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Assessment of Maternal Knowledge, Attitudes, and Practices towards Childhood Immunisation: A Cross-Sectional Study at Hoima Regional Referral Hospital

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ABSTRACT

Public health continues to place a high priority on childhood vaccination, but successful immunisation programmes depend on an understanding of mothers' knowledge, attitudes, and behaviours (KAB) towards vaccination. The purpose of this study was to evaluate the mothers' knowledge of kid immunisation at Hoima Regional Referral Hospital (KAB). A cross-sectional survey was carried out on a sample of women who visited the paediatric clinics of the hospital. Employing structured questionnaires, data were gathered and then subjected to both descriptive and inferential analysis. The findings showed that people's understanding varied, and certain misconceptions were noted. Although worries regarding the effectiveness and safety of vaccinations remained, attitudes towards them were largely positive. High vaccination rates were found in practice; however, accessibility and awareness issues were also recognised as impediments. The aforementioned results highlight the significance of customised educational initiatives and enhanced accessibility in achieving maximum vaccination rates and successfully addressing vaccine-preventable illnesses.

Keywords: Assessment, Knowledge, Attitude, Practice, Childhood Vaccination

INTRODUCTION

The WHO lists childhood immunization as one of the interventions with a significant influence on health outcomes, but vaccine-preventable illnesses continue to be the leading cause of child mortality in developing countries. Even though the WHO lists childhood immunisation as one of the interventions with a significant influence on health outcomes, vaccine-preventable illnesses continue to be the leading cause of child mortality in developing countries [1, 2]. A study from the Millennium Development Project [3] listed Sub-Saharan Africa as the region with the lowest performance in fulfilling the Sustainable Development Goals (SDGs) on reducing child mortality. According to studies, the region's ineffective immunisation programmes are to blame for the majority of under-five mortality [4, 5]. One of the most lasting and economical public health interventions is childhood immunization [6]. It is impossible to overstate the advantages of routine childhood immunisation in lowering morbidity and death from diseases that can be prevented by vaccines [7, 8]. According to data from the WHO, routine child immunisations globally save 3 million lives each year, and the death rate from measles has significantly decreased (by 84%) thanks to measles vaccination [9]. Currently, vaccination prevents an estimated two to three million fatalities from diphtheria, tetanus, pertussis (whooping cough), and measles each year in all age groups [10]. Therefore, immunisation is a crucial strategy for achieving Sustainable Development Goal (SDG) number 3, which aims to reduce under-five mortality to less than 25/1000 live births by 2030 [11].

Despite being a developing nation, Uganda's health fell behind many other nations but was on par with those in the WHO's Africa area [10]. In 2017, there was a 5.5 percent chance that a child would die before turning five (55 deaths for every 1,000 live births), and in 2015, total health spending as a percentage of GDP was 9.8%, which sparked discussions about immunisation, health education, and eventual uptake [12]. According to Uganda's health information management system (HMIS), only 55% of children between the ages of 12 and 23 months were found to have had all recommended vaccinations, with coverage being somewhat greater in urban (61%) than rural areas (50%) [13].

According to earlier research, a variety of intricate elements affect whether or not vaccinations are demanded and accepted [14]. In most low-income countries, like Uganda, ineffective immunization services are hampered by a number of health issues, including difficult terrain for transportation, a lack of supplies to meet demand in some facilities, frequent shortages of vaccine supplies, poorly trained medical staff, a shortage of medical personnel, and a lack of community awareness of the need for immunisation and the availability of vaccines [15].

It has been discovered that the uptake of vaccination services depends not only on their availability but also on a number of other factors, such as parental awareness, attitude, and behaviour, as well as the availability of health professionals [16]. Numerous studies conducted across the world on mothers' knowledge, attitudes, and practices (KAP) about the immunisation of children have revealed that a parent's knowledge and attitude are crucial for a successful immunisation process [1].

Hoima, one of the largest districts in western Uganda bordering the Democratic Republic of the Congo (DRC), has consistently performed poorly with low routine immunisation coverage despite the fact that Uganda has a mandatory and active national immunisation programme and laws that encourage immunisation and that make it illegal for carers to intentionally fail to take their children for routine immunisation [15]. The district continues to regularly report outbreaks of diseases that can be prevented by vaccination, particularly measles [17]. The district continues to regularly report outbreaks of diseases that can be prevented by vaccination, particularly measles. In order to improve immunisation in Uganda, policymakers can benefit from knowing the state of immunisation at Hoima Regional Referral Hospital as well as the underlying facilitators and barriers to effective immunization. Therefore, the purpose of this study is to assess the knowledge, attitudes, and practices of mothers towards the immunisation of children at Hoima Regional Referral Hospital.

Through the Child Care Programme, the Ministry of Health increased its efforts to educate and teach people about the value of immunisations, make use of the Village Health Teams, disseminate information on primary care through various media, and give health talks to carers [12]. Despite this, there was still a continuous lack of vaccine uptake in the area, and the causes of this lack of immunisation uptake are not well understood [18]. In most low-income nations like Uganda, notable health issues that affect and obstruct effective immunisation services include difficult terrain for transportation, a lack of supplies to meet demand in some facilities, frequent shortages of vaccine supplies, poorly trained healthcare staff, a lack of staff, and low community awareness of the importance of immunisations, available vaccines, and the need for vaccination [18].

Despite the fact that Uganda has an active and mandatory National Immunisation Programme and laws that encourage immunisation and make it illegal for carers to purposefully fail to take their children for routine immunisation, Hoima, one of the largest districts in western Uganda bordering the Democratic Republic of the Congo (DRC), has consistently performed poorly with low routine immunisation coverage [15]. Mothers' knowledge, attitude, and practice play an important role in achieving complete immunisation before the first birthday of the child; previous parent factors are also contributing to the success or failure of immunization programs [19]. Also, knowledge, attitude, and practice studies provide information about the people's awareness of certain topics, their feelings, and their [20].

Understanding the level of immunization in Hoima District, as well as the underlying enablers and inhibitors of effective immunisation in the district, can help inform policy aimed at enhancing immunisation in Uganda. It can also serve as a baseline for designing prospective interventional studies, trials, and modeling studies addressing these issues, the results of which can then be expanded to include the entire nation and similar low-income populations. This study's goals are to assess the state of vaccination services and pinpoint any immunisation health system gaps that may be causing poor vaccine uptake and incomplete immunisation schedules in the Hoima District. The objectives of this study are to evaluate the knowledge, attitudes, and practices of mothers regarding the immunization of children at Hoima Regional Referral Hospital, as well as their attitudes towards vaccination.

METHODOLOGY

Study Design

An aquatic and quantitative cross-sectional study was conducted in order to assess the knowledge, attitudes, and practices of mothers towards the immunisation of children at Hope Regional Referral Hospital.

Study Site

The study was conducted in the paediatric clinic, infant welfare clinic, and immunisation clinic at Hoima Regional Referral Hospital.

Study Population

The study was conducted among mothers visiting the paediatric clinic, infant welfare clinic, and immunisation clinic at Hoima Regional Referral Hospital.

Inclusion Criteria

It included all mothers with at least one child aged 0–5 years visiting the paediatric clinic, infant welfare clinic, and immunisation clinic at Hoima Regional Referral Hospital who were available at the time of collecting data and were willing to participate in the study.

Exclusion Criteria

Eligible mothers who refused to participate in the study.

Sample Size Determination and Rationale

The sample size will be determined using Kish Leslie's formula [21]:

$$N = \frac{P(1-P)Z^2}{e^2}$$

Where n is the desired minimum sample size, Z is the value at $\alpha = 0.05$, which is 1.96, e is the margin of error, and p is the immunization, where the coverage at Hoima Regional Referral Hospital is considered to be 50% due to the lack of available literature.

Therefore,

$$N = \frac{(1.96 \times 1.96) (0.5 \times 0.5)}{(0.08 \times 0.08)} \\ = 150 \text{ respondents}$$

Sampling Procedure

A simple random sampling technique was used to choose the respondents for the study, from whom data will be collected.

Dependent Variables

Childhood immunisation.

Independent Variable

Knowledge, attitudes, and practices of vaccination among mothers visiting the paediatric ward at Hoima Regional Referral Hospital.

Data Collection Method

An interviewer administered a questionnaire to collect data. After obtaining permission for data collection from the targeted respondents who took part in the study, the researcher met with them. Each participant was required to give informed consent before enrolling in the study. The researcher assisted the respondents in filling out the questionnaires by providing clarifications as needed. The researcher then collected the properly filled-out questionnaires and analysed the data. The researcher employed a structured questionnaire, posing similar questions to the participants, who then selected the most suitable option from the available options.

Data Entry and Cleaning

We checked for completeness, cleaned, and sorted the data in the questionnaire to remove obvious inaccuracies and mistakes. The data was then coded and entered into a computer.

Data Analysis

The data collected was statistically analysed and documented using Microsoft Excel and Word version 2019. The analysed data was presented in the form of tables and graphs, which formed the basis for discussion and conclusion, among others.

Quality Control

The researcher will conduct a pretest using 10 questionnaires to ensure quality control, and will collect data before the actual study to aid in the reconstruction of the questionnaires as needed.

Ethical Considerations.

Participants were given information regarding their research to seek consent. Each participant's choice to participate or not was respected, and the data collected from participants was kept confidential.

Dissemination of Results

The Kampala International University School of Medicine and Surgery will receive the study's results, which they can publish in online journals and discuss in workshops.

RESULTS

Table 1: Demographic Characteristics of Respondents

Variable	Frequency	Percentage
Age in years		
<20yrs	20	13.3
21-30	90	59.7
31-40	27	17.7
41-50	14	9.3
>50yrs	0	0
Tribe		
Bakiga/Banyakole	101	67
Bafumbira	11	7.6
Batooro	20	13.5
Basoga	6	4.3
Bakonjo	8	5.1
Others	4	2.5
Religion		
Catholics	40	26.7
Anglican	78	52.3
Moslems	24	16.2
Others	7	4.8
Education level		
Primary	101	67.3
Secondary	25	16.4
Tertiary	15	10.0
None	9	6.3
Occupation		
Peasant farmer	108	72.0
Commercial farmer	3	1.8
Housewife	24	16.2
Civil servant	9	5.9
Others	6	4.1
Marital status		
Single	35	23.6
Married	73	48.4
Widowed	14	9.2
Divorced/Separated	28	18.8



Figure 1: Education level of respondents

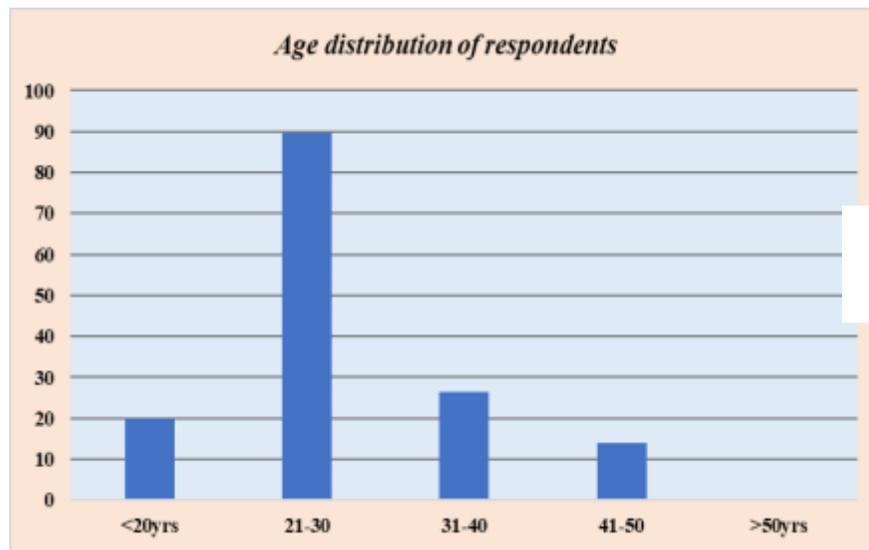


Figure 2: Age distribution of respondents

More than half of the respondents, 90 (59.7%), were 21–30 years old, 20 (13.3%) were 20 years and younger, 27 (17.7%) were 31–40 years old, and 14 (9.3%) were 41–50 years old. However, there were no respondents aged over 50 years. More than half of the respondents, 101 (67.0%), belonged to the Bakiga/Banyakoletribe; 13.5% were Batooro; 7.6% were Bafumbira; 5.1% were Bakonjo; and 13.0% were Batooro. In terms of religion, 78 (52.3%) of the respondents were Anglicans, 40 (26.7%) were Catholics, 24 (16.2%) were Muslims, and 7 (2.5%) belonged to other religions. The majority of 101 (67.3%) of the respondents were primary teachers; 25 (16.4%) of the respondents had reached secondary school, whereas only 15 (10%) had attained tertiary education; and 9 (6.3%) had no formal education at all. Also, 108 (72% of the respondents) were peasant farmers, while the fewest number (3.8%) were commercial farmers. Most of the sample population, 73 (48.4%), was married; only 28 (18.8%) were either divorced or separated, while only 14 (9.2%) were widowed.

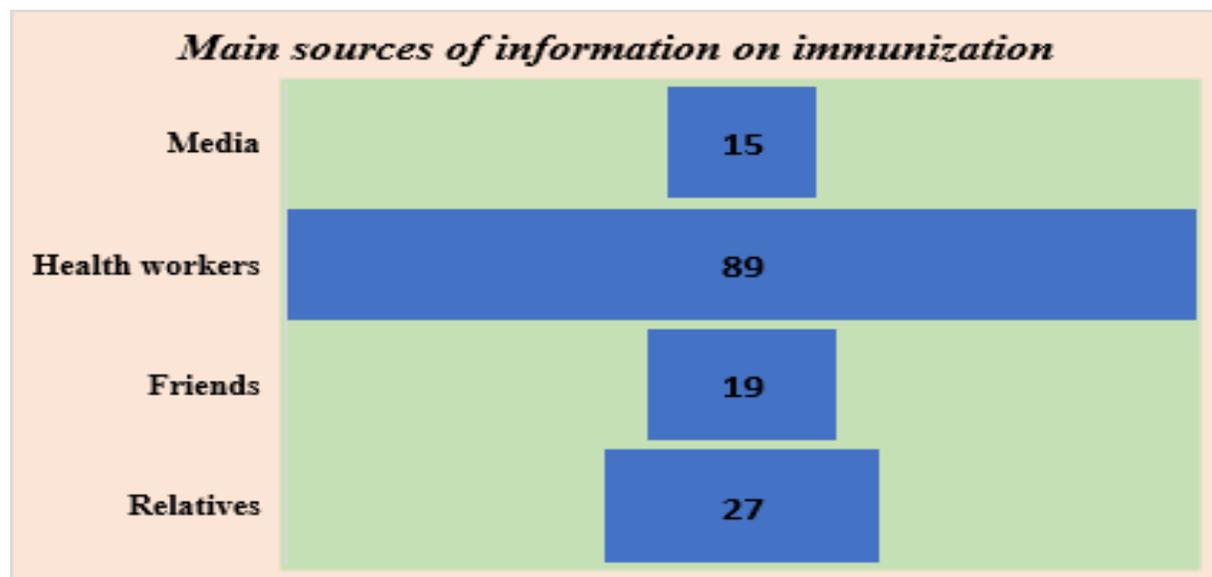


Figure 3: Majority (89) of the participants got their information from health workers. Other sources were Media (15), friends (19) and relatives (27) as shown in the figure

Table 2: Mother's knowledge toward childhood Immunization

Knowledge questions	Good knowledge	Poor knowledge
Vaccination starts at birth.	85%	15%
Routine vaccinations protect children from infectious diseases and their complications.	90%	10%
Most diseases against which children are vaccinated occur during the first years of life.	78%	22%
Vaccines given at intervals are important for child immunity.	80%	20%
Multiple vaccines at the same time have no negative impacts on child's immunity.	59%	41%
Importance of vaccinating children during immunization campaigns.	83%	17%
It is recommended to vaccinate children against seasonal influenza.	35%	65%
Non-immunized children can be allowed to go to school although they had one of the infectious diseases.	89%	11%
Common colds, ear infection, and diarrhea are not contraindications for vaccination.	51%	49%



Figure 4: Fifty-one percent of the mothers had good knowledge while 49% had poor knowledge about childhood vaccination

Table 3: Mother's Attitude toward childhood vaccination

Attitude questions	Positive attitude	Negative attitude
Child immunization is important.	99%	1%
Vaccinations benefits are more than their potential harms.	98%	2%
Vaccines are safe for child immunity.	82%	18%
Immunization may be associated with some side effects.	82%	18%
Child can become infected after immunization with the diseases against which he/she was vaccinated.	46%	54%
Compliance to immunization schedule is important.	98%	2%
Immunization will keep child healthy.	99%	1%
Immunization may not cause autism?	78%	22%
Complementary medicines are not better than immunization.	80%	20%

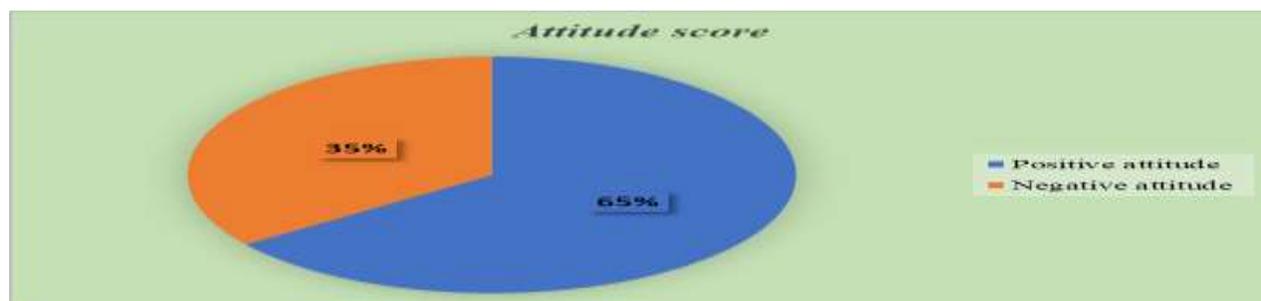


Figure 5: Sixty-five percent of the mothers had positive attitude while 35% had negative attitude toward childhood vaccination

Table 4: Mother's Practice toward childhood vaccination

Practice question	Positive practice	Negative Practice
Completion of immunization schedules.	91%	9%
Presence of vaccination card.	96%	4%
Appearance of any type of side effects after vaccination dose.	81%	19%
Hearing about immunizations through certain source.	99%	1%



Figure 6: Seventy-five percent of the mothers had positive practice while 25% had negative practice toward childhood vaccination

DISCUSSION

The mother's immunisation knowledge, attitudes, and practices should be favourable for successful immunisation and improving immunisation coverage throughout Uganda, particularly at Hoima Regional Referral Hospital. Their practice and attitude towards immunisation will improve as a result of their ability to acquire the necessary knowledge. Mothers' knowledge, attitude, and behaviour influence the success or failure of immunisation programmes because they regulate the accuracy and adherence of immunisation regimens as well as children's vaccination status. Using sets of questions relevant to mothers's comprehension of vaccination, the analysis of respondents' knowledge regarding vaccination was examined in this study. Only 77 mothers (51 percent) had a decent degree of expertise, according to the findings. This data makes it abundantly evident that mothers visiting Hoima Hospital frequently lack basic health literacy. Even though the majority of them had college degrees, some of them even went beyond that; their general understanding of immunisation wasn't adequate. This outcome may therefore be a reflection of the deficiencies in the Ugandan school curriculum in relation to fundamental health knowledge. This opinion is reinforced by two further studies that examined mothers knowledge, attitudes, and practices regarding immunisation and came to the same conclusion [22]. However, they disagree with the

findings of numerous other studies, which showed higher percentages of knowledge of childhood vaccinations [23].

The influenza vaccine is frequently advised for paediatric patients older than six months who are at high risk for complications associated with the virus, but healthy youngsters should only receive the shot if they share a home with someone at risk. The study's findings revealed that just 35% of the mothers who participated recognised that immunising children against seasonal influenza is advised. As a result of the lack of awareness of this sort of vaccine in Uganda, the mother's knowledge of influenza vaccination is inadequate. To achieve maximal immunity, most vaccinations on the childhood immunisation schedule require more than one dose. Some, such as tetanus and diphtheria, necessitate booster doses throughout one's lifelong reserve immunity [24]. Table 1 shows that in the current survey, a significant number of 160 (80 percent) respondents accurately identified the need for delivering vaccines at intervals for child immunity. For instance, a Saudi survey found that only 41.6 percent of those polled realised that administering multiple doses of the same vaccine is important for child immunity [25]. According to the survey, just 59 percent of respondents were aware that administering numerous immunisations at the same time had no harmful effects on child immunity. According to a study conducted in the United States, 72.5 percent of parents believe that delivering many immunisations at the same time may result in immune system overload [26]. This fear of vaccination excess may have a detrimental impact on vaccination acceptability. We should educate mothers about vaccine safety precautions. According to the current study, just half (51 percent) of study participants were aware that acute diseases such as fever, common colds, ear infections, and diarrhoea around the time of vaccination are valid reasons to postpone a child's vaccination. This number demonstrates the respondents' lack of understanding and information regarding vaccine precautions. Similarly, a survey of parents of unprotected measles cases in Merseyside, England, revealed that just being aware that child sickness According to Novilla et al. [27], certain health scenarios dictate the avoidance of vaccinations. Interestingly, despite their lack of understanding, the majority of participants (65%) had a positive attitude regarding vaccination, according to the findings of this study. One possible reason for this is that responding mothers were eager to continue immunising their children despite their reservations about vaccination. Furthermore, they may consent to proceeding with their child's vaccination while being subject to opposing sources of information from anti-immunisation advocates as well as their own personal anxiety [7]. This does not necessarily imply that mothers exhibit the behaviours and practices required for informed consent before consenting to vaccination. Modern vaccinations are incredibly successful. Vaccinations prevent most illnesses from spreading from person to person; the more vaccinated individuals in a society, the less likely they are to transmit the disease, but a small number may remain unprotected [28]. In the current study, mothers appeared to be adequately educated about probable vaccination side effects, as they reported fever and swelling at the injection site as the predominant adverse effects following immunisation dosage. The most intriguing conclusion in this study was that nearly three-quarters of respondents (75%) had a high level of vaccination practice. This result might be attributed to respondents' positive attitudes about vaccination as well as mothers' knowledge that immunisation is essential for school registration. Some educated mothers (10%) acquired information about vaccination from the media or the internet, where opponents of vaccines may disseminate biased or incorrect interpretations of verified scientific data if not appropriately handled [29]. This incorrect information, along with a likely decline in vaccination perception for disease prevention, might have a negative impact on vaccination coverage [30]

CONCLUSION

The findings of this study provide insight into respondent mothers' knowledge, attitudes, and practices towards child immunisation. Despite their poor understanding, the mothers in the study had a favourable attitude and a high level of practice towards child immunisation. This study makes it abundantly evident that mothers visiting Hoima Hospital frequently lack basic health literacy. Even though the majority of them had college degrees, some of them even went beyond that; their general understanding of immunisation wasn't adequate. According to this study, just half (51 percent) of study participants were aware that acute diseases such as fever, common colds, ear infections, and diarrhoea around the time of vaccination are valid reasons to postpone a child's immunization. Despite their lack of understanding, the majority of participants (65%) had a positive attitude regarding vaccination.

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