

KNOWLEDGE, ATTITUDE, AND PRACTICES TOWARD CHILD IMMUNISATION AMONG MOTHERS ATTENDING KISIITAHEALTH CENTER III IN KAKUMIRODISTRICT. A CROSS-SECTIONAL STUDY.

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ABSTRACT

Introduction

The burden of un-immunized children in Uganda is 48% of children under the age of five years who are not immunized at all or partially immunized meaning some of them start immunization but do not complete the immunization schedule.

Methodology

The study was based on a purposive sampling method in which 117 mothers were enrolled in the study; the study employed a structured questionnaire which was administered by the researcher and the research assistants to collect data.

Results

Majority of the mothers; we're in the 21- 30 age group 60(51.3%), 84(71.8%) were married, 50(42.7%) were banyankore by tribe, majority 63(53.8%) were farmers, 40(34.1%) were Catholics, those who attained secondary education level were 63(53.8%). Of those who had heard about child immunization 73%, majority 44(37.6%) heard about it from radio, majority 60(51.3%) mentioned fever as the side effect they know following immunization, 57(48.7%) mentioned 3 and more child immunizable diseases, and majority mentioned others about the importance of child immunization, 34(29.1%) mentioned that immunization promotes child health, 20(17.1%) it protects from serious diseases, 19(16.2%) reduces risk of child death rates. The majority, 71% of the respondents said yes in support of child immunization services being carried out, 68% agreed that they would encourage others to bring their children for immunization, and 70% said yes the support of immunization programs to continue. The majority 71% had ever taken their children for immunization.

Conclusions

Majority of the mothers knew child immunization, its importance towards their children's health, and the VPDs.

Recommendations

Government should come up with programs creating awareness concerning the importance of child immunization as well as providing health education to parents about the Vaccine Preventable Diseases.

Keywords: Knowledge, Attitude, Child Immunisation, Mothers, Kisiita Health Center.

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Background to the study

Immunization is a means of protecting a person against vaccine-preventable diseases (VPDs) by building the body's defense system so that it can fight off diseases. This is achieved by giving vaccines through the mouth or by injection. Immunization is provided by qualified Health workers at all Government and non-government Health Facilities and Outreach sites in various communities at no cost.

The World Health Organization (WHO) recommends that all children aged nine months and below should be immunized against the following childhood diseases; Tuberculosis, Polio, Whooping cough, Diphtheria, Tetanus, Measles, Hepatitis B infection, Haemophilus influenza, Pneumococcal infection and Rota virus infection. The vaccines are administered starting at birth

or first contact and thereafter at 6 weeks, 10 weeks, 14 weeks, and 9 months.

A child needs to be immunized as they grow up because it strengthens a child's ability to fight diseases against childhood immunizable diseases, contributes to a child's proper growth and development, and reduces costs in terms of time and money spent on treatment which contributes to socio-economic development, protects the women and her future babies from tetanus though Immunization is very effective in preventing diseases when all recommended doses of vaccines are given at the right time as per the schedule.

Globally, vaccination continues to decline in 2021 with 25 million children missing out on life-saving vaccines, 2 million more than in 2020, and 6 million more than in 2019. The World Health Organization (WHO) estimates

of national immunization coverage also show that 112 countries experienced declining DPT3 coverage since 2019 with 62 of those countries declining by at least 5% points as a result 25 million children were under-vaccinated in 2021 where more than 60% live in 10 countries and 18 million did not receive any vaccines, an increase of 5 million from 2019. Asia holds the highest prevalence of noncompliance which implies notable gaps in vaccination coverage among most regions.

In Saudi Arabia, 51.8% of the parents don't adhere to childhood immunization which is related to a combination of perceptions of; the benefits of immunization, barriers to obtaining immunization, and self-efficacy.

According to Brown et al 2012, the immunization coverage in Sub-Saharan Africa is 71% which indicates a low level of immunization compliance in comparison to the WHO target.

The nationally acceptable coverage for every vaccine is 90%. However, according to the Uganda Demographic Health Survey (UDHS), the national immunization indicated that the national coverage is below the desired coverage of 90% except for BCG (96%) most likely because it's administered at birth. Many parents drop out or fail to go for routine immunization and do not complete the immunization schedule.

The key drivers of immunization schedule compliance in Uganda include education levels of caretakers or parents, cultural or religious beliefs, age of caretakers, terrain, accessibility to health facilities, mobility of the population, refugee status, negative or anti-vaccine sentiments, socioeconomic status, and attitudes of caretakers. Besides, there could be variations in health information management system (HMIS) based estimates that only 55% of children aged 12 to 23 months were found to be fully vaccinated with coverage being relatively higher in urban areas.

General objectives

The general objective of the study is to assess the knowledge, attitude, and practices toward child immunization among mothers attending Kisiita Health Center III Kakumiro District

METHODOLOGY

Study Design

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

Study area

The study was conducted in Kisiita Health Center III which is located 180.3km by the road away from Kampala City to Kakumiro district. It is Health Center III in the sub-county serving over 10000 people in a county of over ten villages. The study setting was selected because the problem under study is prevalent on the ground according to the immunization records presented in the research that was carried out in Uganda. The health facility offers many health care services including immunization, child health

services, obstetrics, HIV/AIDS management services, general

patient management, laboratory services, nutrition services, antenatal and post-natal services, EMTCT program as well as RCT services, among others. The study was restricted to knowledge; attitudes and practices of child immunisation among mothers attending Kisiita Health Centre iii located in Kakumiro district in western Uganda which took place in a period between 22nd May, 2023 to November 10th, 2023

Study Population

The study population comprised mothers with children aged 9 months and below attending MCH at Kisiita HC III in May 2023.

Selection criteria

Inclusion criteria

The study included mothers with children aged 9 months and below who attended immunization services at the MCH department in Kisiita HC III Kisiita Sub-county. Only mothers who consented to participate in the study were considered.

Exclusion criteria

Mothers who did not consent to participate in the study were excluded from the study and mothers who had children aged above 9 months were not included in the study.

Sample Size determination

The overall sample size was determined using Kish and Leslie (1965) formula.

$$N = \frac{Z^2 PQ}{e^2}$$

Where N= Sample size required

e= acceptable error/ required precision of the estimate = 0.09

Z= the standard variant (normal Z-score) corresponding to the confidence interval i.e., for the confidence interval of 95% Z=1.96,

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

$$Q = (1-P)$$

$$(1-0.558) = 0.442$$

$$n = \frac{1.96^2 \times 0.558 \times 0.442}{(0.09)^2}$$

$$n = 117 \text{ Respondents}$$

Therefore 117 respondents were involved in the study.

Sampling technique

The sampling technique was a non-probability sampling method i.e. purposive sampling method was used since the data to be collected involved mothers who brought their children aged 9 months and below for immunization.

Sampling procedure

The researcher selected mothers who brought their children for immunization at MCH in Kisiita HC III in Kakumiro district.

Data collection methods

The questionnaire was used for data collection in the study and was delivered by the researcher to the selected participants where information regarding factors associated with immunization schedule compliance was sought.

Data collection tools

The only data collection tool in the study was a questionnaire which comprised both open and closed-ended questions that were typed and printed on papers in English by the research including other materials like pens, rulers, and a parcel.

Data collection procedure

The respondents were informed about the content of the study and consent was sought. the researcher got information from the respondents as he recorded it himself with a serial number printed on every questionnaire for each respondent.

Piloting the study.

The researcher had to seek permission from relevant authorities and then developed a questionnaire which was pretested at Kisiita Health Center III to check the

effectiveness, reliability, sensitivity, and sustainability of the researcher.

Quality control

Two research assistants were recruited and trained by the principal researcher in how to answer questions in a questionnaire form, how to treat respondents ethically, and how to translate any question in the questionnaires for respondents. These assisted in interviewing mothers with children aged 9 months and below and filling in the questionnaire according to the responses given.

Data analysis and presentation.

The data collected was analyzed using Microsoft Excel, and SPSS version 22 to generate frequencies and percentages. Findings were presented in the form of tables pie charts and graphs

Ethical consideration

A letter of introduction from the principal of medicare Health Professionals College was presented to the administration of Kisiita Health Center III seeking permission to conduct the study within the health center. A copy of a letter was presented to MCH seeking permission to collect data among mothers. Informed consent was sought from the respondents after thoroughly explaining to them the study and high-quality confidentiality which was ensured by the use of serial numbers instead of names on the questionnaires and participation was voluntary.

RESULTS

Socio-demographic characteristics of respondents

Table 1: Distribution of Respondents by socio-demographic characteristics (n=117)

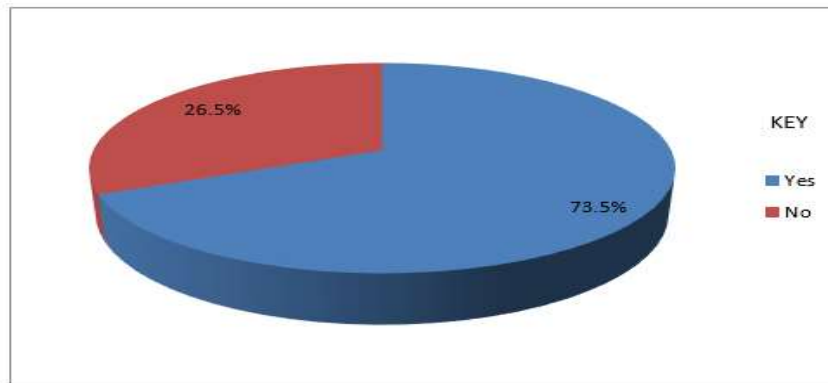
CHARACTERISTICS	FREQUENCY	PERCENTAGES (%)
AGE		
15-20	10	8.5
21-30	60	51.3
31-40	38	32.5
41-50	9	7.7
MARITAL STATUS		
Single	30	25.6
Married	84	71.8
Other	3	2.6
CULTURE		
Muganda	20	17.1
Munyankole	50	42.7
Munyoro	19	16.2
Musoga	15	12.8
Others	13	11.1
OCCUPATION		
Housewife	50	42.7
Farmer	63	53.8
Others	4	3.4
RELIGION		
Moslem	30	25.6
Protestant	21	17.9
Catholic	40	34.2
Born again	20	17.1
Others	06	5.1
EDUCATION LEVEL		
Primary	40	34.2
Secondary	63	53.8
Tertiary	10	8.5
None	4	3.4

The results show that the majority 60(51.3%) of the respondents were between (21-30) years of age while a few of them 9(7.7%) were 41-50 .84(71.8%) of the respondents were married, 30(25.6) were single and the least 3(2.6%) were of other statuses. The majority 50(42.7%) of the respondents were Banyankore by tribe and the minority 13(11.1) group were of other tribes besides Banyoro, basoga, and Baganda. The majority

63(53.8%) of the respondents were farmers while the minority 4(3.4%) were under the category of others. The majority of 40(34.1%) of the respondents were Catholics while the least 6(5.1%) were under the category of others. majority 63(53.8%) had attained a secondary level education and the least 4(3.4%) of the respondents had attended none of the education levels.

Knowledge towards child immunization among mothers attending Kisiita Health Center III in Kakumiro district.

Figure 1: Distribution of respondents by having ever heard about child immunization and child immunisable diseases=117.



The majority 73% of the respondents had ever heard about immunization and 26.5% had never heard about immunization.

Table 2: showing the distribution of respondents by where they have ever heard about immunization, n=117.

SOURCE OF INFORMATION	FREQUENCY	PERCENTAGE (%)
Radio	44	37.6
Health workers	42	35.9
None	31	26.5
Newspapers	0	0
Total.	117	100

Most 44(37.6%) of the respondents heard about immunization from the radio, 42(35.9) from health workers, 31(26.5) mentioned no sources of information and 0(0%) of the respondents heard about it from the newspaper.

Table 3: Distribution of mothers by which side effects they know about vaccines experienced by immunized children, n=117

ADVERSE EFFECT	FREQUENCY	PERCENTAGE (%)
Fever	60	51.3
Convulsions	0	0
Vomiting	12	10.3
None	45	38.5
Total	117	100

Majority 60(51.3%) of the respondents mentioned fever, 45(38.5) did not have any knowledge about any side effects, 12(10.3%) and none (0%) of the respondents mentioned convulsions.

Table 4: showing number of child immunisable diseases known by the respondents, n=117.

NUMBER OF IMMUNIZABLE DISEASE	FREQUENCY	PERCENTAGE (%)
None	44	37.6
Only 1	06	5.1
Only 2	10	8.5
3 and more	57	48.7
Total	117	100

The majority 57(48.7%) of the respondents were able to mention 3 or more child immunizable diseases, 44(37.6%) mentioned none, 10(8.5%) mentioned only 2, and the least 6(5.1%) were able to mention only one immunizable disease.

Table 5: Distribution of respondents by benefits of child immunization they know.n=117

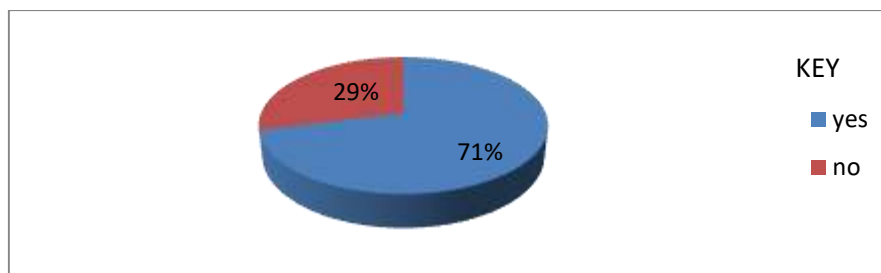
BENEFITS	FREQUENCY	PERCENTAGE (%)
Protects from serious diseases	20	17.1
Promotes child health	34	29.1
Reduces risk of child death rates	19	16.2
Others	44	37.6
Total	117	100

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The majority of the respondents 44(37.6) mentioned other responses about child immunization,34(29.1) said that immunization promotes child health,20(17.1) said that it protects from serious diseases and 19(16.2%) said that it reduces child death rates.

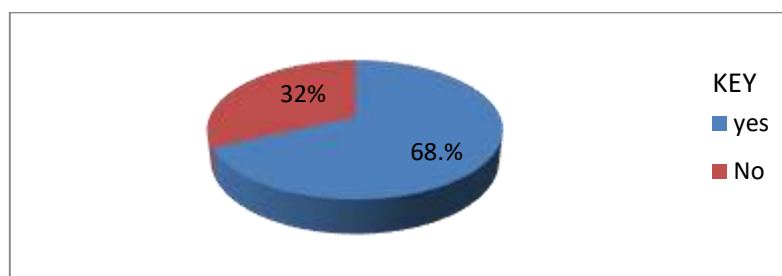
Attitude towards child immunization among mothers attending Kisiita Health Center III in Kakumiro district.

Figure 2: Distribution of mothers by whether they support child immunization services to be carried out .n=117



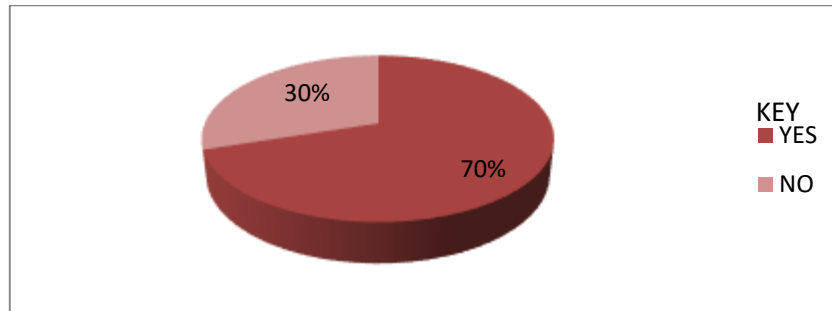
The majority 71% of the respondents said yes as they supported child immunization services to be carried out and the least 29% said no meaning they do not support child immunization.

Figure 3: Distribution of respondents by whether they would encourage others to bring their children for immunization, where n=117



The majority 68% of the respondents said yes about encouraging others to bring their children for immunization and the least 32% said no about encouraging others.

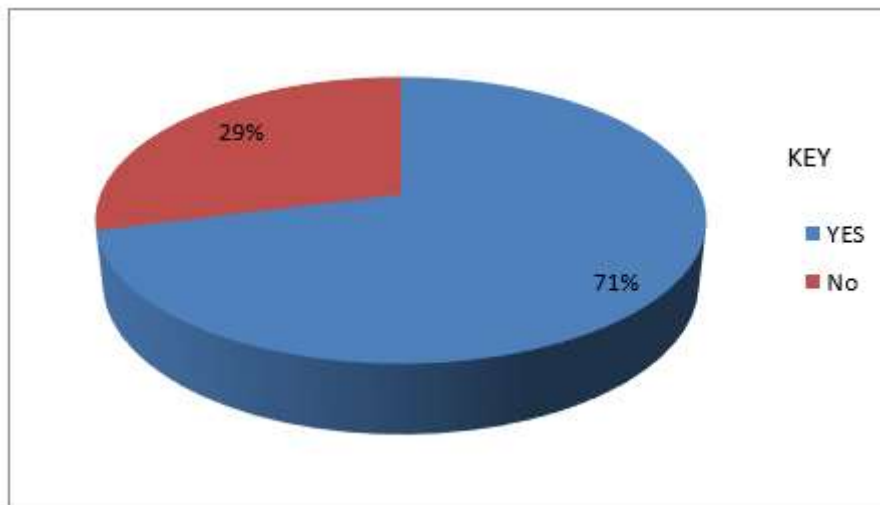
Figure 4: Distribution of mothers by whether they support child immunization programs to continue. n=117



The majority 82(70%) said "yes" meaning they supported child immunization programs to continue and the least 35(30%) said "No" meaning they are opposing it.

Practices towards immunization among mothers attending Kisiita Health Center III in Kakumiro district.

Figure 5: Distribution of respondents by having ever taken their children for immunization where n =117.



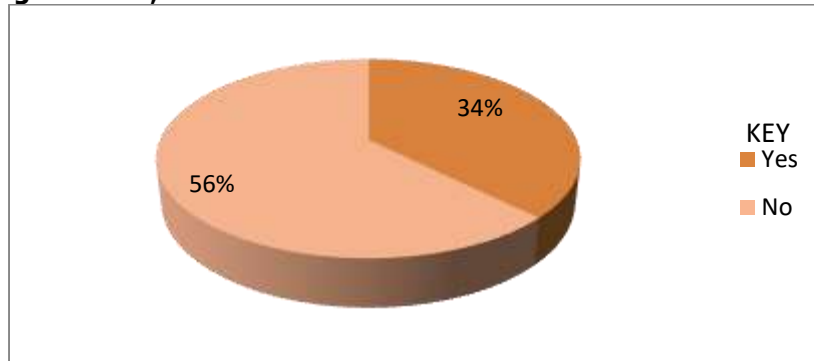
The majority 71% had ever taken their children for immunization and 29% had never taken their children for immunization.

Table 6: Distribution of respondents by the age at which they always stop taking their children for immunization. n=117

AGE OF CHILDREN	FREQUENCY	PERCENTAGE (%)
At birth	21	17.9
At 11 months	5	4.3
At 6 months	10	8.5
Above one year	81	69.2
Total	117	100

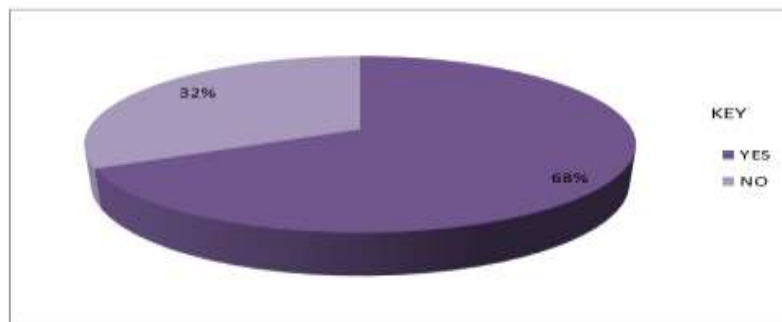
The majority of the respondents (69.2) always stopped taking their children for immunization at one year and above, 21(17.9%) said at birth, 10(8.5%) mentioned at 6 months, and 5(4.3%) mentioned at 11 months after childbirth.

Figure 6: Showing compliancy to children's immunization schedule according to the recommended guidelines, where n=117



The majority 56% of the respondents had complied with the child's immunization schedule according to the recommended guidelines and 34% had not complied with it.

Figure 7: Distribution of respondents who intended to take their children for immunization services, where n=117



Many of the respondents (68%) intended to take their children for immunization whereas a few (32%) of the respondents had no intention of taking their children for immunization services.

Discussion

Knowledge of mothers towards immunization

The study showed that 86 (73.5%) respondents had ever heard about child immunization and child immunizable diseases, and a few 31 (26.5 %) had never heard about child immunization. This is because the facility conducts routine programs for sensitizing mothers who always come for services about child immunization.

This study showed that 57(48.7%) of the respondents were able to mention 3 or more child immunizable diseases, 13.6% mentioned less than 3 immunizable diseases and 44(37.6%) could not mention any immunizable diseases. The reason why the majority mentioned 3 or more immunizable diseases was that most mothers had previously attended health education

sessions and sensitization from various communication media about child immunization.

The findings of this study indicated that the majority of the respondents were able to mention the benefits of child immunization where 29.1% said that immunization promotes child health, 17.1% said that it protects from serious immunized diseases, and 16.2% said that it reduces risks of child death rates. This means knowledge of the immunization benefits was of a big percentage compared to those who did not know the Clear importance of it. This is a result of the routine education provided to mothers who come for health services by the health personnel at Kisiita Health Center III, other mothers reported that their already immunized children are healthy compared to the non-immune ones they see in the community. This is in line with the study carried out by Vonasek et al.,2016 in rural Uganda which showed that a majority (93.5%) of the women knew that immunization protected children from diseases.

The majority of the respondents were aware of some of the adverse effects secondary to vaccination and gave some of them including fever (51.3%), vomiting(10.3%), and 45(37%) did not have any knowledge about any adverse effects. Most of them mentioned fever because their children had ever experienced it in their previous immunization sessions and others had knowledge from health workers' advice and education at the facility.

This is slightly in disagreement with the study carried out by Malande *et al.*, 2017 in Hoima district Uganda which showed that only 41.2 % of the respondents were able to mention the side effects following immunization of their children. where fever, skin rash, and convulsions were the common ones.

The attitude of mothers toward immunization

The study showed that the majority 70% said 'Yes' meaning they supported child immunization progress to continue and the least 30% said 'No' meaning they did not support it. This is because the majority knew the benefits of child immunization.

This is slightly in line with the study carried out in Saudi Arabia by Almutairi *et al* 2021 that showed 93.5% supported the compulsory vaccination designed by the Ministry of Health.

This study also indicated that 80(68%) of the respondents agreed that they would encourage others to bring their children for immunization and 37(32%) said that they could not encourage others to take their children for the services.

This is because most mothers knew the benefits and outcomes after their children got immunized thus having the internet encouraged others to join the sessions.

The study is in agreement with one carried out by Adedire *et al.*, 2021 which showed that 82.4% of the mothers advised other mothers to take their children for routine immunization, and also agrees with another study carried out by Almutairi *et al.*, 2021 which showed that 98.1% of the respondents advised their relatives and family to vaccinate their children.

Majority (71%)

of the respondents said yes in support of children's immunization services being carried out and only a few (29%) disagreed with it. This is because mothers had gained some information about the benefits of immunization. This agrees with a study carried out by Tagbo, 2012 in where most 75.4% of mothers accepted immunization on immunization campaign days and only a few 13% had out-rightly rejected immunization during campaign days.

Practices of mothers towards immunization

Most (56%) of the mothers had complied with the children's immunization schedule according to the recommended guidelines which was proved by looking at their children's immunization cards and the minority (34%) did not comply with it because they had missed most of their children's appointments for immunization. The majority of the mothers had complied with the

immunization schedule because they were educated about the importance of its completion and the likely risks to those who may fail to complete it. This study agrees with a study conducted by Amugune, P, *et al.* (2020). where 62.8% of mothers had fully complied with the child immunization schedule.

The study showed that the majority (71%) of the mothers had ever taken their children for immunization services and a few (29%) had never taken their children for immunization services and this was indicated by seeing on their immunization cards. This is because most mothers delivered their babies from health facilities where they were encouraged to always attend immunization sessions for the good health of their children. This was in agreement with a study which was conducted by Oryema *et al.*, 2017 in Hoima District which found that the majority 87.4% of children had ever utilized outreach immunization services which was due to caretakers' knowledge about the benefits of childhood immunizations before community mobilization about outreach sessions. Furthermore, the study showed that the majority of the mothers 81 (69.2%) usually stop taking their children for immunization at above one year of age, 10(8.5%) at 6 months, 5(4.3%) at 11 months and 21(17.9%) at birth. This is because of the regular health education to the mothers about child immunization and immunization schedule compliance. This is in agreement with a study carried out in Atakumosa West District Osun State in Nigeria by Adedire *et al* 2016 which indicated that 74.4% of children were taken for a full immunization, 20.8% were partially immunized and 4.8% were not taken for any vaccination.

Conclusions

The study findings indicate that the majority of the mothers know child immunization, its importance towards their children's health when a child needs to be vaccinated, the VPDs, and the recommended sites for different vaccines.

Results have shown that mothers generally have a good attitude toward the immunization of children since all had ever brought their children for immunization.

The findings revealed that mothers had good practices for immunization of their children which was portrayed by their children's health cards.

Recommendations

The study recommended that:

The government should come up with programs creating awareness concerning the importance of child immunization and delivery of immunization services at all health facilities among various communities as this is associated with a higher likelihood hood of child immunization.

Secondly, health facilities providing EPI services should strengthen continuous staff motivation, regular supervision, and continuous monitoring and evaluation to detect any declines in vaccination coverage earlier

Thirdly, for children whose parents have low education status, it's recommended that all health facilities always

conduct health education talks to encourage and create more awareness about Vaccine-Preventable Diseases, correct false ideas known to mothers about child immunization and the values plus benefits of child immunization with its consequences to the child's health if he or she is not immunized.

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List of Abbreviations and Acronyms

AIDS: Acquired immunodeficiency syndrome
BCG: Bacille Calmette- Guerin
DPT: Diphtheria, pertussis, tetanus
EMTCT: Elimination of mother-to-child transmission
HC: Health Center
HIV: Human immunodeficiency virus
MCH: Maternal and child health
MOH: Ministry of Health
OPV : Oral polio vaccine
RCT: Randomized controlled trial
SPSS: Statistical Package for the Social Sciences
UDHS: Uganda Demographic Health Survey
UNEPI: Uganda National Expanded Program for Immunization
UNICEF: United Nations Children's Fund
VPDS: Vaccine-preventable diseases

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