

ASSESSMENT OF CHILDHOOD IMMUNISATION PRACTICES AMONG PARENTS IN
ARAPAI SUBCOUNTY, SOROTI DISTRICT-UGANDA

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A PROJECT DISSERTATION SUBMITTED TO THE FACULTY OF CLINICAL MEDICINE
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DECLARATION

I declare that this research titled “ASSESSMENT OF CHILDHOOD IMMUNISATION PRACTICES AMONG PARENTS IN ARAPAI SUBCOUNTY, SOROTI DISTRICT-UGANDA” is my own original work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references. This work has not been submitted to any other institution or anywhere else for any award whatsoever

SIGNATURE

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DATE:

SUPERVISOR’S APPROVAL

This research project titled “Assessment of childhood immunisation practices among parents in Arapai subcounty, Soroti district-Uganda” has been done under my supervision & is ready to be submitted for examination with my approval.

.....
MR.MANIGA.JOSEPHAT

.....
DATE

ACKNOWLEDGEMENT

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The persons mentioned above, however, are exonerated from any responsibility regarding errors and omission that may be in this document, of which I take full responsibility of.

DEDICATION

This book is dedicated to my lovely Dad and academic sponsor, Chief. Ayuta.Charles for his love and support in everything, my dear mother Tikabulamu.Grace.

I also dedicate it to my, sister. Mildred, my brothers, Edgar, Douglas, Cocus, and Denis for their love, advice and care which they have always shown me.

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LIST OF ABBREVIATIONS

DPT:	Diphtheria, Pertussis, and Tetanus
KAPE:	Knowledge, Attitudes, Practice and Expectations
MMR:	Measles-Mumps-Rubella
OPV:	Oral Polio Vaccine
UNICEF:	United Nations Children's Emergency fund
VPDs:	Vaccine preventable diseases
WHO:	World Health Organisation

ABSTRACT

Aim

The study aimed to assess childhood immunisation practices among parents in Arapai subcounty, Soroti district-Uganda.

Methods

A cross-sectional study design was used in which 114 parents and caretakers were recruited into the study using simple random sampling technique. Both male and female respondents were recruited. A questionnaire was used to collect data about childhood immunization practices.

Results

From data collected, 72.8% of the respondents were female while 28.2% were male. 66.7% of the parents had their children fully immunized while 33.3% had their children not fully immunized. Further, 81.6% of the respondents were not aware of the immunization schedule while 18.4% were aware of the immunization schedule. Child Falling sick after previous immunization (34.2%) was the main reason given for not completing schedule. 31.6% of the parents reported having forgotten to take the children for the next visit, while 18.4% said they were busy.

Conclusion

There is a need to increase awareness and knowledge about the benefits and importance of vaccination, as well as the harmful consequences of non-complete immunization.

CHAPTER ONE: INTRODUCTION

1.1 Background

1.1.1 Immunisation

Immunisation, is the process by which an individual's immune system becomes fortified against an agent (known as the immunogen). When an immune system is exposed to molecules that are foreign to the body (non-self), it will orchestrate an immune response, but it can also develop the ability to quickly respond to a subsequent encounter (Gulani, 2007).

Immunization of infants and young children against serious infectious diseases is among the most successful and cost-effective interventions in preventative health care. The success of these programs relies on sufficiently high coverage to maintain herd immunity (Boëlle, 2007). Coverage, however, can be affected by several factors.

According to United Nations Children's Fund¹² (UNICEF) vaccine preventable diseases (VPDs) cause an estimated 2 million deaths or more every year, of which approximately 1.5 million deaths occur among children below five year age. These 1.5 million deaths represent approximately 15 percent of under-five deaths. Reducing child mortality by two thirds between 1990 and 2015 is the fourth of eight Millennium Development Goals endorsed by world leaders in the Millennium Declaration in 2000 (UNICEF and WHO, 2000).

Some infectious diseases have the potential to cause long-lasting health problems that are permanent in nature. Immunization helps to guard against such hazardous diseases. In the past two decades, vaccines have shown a tremendous ability in preventing serious illnesses, and

averted death in millions of cases. They have proved to be one of the most effective tools ever created to help babies live a healthy life (WHO, 2006).

1.2 Problem statement

Despite successes in control of vaccine preventable diseases in the developed world, they still require better control particularly in developing countries with limited resources (Bedford, 2008). The immunization coverage in many rural areas in developing countries needs improvement (Schwarz et al, 2009). The reasons for inadequate immunization coverage in these countries are several. Numerous other factors are also known to contribute to success or failure of immunization programs (Yarwood et al, 2005). Published information about immunization and factors affecting attendance are lacking for Arapai sub-county, Soroti district-Uganda.

1.3 Objectives

1.3.1 General objective

To assess childhood immunisation practices among parents in Arapai subcounty, Soroti district-Uganda

1.3.2 Specific objectives

- i. To assess the knowledge about childhood immunization among parents in Arapai subcounty, Soroti district-Uganda.
- ii. To determine the attitudes towards immunization among parents in Arapai subcounty, Soroti district-Uganda.
- iii. To determine the practices of childhood immunization among parents in Arapai subcounty, Soroti district-Uganda.

1.4 Research questions

- i. What is the knowledge about childhood immunization among parents in Arapai subcounty, Soroti district-Uganda?
- ii. What are the attitudes towards immunization among parents in Arapai subcounty, Soroti district-Uganda?
- iii. What are the practices of childhood immunization among parents in Arapai subcounty, Soroti district-Uganda?

1.5 Justification

While priority remains to increase immunization coverage levels, surveillance of vaccine preventable diseases is receiving high priority to identify weak pockets for intensification of immunization services and to document impact. Reducing child mortality by two thirds between 1990 and 2015 is the fourth of eight Millennium Development Goals endorsed by world leaders in the Millennium Declaration in 2000. Although researches have been published on parents' knowledge, attitudes and practices regarding childhood vaccination no such studies have been reported for Arapai sub-county. Therefore, this study was undertaken to assess parental knowledge, and attitudes on childhood immunization among the parents.

CHAPTER TWO: REVIEW OF LITERATURE

2.1 Introduction

Low socioeconomic status, sometimes resulting in counteractive practical circumstances such as lack of transport (Bedford, 2008), may play a role in preventing the completion of the full set of immunizations. In addition, acceptance of any program is highly dependent on parental attitudes towards immunization. A fear of adverse effects has a negative impact on paternal attitude. For example, in response to a hypothesized link to Autism, coverage of the Measles-Mumps-Rubella (MMR) immunization in some areas of Scotland (Friederichs et al, 2006) decreased significantly, reaching dangerous levels below 80% (Wakefield, 2008).

Recent analysis from WHO showed failure of a large proportion of children to access immunization services or to complete their immunization schedule. Lack of services due to system weaknesses, low public awareness, or fears and misconceptions about vaccines were some of the influencing factors (WHO, 2012). Vaccination coverage can be affected by many other factors like low socioeconomic status and low education level. These factors can play a role in delay or finishing full set of vaccination (Schwarz et al, 2009).

A cross sectional study was conducted on Maternal knowledge and practice about the routine immunization programme in a semiurban area in Rajasthan, 2003. A Total of 166 mothers were interviewed using a pre-tested interview schedule/questionnaire on Knowledge, Attitudes, Practice and Expectations (KAPE). The results showed that among the 12-24 month old children 50% fully, 31.3% partially and 18.7% not at all immunized. High levels of initial vaccination

rates and low levels of OPV3/DPT3 (62.7%) and measles (51.8%) vaccines indicate that completing vaccination schedule needs attention. Almost all the children in the study, 165 out of 166 received two doses of polio vaccine from the Pulse Polio Immunization programme. Majority of the mothers expressed favourable attitudes and practice regarding the programme. Though many were aware of the importance of vaccination in general, specific information about importance of completing the schedule and knowledge about vaccine preventable diseases other than poliomyelitis was very limited (Manjunath and Pareek, 2008)

A study was conducted on knowledge, practice and attitude regarding vaccination among mothers in Iran, 2005. The results showed a favorable attitude towards children immunization in 95.5% of respondents. Nearly half (51.4%; 95% confidence interval: 47.6%–55.2%) of mothers knew the name of the diseases against which their children were being vaccinated. More than half (67%) of respondents gave disproportionate importance to mild intercurrent illness as a reason to defer immunization. About half of children (341=51.1%) experienced vaccination delay. Results of logistic regression analysis showed increase in: birth order, number of children in household, and mother's age significantly predicted vaccination schedule non-adherence (P=0.02, P=0.02 and P=0.04 to P=0.001 respectively) and increasing mother's age was the most significant factor for vaccination delay. Educating mothers about the vaccines and vaccine preventable diseases, and improving their performance are recommended (Shahla et al, 2008).

A study was conducted on knowledge, attitudes and practices of parents regarding immunisation in Kinshasa, Democratic Republic of the Congo in 2008, A total of 1 613 children aged zero to four years participated in the study. Awareness of immunisation and its importance in protecting a child against diseases was universal, although most mothers could not tell exactly against

which diseases. Mothers had positive attitudes towards immunisation (98%). Coverage based on the immunisation card, however, was as low as 37%, indicating a discrepancy between the high level of knowledge and positive attitudes, with the observed low immunisation coverage. The father's education and the mother's experience of an EPI-targeted disease in the family emerged as significant predictors of complete immunisation of the child. The father's involvement and the mother's ability to cite signs of severity of EPI diseases were associated with the child's vaccination status in the high-coverage health zone. The mother's vaccine-related knowledge was a predictor of immunisation status only in the low-coverage zone (EPI, 2008).

A study was conducted on Knowledge, attitude and practice survey on immunization service delivery in Guangxi and Gansu, China. KAP surveys were conducted in 12 randomly selected counties from high and low quality immunization service delivery area in Guangxi and Gansu Provinces. The level of immunization knowledge among parents was positively associated with attitude and practices of immunization. Immunization coverage was 89.3% in the high and 63.8% in the low service areas. Low coverage was associated ($p < 0.01$) with the number of immunization service sessions per year, fee for immunization services and health insurance schemes for immunization services. Immunization coverage can be improved by ensuring sufficient immunization service sessions per year, reducing the cost of immunization services and increasing the participation in health insurance schemes for immunization services (Xinglu, 2009)

A study was conducted on attitudes, knowledge and practices of health professionals regarding immunization in regional NSW, 2008. : A self-administered questionnaire was posted in 2008 to health professionals, located within the North Coast and Hunter New England Area Health Services regarding immunisation. This included general practitioners (GPs), practice nurses,

community nurses, hospital nurses and midwives. Out of 926 surveys sent, 434 were returned (47%). The great majority of the health professionals (97%) believed that vaccines were safe, effective and necessary. However, in approximately one-third of respondents, there were specific concerns about additives, immune system overload and the number of vaccines. Significantly more health professionals in the North Coast area believed that additives in vaccines may be harmful and that adding more vaccines to the schedule would make immunisation too complex. Among GPs, over half felt uncomfortable about giving more than two injections at the one visit. Health professionals in this study had overall confidence in vaccines but had specific concerns about the number of vaccines given to children and vaccine content (Carton et al, 2010).

A study was conducted on Knowledge and practice of oral polio vaccine-vaccine vial monitor among health personnel in India, 2002. A total of 115 health personnel were interviewed. More than half (55.6%) of them were block-level officers and below, 28.6% were district- and state-level officers, 6% were medical institution faculty/health trainers, 1.7% were health administrators and 7.8% were peripheral health staff. More than half of those interviewed (55.6%) had a service experience of 19 years or more, 25.2% had experience of 6 years or less and 19.1% had 7–18 years of service experience. Fifty-two percent had received immunization-related training twice or more, whereas 36.4% had received training at least once. Response to question on training received was not given by 11.3% (Bornny et al, 2005).

A study was conducted to examine knowledge, attitude and perceptions regarding vaccination in 11 states in northern Nigeria, 2006. A severe lack of knowledge regarding the causative agent of poliomyelitis was observed, and in many cases respondents attributed this to evil spirits. The proportion of respondents that had heard of childhood immunisation was high, ranging from 86.5% in Kebbi state to 98.9% in Kaduna state. Knowledge related to dosage of polio vaccine

varied, ranging from 1.6% in respondents in Bauchi state who believe that children need only one dose of polio vaccine, to 23.3% of their counterparts in Kano state. In Yobe, 52.9% of parents were ignorant of the number of doses of polio vaccine required. A substantial proportion of respondents in all states wrongfully believed that administering more than four doses of polio vaccine is harmful to a child, ranging from 12.6% in Bauchi to 32.2% in Jigawa. The proportion of respondents that accepted that children should be immunised was high across all states, ranging from 80.2% in Zamfara to 93.8% in Kaduna state (Ekute et al, 2007).

A study was conducted on knowledge of mothers regarding pulse polio and other immunisation in New Delhi, 2004. The study related that children of all age group participated on pulse polio immunisation, though the coverage was low in 37-48 and 49-60 month age group. In all 30.5 % children of respondent could not get OPV in the previous year and they came for the first time to the pulse polio immunisation centre. A significant finding of the study was the status of children regarding other immunisation. About 59.5% of the respondent had not immunized their children with other vaccines. In the present study 73% of the respondent ha correct information about pulse polio. Predominant source of information about pulse polio was found to be electronic media (58.8%) follow by health workers (20.9%). Only 8.4% respondent opined that distance of PPI centre was away from the residence (Kharir et al, 2006).

A study was conducted on knowledge and practice regarding immunisation in Wardha district, Punjab. One hundred and thirty mothers in the age group of (15-44) years and 142 children aged between(2-59) months were selected by clustering sampling method from the nine villages. 100 mothers and 122 children could be contacted for evaluation of immunisation coverage and assessing maternal knowledge and practice regarding immunisation. 52.5% children were fully immunised and 45.1 % were partially immunised. Vaccine coverage for BCG and primary dose

of DPT/OPV was 95.5% and above 85% respectively. It was 57.4% for measles and 63.04% for booster dose of DPT/OPV. Dropout rate from second to third dose of DPT/OPV was 5.3% and for third to booster dose was 36.96 %. Mother had fair knowledge regarding the need of immunization but poor knowledge regarding the disease prevented and doses of vaccines. Health workers and nurses are the major source of information and can spread the adequate knowledge regarding immunisation schedule (Tulmon et al, 2009).

CHAPTER THREE: METHODOLOGY

3.1 Study area

The study was conducted in Arapai sub-county of Soroti district, Eastern Uganda. The geographical location of Soroti district is on latitudes 1033 and 2023 north of the equator; 300 01 and 34018 east of the prime meridian and is over 2500 feet above sea level with rocks in most areas. The district borders Serere, Lake Kyoga, Kumi, Ngora, in the South, Kaberamaido in the west and Amuria from the north and Katakwi district in the north east. District covers approximately 2662.5km² areas, of which 2256.5km² is land and 406km² is water. The sub district has four (04) parishes and 27 villages.

3.2 Study population

The study involved male and female parents or caretakers of children.

3.3 Study design

A cross-sectional study design was used to conduct this study.

3.4 Sample size

The sample size (n) was calculated using the standard formula below:-

$$n = \frac{Z^2 P (1-P)}{d^2} \text{ (Lwanga and Tye 1986).}$$

Where d = margin of error of setting a significance level of 0.05 (i.e. 5%).

P= proportion of non adherence to immunization schedule in Uganda and is known to be 12.0% (Maher et al 2011)

Z=Level of significance (1.96) for confidence interval of 95%.

With the above formula 114 participants were recruited into the study.

3.5 Data collection

Simple random sampling was used to select study participants. The participants were given self-administered questionnaires to provide information on demographic, and other factors related to the study. In the cases where the selected participant was illiterate, the researcher guided them through the questionnaire.

3.6 Data analysis

Only questionnaire which had been filled fully and correctly was considered for analysis. Data was then entered and analysed statistically using Microsoft office excel, 2007.

3.7 Inclusion criteria

To be included in the study, a participant had to;

- i. Consent to participate
- ii. Be a parent/care taker irrespective of age

3.8 Exclusion criteria

- i. Those who refused to consent
- ii. Those who were found not to be in a sound state of mind

3.9 Ethical considerations

Clearance was obtained from Kampala International University Research and Ethics Committee. Informed consent was sought and obtained from the participants. All results were treated with utmost confidentiality by ensuring that only authorized people had access to them. To ensure anonymity, no names were used but instead codes only known to the researcher.

CHAPTER FOUR: RESULTS

Table 1: Demographic distribution of respondents

	18-25 (%)	26-30 (%)	31-35 (%)	36-40 (%)	41-45 (%)	above 45 (%)	Total (%)
Female	37 (32.5)	18 (15.7)	11 (9.6)	6 (5.3)	9 (7.9)	2 (1.8)	83 (72.8)
Male	4 (3.5)	7 (6.8)	15 (13.2)	2 (1.8)	1 (0.9)	2 (1.8)	31 (27.2)
Total	41 (36.0)	25 (22.5)	26 (22.8)	8 (7.1)	10 (8.8)	4 (3.6)	114 (100)

From table 1 above, 72.8% of the respondents were female while 28.2% were male

Fig 1: What do you do in the first year of a Child’s life to protect them from harm?

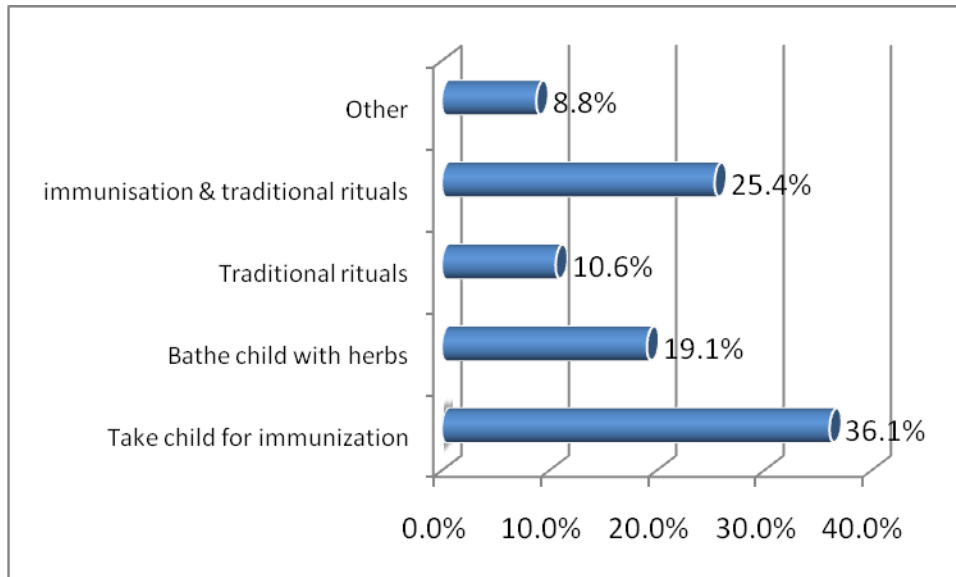


Figure 1 above shows that 36.1% of the respondents take their children for immunization, 25.4% used a combination of immunization and traditional protective measures, 19.1% reported bathing their children with herbs

Fig 2: Were/ are all your children fully immunized

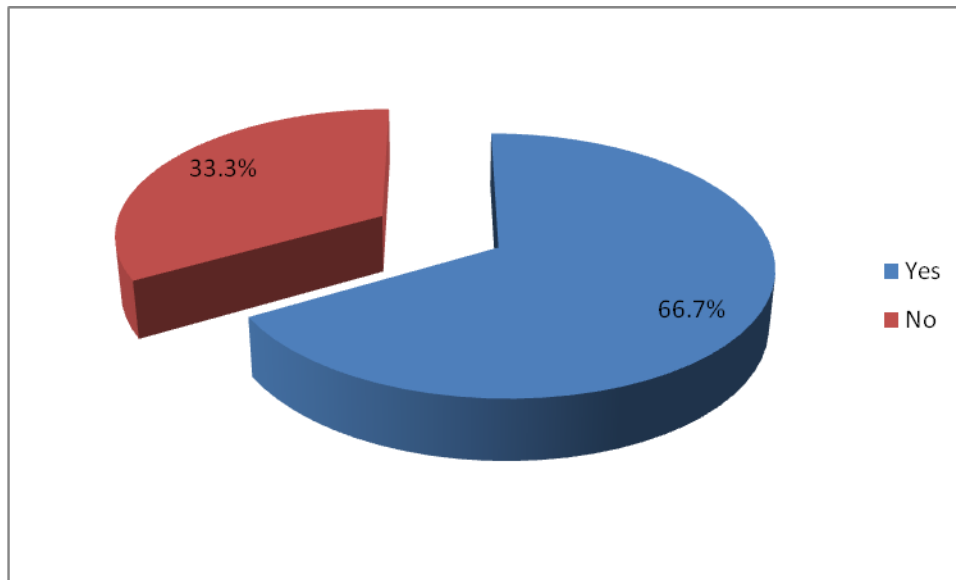
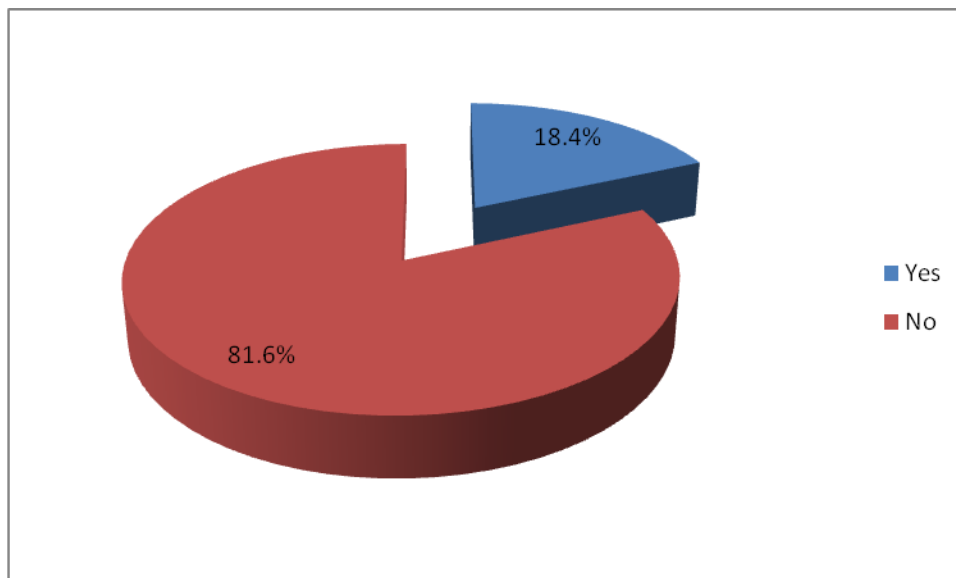


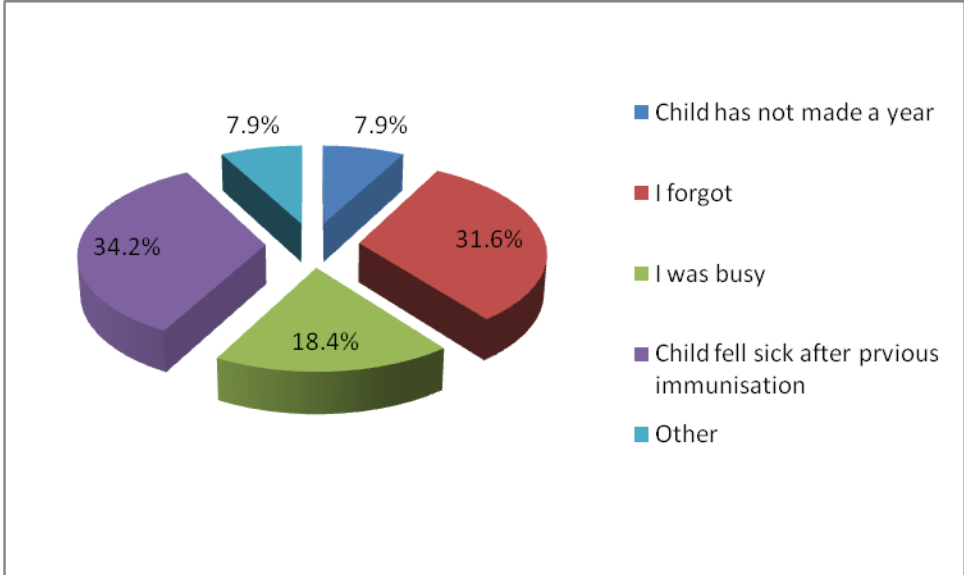
Figure 2 shows that 66.7% of the parents had their children fully immunized while 33.3% had their children not fully immunized.

Fig 3: Aware of the immunization schedule



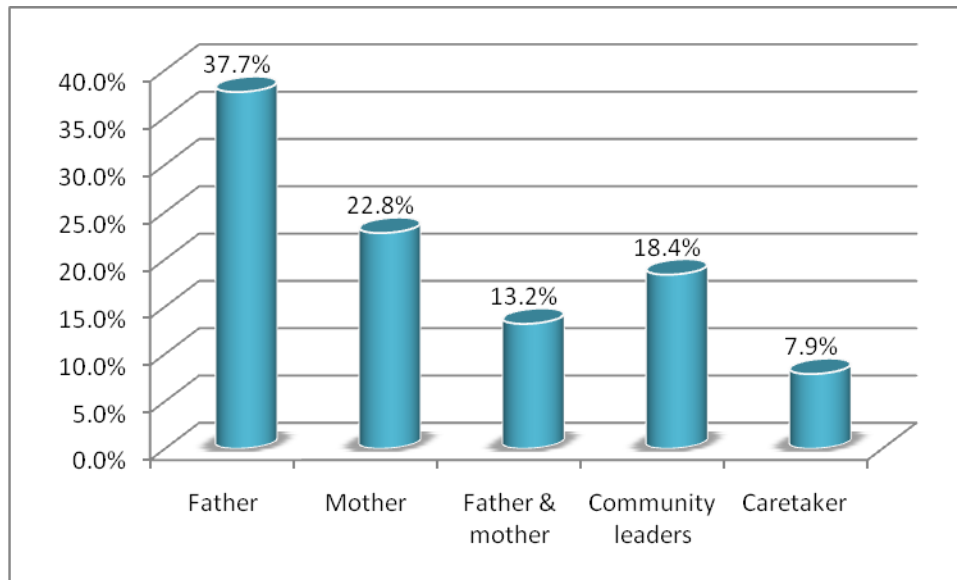
From figure 3 above, 81.6% of the respondents were not aware of the immunization schedule while 18.4% were aware of the immunization schedule.

Fig 4: Reason for not fully immunizing



Child Falling sick after previous immunization (34.2%) was the main reason given for not completing schedule. 31.6% of the parents reported having forgotten to take the children for the next visit, while 18.4% said they were busy.

Fig 5: Who makes decision regarding immunization of children



Father making the decision was reported by 37.7% of the respondents, 22.8% reported it was the mother, 13.2% reported it was a joint decision between mother and father while 18.4% reported community leaders influenced their decision to take on not to take children for immunization.

Fig 6: Immunization protects children against killer diseases

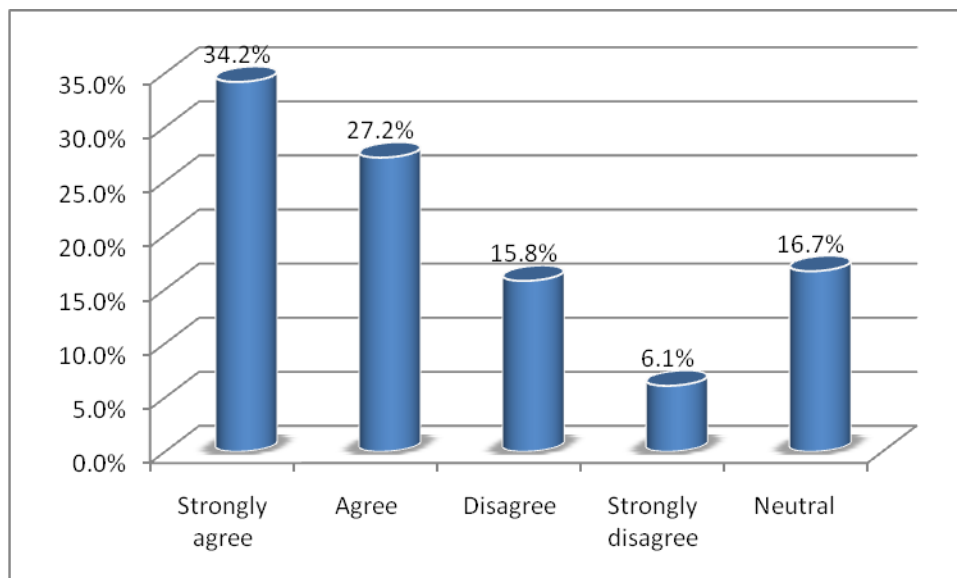
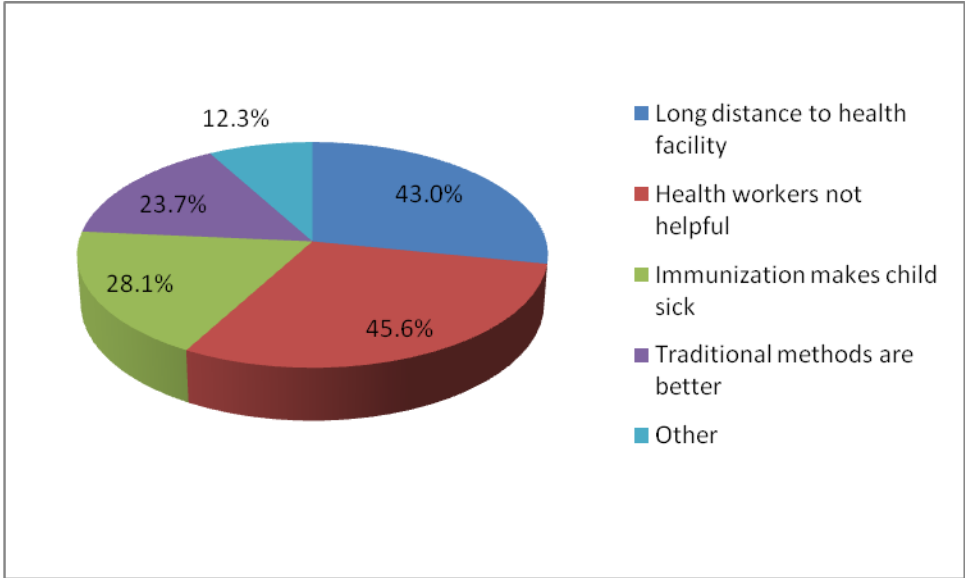


Figure 6 above shows that 34.2% of the respondents strongly agreed while 27.2% agreed that immunization protects children against killer diseases. 15.8% disagreed while 6.1% strongly disagreed.

Fig 7: Factors hindering uptake



Health workers not being helpful was reported by 45.6% of the respondents, long distances to the health facility was reported by 43.0%. 28.1% reported that immunization makes their children sick.

CHAPTER FIVE: DISCUSSION

5.1 Knowledge about childhood immunization among parents in Arapai subcounty

In the current study, figure 3 shows that only 18.4% of the respondents were aware of the immunization schedule for children. This finding is in contrast with a similar study by Madzu et al, (2011), in which majority of parents 91.9% knew the role of routine vaccination in protecting children from some infectious diseases and its complications. Madzu et al, (2011), further report that considerable proportion of (86.9%) parents knew the timing of the first dose in vaccination schedule. The study also contrasts another similar study by Wyners et al, (2006) where 83.1% of the parents and caretakers who were interviewed knew the vaccination schedule for children. The difference in levels of knowledge between the current study and the two previous similar studies could be because the current study was community based while the two studies where knowledge levels were high were conducted in health facility settings. It is expected that the parents who were interviewed in a health facility setting would have higher knowledge levels since they usually receive health education on every visit.

However, the current study is agreement with studies by Mugabi et al, (2009) and Opoka et al, (2005), in which 16.6% and 21.4% respectively of the respondents were reported to be knowledgeable about the immunization schedule for children. It has been previously reported (WHO, 2010) that knowledge about immunization is significantly related to parity or number of children under care. Parents or caretakers with more children have been found to be having more knowledge about childhood immunization as compared to those with fewer children. This could be due to the experience gained from every visit for each of the children.

5.2 Practices of childhood immunization among parents in Arapai

Analysis of the demographic characteristics of the parents participated in the present study showed that the mothers constituted the majority of the sample. Understanding mothers' knowledge and attitudes towards immunization is important, although the father's involvement was shown to be associated with the child's vaccination status.

From figure 2, 66.7% of the respondents had their children having been fully immunized while 33.3% reported that their children had not been fully immunized.

5.3 Attitudes towards childhood immunization among parents in Arapai subcounty

From the current study, 34.2% of the respondents strongly agreed while 27.2% agreed that immunization protects children against killer diseases. 15.8% disagreed while 6.1% strongly disagreed. In a similar study by Fata et al, (2005), majority (98.4%) of the parents either strongly agreed or agreed that child immunization is important. Most (91.5%) of them considered immunization is more beneficial than harmful and 73% strongly agreed or agreed that vaccines are safe. Out of parents 82.9% and 56.8% parents strongly agreed or agreed that child immunization is not prohibited in religion and the administration of vaccines is associated with side effects respectively. In the present study, 16.7% of the respondents were neutral about the protective ability of vaccines. In a study by Fata et al, (2005), nearly 40% of parents were not sure if the child becomes infected after immunization with the disease/s against which he/she was vaccinated or not.

5.4 Conclusion

There is a need to increase awareness and knowledge about the benefits and importance of vaccination, as well as the harmful consequences of non-complete immunization.

5.5 Recommendations

- i. A planned educational programme is needed; the educational level of the parents needs to be taken into consideration when the programme is planned, especially as regards those with a lower educational level
- ii. Mass sensitization of communities about childhood immunization should be on-going, through the year and not during specific times of the year.

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APPENDICES

Appendix I: Map of Soroti district showing the location of the study area.



Appendix II: Informed consent form

Introduction

Good morning/afternoon, my name is Alingo Collins and I am a student at KIU-WC. I am conducting a survey in Arapai subcounty. The purpose of this study is to learn what parents think, feel and know about childhood immunization. The information you provide will help to understand what parents need in order to help keep their children healthier.

I would therefore like to ask you some questions about the immunization program for children. I will not ask for your name and I will not show your answers to anyone else.

I would greatly appreciate it if you could help us understand the strengths and weaknesses of the present program. What we learn from you will help us to improve support to you so you can help the communities and provide a good service.

Appendix III: Questionnaire

Demographic Information

Sex Female Male

Age (In years)

Highest level of education completed

None Primary Secondary Tertiary

1. How many children do you have?

.....

2. What do you do in the first year of a Child's life to protect them from harm?

.....

3. Were/ are all your children fully immunized?

Yes No

4. If No, why?

.....

5. Who makes the decision to take a child for immunizations?

.....

6. Who does this person seek advice or information from?

.....

7. What prevents people from having their child immunized?

.....

8. What are the worries with Immunization?

.....

Appendix IV: Budget estimate

ITEM	UNIT COST (UGX)	NO OF UNITS	AMOUNT (UGX)
Printing	10,000	5	50,000
Type setting	500	70	35,000
Data analysis	50,000	1	50,000
Research assistant	10,000	7	70,000
Transport	200,000	1	200,000
Internet access	40,000	1	40,000
TOTAL			445,000

Appendix V: Time frame

ACTIVITY	JUL 2014	AUG 2014	SEPT 2014	OCT 2014
<ul style="list-style-type: none"> • Project Proposal writing. • Approval of Project Proposal. • Securing Support from Stakeholders 				
<ul style="list-style-type: none"> • Acquisition of requirements. 				
<ul style="list-style-type: none"> • Data collection 				
<ul style="list-style-type: none"> • Data Analysis • Thesis write up. 				
<ul style="list-style-type: none"> • Presentation of Thesis for examination 				