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Assessment Of Knowledge Of Caregivers On The Importance Of Immunization Of Their Babies Under The Age Of Five At Katutura Health Centre,Windhoek ,Khomas Region,Namibia

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Abstract

Introduction: *Immunization is one of the ways in which children can be protected against various infectious diseases and their complications. In Namibia, vaccination is for all the children and it is provided for free. There are factors that hinder caregivers from taking the child to the clinic for immunization and they are determined in this study. The aim of the study was to assess the knowledge of caregivers with regards to immunization importance and to provide information to caregivers on the importance of immunization. The objectives of the study were to determine the knowledge of caregivers on the importance of immunization and to determine the factors contributing to non-vaccination and under-vaccination of babies under 5 years old at Katutura Health Centre KHC.*

Methods: *A quantitative study was conducted using a descriptive design among 37 caregivers who bring their babies under the age of 5 years for immunization at Katutura Health Centre from 26th - 30th of September 2019 in which a purposive sampling method was used to choose participants for the study. Questionnaires with close-ended questions were used to collect data from the participants. The questionnaire consisted of four sections. Section A: Demographic data, Section B and C: Caregivers' knowledge on immunization importance and Section D: Factors contributing to under vaccination and non-vaccination of babies under 5 years.*

Results: *A total of 36 female and 1 male participated in the study, the youngest people to participate were 18 years and oldest were 49 years. Most of the participants (62.2%) were unemployed. Out of the total participants, 54. % strongly agreed that routine vaccination protects children against various infectious diseases and their complications however 24.3% agreed that vaccination can result into autism. Furthermore, 59.5% of the participants could strongly agree that a child who is immunized is less like to get ill from diseases such as Polio and Measles and that when a child is immunized they can live a longer and healthier life. Though the participants showed low percentages in most of the statements, 89.2% indicated that vaccines provide babies with immunity against infectious diseases and 94.6% indicated that when the baby is immunized it helps reduce the spreading of such diseases thus protecting the broader community. The study determined that not having money to take the child to the clinic, negligence to follow-up dates given, lack of motivation and doubts about the importance of immunizations, staying far from the clinic, not having all needed vaccines at the facility, when the nurse does not show and inform the caregiver about the next follow-up date and attitudes of health workers at the facilities are some of the factors contributing to under vaccination and non-vaccination in babies under 5 years.*

Conclusions: *The study discovered poor knowledge in caregivers regarding immunization importance. Different factors contributing to under vaccination and non-vaccination of babies under 5 years at KHC were also determined as outlined and mentioned in the results. To help attain good knowledge of caregivers, more educational programs on importance of immunization must be established to provide with information and health care workers must work on their attitudes towards caregivers and be patient with them, are some of the recommendations from the present study.*

Keywords: *Caregivers, Immunization, Importance, Knowledge, Vaccine.*

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I. Introduction

Sanaa, Track and Erian (2013) outlined that one of the most effective, safest and efficient public health interventions is immunization and it is the society and individual's responsibility to promote health. "Immunization is a high priority area in care of infants and children. High immunization rates have almost eliminated many infectious diseases which used to decimate sizable of the population of the countries", Sanaa et

al., (2013). Immunization refers to the process whereby the person is made immune or resistant to an infectious disease, typically by the administration of a vaccine (World Health Organization, 2018). Immunization depicts the ability to develop immunity. Different vaccines are used during babies'/children' immunization and they are administered in various routes such as orally, and intramuscularly and at different age ranges.

At birth, the babies get Bacillus Calmette-Guerin (BCG) against Tuberculosis, Hepatitis B vaccine against liver disease and Oral Polio Vaccine-0 (OPV) against Poliomyelitis. At 6 weeks it is Pentavalent-1 which is a combination of Diphtheria, Pertussis and Tetanus (DPT), Hepatitis B and Hib.B, OPV-1, Rotavirus-1 against diarrhoea and Pneumococcal vaccine against pneumococcal infections (PCV-1). At 10 weeks the babies get Penta-2, OPV-2, Rotavirus-2, and PCV-2. Babies at 14 weeks are given Pentavalent-3, OPV-3, PCV-3 and Inactive Polio Vaccine. And the schedule continues, at 6 months they get Vitamin A, 9 months they get Measles against measles infection, 15 months babies get Measles and Rubella. At 5 years and 10 years they get the same vaccines which are Diphtheria and Tetanus (DT) and OPV but at 5 years they add Vitamin A, (World Health Organization, 2018).

On top of this routine immunization schedule, an Expanded Program on Immunization (EPI) was established in 1974 by WHO with the aim of reducing of morbidity and mortality related to vaccine- preventable childhood diseases. EPI was also initiated to provide protection against six childhood diseases, namely Polio, Measles, Diphtheria, Tuberculosis, Pertussis well known as whooping cough and lastly Tetanus, (Lifalaza, Stern and Ashipala, 2018).

II. Material And Methods

This descriptive study was carried out on caregivers with babies under the age of 5 years at Katutura Health Centre in Windhoek, Khomas region, central of Namibia for five days.

Study Design: The researcher made use of the quantitative approach to carry out the study. In which a descriptive design was used to conduct the research because the researcher wants to describe the variables in order to answer the question of the study and its concern to gather information from the sample representing the population.
Study Location: Katutura Health Centre, Windhoek, Khomas region,Namibia.
Study Duration: The study took 5 days. From 26th -30th of September 2019.
Sample size: 44 caregivers

Sample size calculation: The researcher decided to only use 50 caregivers as the representing population from the target population for the study due to time limit and finance. In this study the sample was selected from caregivers that bring their children under the age of 5 years for immunization at Katutura Health Centre.

$n=\frac{N}{1+N*a^2}$ n=sample size

$n=\frac{50}{1+50*0.05^2}$ N=population size

$n=\frac{50}{1+0.125}$ a=margin error @5% (0.05)

$n=\frac{50}{1.125}$ Population= 50

n=44.4

A total number of 44 participants were supposed to be used for the study. The sample size of this study was actually 37 caregivers. The dropout rate of the sample size was 15.9%.
Subjects & selection method: The study population was drawn from caregivers who presented to Katutura Health Centre for their babies' immunization consecutively.

Inclusion criteria

1. Caregivers with babies under the age of 5 who are brought for immunization
2. Either sex
3. Caregiver of any age

Exclusion criteria

1. Caregivers with babies over 5 years of age brought for immunization
2. Caregivers with babies brought for treatment despite their ages

Procedure methodology

Data collection took place at Katutura Health Center from 37 caregivers of children aged 0-5 years of age on the importance of immunization. Data was collected from individuals using questionnaires in which the researcher was the responsible person that distributed the questionnaires with the aim of collecting the data. The

questionnaires were handed over together with a consent form, whereby participants were asked to read it, and sign it as an indication that they agree to take part in the research. The questionnaire consisted of closed ended questions which were 34 in total. It took the researcher 5 days to collect data from the participants because not all children that were brought for immunization were under the age of 5 years, so as a result the researcher did not manage to include the whole entire sample size. The data was collected using the nominal scales i.e. male/female, yes/no and ordinal scales i.e. strongly agree, agree, not sure, disagree and strongly disagree.

Statistical analysis

Data collected was analyzed using the SPSS version 20. Charts such as pie charts, histogram and bar graphs are used to present the data. Some of the data are tabulated. Descriptive statistics were also used to explain and summarize data i.e. frequencies.

III. Result

Section A: Demographic data

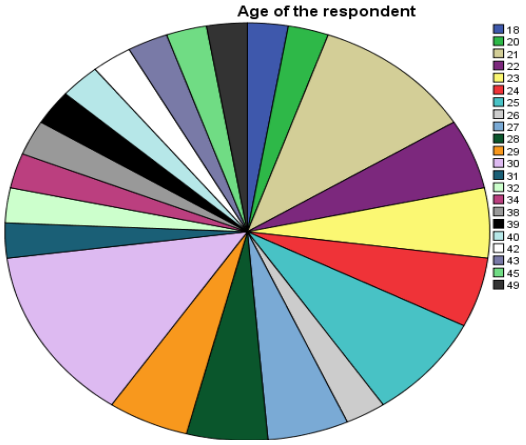

Figure 1. Represents the age of participants of the study.

The pie chart above shows that the oldest people to participate in the study were 49 years old and the youngest were 18 years old**.**

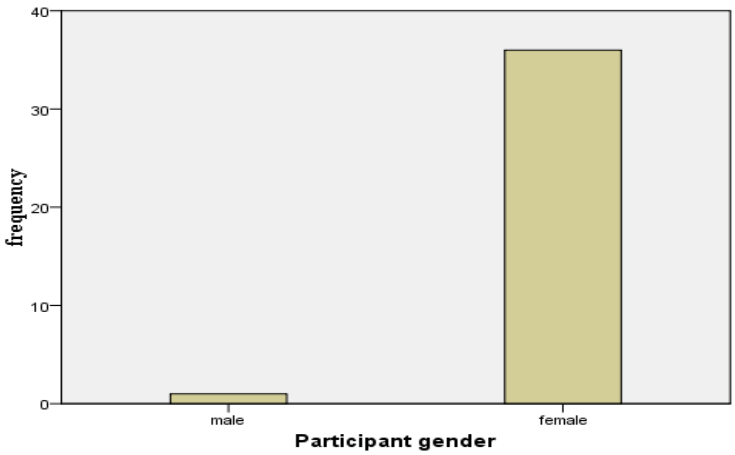

Figure 2. Represents the frequency of the gender of the study participants

The above graph shows the gender of the participants. Females were the most that participated in the study with a frequency of 36 and males were the least to participate with a frequency of 1.
This means that most of the caregivers who bring children under the age of 5 years for their immunization are female.

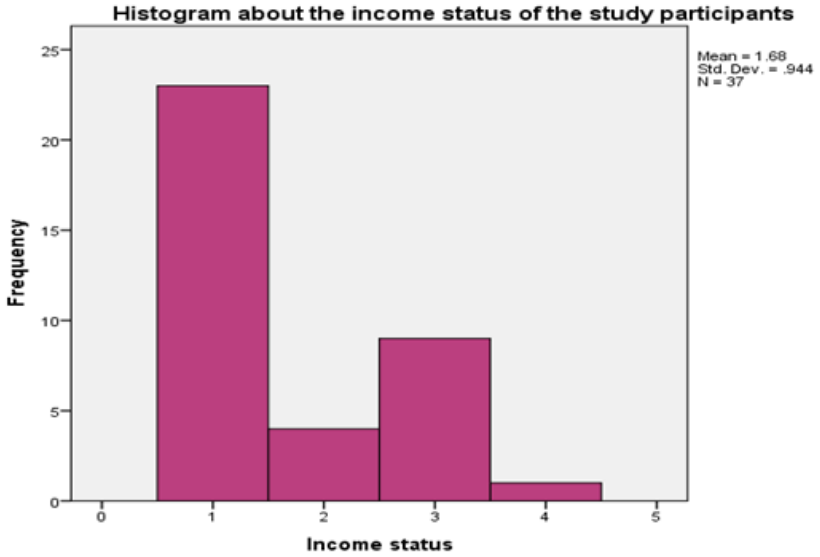

Figure 3. Represents the frequency of participants' income status.

As presented by the histogram above, 23 (62.2%) of the caregivers are unemployed whereas 1(2.7%) of the participants earn a high income.

	Frequency	Percent	Valid Percent	Cumulative Percent
Graduated	6	16.2	16.2	16.2
College or University	12	32.4	32.4	48.6
secondary school	16	43.2	43.2	91.9
Primary school	2	5.4	5.4	97.3
Uneducated	1	2.7	2.7	100.0
Total	37	100.0	100.0	

Table 1. Educational level of the participants

The above table shows that most of the participants have secondary school level of education (43.2%) whereas 2.7% of the caregivers were uneducated.

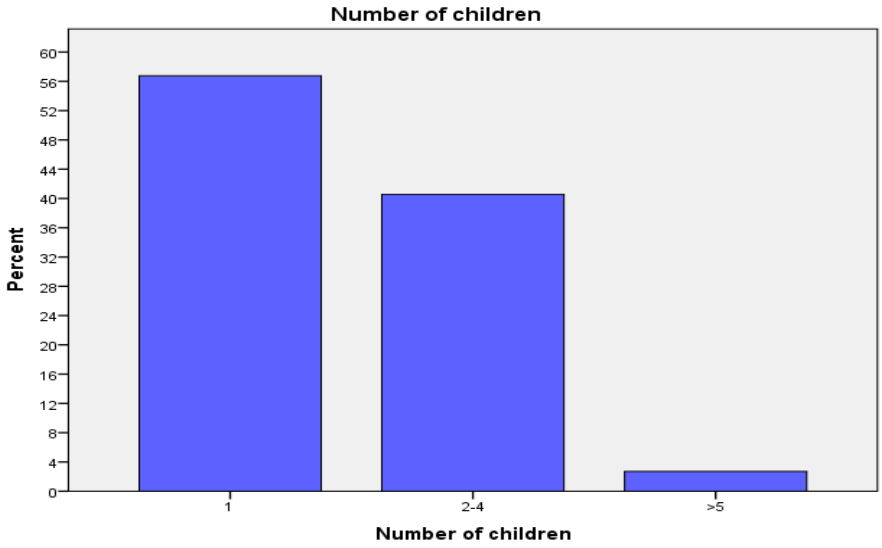

Figure 4. Represents the percentages of caregiver for each category of number of children

As shown by the graph above, the category of number of children with the highest percentages is 1 with 56.8% while >5 category had the least caregivers with 2.7%.

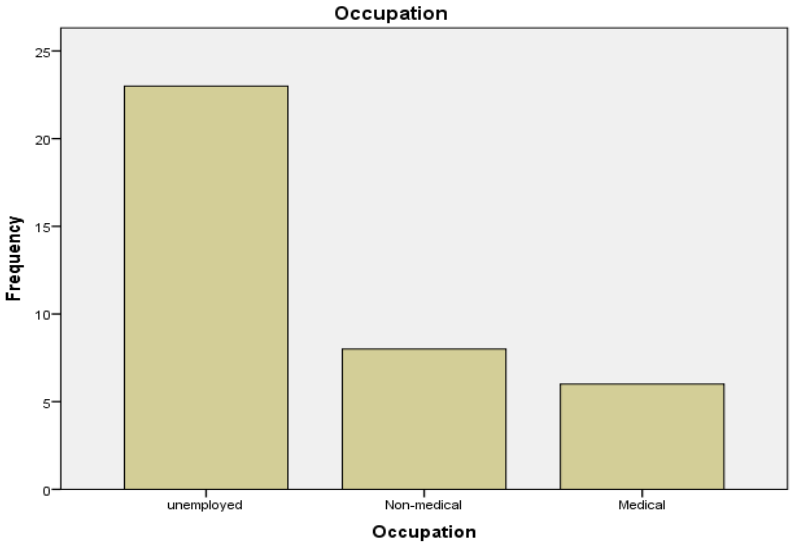

Figure 5. Occupation of the participants

As shown by the graph above, most of the participant (23 caregivers) were unemployed and medical had the least participants (16.2%).

Section B: Knowledge of caregivers on the importance of immunization of their babies.
The following section presents data obtained from the study with regards to caregivers' knowledge on immunization importance.

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. Routine vaccination protects children against various infectious diseases and their complications.	54.1%	29.7%	16.2%	0%	0%
2. Vaccination can result into autism	2.7%	24.3%	45.9%	13.5%	13.5%
3. Children get vaccinated against infectious diseases at their early life because such diseases affect the children in their first year of life.	48.6%	35.1%	10.8%	5.4%	0%
4. Children are given more than one vaccine at a time to boost their immunity.	37.8%	40.5%	18.9%	2.7%	0%
5. Immunization is not a safe and effective way of protecting children against diseases.	5.4%	5.4%	5.4%	54.1%	29.7%
6. A child who is immunized is less likely to get ill from diseases such as polio and measles.	59.5%	29.7%	5.4%	0%	5.4%
7. When a child is immunized they can live a longer and healthier life.	59.5%	32.4%	0%	8.1%	0%
8. It is important for you to complete the immunization of your child as indicated in your child's Health Passport.	70.3%	29.7%	0%	0%	0%
9. Children are not immunized at different stages	2.7%	13.5%	18.9%	40.5%	24.3%
10. There are several immunizations that are required in the first 5 years of a child's life	48.6%	45.9%	2.7%	2.7%	0%

Table 2. This table presents the response of participants on statements of importance of vaccinations/immunizations.

Participants were asked to indicate on the questionnaire whether they strongly agree, agree, not sure, disagree or strongly agree to the statement provided in the table.

The results show that most of the participants (54.1%) strongly agree to the statement of routine vaccination protects children against infectious diseases and their complications, whereas 16.2% of the total participants were not sure about the statement.

Forty-five point nine percent (45.9%) of the total participants were not sure if vaccination can result into Autism while 2.7% of the participants strongly agree that vaccination can result into autism.

Participants showed with 48.6% by strongly agreeing that they know that children get vaccinated against infectious diseases at their early life because such diseases affect children in their first year of life, while 5.4% of the population disagreed with the statement.

Most of the participants (40.5%) agreed that children are given more than one vaccine at a time to boost their immunity while 2.7% of the population disagreed with the statement.

The results also show that 54.1% of the participants disagreed with the statement stating that immunization is not a safe and effective way of protecting children against diseases, while 5.4% of the population strongly agreed, 5.4% agreed and another 5.4% were not sure about the statement.

As shown by the table that 59.5% of the participants strongly agreed with the statement of a child who is immunized is less likely to get ill from diseases such as Polio and Measles. 5.4% of the participants were not sure about the statement and 5.4% of the participants strongly disagreed with the statement.

The results show that 8.1% of the participants disagreed with the statement of when a child is immunized they can live a longer and healthier life, whereas 59.5 % of the participants strongly agreed with the statement.

Most of the participants (70.3%) strongly agreed that it is important to complete the immunization of their children as indicated in the child's health passport. The rest of the participants, 29.7%, agreed with the statement.

The results show that caregivers know that children are immunized at different stages (40.5%), 2.7% of the participants strongly agreed that children are not immunized at different stages.

As shown by the results, 48.6% of the participants strongly agree that there are several immunizations required in the first 5 years of a child's life while 2.7% of the participants were not sure about the statement and 2.7% disagreed with the statement.

Section C: Caregivers' knowledge on immunization importance.

	Yes	No
1. Vaccines provide babies with immunity against infectious diseases.	89.2%	10.8%
2. When your baby is immunized it helps reduce the spreading of such diseases thus protecting the broader community.	94.6%	5.4%
3. The harms of vaccines exceeds their benefits.	40.5%	59.5%
4. The baby gets Inactive Polio Vaccine (IPV) at 10 weeks.	54.1%	45.9%
5. At each immunization the child gets Vitamin A.	56.8%	43.2%
6. A sick child on the day of immunization will be immunized.	27.0%	73.0%
7. A child might become feverish after being immunized.	70.3%	29.7%
8. You should rub or apply Vaseline at the immunization site.	13.5%	86.5%
9. If you deliver the child at home make sure to take the child to the nearest clinic for immunization.	94.6%	5.4%
10. Immunization is not important for the young children.	8.1%	91.9%

Table 3. The percent of caregiver's knowledge on immunization importance

Section D: Factors contributing to under-vaccination and non-vaccination of babies under 5 years.
The following tables are showing the frequencies and percentages on how participants responded to the questions under this section.

Table 4: Not having money to take the child to the clinic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	45.9	45.9	45.9
	No	20	54.1	54.1	100.0
	Total	37	100.0	100.0	

Table 5: Negligence to follow up dates given

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	40.5	40.5	40.5
	No	22	59.5	59.5	100.0
	Total	37	100.0	100.0	

Table 6: Lack of motivation and doubts about the importance of immunization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	43.2	43.2	43.2
	No	21	56.8	56.8	100.0
	Total	37	100.0	100.0	

Table 7: Staying far from the health facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	54.1	54.1	54.1

	No	17	45.9	45.9	100.0
	Total	37	100.0	100.0	

Table 8: Not having all needed vaccines at the facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	23	62.2	62.2	62.2
Valid	No	14	37.8	37.8	100.0
	Total	37	100.0	100.0	

Table 9: The nurse does not inform and show the next follow up date to the caregiver

		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	15	40.5	40.5	40.5
Valid	No	22	59.5	59.5	100.0
	Total	37	100.0	100.0	

Table 10: Attitudes of the health workers at the health facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	17	45.9	45.9	45.9
Valid	No	20	54.1	54.1	100.0
	Total	37	100.0	100.0	

As shown by each table, there are various factors that hinder caregivers from taking the child to the clinic for their routine immunization. Where unavailability of all needed vaccines had the highest percentages (62.2%) while negligence to follow-up date given and the nurse not showing and informing the caregiver about the follow-up date had the lowest percentages (40.5%).

IV. Discussion

The study was carried out at Katutura Health Centre in Windhoek, central of Namibia. Majority of caregivers who participated in the study were female (36 participants), unemployed (62.2%) and most of them were at a secondary school level of education.

Knowledge of caregivers with regards to immunization importance

As one of the objectives of the study was to determine the knowledge of caregivers regarding immunization importance, the results of the present study shows that most of the caregivers know that routine immunization protects children against various infectious diseases and their complications by strongly agreeing with 54.1% and just 29.7% agreed to the statement, though 27% of caregivers indicated that vaccination can result into autism as a complication. Eighty-nine point two percent (89.2%) of the caregivers showed that they know that vaccines provide babies with immunity against infectious diseases. Additionally, caregivers know that children are given more than one vaccine at a time to boost their immunity in which 37.8% strongly agreed and 40.5% agreed. Similarly, in a study conducted by Mphaka et al., (2018), it shows that most of the caregivers knew that immunization prevent babies from different diseases. But in contrast to that, 59.5% of caregivers of the present study indicated/agreed that the harms of vaccines exceed their benefits. With that statement, it means that caregivers are contradicting their knowledge on immunization and that means they are blindly bringing their babies for immunization though it is harmful as they indicated. A percentage of 16.2 of caregivers were not sure if routine vaccination protects children against infectious diseases and their complications. Meaning caregivers take their babies for immunization without knowing why. With the information provided in literature review, Vinish (2016), stated that majority of the mothers were blindly taking their children to vaccination centers without having any idea about vaccines and vaccinations schedule in which the study determined that majority of the subjects 38 (76%) had poor knowledge, 20% had average knowledge and only 2 (04%) had good knowledge on immunization.

Generally, the researcher found out that caregivers do not know which vaccine is administered at which age. A total number of 20 caregivers which constitute 54.1% of the population indicated that the baby gets Inactive Polio Vaccine (IPV) at 10 weeks. Another result from the present study revealed that 56.8% of caregivers agreed that at each immunization the child gets Vitamin A. In a similar study conducted by Vinish (2016), outlined that majority which is 80% of the subjects possessed no knowledge about Vitamin A.

Factors contributing to under-vaccination and non-vaccination of babies under the age of 5 years at KHC.

This study aimed at determining factors contributing to under-vaccination and non-vaccination of babies under 5 years. A study conducted in South Africa by Mphaka et al., (2018) discovered that unavailability of vaccines, negative attitudes of staff and waiting for a long time are some of the factors contributing to incomplete immunization in children, similarly the present study determined that the attitudes of health workers at the health facility and not having all the vaccines needed are some of the factors contributing to under vaccination and non-vaccination of babies under 5 years.

The present study determined that not having money to take the baby to the clinic contribute to incomplete vaccination of babies. This finding is similar that found in a study conducted in Namibia by Lifalaza et al., (2018) and for the study by Waris et al., (2008) in Pakistan.

Lack of motivation and doubts about the importance of immunization is also one of the factors determined by the current study which is similar to that found in the study conducted in Islamabad by Malik et al., (2008).

Some of the factors discovered in the present study are negligence to follow up dates given (40.5%) and the nurse not informing and showing the caregiver about the next follow up date (45.9%).

V. Conclusion

Based on the findings of this study, it can be concluded that caregivers have poor knowledge regarding immunization importance though knowledge on specific diseases prevented by each specific vaccines was not assessed. Some of the caregivers are contradicting their knowledge. This could also mean they do not know the importance of immunization, because 16.2% is a lot for caregivers not to know if routine vaccination protects children against various diseases and their complications. Another 16.2 % of caregivers do not that immunization is one of the effective and safe way of protecting children against and 10.8% of caregivers do not know that a child that is immunized is less likely to get ill from diseases such as Polio and Measles. Caregivers do not know which vaccine is given at which age.

The study determined that not having money to take the child to the clinic, negligence to follow up dates given, lack of motivation and doubts about the importance of immunization, staying far from the health facility, unavailability of all needed vaccines, nurses not showing and informing the caregiver about the next follow up date and attitudes of health workers at the health facility are some of the factors contributing to under vaccination and non-vaccination in babies under the age of 5 years.

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