLUENCING THE COMPLETION OF IMMUNISATION SCHEDULE
AMONG CHILDREN UNDER 2 YEARS AT NAGONGERA
HEALTH CENTRE IV, TORORO DISTRICT**

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DECLARATION

I, **Bbe Jonathan**, hereby declare that this work is my original work and has never been submitted before any School, or institution of learning for any academic award of any qualification. Theories, ideas and materials obtained from existing literature and other sources have been dully acknowledged and referenced.

Signed.....

Date.....

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APPROVAL

This research report titled, “Factors Influencing the Completion of Immunization Schedule of Children under 2 Years of Age Attending Nagongera Health Centre IV, Tororo district,” being submitted to International Health Sciences University was done under my supervision.

Signature..... Date.....

DR. ODDA JOHN

SUPERVISOR

DEDICATION

I dedicate this dissertation to my wife, Ms. Kuteesa Olivia for her motherly and tender loving care and support towards the whole process of my study. May God richly bless you mummie.

ACKNOWLEDGEMENT

First and foremost, I thank the Almighty God for granting me the gift of life and strength to enable me accomplish the report.

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OPERATIONAL DEFINITIONS

Immunization	: This is the process of protecting a person from a specific disease by introducing a specific type of vaccine to stimulate the body's immunity.
Knowledge	: Is the understanding of something that a person acquires through experience or training.
Attitude	: Feeling towards something. It can be positive or negative
Vaccination	: Is a means of producing immunity to immunizable diseases by using a vaccine
Vaccine	: A special preparation of antigenic substances that can be used to stimulate the development of anti-bodies to confer immunity against specific diseases.
Antigen	: Any substance that may be specifically bound by antibody molecule.
Mortality	: Is the incidence of death in the population
Morbidity	: Is the state of being ill or having a disease

LIST OF ACRONYMS

AEFI	-	Adverse Effects Following Immunization
BCG	-	Bacilli Calmette Guerin
BNS	-	Bachelor of Nursing Sciences
CAO	-	Chief Administrative Officer
CDC	-	Centers for Disease Control
DHO	-	District Health Officer
DISH	-	Delivery of Improved Services for Health
DPT	-	Diphtheria, Pertussis, Tetanus
EMTCT	-	Elimination of Mother – To – Child Transmission of HIV.
EPI	-	Expanded Program on Immunization
HC	-	Health Centre
HCIV	-	Health Centre four
HUMC	-	Health Unit Management Committee
IHSU	-	International Health Sciences University.
LCV	-	Local Council Five
MDG	-	Millennium Development Goals
MFPED	-	Ministry of Finance Planning and Economic Development
MOH	-	Ministry of Health
MOHDR	-	Ministry of Health and Demographic Report
NDP	-	National Development Plan
NPI	-	National Program on Immunization
OPD	-	Outpatient department
OPV	-	Oral Polio Vaccine
PCV	-	Pneumococcal Conjugated Vaccine
Polio	-	Poliomyelitis
RCT	-	Routine Counseling and Testing
TB	-	Tuberculosis
UBOS	-	Uganda Bureau of Statistics
UDHS	-	Uganda Demographics and Health Survey
UNEPI	-	Uganda Nation Expanded Program on Immunization
UNICEF	-	United Nations International Children’s Emergency Fund
WHO	-	World Health Organization

ABSTRACT

A study was carried out at Nagongera Health Center IV, Tororo district to determine the factors influencing the completion of immunization schedule among children under 2 years of age. A cross sectional and descriptive design was employed and 100 respondents were selected to the study using a none probability, consecutive enrollment method. Data was collected using researcher administered questionnaires.

The study found out that the completion rate for immunization was only 40%.

There were various caretaker related factors influencing the completion of immunization schedule of children under 2 years of age. For instance, all respondents 100 (100%) had at least a fear concerning the vaccines given to their children. These fears included 30 (30%) who stated vaccines being expired, 27 (27%) feared that the vaccines could make their children lame, 20 (20%) feared that vaccines had many side effects, 13 (13%) said the vaccines would make the children barren while 10 (10%) said that vaccines can kill their children. Furthermore, 40 (63.6%) said the funds for transport were sometimes readily available, 60 (60%) did not know the vaccination schedule of their children under 2 years, respondents 67 (67%) had bad attitudes towards childhood immunization.

Respondents also faced various health system factors influencing the completion of immunization schedule of children under 2 years of age and most 83 (83%) did not have good access to various health facilities offering immunization services and 83 (83%) did not have adequate coverage of immunization services in their community which was not surprising that most 60 (60%) did not have all their children immunized.

The study concluded that mothers of children less than 2 years faced various caretaker related and health system as well as a few health worker factors which influenced the completion of immunization schedule of children under 2 year. The key recommendations included improved health education, provision and availability of health services through bringing the services closer to the mothers.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background to the study, problem statement, purpose of the study, specific objectives, research questions, justification of the study as well as the conceptual framework.

1.1 Background

Immunization is defined as the process of injecting or vaccinating an individual to receive active protection against a particular illness. Immunization coverage is defined as the provision and utilization of immunization services (Racine and Joyce, 2013). Child immunization is one of the most cost effective public health interventions for reducing child morbidity and mortality, and attaining high levels of coverage with potent vaccines administered at the appropriate ages (Haddad et al., 2010).

Major childhood diseases in Uganda include measles, tuberculosis, poliomyelitis, pertussis (whooping cough), diphtheria, tetanus, hepatitis B, Haemophilus influenzae and neonatal tetanus. However, some 48% of children under the age of five were un-immunized or under-immunized - meaning they started immunization but did not complete the schedule (UDHS, 2011).

Globally, coverage of some childhood immunizable diseases such as measles stood at 77% and the coverage in low income/least developed countries was particularly very low and currently estimated at between 22% – 37% (Henderson et al., 2014).

In 2009, 28 million infants worldwide had not been fully vaccinated, with 75% of these being in least developed/developing countries (Callreus, 2010). Furthermore, globally, immunization coverage was lowest in poor countries and among poor populations such as Africa and Asia (Gmariam, 2012).

Immunization rates for children under 2 years in Africa are steadily behind any other region in the world and it was estimated to be between 37% - 76% (Goldstein et al, 2010). In Africa, immunization coverage was negatively influenced by many factors including inadequate provision of vaccines, location of services, poor infrastructure, negative perceptions towards vaccines among other factors (Berhane, 2013).

Similarly, in East African countries such as Kenya and Tanzania, immunization coverage continues to average between 41% - 68% for most of the childhood immunizable diseases (Senessie et al., 2011).

Between 2000 and 2010, the percentage of children who were fully immunized increased from 56% to 85% under Uganda's Expanded Program on Immunization (EPI). However, it had subsequently declined to below 80% over the 2007 – 2011 period (UDHS, 2011). Haemophilus Influenza type B, (Hib) is the leading cause of childhood meningitis in Uganda with a case fatality of up to 30 – 40% (UNICEF, 2016). Children who survive Hib meningitis face permanent disability including: brain damage, paralysis of the legs, hearing loss and mental retardation (UDHS, 2011).

Whereas the Uganda MoH is committed to achieving 90% immunization coverage of all Ugandan children below 1 year, the trend in most parts of Uganda like Nagongera in Tororo district, Eastern Uganda remains low (MoH, 2016). This was why there was a need to carry out a study to determine the factors influencing the completion of immunization schedule in Nagongera Health Centre IV.

1.2 Statement of the problem

It is the right of every child to be immunized against the childhood immunizable diseases and it's the duty of every parent/caretaker to ensure this (Nankabirwa et al., 2010). However, according to Ministry of Health (MoH, 2016), the coverage of immunization for childhood immunizable diseases remains low globally, but especially felt in least developed countries such as Uganda and mostly in rural areas and villages.

The Government of Uganda through the ministry of Health is committed to achieving 90% immunization coverage for all children under one year under the Uganda National Expanded Program on Immunization (UNEPI) by 2025 (National Development Plan (NDP), 2010-2015).

Despite the universal childhood immunization program, coverage rates are still low and they decline for subsequent doses. According to Uganda Demographics and Health Survey (UDHS) 2016, 96% of children received the BCG vaccination, 95%, dose of polio 0, 95% received the first dose of DPT- Hep B-Hib, and 87% the first dose of the PCV and 80% of children received a measles vaccination. In Nagongera health center IV, the trend continues

to deteriorate for BCG, DPT-Hep B –Hib and Measles at 70%, 64% and 60% (HMIS 105) 2017, respectively which are far below the targeted average percentage of 90%. These alarming issues raise pertinent questions like: Why the failure to attain target by Nagongera Health Center IV and which factors are influencing the completion of immunization in children under 2 years. Unfortunately, there is hardly any documented literature in Nagongera, Tororo which answer the pertinent questions. There is, therefore, an urgent need to determine factors influencing the rate of completion of immunization schedule of children less than 2 years of age as of 2018, hence this report. It is hoped that this study will shed more light on the factors influencing immunization completion rate in children below 2 years and addressing them by relevant stake holders will improve completion rates and hence lead to improved health status among children under 2 years.

1.3 General objectives

To determine factors influencing the completion of immunization schedule among children under 2 years at Nagongera Health Centre IV, Tororo district.

1.4 Specific objectives

- 1) To determine the completion rate of immunization among caretakers of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018.
- 2) To determine the caretaker related factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018.
- 3) To identify the health worker factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018.
- 4) To establish the health system factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018.

1.5 Research questions

- 1) What is the rate of completion of immunization among care takers of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018?
- 2) What are caretaker related factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018?
- 3) What are health worker factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018?
- 4) What are health systems factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District between May 2018 to June 2018?

1.6 Justification of the study

Despite programs such as National Immunization Days and improved sensitization about immunization, there is still low coverage of completion of immunization schedule in Nagongera health centre IV. This scenario necessitates that the factors that are responsible for failure to meet the set target are determined so as to be addressed. Unfortunately there is hardly any published data regarding factors influencing the completion of immunization schedule in Nagongera Health Centre IV in Tororo district.

1.7 Significance of the study

This study is intended to identify and highlight the factors affecting completion of immunization among children under 2 years. This will greatly assist the Nursing profession, especially health workers at Nagongera Health Centre IV by coming up with more appropriate sensitization and health education of caretakers on the importance of ensuring that all children under 2 years are fully immunized.

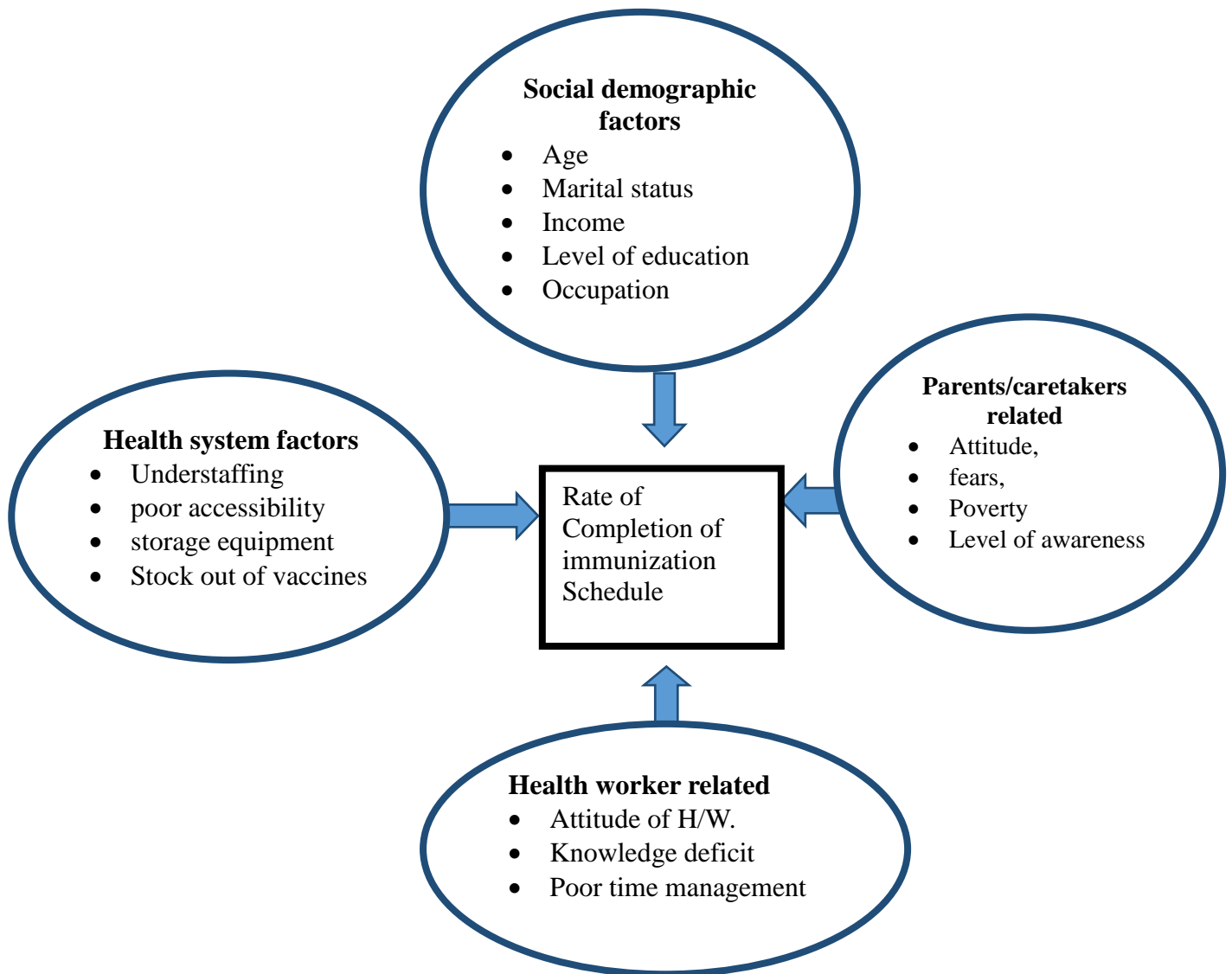
The study results are also intended to assist policy makers and planners at the district level by identifying and isolating potential areas which still require more funding and development in ensuring improvements in immunization coverage and immunization rates for children under 2 years in Nagongera Health Centre IV.

The study may also assist the community as they will receive more support and appropriate sensitization and health education from health workers about the importance of completing immunization. This will hopefully make them bold to be able to do away with out breaks of diseases like Poliomyelitis and Measles hence reducing their expenditure on treatment and giving them enough time to engage into useful productive work.

The results from this study will provide a valuable reference point for future studies on this issue and also contribute to the available research material about the factors influencing the completion of immunization schedule of children less than 2 years of age.

Furthermore the study will also lead to the requirement of award of bachelor's degree in nursing science by International Health Science University (IHSU).

1.8 Conceptual Frame Work



Source: Modified by the researcher

Figure 1: A conceptual framework showing the relationship between the health system factors, caretaker related factor as well as social demographic factors and the rate of completion of immunization.

The independent variables include:

1. Socio-economic/demographic factors e.g. Age, income, religion, marital status.
2. Health system related factors e.g. Stock out of vaccines, under staffing, government policy, poor infrastructure, inadequate storage equipment etc.
3. Parents related factors e.g. poverty, knowledge deficit, negative attitude
4. Health worker related factors e.g. knowledge deficit, negative attitude, lack of motivation.

The dependent variable is rate of completion of immunization schedule.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter describes the literature review cited by other scholars about the factors influencing the completion of immunization schedule of children less than 2 years of age. The literature is presented according to the objectives of the study and it commences with the rate of completion of immunization among care takers of children under 2 years of age.

2.2 Rate of completion of immunization among care takers of children under 2 years of age

Rate of completion, in this study refers to the percentage of children less than 2 years of age who completed their immunization schedule and the following literature is presented in line with this objective.

According to a case control study about vaccine preventable diseases and vaccination coverage in Australia, Aboriginal and Torres Strait Islander who said that the rate of completion of immunization among caretakers of children under 2 years was 45% which can be described as low (Menzies et al., 2008)

Furthermore, results showed that of the total 37,683 notified cases reported to Net EPI, 4,993 (13.3%) were hospitalized with an immunizable diseases like Measles, Diptheria with 17% (830/4,993) of these reported as Aboriginal and Torres Strait Islander and 83% (4,163/4,993) as other. Twenty per cent (830/4,063) of all Aboriginal and Torres Strait Islander, 12.4% (4,163/33,620) were hospitalized.

A cross sectional study by Daniel et al., (2009) in Thailand about disparities in preschool immunization coverage associated with maternal age and 19–35 month-old children reported that the rate of completion of immunization among caretakers of children under 2 years of age was 40% (Daniel and colleagues, (2009).

A cross sectional study about hepatitis B vaccination in infancy in the Gambia: protection against carriage at 9 years of age reported that the rate of completion of immunization among caretakers of children under 2 years was low as 45% which was attributed to poor coverage of immunization services as well as frequent stock outs of vaccines (Viviani et al., 2009).

Von Gottberg et al, (2009) document in their cross sectional study about respiratory and meningial disease surveillance in South Africa: impact of conjugate Haemophilus influenzae type b (Hib) vaccine introduction in South Africa that the rate of completion of immunization among caretakers of children under 2 years was low at an average of 56%. Furthermore, the enhanced surveillance initiated in 2003, identified human immunodeficiency virus (HIV)-infection and incomplete vaccination as contributing factors for Hib transmission. The total number of laboratory-confirmed cases of *H. influenzae* remained unchanged because non-type b disease was being increasingly reported to the surveillance system concomitant with system enhancements (Von Gottberb et al., 2009).

Similar low rates of completion of immunization among caretakers of children under 2 years is reported in a cross sectional survey about access to and utilization of health services for the poor in Uganda revealed a completion rate of 49.8%. Furthermore, the barriers to access health care services arise from both the service providers and the consumers. Distance to service points, perceived quality of care and availability of drugs are key determinants of utilization. Other barriers are perceived lack of skilled staff in public facilities, late referrals, health worker attitude, costs of care and lack of knowledge (Kiwanuka et al., 2008)

2.3 Caretaker related factors influencing completion of immunization schedule

The caretaker related factors in this study refer to the individual factors of the respondents and these may include attitudes, negligence and poverty.

Callreus in 2010 mentioned in his cross sectional study in Mexico about perceptions of vaccine safety in a global context that a very prevalent socio-economic factor influencing the completion of immunization schedule of children under 2 years is the inability of health workers to adequately address negative attitudes of mothers and caregivers about the safety and efficacy of the vaccines used. Furthermore, it was revealed that most mothers (62%) developed negative attitudes towards routine immunization of their children for various reasons including hidden health consequences of the vaccines. Given the serious consequences of low vaccine coverage, their concerns need to be taken seriously and responded to appropriately to sustain accomplishments of immunization programmes. For parental decisions related to childhood vaccinations, it seems reasonable to assume that the cultural context of the immunization programme is of importance.

A community based randomized-controlled trial in Karachi, Pakistan by Owais and colleagues (2011) which sought to find out if improving maternal knowledge of vaccines impacted infant immunization rates showed that only 59-73% of children 12-23 months of age are fully immunized (Owais et al., 2011). In this study, 366 mother-infant pairs, with infants aged ≤ 6 weeks, were enrolled and randomized into either the intervention or control arm between August - November 2008. Multivariable analysis revealed that one of the caretaker factors influencing the completion of immunization schedule of children under 2 years is having knowledge deficit regarding routine immunization of children. Their study revealed that knowledge deficit on immunizable diseases and immunization schedules is a key factor influencing the completion of immunization schedule (Owais et al., 2011).

A study by Haynes et al., (2014) revealed in their study which used probabilistic record linkage and aimed to determine the predictors of incomplete immunization in children, immunization coverage was 92.8% at 12 months and 89.2% at 24 months. After multivariate analysis, the following maternal factors were significant predictors of incomplete immunization in children aged 12 months. It was revealed that among some Asians in the U.K. were at higher risk of the rubella because they did not seek or accept immunization due to a lack of information about the vaccines and immunizable diseases (Haynes et al., 2014). Furthermore, within this group, the symptoms of some diseases were often confused with other diseases which were perceived as not severe or a threat to health and as they used herbal medications instead of getting the children immunized (Haynes et al., 2014).

Boerma et al., (2014) documented in a cross sectional survey about the vaccination gap as well as equity and trends in coverage of maternal, newborn, and child health services and data showed that one of the caretaker related factors influencing the completion of immunization schedule of children under 2 years is knowledge deficit about the outcomes following immunization such as over crying and getting temperature which made parents fearful and fail to complete immunization for their children under 2 years (Boerma et al., 2014).

Danielson and colleagues in a 2009 convenience study about how improved immunization practices reduce childhood hepatitis B infection in Tonga where children aged 6–59 months who were admitted to Vaiola Hospital, Nuku'alofa, Tonga, and had blood collected for clinical investigation, were tested for HBsAg with a rapid serological test (Abbott

Determine[®]). A total of 449 children were recruited and interviewed and 375 (84%) were tested for HBsAg. Findings showed that important socio-economic factors influencing the completion of immunization schedule of children under 2 years included lack of support from partner as well as low level of educational attainment of the household head among others.

However, Odusanya and colleagues in 2010 reveal in a cross section survey which included the use of interviewer-administered questionnaire to assess knowledge of mothers of children aged 12-23 months and vaccination coverage. Survey participants were selected following the World Health Organization's (WHO) immunization coverage cluster survey design. Vaccination coverage was assessed by vaccination card and maternal history (Odusanya et al., 2010). Three hundred and thirty-nine mothers and 339 children (each mother had one eligible child) were included in the survey. Results showed that one of the most important socio-economic factors influencing the completion of immunization schedule of children under 2 years is the prevalent negative attitudes of mothers of children under 5 years regarding routine immunization. This was found to be most predominant among Moslem communities as they strongly believed that the vaccines used had other hidden health effects and could make their children barren (Odusanya et al., 2010).

A cohort study was carried out in Botswana about incomplete immunization uptake in infancy and a cohort of 18,819 infants born between September 2000 and January 2002 and mothers most frequently cited medical reasons (45%) for partial immunization (n=697), but cultural beliefs or negative attitudes (47%) for no immunization (n=228). An understanding of maternal reasons for incomplete immunization status may assist in identifying appropriate interventions to maximize uptake. Furthermore, some of the socio-economic factors influencing the completion of immunization schedule of children under 2 years include birth order and size of family. It was further mentioned that the higher the number of offspring in a family, the greater the probability that the youngest will not be vaccinated (Samad et al, 2013).

According to a cross sectional study in Namibia about immunization coverage by age 2 that socio-economic status of the family contributes to high dropout rate. This affects availability of, or access to, health care by creating conflicting priorities for working families that must meet daily survival needs. Families that live in deprived socio-economic (SES) areas may

have less access to, and are less likely to pursue immunization (Brown-Ogrodnick et al., 2013).

In a community-based prospective cohort study conducted by Nankabirwa and colleagues in 2010 between January 2006 and May 2008 in which 696 pregnant women were followed up to 24 weeks post-partum. Information was collected on the mothers' education and vaccination status of the infants. Results showed that maternal education is associated with vaccination status of infants less than 6 months in Eastern Uganda that some of the socio-economic factors influencing the completion of immunization schedule of children under 2 years include level of education of the mothers as well as the size of the family. It was revealed that as a family increases in number, successive children are less likely to be vaccinated as the increasing family responsibilities demand more and more time and detract from health care decisions. Single parent families are especially at risk since the increased demands of family support and maintenance may impede health care decisions for the single parent who has no partner with whom to share responsibility (Nankabirwa et al., 2010).

2.4 Health worker factors influencing the completion of immunization schedule of children under 2 years

The health worker factors influencing the completion of immunization schedule of children under 2 years in this case refer to issues such as inexperience, attitude towards caretakers among others.

In Burkina Faso, a descriptive, cross sectional survey about heterogeneity in the validity of administrative-based estimates of immunization coverage across health districts revealed one of the hindrances to the completion of immunization schedule of children under 2 years is the failure of health workers to sensitize mothers/caregivers about the return date for immunization (Haddad et al., 2010). Hence there is need for health workers to regularly sensitize and health educates mothers/caregivers about the immunization schedule.

Another study by Danielson et al., 2009) about how improved immunization practices reduce childhood hepatitis B infection in Tonga where children aged 6–59 months who were admitted to Vaiola Hospital, Nuku'alofa, Tonga reported that one of the important health worker factors influencing the completion of immunization schedule of children under 2 years is the lack of sensitization and community outreaches about immunization days. This

highlighted the need for regular community outreaches about immunization days (Danielson et al., 2009).

In another case control study done in Rio de Janeiro, Brazil by Gust and colleagues (2012) about under immunization among children as well as the effects of vaccine safety concern on immunization status, vaccination status was assessed. Case subjects were under immunized with respect to $>$ or $=2$ of 3 vaccines (diphtheria-tetanus-pertussis or diphtheria-tetanus-a cellular pertussis, hepatitis B, or measles-containing vaccines), and control subjects were fully immunized. With control for demographic and medical care factors, case subjects were more likely than control subjects to not want a new infant to receive all shots (OR: 3.8; 95% CI: 1.5-9.8), to score vaccines as unsafe or somewhat safe. Among case subjects, 14.8% of under immunization was attributable to parental attitudes, beliefs, and behaviors.

Furthermore, health worker factors influencing the completion of immunization schedule of children under 2 years include negative attitude of health workers towards mothers and poor customer care skills. Hence, health workers need to update their customer care skills in an effort to improve uptake of immunization (Gust et al., 2012).

An immunization survey was carried out in Kissy Mess-Mess in the Greater Freetown area in 1998/99 using a two-stage sampling method to assess delays in childhood immunization based on immunization cards and verbal history we collected data on immunization for tuberculosis, diphtheria, tetanus, pertussis, polio, and measles by age group (0-8/9-11/12-23/24-35 months). It was noted that in a conflict area in Sierra Leone during the civil war that apart from the insecurity, other key health worker factors influencing the completion of immunization schedule of children under 2 years include provision of poor quality health care services as well as poor handling of clients who had come for immunization (Senessie et al., 2011). Hence this highlights the need for health workers to improve handling of clients as well as customer care skills and the overall quality of health care services provided.

In East Africa, Ndiritu and colleagues in 2010 revealed in a cross sectional study about immunization coverage and risk factors for failure to immunize within the Expanded Programme on Immunization in Kenya after introduction of new *Haemophilus influenzae* type b and hepatitis b virus antigens that negative attitude of health workers towards mothers was

one of the factors influencing the completion of immunization schedule of children under 2 years.

Furthermore, another cross sectional study by Bbaale in 2013 about the factors influencing childhood immunization in Uganda reported that some of the health worker factors influencing the completion of immunization schedule of children under 2 years include failure to provide immunization cards to mothers. It was noted that having an immunization plan in the form of an immunization card was decisively important in our analysis. Mothers having a child immunization card can easily follow the immunization schedule and be able to attain timely immunization for their children. Previous researchers found the importance of having an immunization plan (Bbaale, 2013) in Uganda.

2.5 Health system factors influencing the completion of immunization schedule of children under 2 years

The health system factors in this case refer to issues such as poor storage equipments, stock out of vaccines, remote location of health facilities, under staffing of health workers among others.

A descriptive, cross-sectional survey was conducted in October 2007 through to January 2008, throughout public- and private-sector health care centers in the town of Libreville by Ategbro and colleagues in 2010 about immunization coverage of children aged 0 to 5 years in lagos (Nigeria) that among the mothers of children under 5 years interviewed, findings showed that one of the most important health system factors influencing the completion of immunization schedule of children under 2 years include poor coverage of immunization services. Adenike OB, et al., (2017).

This highlights the need for concerned authorities to come up with measures to improve the coverage and availability of immunization services.

Bondy et al., 2009) in their cross sectional study about identifying the determinants of childhood immunization in Philippines, results of the multinomial logistic regression analyses indicate that mothers who have less education, and who have not attended the minimally-recommended four antenatal visits are less likely to have fully immunized children. It was further noted that one of the health system factors influencing the completion of immunization schedule of children under 2 years include the remote location of health facilities. It was further mentioned that some health facilities were located in difficult to reach

areas with either poor or no means of transport available and this greatly contributed to dropouts. This highlighted the need to bring services closer to the people, perhaps through provision of mobile services (Bondy et al., 2009).

A cohort study by (Samad et al., 2013) was carried out in Botswana about incomplete immunization uptake in infancy and a cohort of 18,819 infants born between September 2000 and January 2002 where mothers most frequently cited medical reasons (45%) for partial immunization (n=697), but beliefs or attitudes (47%) for no immunization (n=228). An understanding of maternal reasons for incomplete immunization status may assist in identifying appropriate interventions to maximize uptake. Health system factors influencing the completion of immunization schedule of children under 2 years include logistical barriers such as climate, geography or limited accessibility to health care due to poor roads, a failure of the Ministry of Health to provide them, inadequate public transportation, inconvenient office hours, inaccessible locations, or long waiting lines. Access to immunization is influenced by the nature of the health care system and service available.

(Hamilton et al., 2014) report about qualitative study in South Africa, using semi structured interviews with parents either in their own houses or at their places of work where the study was set in an inner city area with a high level of deprivation. Parents subsequently were selected using purposive sampling technique. Data were analyzed using consistent and systematic review. Results showed that an important health system factors influencing the completion of immunization schedule of children under 2 years include regular stock outs and unavailability of vaccines as required (Hamilton et al., 2014). This demonstrates the need for system administration to ensure that vaccine stock outs are prevented which will improve uptake of immunization.

(Haddad et al., 2010) cross sectional study in Burkina Faso about heterogeneity in the validity of administrative-based estimates of immunization coverage across health districts in as well as the implications for measurement, monitoring and planning. In this study, DTP3 and measles coverage rates from administrative sources were compared with estimates from the EPI cluster survey (ECS) and Demographic and Health Survey (DHS) carried out in 2003 at national and regional levels. Results of this study mentioned that health system factors influencing the completion of immunization schedule of children under 2 years include poor coverage of immunization services and unavailability of health personnel (Haddad et al.,

2010). This also highlights the need to ensure ready availability of immunization services as well as health workers in an effort to improve uptake of the immunization services (Haddad et al., 2010).

Furthermore, there was another cross sectional study by Chambongo and colleagues about community vaccine perceptions and its role on vaccination uptake among children aged 12-23 months in the Ileje District, Tanzania (Chambongo et al., 2016). The findings of this study revealed that some of the health system factors influencing the completion of immunization schedule of children under 2 years include unavailability of health workers, understaffing which leads to long waiting time to receive services.

A community-based, cross-sectional study by Babirye et al., 2012) about the timeliness of childhood vaccinations in Kampala Uganda that some of the health system factors influencing the completion of immunization schedule of children under 2 years include vaccine shortages and stock outs in Kampala Uganda (Babirye et al., 2012).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The chapter described the practical procedures and methods for carrying out the study. It gave details of the research methods to be adopted, including the research design, study population, sampling procedure, sample size, data sources, data collection methods, data processing, data analysis and presentation of findings.

3.2 Research Design

The study design was cross sectional and descriptive, employing quantitative data collection methods. It was a cross sectional type of design because it involved collection of data from a single point in time.

3.3 Study Setting

The study was conducted in Nagongera Health Center IV, Tororo District which is found in Eastern Uganda. The study setting was selected because the problem under study is prevalent on the ground according to the immunization records presented. The health center is one of the biggest health facilities in the district and it offers many health care services including immunization, child health services, obstetrics and emergency care, HIV/AIDS management services, general patient management, laboratory services, nutrition services, antenatal and post natal services, EMTCT program as well as RCT services among many others.

3.4 Study Population

The study population comprised of caretakers of children less than 2 years of age attending health care services at Nagongera Health Center IV, Tororo District. 3.4 Selection criteria.

3.4.1 Target Population

The study population will comprise of caretakers of children less than 2 years of age attending health care services at Nagongera Health Center IV, Tororo District.

3.4.2 Sample size

The study population comprised of care takers attending immunization clinic at Nagongera Health Center IV, Tororo District.

3.5 Sample Size determination

The overall sample size was estimated using Kish and Lesley formula (Kish and Lesley, 1965). This formula was used because it is appropriate for determining proportions of a variable in a given population.

$$N = \frac{z^2 pq}{e^2}$$

Where, N= Sample size, Z= 1.96, critical value at a significance level of 97%

$$e^2 = \text{margin of error} = 0. 97\%$$

P= Proportion of children that received all basic vaccinations is 55.8% (Uganda Bureau of Statistics, 2016)

$$q = (1-P).$$

$$N = \frac{1.96 \times 1.96 \times 0.558 \times 0.442}{0.097^2}$$

$$N = \frac{3.841 \times 0.2466}{0.009409} \sim 100$$

N= 100 Respondents

Therefore, 100 respondents were estimated to participate in this study.

3.6 Sampling Procedure

Due to the fact that a sampling frame was not specifically available, the study used anone probability sampling method. This was consecutive enrollment method where the researcher sampled the first mother who brought her child less than 2 years of age to the health system

after consenting to participate in the study which process was repeated till sample size was attained.

3.7 Data sources

Data was collected from both primary and secondary sources. Primary data was collected from the respondents using researcher administered questionnaires at Nagongera Health Center IV, Tororo District and Secondary data was collected from HMIS 105 of the health facility, internet, other documents plus related Jaournals.

3.7.1 Data collection methods

The researcher used documentary review and survey methods to get empirical data for processing and presentation. This involved checking of various journals and text books by different authors on the factors influencing the completion of immunization schedule of children under 2 years.

3.7.2 Data collection Instrument

Data was collected by the use of pre tested semi-structured questionnaires that is researcher administered.

3.8 Data processing

The questionnaire responses were edited for accuracy without changing the meaning given in the response. Responses were manually coded and arranged properly for presentation analysis. It also involved data cleaning during data entry to ensure quality inputs.

3.9 Data Analysis and presentation

Data was analyzed by the use of SPSS version 22 to generate frequencies and percentages. Findings are summarized in form of tables, pie charts and graphs as well as plain text models to determine factors influencing the completion rate, bivariate analysis was done and where $P < 0.05$, a significant relationship was derived.

3.10 Ethical considerations

Data collection was preceded by a letter of introduction from the Dean's office as pre-requisite for carrying out the study. The researcher got permission from the administration of Nagongera Health Center IV to enable data collection at the health center. After permission was granted, the administration introduced the researcher to the in-charge of immunization

clinic who then introduced the researcher to the respondents. The written informed consent of the respondents was obtained after the purpose and objectives of the study had been identified and well explained to the respondents. The study was purely for academic purposes and all the information given was treated with confidentiality and numbers instead of names were used to identify the respondents.

3.11 Dissemination of Results

A copy of this dissertation will be forwarded to International Health Sciences University and another shall be given to the administration of Nagongera Health Center IV with the researcher retaining a copy for future reference and ownership.

3.12 Limitations of the study

In this study however, the researcher faced some limitations including:

- 1) The study was carried out at one health system, hence study results could not be generalizable for the entire region.

Therefore, the researcher recommends that other studies on the same topic to be undertaken but with a wider coverage to improve the quality of the results obtained.

- 2) Initially, clients were reluctant to participate in this study fearing that divulging information that seem as negative to institution would implicate them for services offered.

This was overcome by clearly explaining the expected benefit to hospital shown by hospital allowing study to be carried out there. The issue of confidentiality was clearly stated and respondents eagerly enrolled in the study.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents results of the study entitled: Factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo district. This was done based on objectives using researcher administered questionnaires. Data was gathered from 100 caretakers of children under 2 years. The findings were analyzed and presented in form of tables, figures and graphs as appropriate.

4.2 Rate of completion of immunization schedule of children under 2 years of age

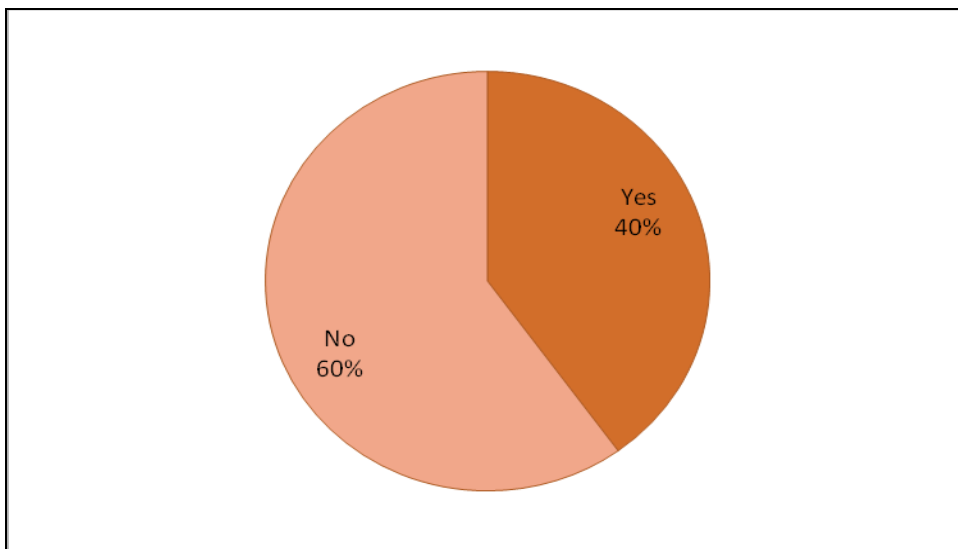


Figure 2: showing rate of completion of immunization schedule of children less than two years of age. (n=100)

The majority of respondents 60 (60%) did not have all their children immunized. While the minority 40 (40%) had all their children immunized.

Table 1: Showing Bivariate analysis of socio-demographic characteristics and immunization completion (n= 100)

Characteristic	Immunization Completion				X^2	df	P
	Yes		No				
	N	%	n	%			
Age in complete years					7.96	2	0.0187**
18-25	7	17.5	20	33.3			
26-35	24	60	19	31.7			
36-45	9	33.5	21	35			
Marital Status					20.51	2	<0.0001**
Single	3	7.5	20	33.3			
Married	35	87.5	32	53.3			
Divorced	2	5.0	8	13.3			
Level of education completed					32.71	2	<0.0001*
Primary	28	70	16	26.7			
Secondary	8	20	26	43.3			
Tertiary	4	10	18	30			
None	6	15	8	13.3			
Occupation					ND ⁺	2	ND ⁺
Housewife	30	75	49	81.7			
Self-employed	10	25	10	16.7			
Professional	0	0	1	1.7			
Partner Education					4.23	3	0.1102
Primary	9	22.5	19	31.7			
Secondary	20	50	16	26.7			
Tertiary	8	20	21	35			
None	3	7.5	4	6.7			
Partners' Occupation					5.98	2	0.0502
Housewife	5	14.3	11	34.4			
Self-employed	15	42.9	15	46.9			
Professional	15	42.9	6	18.8			

(X^2 : Chi-square; p: p-value; ** significant variables at 95% Confidence interval)

ND⁺ = X^2 It was not done because one of the cells is a Zero

Bivariate analysis revealed that age of the respondents; marital status and level of education were significantly associated with immunization completion status (P<0.05) whilst occupation, partners' education and partners of occupation were not significantly associated with immunization completion (P>0.05) as shown in table 1 above.

4.3 Social Demographic Characteristics

The questionnaire included questions on demographic and social characteristics such as age, marital status, level of education, occupation, partners' level of education and occupation. This information was identified to find out its relationship with the factors affecting

completion of immunization among children under 2 years in Nagongera Health Center IV, Tororo district. The results were presented as follows.

Table 2: Demographic characteristics of respondents where (n=100)

Variables	Frequency (n=100)	Percentage (%)
Age		
18 – 25 years	27	27
26 – 35 years	43	43
36 – 45 years	30	30
Marital status		
Single	23	23
Married	67	67
Divorced	10	10
Level of education		
No schooling	17	17
Primary only	50	50
Secondary level	23	23
Tertiary level	10	10
Occupation		
House wife	70	70
Self employed	20	20
Professional	10	10
Partner's level of education n=100		
No schooling	25	25
Primary only	35	35
Secondary level	30	30
Tertiary level	10	10
Partner's occupation n=100		
Professional	20	20
Self employed	45	45
Peasant/farmer	35	35

Most of the respondents 43 (43%) were in the age range of 26 – 35 years, followed by 30 (30%) who were in the age range of 36 -45 years while the least 27 (27%) were in the range of 18 – 25 years. The majority of respondents 67 (67%) were married, 23 (23%) were single while the least 10 (10%) were divorced.

Half of the respondents 50 (50%) attained primary level education, followed by 23 (23%) who attained secondary level education, 17 (17%) did not attain any schooling while the least 10 (10%) attained tertiary level education.

The majority of respondents 70 (70%) were house wives, followed by 20 (20%) who were self-employed while the least 10 (10%) were professionals.

Out of the 100 married respondents, most respondents' partners 35 (35%) attained primary level education, followed by 30 (30%) attained secondary level education, 25 (25%) did not attain any schooling while the least 10 (10%) attained tertiary level education.

Out of the 100 married respondents, the majority of respondents' partners 45 (45%) were self-employed, followed by 35 (35%) who were peasant/farmers while the least 20 (20%) were professionals.

4.4 Caretaker factors influencing the completion of immunization schedule of children under 2 years of age

Caretaker factors considered in this study were negative attitudes towards childhood immunization, poverty leading to poor means of transport to the nearest health unit and negligence towards keeping appointment and responsibility.

Respondents were asked whether they had any fears concerning the vaccines given to their children and all of the respondents 100 (100%) had fears concerning the vaccines given to their children.

Table 3: Monovarriate analysis of caretakers characteristics and immunization completion (n=100)

VARIABLE	FREQUENCY(n=100)	PERCENTAGE (%)
Negative attitudes towards the outcome of immunization of their children		
The vaccines May be expired	30	30
They can make them lame	27	27
They have many side effects such as high temperature	20	20
They May make their children barren	13	13
They can kill their children	10	10
Means of transport to the units (POVERTY)		
Bicycle	53	53
Footing	37	37
Motorcycle	10	10

Most respondents 30 (30%) mentioned that the vaccines May be expired, followed by 27 (27%) who said that the vaccines could make their children lame, 20 (20%) said that the vaccines had many side effects such high temperature, 13 (13%) said that the vaccines made their children barren while the least 10 (10%) said the vaccines could kill their children.

More than half of the respondents 53 (53%) used bicycles as their means of transport to the nearest health unit, followed by 37 (37%) who footed to the health unit while the least 10 (10%) used motorcycles. Bivariate analysis revealed that reason for fear of immunizing a child and mode of transport one uses were not significantly associated with immunization completion ($p\text{-value}>0.05$).

Table 4: Amount of money used for transport, availability of funds for transport as well as source of funds for transport to health system

Variables	Frequency (n=100)	Percentage (%)
Amount of money used for transport		
< 2000shs	48	48
2001 – 4000shs	32	32
>4000shs	20	20
Availability of funds for transport		
Sometimes	64	64
Always	21	21
Never	15	15
Source of funds for transport to health system		
Digging other people’s gardens	45	45
From husband/partner	27	27
From other family members	16	16
From their job	12	12

Most respondents 48 (48%) spent below 2000shs on transport to the nearest health care unit, followed by 32 (32%) who spent between 2001 – 4000shs on transport to the nearest health care unit while the least 20 (20%) spent more than 4000shs.

Most respondents 64 (64%) said the funds for transport were sometimes readily available, followed by 21 (21%) who said the funds for transport were always available while the least 15 (15%) said the funds for transport were never readily available.

Most of the respondents 45 (45%) obtained funds for transport from digging other people’s gardens, followed by 27 (27%) who obtained funds from their husbands/partners, 16 (16%) obtained funds from other family members while the least 12 (12%) obtained funds from their jobs.

Bivariate analysis revealed that cost, availability and source of funding needed for transportation to health facility were not significantly associated with immunization completion ($p>0.05$) as shown in Table 4 above.

Amount of money used for transport, availability of funds for transport as well as source of funds for transport to health system

Following monovarriate analysis, Bivarriate analysis of availability of funds and completion rate of immunization schedule among children under 2 years of age was done. These results are shown in table 5 below.

Table 5: showing Bivarriate analysis for transport-related individual care giver variables

Characteristic	<i>Immunization Completion</i>				X^2	<i>df</i>	<i>P</i>
	<i>Yes</i>		<i>No</i>				
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>			
Cost of Transport					1.7	2	0.4216
<2000shs	16	33.33	32	66.67			
2001-4000shs	15	46.9	17	53.1			
more than 4000	9	45	11	55			
Availability of Transport funds					0.52	2	0.7726
sometimes	24	37.5	40	62.5			
always	9	42.9	12	57.1			
never	7	46.7	8	53.3			
Source of transport funds					3.17	3	0.3662
Digging other people's garden	14	31.11	31	68.89			
From husband/partner	14	51.85	13	48.15			
From other family members	7	43.75	9	56.25			
From their job	5	41.67	7	58.33			

Bivarite analysis revealed that cost, availability and source of funding needed for transportation to health facility were not significantly associated with immunization completion ($p>0.05$) as shown in Table 5 above.

Table 6: Awareness of the vaccination schedule, Diseases immunized against, overall attitude towards childhood immunization, reasons for respondents' attitudes towards childhood immunization

Variables	Frequency (n=100)	Percentage (%)
Awareness of the vaccination schedule of their children under 2 years		
Yes	40	40
No	60	60
Diseases immunized against n=100		
Poliomyelitis	63	63
Diphtheria, Pertusis, Tetanus	37	37
Overall attitude towards childhood immunization		
Postive	33	33
Negative	67	67
Reasons for respondents' attitudes towards childhood immunization n=100		
It protects children against immunizable diseases	32	32
It causes many side effects	25	25
It May make the child barren	22	22
The vaccines are expired and do not work	21	21

The majority of respondents 60 (60%) did not know the vaccination schedule of their children under 2 years while the least 40 (40%) knew the vaccination schedule of their children under 2 years.

Out of the 100 respondents who were aware of the diseases immunized, the majority of respondents 63 (63%) mentioned poliomyelitis as an immunizable disease while the least 37 (37%) mentioned Diphtheria, Pertusis and Tetanus.

Results showed that the majority of respondents 67 (67%) had negative attitudes towards childhood immunization while the least 33 (33%) had positive attitudes towards childhood immunization.

More of the respondents 32 (32%) had positive attitudes towards childhood immunization because it protected children against immunizable diseases, followed by 25 (25%) who had negative attitudes towards childhood immunization because it caused many side effects, 22 (22%) said it would make the children barren while the least 21 (21%) said the vaccines are expired and do not work.

Bivariate analysis revealed that one's overall attitude to immunization was significantly associated with immunization completion ($p < 0.005$) whilst awareness to immunization schedule and diseases immunizable were not significantly associated with immunization completion (Table 6).

Table 7: showing Bivariate analysis of Awareness of the vaccination schedule, Diseases immunized against, overall attitude towards childhood immunization, reasons for respondents' attitudes towards childhood immunization

Characteristic	Immunization Completion				X ²	df	P
	Yes		No				
	n	%	N	%			
Aware of the immunization schedule							
Yes	16	40	23	38.3	1.506	1	0.2198
No	24	60	37	61.7			
Diseases Immunized against							
Poliomyelitis	30	47.62	33	52.38	4.12	1	0.0424**
DPT	10	27.03	27	72.97			
Overall attitude to immunization							
Positive	10	31.25	22	68.75	1.50	1	0.2205
Negative	30	44.12	38	55.88			

NB X² = was carried out because no cell had a Zero.

Negative attitudes above are all those expressed as; It causes many side effects, it May make their children barren and the vaccines are expired and do not work.

Bivariate analysis revealed that overall attitude is significant associated with completion of immunization (p<0.05) while awareness of immunization schedule, diseases immunized against were not significantly associated with immunization completion (p>0.05) as shown in the table 5 above.

4.5 Health system factors influencing the completion of immunization schedule of children under 2 years of age

Health system factors considered in this study were poor storage equipments, reasons why children were not fully immunized, understaffing leading to inadequate service delivery, stock out of vaccines and coverage of immunization...

Table 8: Access to various health facilities offering immunization services, reasons why children were not immunized, adequate coverage of immunization services in their community

Variables	Frequency (n=100)	Percentage (%)
Whether respondents had good access to various health facilities offering immunization services		
Yes	17	17
No	83	83
Reasons why children were not immunized n=60		
No health workers offering services	10	16.7
Vaccines shortage	18	30
Long distance to service centers	23	38.3
It creates a lot of discomfort to children and babies cry all night	9	15
Adequate coverage of immunization services in their community		
Yes	17	17
No	83	83

The majority of respondents 83 (83%) did not have good access to various health facilities offering immunization services while the least 17 (17%) had good access to 1 health system.

Out of the 60 respondents who reported that not all their children were fully immunized, most 23 (38.3%) reported long distances to service centers, 18 (30%) said there was a shortage of vaccines, 10 (16.7%) said there were no health workers offering the services while the least 9 (15%) said immunization created a lot of discomfort to children and they cried all night.

The majority of respondents 83 (83%) did not have adequate coverage of immunization services in their community while the least 17 (17%) had adequate coverage of immunization services.

Table 9: Bivariate analysis of health system related factors

Characteristic	Immunization Completion				X^2	df	P
	Yes		No				
	n	%	N	%			
Access to health facility					0.96	1	0.3280
Yes	5	29.41	11	70.59			
No	35	42.17	49	57.83			
Reasons for not completing immunization	5	12.5	10	16.7		3	ND+
Shortage of services	11	27.5	20	33.3			
Vaccine stock outs	18	45	18	30			
Distance	6	15	12	20			
Discomfort to the child					3.02	1	0.0820
Adequate immunization at facility							
Yes	10	58.82	7	41.18			
No	30	36.14	53	63.86			

ND⁺= χ^2 not done because this data was only about those who did not complete the immunization schedule.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presented the discussion of findings of the study which were obtained after data analysis.

5.1.1 Rate of completion of immunization schedule of children less than 2 years of age.

Having an immunization plan in the form of an immunization card was decisively important in our analysis because mothers having a child immunization card can easily follow the immunization schedule and be able to attain timely immunization for their children. In this, the remarks on immunization cards helped in determining the completion of schedule.

Based on this approach, this study found out that the minority of the respondents 40 (40%) completed the immunization schedule while the majority of the respondents 60 (60%) did not have all their children immunized. These findings demonstrated that the rate of completion of immunization among children under 2 years remained low given that there were many children who did not complete their immunization schedule in this study setting. The policy implication of this is that there is need for improved coverage and provision as well as sensitization and health education of parents/caretakers on the benefits/importance of full immunization for children under 2 years.

The best placed officers to do this could be Tororo district authorities for example Chief Administrative Officer, District Health Officer, Chairman Local Council five, and Nagongera Health Unit Management Committee. This is an alarming sign that needs more efforts by Tororo district authorities as mentioned above in the study setting with regards to immunization campaigns. This study finding was in line with another cross sectional study in Kampala, Uganda by Bbaale in 2013 about the factors influencing childhood immunization in Uganda reported that some of the health worker factors influencing the completion of immunization schedule of children under 2 years include failure to provide immunization cards.

Elsewhere in East Africa, rates reported in our study are also lower than those reported in Kenya and Tanzania (77% and 71.1% respectively), (Maina, Karanja and Kombich,

2013):Chambongo et al., 2016).Low immunization coverage in this area is multi factorial; it could be associated with individual and health system related factors as discussed in the subsections to follow.

5.1.2Socio- Demographic Characteristics

As far as bivariante analysis was concerned, the socio- demographic factors significantly associated with completion rates were: Age, marital status and level of education. ($P<0.05$) These findings are similar to those studies reported in cross sectional study carried out in Cameroon by Russo and colleagues, (2015) who pointed out that, Age, marital status and level of education were significantly associated with the completion of immunization schedule.

In their study (Russo and colleagues, 2015) seemed to attribute the completion rate (71%) to educational level based on the ability to read.

However, in the current study, the completion rate is lower than for Nagongera despite the fact that Universal Primary Education and universal Secondary Education whose key goal is to teach the population how to read and write. This is contradictory in that they can read and write which appears that however much education is significant, age or marital status or combination of age and marital status that could be influencing the completion rate of immunization schedule for the case of my study setting of Nagongera. It is possible that the spouses are either discouraging their wives or not supporting them enough to go for immunization in order to complete their immunization schedules.

It is also possible given that the majority of the respondents fall under what is determined as youthful age. According to Uganda ministry of youth, gender and social development, it is observed that the youths are easily influenced by the prevailing practices because on the other hand the young people are easily convinced.

The policy implication is that the target group to be mothers, couples or both: Sensitized about the relevancy of completing immunization schedules.

5.1.3 Caretaker factors influencing the completion of immunization schedule of children under 2 years of age

All of the respondents 100 (100%) had fears concerning the vaccines given to their children and most respondents 30 (30%) mentioned that the vaccines may be expired, followed by 27

(27%) who said the vaccines could make their children lame, 20 (20%) said the vaccines had many side effects such as high temperatures. This demonstrated that fears concerning vaccines were prevalent among the sampled population and this could negatively impact their willingness to immunize their children. This study was in agreement with Callreus in 2010 who mentioned in his cross sectional study in Mexico about perceptions of vaccine safety in a global context that a very prevalent socio-economic factor influencing the completion of immunization schedule of children under 2 years is the inability of health workers to adequately address fears of mothers and caregivers about the safety and efficacy of the vaccines used. Furthermore, it was revealed that most mothers (62%) developed negative attitudes towards routine immunization of their children for various reasons including hidden health consequences of the vaccines.

More than half of the respondents 53 (53%) used bicycles as their means of transport to the nearest health unit. This showed that respondents used various means of transport to the health system and this could hence negatively affect their ability to ensure full immunization for their children under 2 years. Furthermore, this could as well potentially affect timely access to and utilization of immunization services. This study was in line with Samad, Butler and Peckham (2013) who reported in their study that health system factors affecting completion of immunization among children under 2 years included logistical barriers such as climate, geography or limited accessibility to health care due to poor roads, a failure of the Ministry of Health to provide them, inadequate public transportation, inconvenient office hours, inaccessible locations, or long waiting lines. Access to immunization is influenced by the nature of the health care system and service available.

Most respondents 30 (47.7%) spent between 1000 – 2000shs on transport to the nearest health care unit, followed by 20 (31.7%) who spent between 3000 – 4000shs on transport to the nearest health care unit. This demonstrated that the cost of transport to the health system May greatly affect the rate of completion of immunization among children under 5 years, especially since most respondents are of low socio economic status which was perhaps not surprising that most respondents 40 (63.6%) said the funds for transport were sometimes readily available. This study finding was in agreement with Brown-Ogrodnick and colleagues in 2013 who reported in a cross sectional study in Namibia about immunization coverage by age 2 that socio-economic status of the family contributes to high dropout rate.

This affects availability of, or access to, health care by creating conflicting priorities for working families that must meet daily survival needs. Families that live in deprived socio-economic (SES) areas may have less access to, and are less likely to pursue immunization.

The majority of respondents 60 (60%) did not know the vaccination schedule of their children under 2 years which implied that many parents/caretakers could miss out and not complete scheduled immunization for their children on the days it was provided. This study was opposed by Boerma, Bryce and Kinfu, (2014) who documented in a study about the vaccination gap as well as equity and trends in coverage of maternal, newborn, and child health services in 54 countries that one of the socio-economic factors affecting completion of immunization among children under 2 years included not possessing adequate knowledge about immunization as well as schedules for the vaccinations.

Out of the 40 respondents who were aware of the diseases immunized, the majority of respondents 25 (62.5%) mentioned poliomyelitis as an immunizable disease while the least 15 (37.5%) mentioned Diphtheria, Pertusis and Tetanus. This showed that respondents were knowledgeable about some of the immunizable diseases which implied that since they were knowledgeable, they would ensure that all their children under 2 years are fully immunized against these diseases. This study was contrary to Kiwanuka et al, (2008) whose study about access to and utilization of health services for the poor in Uganda revealed a completion rate of 49.8%. Furthermore, the barriers to access health care services arise from both the service providers and the consumers. Distance to service points, perceived quality of care and availability of drugs are key determinants of utilization. Other barriers are perceived lack of skilled staff in public facilities, late referrals, health worker attitude, costs of care and lack of knowledge.

Results showed that the majority of respondents 67 (67%) had bad attitudes towards childhood immunization. This study finding was in agreement with Callreus in 2010 who mentioned in his cross sectional study in Mexico about perceptions of vaccine safety in a global context that a very prevalent socio-economic factor influencing the completion of immunization schedule of children under 2 years is the inability of health workers to adequately address fears of mothers and caregivers about the safety and efficacy of the vaccines used. Furthermore, it was revealed that most mothers (62%) developed negative

attitudes towards routine immunization of their children for various reasons including hidden health consequences of the vaccines.

More of the respondents 22 (32.8%) had good attitudes towards childhood immunization because it protected children against immunizable diseases, followed by 17 (25.4%) who had bad attitudes towards childhood immunization because it caused many side effects while the least 13 (19.4%) said the vaccines are expired and do not work. This study finding was in agreement with Boerma and colleagues in 2014 who documented in a cross sectional survey about the vaccination gap as well as equity and trends in coverage of maternal, newborn, and child health services and data showed that one of the caretaker related factors influencing the completion of immunization schedule of children under 2 years is fear of side effects such as over crying and getting temperature which made parents fearful and fail to complete immunization for their children under 2 years. . Results showed that one of the most important socio-economic factors influencing the completion of immunization schedule of children under 2 years is the prevalent negative attitudes of mothers of children under 5 years regarding routine immunization. This was found to be most predominant among Moslem communities as they strongly believed that the vaccines used had other hidden health effects and could make their children barren (Odusanya et al., 2010).

The policy implication of this finding is that, the District Health Officer (DHO) Tororo, Chief Administrative Officer (CAO) Tororo district, chairman local council five (LCV), incharge Nagongera health centre iv and health unit management committee (HUMC) of the the facility should work together in order to satisfy the public in Nagongera about the completion of immunization schedule. This is possible if all the players concerned like health workers to keep time, sensitize the public, ensure earlier ordering of vaccines, good storage equipments and the political leaders to all work together in order to ensure that no child is left un immunized till full completion of immunization schedule of children less than 2 years of age. They should emphasize the need of taking immunization services nearer the people (out reaching them) other than people going to the health facility for static immunization. Findings showed that one of the most important health system factors influencing the completion of immunization schedule of children under 2 years include poor coverage of immunization services. This highlight the need for concerned authorities to come up with measures to improve the coverage and availability of immunization services.

5.1.4 Health system factors influencing the completion of immunization schedule of children under 2 years of age

The majority of respondents 83 (83%) did not have good access to various health facilities offering immunization services which implied that the lack of adequate access to health facilities as well as coverage of immunization services could potentially affect completion of immunization among children under 2 years. This study finding was in line with a descriptive, cross-sectional survey was conducted in October 2007 through to January 2008, throughout public- and private-sector health care centers in the town of Libreville by Ategbo and colleagues in 2010 about immunization coverage of children aged 0 to 5 years in Libreville (Gabon) that among the mothers of children under 5 years interviewed, findings showed that one of the most important health system factors influencing the completion of immunization schedule of children under 2 years included poor coverage of immunization services. This highlighted the need for concerned authorities to come up with measures to improve the coverage and availability of immunization services.

Out of the 60 respondents who reported that not all their children were fully immunized, most 23 (38.3%) reported long distances to service centers, 18 (30%) said there was a shortage of vaccines, 10 (16.7%) said there were no health workers offering the services while the least 9 (15%) said immunization created a lot of discomfort to children and they cried all night. This showed that most respondents did not fully immunize their children under 2 years due to various reasons and factors. Furthermore, it also demonstrated the need for continuous sensitization and health education of parents/caretakers about the dangers of not fully immunizing their children.

The majority of respondents 83 (83%) did not have adequate coverage of immunization services in their community yet the lack of coverage of these services in the community potentially limited their utilization. This study finding was supported by Ategbo and colleagues in 2010 about immunization coverage of children aged 0 to 5 years in Libreville (Gabon) that among the mothers of children under 5 years interviewed, findings showed that one of the most important health system factors influencing the completion of immunization schedule of children under 2 years include poor coverage of immunization services. This highlight the need for concerned authorities to come up with measures to improve the coverage and availability of immunization services.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

As far as the findings for transport was concerned, the majority of care takers (85%) were able to secure funds to the health facility.

However as far as the care takers factors are concerned, the level of awareness of vaccine schedule was low (40%) and this seems to conform with the majority (67%) having a negative attitude.

The socio-demographic factors that were found to be significantly associated with completion of immunization schedule among children of 2 years at Nagongera health centre IV Tororo district were age, marital status and level of education ($p < 0.05$) On the hand those factors that were not significantly associated were; income and one's occupation ($p > 0.05$).

Health system main factors that were forwarded for not completing immunization schedule were; Long distances to the health facility(38.3%), vaccine shortage(30%),inadequate health workers(16.7%),creating a lot of discomfort to the children(15%).

6.2 Recommendations

6.2.1 Recommendations for Tororo district/ Nagongera health sub- district.

The district health office and the health sub district (HSD) should improve upon its district and health sub district respectively sensitization programs aimed at mothers/caretakers of children under 2 years about the importance of immunization as well as the dangers of not fully immunizing against these diseases.

The district and the health sub district should also ensure that all health centres and health institutions are well facilitated to offer mobile immunization services in an effort to bring services near the people and improve coverage and accessibility to the services for those who cannot get to the health facilities.

6.2.2 Recommendations for Health Unit Management Committee/ administration of Nagongera Health Center IV

The health centre management committee/administration of Nagongera Health Center IV should ensure they work hand in hand with and support health workers to bring immunization services closer to mothers in the community.

The health unit management committee should also act as a link to direct mothers with unimmunized children under 2 years to places where immunization services are carried out.

The health unit management committee should work with health workers to provide health education talk about the advantages of immunization.

6.2.3 Recommendations for health workers at Nagongera Health Center IV

Health workers at Nagongera Health Center IV should endeavor to regularly health educate mothers of children under 2 years about the importance and benefits of ensuring full immunization of their children.

Health workers need to address the all the fears mothers possess about the side effects of vaccines which play a great contributory role in immunization dropout.

Health workers at Nagongera Health Center IV have an important role to play in ensuring that all children below 2 years are fully immunized against childhood immunizable diseases. This could be done through carrying out regular sensitization, community outreach and training of mothers on the importance of full immunization as well as the potential dangers of their children not being fully immunized. Once the health care system aims for equitable access of health care services, then even children in lower wealth quintiles are more likely to complete their vaccination schedule. Increasing female literacy is crucial for improving the health of the population and thus reducing infant and under-five mortality. The government has strengthened its efforts to increase female enrollment and keep girls in school beyond primary level but it also needs to focus on the quality of education provided to these girls.

To healthcare professional; these should endeavor to screen for families with low literacy levels and other socio-demographic characteristics such as low awareness to immunization. Such screening should be followed by creating awareness and follow-up by community health workers.

6.2.4 Recommendations for mothers/caretakers of children under 2 years of age at Nagongera Health Center IV

Mothers of children under 2 years should ensure they have all their children less than 1 year fully immunized as this provided many benefits.

Mothers of children under 2 years at Nagongera Health Center IV should not listen to the prevalent misperceptions about vaccines and child hood immunization as this made them fail to fully immunize their children.

Mothers should endeavor to avail themselves for any sensitization and community outreach about childhood immunization.

Mothers of children should get involved in income generating activities as this helps to ensure that they have the ability to transport themselves and seek for childhood immunization services where they are located.

Furthermore, in the context of caregivers' awareness on the schedule of immunization; we recommend that The ministry of health under the EPI program and its stakeholders like Tororo district authorities should consider investing in digitalization of immunization and health records for children and testing of such digital immunization records until they are widespread. In addition, the EPI program must make provision of waterproof, tear resistant and easily stored immunization cards to each and every child initiating the schedule. Also cards that have a better system of reminding mothers of the vaccine due dates are highly recommended to improve immunization completion, especially among mothers who do not have access to electronic reminder systems like cell phones and those who lack education. The EPI program needs to evaluate its performance on more stringent criteria. Instead of just reporting DTP 1 and 3 among children 12-23 months of age, it should also monitor Up to date (UTD) immunization status of children 52 weeks of age.

REFERENCES

- Al Hilfy, T.K., Essa, A. (2011). Mothers knowledge and attitude regarding childhood survival. *Middle East Journal of family medicine*; 5(1): 20-45.
- Ategbo, S., Ngougou, E.B., Koko, J. (2010). Immunization coverage of children aged 0 to 5 years in Libreville (Gabon). *Sante*. 1; 20(4):215-219.
- Benn, C.S., Fisker, A.B., Rodriguez, A., Ravn, H., Sartono, E., Whilltle, H., Yazdanbakhsh, M., Aaby, P. (2014). Sex-Differential Effect on Infant Mortality of Oral Polio Vaccine Administered with BCG at Birth in Guinea-Bissau. A Natural Experiment. *PLOS ONE*. 3, 12: e4056.
- Berhane, Y. (2013). Universal Childhood Immunization: a realistic yet not achieved goal. *Ethiopian Journal of Health Development*. 22 (2): 35-50.
- Boerma, J.T., Bryce, J., Kinfu, Y. (2014). Mind the gap: equity and trends in coverage of Maternal, newborn, and child health services in 54 Countdown countries. *Lancet*, 371(9620):1259-1267.
- Bondy, J.N., Thind, A., Koval, J.J. (2009). Identifying the determinants of childhood immunization in the Philippines. *Vaccine*, 27(1):169-175.
- Browne, E.N., Bonney, A.A., Agyapong, F.A. (2011). Factors influencing participation in national immunization days in Kumasi, Ghana. *Ann Trop Med Parasitol*, 96(1):93-104.
- Brown-Ogrodnick, A., Hanrahan, A., Loewen, J. (2013). Immunization coverage by age 2 for five recommended vaccines in the capital health region (Edmonton), CCDR ;32(10):117-21.
- Callreus, T. (2010). Perceptions of vaccine safety in a global context. *Acta Paediatrica*. 99: 166-171.

- Daniel, A.S., Smith, P.J., William, K.Y. (2009). Disparities in preschool immunization Coverage associated with maternal age. *Bioscience Volume 21* (5): 8-20
- Danielson, N., Fakakovikaetau, T., Szeged, E. (2009). Improved immunization practices reduce Childhood hepatitis B infection in Tonga. *Vaccine*, 27(33):4462-4467.
- Gmariam, A. (2012). A two year retrospective review of reasons for pediatric admission to Chiro hospital, Eastern Ethiopia. *Ethiopian Medical Journal*. 43(4):241-249.
- Goldstein, K.P., Kviz, F.J., Daum, R.S. (2010). Accuracy of immunization histories provided by adults accompanying pre-schoolchildren to a pediatric emergency department. *JAMA* 270:2190-2194.
- Gust, D.A., Strine, T.W., Maurice, E. (2012). Under-immunization among children: Effects of vaccine safety concern on immunization status. *Pediatrics*;114:16-22.
- Haddad, S., Bicaba, A., Feletto, M. (2010). Heterogeneity in the validity of administrative-based estimates of immunization coverage across health districts in Burkina Faso: implications for measurement, monitoring and planning. *Health Policy Plan*, 25(5):393-405.
- Hamilton, M., Corwin, P., Gower, S. (2014). Why do parents choose not to immunize their children? *The New Zealand Medical Journal*;117(1189):11-16.
- Haynes, K., Stone, C. (2014). Predictors of incomplete immunization in Victorian children. *Australian and New Zealand Journal of Public Health*;28 (1):72-79.
- Henderson, R.H., Sundaresan, T. (2014). Cluster sampling to assess immunization coverage: a review of experience with a simplified sampling method. *Bull World Health Organ*, 60(2):253-260.
- Kiwanuka, S.N., Ekirapaa, E.K., Peterson, S. (2008). Access to and utilization of health services for the poor in Uganda: a systematic review of available evidence. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 102 (11): 1067-1074

- Maekawa, M., Douangmala, S., Sakisaka, K. (2010). Factors affecting routine immunization coverage among children aged 12-59 months in Lao PDR after regional polio eradication in western Pacific region. *Biosci Trends*, 1(1):43-51.
- Makumbi, I., Lee, E.H., Lewis, R.F. (2008). Haemophilus influenza type b conjugates vaccine is highly effective in the Ugandan routine immunization program: a case-control study. *Trop Med Int Health*, 13(4):495-502.
- Menzies, R., Turnour, C., Chiu, C. (2008). Vaccine preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia 2003 to 2006. *CommunDisIntell*. 32 Suppl:S2-67.
- Nankabirwa, V., Tylleskär, T., Tumwine, J.K. (2010). Maternal education is associated with vaccination status of infants less than 6 months in Eastern Uganda: a cohort study. *BMC Pediatrics* 10 (21): pg 71-79
- Odusanya, O.O., Alufohai, E.F., Meurice, F.P. (2010). Determinants of vaccination coverage in rural Nigeria. *BMC Public Health*. 5; 8:381.
- Owais, A., Hanif, B., Siddiqui, A.R. (2011). Does improving maternal knowledge of vaccines impact infant immunization rates? A community-based randomized-controlled trial in Karachi, Pakistan. *BMC Public Health*, 17; 11:239.
- Racine, A.D., Joyce, T.J. (2013). Maternal education, child immunizations, and public policy: evidence from the US National Immunization Survey. *SocSci Med*, 65(8):1765-1772.
- Rwashana, A.S., Williams, D.W., Neema, S. (2012). System dynamics approach to immunization healthcare issues in developing countries: a case study of Uganda. *Health Informatics J*, 15(2):95-107.
- Samad, L., Butler, N., Peckham, C. (2013). Incomplete immunization uptake in infancy: Maternal reasons. *Vaccine*;24:6823-29.

Senessie, C., Gage, G.N., von Elm, E. (2011). Delays in childhood immunization in a conflict area: a study from Sierra Leone during civil war. *Conflict and Health*. 1(14): 36-50.

Viviani, S., Jack, A., Hall, A.J., Maine, N., Mendy, M., Montesano, R., Whittle, H.C. (2009). Hepatitis B vaccination in infancy in The Gambia: protection against carriage at 9 years of age. *Vaccine*, 17(23-24):2946-2950.

Von Gottberg, A.L., de Gouveia, S.A., Madhi, M. (2009). Respiratory and meningial disease surveillance in South Africa: impact of conjugate Haemophilus influenzae type b (Hib) vaccine introduction in South Africa. *Bull World Health Organ*, 84: 811-8.

APPENDIX I: CONSENT FORM

My name is **Bbe Jonathan**, a student of School of Nursing, International Health Sciences University. I am carrying out a study entitled: Factors influencing the completion of immunization schedule of children under 2 years of age attending Nagongera Health Centre IV, Tororo District. You have voluntarily consented to participate in the study and all the information you give will be kept confidential. You are under no obligation to participate in the study, and refusal to participate will not block your access to any services at the health center.

I have explained the study the purpose and objectives of the study to the participant, and they have understood and voluntarily consented to participate in the study.

Researcher's

Signature.....Date.....

(RESEARCHER)

The topic and its objectives have been fully explained to me, and I have understood and voluntarily agreed and consented to participate in the study.

Respondents

Signature.....Date.....

(RESPONDENT)

APPENDIX II: QUESTIONNAIRE

My name is **Bbe Jonathan**, a student of School of Nursing, International Health Sciences University. I am carrying out a study to identify the factors influencing the completion of immunization schedule of children less than 2 years of age in Nagongera Health Centre IV, Tororo District. You have voluntarily consented to participate in the study and all the information you give will be kept confidential.

Instructions

1. Please respond/answer to all questions asked
2. Please as answer as truthfully as possible

Section A: Demographic and Social Characteristics

1) Age

- a) 18 – 25 years
- b) 26 – 35 years
- c) 36 – 45 years
- d) 46 years and above

2) Marital Status

- a) Single
- b) Married
- c) Divorced

3) Level of education

- a) Primary only
- b) Secondary
- c) Tertiary
- d) No schooling

4) Occupation

- a) House wife
- b) Self employed
- c) professional

5) Partner's level of education

- a) Primary only
 - b) Secondary
 - c) Tertiary
 - d) No schooling
-

- 6) Partner's occupation
- a) Professional
 - b) Self employed
 - c) Peasant/farmer

Section B: Caretaker factors influencing the completion of immunization schedule of children under 2 years of age

7) Are all your children under 2 years fully immunized?

- a) Yes
- b) No

8) If no, give reasons why not?.....

9) Do you have any fears concerning vaccines given to your child?

- a) Yes
- b) No

10) If yes, which fears?.....

11) What means of transport do you use to get to the nearest health care unit?

- a) Footing
- b) Bicycle
- c) Motorcycle
- d) Private means
- e) Others (specify).....

12) How much money do you spend on transport to the nearest health care unit?

- a) 1000 – 2000Shs
- b) 3000- 4000Shs
- c) 5000Shs and more

13) Are the funds for transport readily available?

- a) Sometimes
- b) Always
- c) Never

14) What is the source of these funds?

- a) From my job
- b) My husband/partner
- c) Other family member
- d) Others (specify).....

15) Do you know the vaccination schedule of your child under 2 years?

- a) Yes
- b) No

16) What diseases are immunized against?.....
.....

17) What is your overall attitude towards childhood immunization at the study setting?

- a) Good
- b) Bad

18) Give a reason for your answer.....

Section C: Health system factors influencing the completion of immunization schedule of children under 2 years of age

19) In your community, do you have good access to various health facilities offering immunization services?

- a) Yes
- b) No

20) If yes, how many facilities?.....

21) Are all your children immunized?

- a) Yes
- b) No

22) If No, give a reason why.....
.....

Would you say you have adequate coverage of immunization services in your community?

- a) Yes
- b) No

Section D: Cultural factors influencing the completion of immunization schedule of children under 2 years of age

23) Are there any herbs or remedies which can be used in replacement of immunization?

a) Yes

b) No

24) If yes, please mention them.....

25) From your cultural point of view, is immunization good or bad?

a) Good

b) Bad

Thanks for your participation

APPENDIX IV: INTRODUCTORY AND CORRESPONDENCE LETTER



making a difference in health care

Office of the Dean, School of Nursing

Kampala, 18th June 2018

*NAGONGERA HCV
P.O Box 1
TORORO.*

1/c Nagongera HCV

Dear Sir/Madam,

*Receive
allow
the
his*
DISTRICT HEALTH OFFICER
*him to collect
essay data*
20 JUN 2018
20/06/18
P.O. Box 1, TORORO

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

This is to introduce to you **Bbe Jonathan** Reg. No. **2015-BNS-TU-038** who is a student of our University. As part of the requirements for the award of a Bachelors degree in Nursing of our University, the student is required to carry out research.

The topic of research is: **Factors Influencing the Completion of Immunization Schedule of Children Under 2 years of Age in Nagongera Health Centre IV, Tororo District.**

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

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

Sincerely Yours,

Ms. Agwang Agnes
Dean, School of Nursing



*The officer is free to
freely interact and
gather all the necessary
data that he requires
for his research work.*

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