

Awareness of Mothers about Vaccinations on their Children under Five years at Al-Salam Health Center for Primary Health Care in Kirkuk City

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ABSTRACT

Background: Vaccination is the most widely used approach in immunization, and immunization is one of the public health programs that prevents disease in society. The process comprises injecting a vaccine into the body to boost immunity against bacteria, viruses, parasites, and fungus.

Objective: The object of the study is to assess mother awareness about vaccination to their children under five years at Al-Salam health center for primary health care.

Methods: Descriptive study was conducted from November 27th 2022 to 18st June 2023 in order to assess awareness of mothers about vaccinations on their children under five years at Al-Salam health center for primary health care in Kirkuk city. A non-probability sample of (600) mothers was selected. The data were collected through the application of a validated questionnaire, in two parts, the first part related to social and demographic data of study sample, and the second part related to assessment of mothers knowledge regarding to vaccination to their children.

Result: Shows that (53.3%) of children were males, (56.7%) were less than 1 year old, and (40%) of the children the first between family members. in regard with mothers aged between 20-26 years, graduated from colleges, and (93%) were married. Most children had taken previous vaccines, with (98.3%) having BCG, Polio, Hepatitis B, DTaP, Rota virus, Pneumococcal, measles, Mumps, Measles, Rubella, and rubella. (71.7%) didn't take rubella vaccine.

Conclusion: The study concluded Mothers Awareness regarding to vaccination to their children under five years were moderate.

Keywords: Awareness of mothers, vaccinations, and children under five years

INTRODUCTION

Prior to the advent of vaccinations, infectious disease caused a remarkably high rate of morbidity and mortality worldwide. Numerous individuals, particularly children, suffered from contagious diseases such the measles, polio, smallpox, influenza, and others. During the 20th century, smallpox was a serious contagious illness that killed about 300 million people globally. In 1952, poliomyelitis is said to have killed over 3000 individuals and disabled over 21,000 in the United States, while the 1918 influenza pandemic is said to have killed over 20 million people globally. The world's first vaccination was developed in the 18th century by an English country doctor named Edward Jenner, who immunizes people against smallpox by using the pus from infected milkmaids. This is when the modern history of vaccinations began (Kgomotso Lovey Sehume, 2015).

Vaccination is the most widely used approach in immunization, and immunization is one of the public health programs that prevents disease in society. The process comprises injecting a vaccine into the body to boost immunity against bacteria, viruses, parasites, and fungus. A vaccine is a biological preparation that stimulates the creation of antibodies with the goal of producing immunity against a disease. Immunization procedures and vaccines themselves might cause unfavorable reactions, even though they are safe and effective (Ramalingaswami et al., 2016).

According to the World Health Organization (WHO), measles, hepatitis B, hemophilia influenza, whooping cough (pertussis), tetanus, diphtheria, and polio cause a great deal of deaths among children worldwide, particularly in developing countries. Because of their immature immune systems, children have limited immunity. Children therefore have a higher risk of bacterial infection. A particular age must be reached for vaccinations in order to guarantee that children have a strong defense against infection (Omer Qutaiba 2017).

Subject and Method

Design of the study

A descriptive design was adapted throughout the present study from November 27th 2022 to 18st June 2023.

Administrative arrangement

Before establishing the present study, administrative was arrangement in conducting the study in the higher health institute.

Setting of the study

The current study is conducted in Al-Salam health center for primary health care in Kirkuk city, one of Iraq's governorates. It is one of the primary health centers in Kirkuk's city.

Sample of study

A purposive (non-probability) sample is selected for the purpose of study which includes (600) Women from Al-Salam health center.

Eligibility criteria

Mothers were recured to participate in the study by specific inclusion criteria included Age of their children under 5 years and exclusion criteriaincluded mothers who refused to participated to the study.

Data Collection

Data were collected through direct interviews of mothers using a questionnaire form which was designed for the study purpose. The aim of the study was clearly describe to all mothers and their verbal consent was obtained, before filling the questionnaire Interviewing was held by inducing mothers visited the primary health center to answer the research questionnaire. The mothers' agreement for participation in the present study was obtained, the consent was taken verbally, and the interview was carried out individually and it took 10 to 15 minutes.

Data analysis

The data management, compilation, and analysis were done by using Statistical Package for the social sciences (SPSS) program version [22]. through descriptive statistical analyses.

RESULTS

Table 4.1: Distribution of the Socio-Demographic Characteristic of the Study Sample(N=300).

Items	Variable s(V.)	Frequency(f.)	Percentage(%)
FIRST:RELATEDTOCHILD			
Gender	Male	320	53.3
	Female	280	46.7
	Total	600	100%
Age	<1year	340	56.7
	1	150	25.0
	2	30	5.0
	3	20	3.3
	4	50	8.3
	5	10	1.7
	Total	600	100%
The sequence of the child among his/her siblings	1	240	40.0
	2	130	21.7
	3	140	23.3
	4and more	90	15.0
	Total	600	100%
SECOND:RELATED TO MOTHER			
MotherAge	<20 years	40	6.7
	20-26	210	35.0
	27-33	170	28.3

	34-40	140	23.3
	41 and above	40	6.7
	Total	600	100%
EducationLevel	Illiterate	70	11.7
	PrimarySchoolGraduated	100	16.7
	SecondarySchoolGraduated	100	16.7
	PreparatorySchoolGraduated	80	13.3
	Institute	80	13.3
	College	140	23.3
	Post-Graduated	30	5.0
	Total	600	100%
MaritalStatus	Married	560	93.3
	Divorced	10	1.7
	Widow	20	3.3
	Separated	10	1.7
	Total	600	100%

Table (4.1) shows that in related with child gender, the results indicate that (53.3%) were males, regarding with child age the results shows (56.7%) of them were less than (1 year), regarding to child sequence between family members were the first with (40%) of total samples. Regarding to mothers' age the results shows that (35%) of their ages were ranged between (20-26) years, (23.3%) of mothers graduated from colleges, (93%) of them were married.

Table 4.2: History of Children Vaccinations (N=600).

Items	Variab les(V.)	Frequency (f.)	Percentage(%)
THIRD: RELATED TO VACCINATION			
Did child had previous vaccination	Yes	590	98.3
	No	10	1.7
	Total	600	100%
BCG	Vaccinated	590	98.3
	Non-Vaccinated	10	1.7
	Total	600	100%
Polio	Vaccinated	510	85.0
	Non-Vaccinated	90	15.0
	Total	600	100%
Hepatitis B	Vaccinated	590	98.3
	Non-Vaccinated	10	1.7
	Total	600	100%
Diphtheria, tetanus, and pertussis (DTaP)	Vaccinated	510	85.0
	Non-Vaccinated	90	15.0
	Total	600	100%
Rota virus	Vaccinated	530	88.3
	Non-Vaccinated	70	11.7
	Total	600	100%
Pneumococcal	Vaccinated	470	78.3
	Non-Vaccinated	130	21.7
	Total	600	100%
measles	Vaccinated	350	58.3
	Non-Vaccinated	250	41.7
	Total	600	100%
Mumps, Measles, Rubella	Vaccinated	310	51.7

	Non-Vaccinated	290	48.3
	Total	600	100%
(DTaP + IPV+ Hib)	Vaccinated	320	53.3
	Non-Vaccinated	280	46.7
	Total	600	100%
Rubella	Vaccinated	170	28.3
	Non-Vaccinated	430	71.7
	Total	600	100%

Table (4.2) shows that most of children had taken a previous vaccines with (98.3%), The results shows children have (98.3%) of BCG vaccine, (98.3%) Polio, (98.3%) Hepatitis B, (85.1%) Diphtheria, tetanus, and pertussis (DTaP), (88.3%) Rota virus, (78.3%) Pneumococcal, (58.3%) measles, (51.7%) Mumps, Measles, Rubella, (53.3%) (DTaP + IPV+ Hib) and (28.3%) rubella, while (71.7%) didn't take rubella vaccine.

Table(4.3): Assessment of Mothers knowledge about vaccinate their Rchildren's (N=600).

Items	I Know		Uncertain		IDon'tKnow		Total score	Results
	Fr.	%	Fr.	%	Fr.	%		
Routine vaccination protects children from various infectious diseases and from complications of diseases.	320	53.3	250	41.7	30	5	890	Fair
Vaccination do not lead to autism.	30	5	190	31.7	380	63.3	250	Poor
Children are vaccinated against infectious diseases during the first year of their life because these diseases can infect children during that stage.	420	70.0	100	16.7	80	13.3	940	Good
Children are given more than one vaccine at a time to boost their immunity.	100	16.7	420	70	80	13.3	620	Fair
Immunization is a safe and effective way to protect children from disease.	130	21.7	390	65	80	13.3	650	Fair
A child who is vaccinated is less likely to contract diseases such as polio and measles.	500	83.3	90	15	10	1.7	1090	Good
When a child is vaccinated, he can live longer and a healthier life.	410	68.3	170	28.3	20	3.3	990	Good
It is important to complete your child's immunization as described in your child's healthcare booklet.	470	78.3	110	18.3	20	3.3	1050	Good
When your child is immunized, it helps in reducing the spread of diseases and thus protecting the community.	470	78.3	120	20	10	1.7	1060	Good
There are many immunizations required in the first 5 years of a child's life.	350	58.3	130	21.7	120	20	830	Fair
Nott// Sample (600), I Don't Know knowledge code (0), Uncertain Know knowledge code (1) and I Know knowledge code (2), Then the total score (1200). The knowledge was classified as poor knowledge (<50%) with score (0 – 599), Fair knowledge: (50% - < 75%) with a score (600 – 899) and good knowledge (≥ 75%) with a score (900-1200)								

Continues to table (4.3)

Items	I Know		Uncertain		IDon'tKnow		Total score	Results
	Fr.	%	Fr.	%	Fr.	%		
Immunization is an important for young children.	380	63.3	100	16.7	120	20	860	Fair
Children are immunized at different stages of life.	230	38.3	230	38.3	140	23.3	690	Fair
The benefits of vaccines outweigh the harms.	360	60	120	20	120	20	840	Fair
The child receives the first	160	26.7	390	65	50	8.3	710	Fair

inactivated polio vaccine (IPV) at the 2 nd week of age.								
With each vaccination, the child is given Vitamin A.	130	21.7	310	51.7	160	26.6	570	Poor
A sick child is do not allowed to take the vaccination dose on time.	260	43.3	170	28.3	170	28.3	690	Fair
The child may have a fever after vaccination.	470	78.3	110	18.3	20	3.3	1050	Good
You should not rub or apply petroleum jelly at the vaccination site.	170	28.3	260	43.3	170	28.3	600	Fair
If the baby was born at home, be sure to take him to the nearest clinic for vaccination.	470	78.3	90	15	40	6.7	1030	Good
You should place a piece of ice wrapped in gauze or a clean cloth on the vaccination site.	320	53.3	210	35	70	11.7	850	Fair
Nott// Sample (600), I Don't Know knowledge code (0), Uncertain Know knowledge code (1) and I Know knowledge code (2), Then the total score (1200). The knowledge was classified as poor knowledge (<50%) with score (0 – 599), Fair knowledge: (50% - < 75%) with a score (600 – 899) and good knowledge (≥ 75%) with a score (900-1200).								

The table presents a breakdown of knowledge items, delineating them into poor, fair, and good levels based on the total scores attained. Additionally, the data includes information regarding sample size, knowledge codes for incorrect, unsure, and correct answers, and the resultant total score, which is capped at 194. Knowledge levels were further categorized: poor knowledge, representing scores below 50% (0-599); fair knowledge, encompassing scores between 50% and less than 75% (600-899); and good knowledge, comprising scores of 75% or higher (900-1200). This comprehensive analysis offers insights into the distribution and comprehension levels of various aspects related to nursing processes among the surveyed population. Overall, the results depict a comprehensive understanding among the participants.

The data provided is a summary of knowledge levels regarding vaccination among a group of respondents. Here's the breakdown:

Protection from disease : Fair knowledge (53.3% "I Know," 41.7% "Uncertain," 5% "I Don't Know").

Do not lead to autism: Poor knowledge (5% "I Know," 31.7% "Uncertain," 63.3% "I Don't Know").

Diseases infect children during first year of life : Good knowledge (70% "I Know," 16.7% "Uncertain," 13.3% "I Don't Know").

Vaccine boost children immunity: Fair knowledge (16.7% "I Know," 70% "Uncertain," 13.3% "I Don't Know").

Effectiveness of immunization: Fair knowledge (21.7% "I Know," 65% "Uncertain," 13.3% "I Don't Know").

Vaccinated child is less contract to disease: Good knowledge (83.3% "I Know," 15% "Uncertain," 1.7% "I Don't Know").

Vaccinated child live longer and healthier life: Good knowledge (68.3% "I Know," 28.3% "Uncertain," 3.3% "I Don't Know").

Importance of complete child immunization: Good knowledge (78.3% "I Know," 18.3% "Uncertain," 3.3% "I Don't Know").

Protection of community by immunization: Good knowledge (78.3% "I Know," 20% "Uncertain," 1.7% "I Don't Know").

Immunization required in the first 5 years of life: Fair knowledge (58.3% "I Know," 21.7% "Uncertain," 20% "I Don't Know").

Importance of immunization: Fair knowledge (63.3% "I Know," 16.7% "Uncertain," 20% "I Don't Know").

Children are immunized at different stages of life: Fair knowledge (38.3% "I Know," 38.3% "Uncertain," 23.3% "I Don't Know").

Benefits of vaccines outweigh the harms: Fair knowledge (60% "I Know," 20% "Uncertain," 20% "I Don't Know").

Polio vaccine first does: Fair knowledge (26.7% "I Know," 65% "Uncertain," 8.3% "I Don't Know").

Given vitamin A with each vaccine: Poor knowledge (21.7% "I Know," 51.7% "Uncertain," 26.6% "I Don't Know").

Given vaccine to a sick child: Fair knowledge (43.3% "I Know," 28.3% "Uncertain," 28.3% "I Don't Know").

Fever related to vaccination: Good knowledge (78.3% "I Know," 18.3% "Uncertain," 3.3% "I Don't Know").
 Rubbing or applying petroleum jelly at the vaccination site: Fair knowledge (28.3% "I Know," 43.3% "Uncertain," 28.3% "I Don't Know").

Taking of a newborn baby who born at home to the clinic for vaccination: Good knowledge (78.3% "I Know," 15% "Uncertain," 6.7% "I Don't Know").

Place a piece of ice wrapped in gauze on the vaccination site: Fair knowledge (53.3% "I Know," 35% "Uncertain," 11.7% "I Don't Know").

Overall, the assessment indicates good knowledge on Diseases infect children during first year of life, vaccinated child is less contract to disease, Vaccinated child live longer and healthier life, importance of complete child immunization, protection of community by immunization, fever related to vaccination and taking of a newborn baby who born at home to clinic for vaccination . However, poor knowledge levels are observed for vaccination do not lead to autism and Given vitamin A with each vaccine.

DISCUSSION

Worldwide, vaccine-preventable diseases are thought to be the cause of 1.5 million deaths among children under the age of five. 8% of these deaths are related to measles, even though there is a reliable and reasonably priced vaccination available. There were 266,722 cases of measles in 2012, and 122,000 deaths attributable to the disease. More than 95% of these deaths occurred in settings with insufficient resources (Doshi & Reena Hemendra, 2017).

Since the start of 2017, there have been 7,031 suspected cases of measles recorded throughout the Middle East. This amount is more than the total instances (5,657) for the entire year of 2016. More than half of the cases that have been reported come from the central and southern regions, and 65% of the cases are in children under the age of five (UNICEF . 2017).

This study presents that the highest percentage of children were males and constitute (53.3%), this finding agree with (Mugada, et al., 2017) who indicates that most of children were males and constitute of (71.6%). Regarding age distrubtion, the results shows (56.7%) of children were under 1 year. This finding disagree with (Sunny, et al., 2018) who demonstrate that most of children with (2 years) had more than 5 types of vaccines. Regarding to the child number between family members the results indicates that (40%) of them were the first child in family. This study is in line with (Lamiya, et al., 2019) who indicated that the family's first kid received a variety of vaccinations to increase the infant's protection against infections and illnesses.

Regarding to mothers data the results shows most of their age were ranged between (20-26) years, this finding agree with (Habib, et al., 2018) finding who indicated that (40%) of mother had ranged between (20-28) years. The study shows mothers had (23.3%) graduated from colleges, this study is in agreement with (Chris-Otubor et al., 2015) because most of women knowledge comes from the higher education Regarding to the marital status the results shows (93.3%) of them were married, this finding agree with (Fad et al., 2017) who indicates that (94.2%) were married.

Regarding to the child vaccination history the results shows (98.3%) of children has been vaccinated with (98.3%) take (BCG, Polio, Hepatitis B) vaccines, (85%) of children take Diphtheria, tetanus, and pertussis (DTaP) and (88.3%) take Rota virus vaccine, also (78.3%) of children take Pneumococcal, (58.3%) of children has been vaccinated from measles and (51.7) from Mumps, Measles, Rubella, and (53,3%) takes (DTaP + IPV+ Hib) and only (28.3%) taking Rubella vaccine.

According to Sharma and Singh as per "District level household and facility survey" (DLHS-3), 73% of children were given BCG vaccine, three doses of DPT, and three doses of polio (excluding at birth dose of polio) and measles, whereas at the time of DLHS-4, 85.8% of children were reported immunized with BCG vaccine, three doses of DPT, and three doses of polio (excluding at birth dose of polio) and measles. The coverage of vaccination was more in rural area (87.1%) than that of urban area (85.2%) as per DLHS-4 in Chandigarh" (Sharma & Singh.2015).

A study done by (ALAmri et al. 2018) conducted in Saudi Arabia in 2018 revealed that parents agreed that vaccination prevents infectious diseases, with 90.1% of mothers.

The mothers knowledge regarding the Routine vaccination protects children from various infectious diseases and from complications of diseases were fair and constitute (53.3%), the study shows a low level of mothers knowledge regarding to Vaccination cannot lead to autism, only (5%) of mothers had a poor knowledge, (70%) of mothers had good knowledge regarding to Children are vaccinated against infectious diseases during the first year of their life because these diseases can infect children during that stage, the children are given more than one vaccine at a time to boost their immunity. Only (16.7%) of mothers had a good knowledge regarding to Immunization is not a safe and effective way to protect children from disease, (21.7%) of mothers had knowledge regarding to immunization is a safe and effective way to protect children from disease., (83.3%) of mothers had good knowledge related to child who is vaccinated is less likely to contract diseases such as polio and measles, (68.3%) of mothers had good knowledge regarding child while vaccinated, he can live longer and a healthier life.

The knowledge of mothers were increased through (78.3%) related to the important to complete child's immunization as described in child's healthcare booklet, and when child is immunized, it helps in reducing the spread of diseases and thus protecting the community, (58.3%) of mothers had right knowledge related to the many immunizations required in the first 5 years of a child's life.

Any program's ability to succeed is contingent upon the community's mindset. The majority of moms (95.6%) in the current survey who were asked about their attitudes toward vaccinations said they were in favor of vaccinations. The 100% vaccination rate is due to this. These findings aligned with a study carried out in a rural Bangalore area that found 85.4% of moms had a positive attitude toward vaccination (Adefolalu, et al., 2019).

In one study (Verulava et al., 2020) In a 2020 survey was out in Georgia, USA, only 58% of participants thought that vaccinations can prevent diseases, while the current study revealed that 53.3% of the moms who took part in the study agreed that immunization prevents infectious diseases. Another overseas study Wani, et al. revealed that Just 58.33% of mothers thought vaccinations were safe (Wani, et al., 2017)

Furthermore, in a study (Ramadan et al., 2016) conducted in Egypt, out of all the participants, only 78.7% agreed that vaccination lowers the rate of child mortality. According to a study conducted abroad, 91.66% of participants understood the significance of adhering to vaccination schedules. On the other hand a study done by (Wani, et al., 2017) showed that 95.0 % of participants believed immunizations to be useful.

The study shows that mothers had fair knowledge regarding to immunization is important for young children, (63.3%) of mothers responds correctly and (38.3%) of mothers had correct knowledge regarding to children are immunized at different stages of life, (60%) believe that The benefits of vaccines outweigh the harms, and (65%) not sure if the child receives the inactivated polio vaccine (IPV) at the tenth week or not.

Mothers has been poor knowledge related to with each vaccination, the child is given Vitamin A, (43.3%) of mothers believe that sick child is not allowed to take the vaccination dose on time, (78.3%) think that the child may have a fever after vaccination, (43.3%) not sure if they have to rub or apply petroleum jelly at the vaccination site, and (78.3%) if the baby was born at home, be sure to take him to the nearest clinic for vaccination, and (53.3%) of mothers should place a piece of ice wrapped in gauze or a clean cloth on the vaccination site.

A study done by (Kaur et al., 2021) indicated that following immunization, the most common complaints among 173 children were discomfort (0.8%), swelling at the injection site (13.3%), and fever (37%). Syrup crocin (20.2%), PCM tablets (8.6%), or tepid sponging (4.6%), were used to treat the fever. Thirteen (7.5%) children had oil massaging, and ten (5.8%) children received ice treatment at the injection site to reduce swelling.

Another Saudi Arabian study revealed that 83.3% of participants felt safe after getting their children vaccinated, and 86.4% of participants believed that vaccinations are good (Alfahl & Alharbi, 2017).

In addition, a study (Odia et al., 2015) that was carried out in Lagos State reveals that 94.2% of mothers advised their relatives to be vaccinated. In an overseas study (Adefolalu, et al., 2019), The majority of responders (86.4%) have fully immunized their children, according to the statistics. On other hand, one study stated that merely 76% of young people had all of their vaccinations (Sohail, et al., 2015).

CONCLUSION

This study clearly states that mothers Awareness regarding to vaccination to their children under five years were moderate.

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