Assessment of Mother‘s knowledge Concerning Child Immunization in Primary Health Care Centers in Baquba City

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Abstract

Background: Immunization remains one of the most important public health intervention and a cost effective strategy to reduce both the morbidity and mortality related with infectious diseases.

Objective: To identify and describe the scope of knowledge of mothers towards child immunization and its relation to immunization status of their children.

Subjects and Methods: A cross sectional study was conducted in three primary health care centers in Diyala governorate from the 1st of October 2014 to 1st of April 2015. Two hundred fifty random samples of mother and child, who had aged (12-24) months. The data were collected by obtained questionnaire formats which included demographic data such as age, residence, educational level, occupation, number of children, and this questionnaire designed for the purpose of the study.

Results: The findings revealed that knowledge of mothers toward child immunization were poor and represent (98 %) of mothers ,also the decline of the immunization status of children aged (12-24) months, the main barriers for mothers to complete their children ‘s immunization were because their child illness .The findings have approved that there is a significant relationship between mothers’ knowledge and demographic variables (age, educational level and number of children), and sources of mothers’ knowledge concerning child immunization (physician, health worker).

Conclusions: There is a significant relationship between knowledge of the mothers regarding vaccination and their age and educational level also there is a significant relationship between mothers knowledge and immunization status of their children.

Key words: Knowledge, assessment, mothers, immunization, vaccine. .

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Received: 10th November 2015

Accepted: 29th December 2015

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Introduction

Prevention of disease is one of the most important goals in child care during infancy and childhood [1].

Immunization is very important component of child‘s health care. The health care providers most have the knowledge of immunization schedules and an awareness of potential delays to identify children who have not been fully immunized. Parents should be provided with accurate information regarding immunization [2].

That the majority of people consider the responsibility of the care of the child and family is the duty of the mother. In spite of that what is known, but it does not cancel the role of father in this responsibility, father plays a great role in the field of caring his

child as a result of his direct relationship with him and through her support which he gives to the child' s mother to do her duties toward the child and family [3,4]. The parents need to be informed about first doses of child immunization, so that they will follow up with the subsequent doses ,this also a good opportunity to talk to parents about other childhood immunization and encourage them to make sure that their child gets them at the appropriate times [5].

Health professional should have enough time to read information to parents , discuss the vaccine to determine caregiver's understanding, address parents, concerns, and correct any misinformation, because nurses often administer vaccine, they may have the responsibility for adequately informing parent of the nature, prevalence and the risk of the disease, type of immunization product to be used, expected benefits and the risk of side effects of the vaccine , and the needs foe accurate immunization records [6,7]. Routine immunization plays a great role in reducing the incidence and prevalence of infectious diseases since 1950, in spite of the major importance of vaccine in re-education of communicable disease, nurse and other health professions must continue to consider immunization a priority in order to protect children from preventable disease [1, 8].

World Health Organization (2004) reported that more than three million persons have been died from tuberculosis in 1995,and in same year more than one million persons have been died by measles , between 500000 and one million babies have been died by neonatal tetanus ,also more than one million persons have died by hepatitis (B) every year around the word [9].

The aims of this study to assess the scope of mothers knowledge concerning child's immunization and to find out the relationships between mothers knowledge and their demographic variable that may have effects on the immunization status of the children aged (12-24) months

Subjects and Methods

Samples: A cross sectional study was conducted in three primary health care centers in Diyala governorate from the 1st of October 2014 to 1st of April 2015. Two hundred fifty random samples of mother and child, who had aged (12-24) months. Data were obtained by direct interview with mothers who attending to PHCCs in Baquba city in Diyala governorate by use of special questionnaire, observation of child for BCG scar and checking of child' s immunization card**.**

Special questionnaire form use to collect information from mothers have children aged (12-24) months which contain socio-demographic characteristic such as age, residence, educational level occupation, number of children family and accessibility of vaccination services such as distance of mother' s house from (PHC centers), mother's access way to (PHC centers), source knowledge of mother , and knowledge level about vaccination which contain 6 domain (54) questions (general concepts about vaccines, vaccines should be taken in first year of children life's ,administration of vaccines, side effects of vaccine, false contraindication of vaccine, true contraindication of vaccine

For the reliability of the questionnaire, pre-test on the questionnaire was conducted with 10 mothers (not included in the study) in Diyala governorate, which was the study setting. The Cranach's Alpha was adopted for reliability analysis of questionnaire as follow. Knowledge (0.78).

Statistical analysis

Data was entered and analysis using SPSS (statistical package for social science)

version 20 .Mainly descriptive statistical method was used for the description of the findings, and chi-square test for relationship between variables.

Results

Table (1) shows that 50% of mother in the age group 26-40 years. Regarding residency of mother 85.6% of them were from urban area, 30.4% of them had primary education level. Regarding occupation of mother 72.8% of them were housewife. More than one quarter 40.8% of mother had 1-2 children.

Table (1): Demographic characteristic of respondents

Age of mother	25 and less	99	39.6
	26- 40	125	50.0
	41 and more	26	10.4
	Total	250	100.0
Residence	Urban	214	85.6
	Rural	36	14.4
	Total	250	100.0
Mother education level|	Illiterate	23	9.2
	Read and write	26	10.4
	Primary school	76	30.4
	Intermediate school	55	22.0
	High school	26	10.4
	University	44	17.6
	Total	250	100.0
Occupation of mother	Employed	63	25.2
	Student	5	2.0
	Item	Frequency	Percent
	Housewife	182	72.8
	Total	250	100.0
No. of children	1-2	102	40.8
	3-4	62	24.8
	5-6	73	29.2
	7 and more	13	5.2
	Total	250	100.0

Regarding accessibility of vaccine services, table (2) shows that 42% of mothers house far from PHC center less than 1 Kilometer, 56.8% of mothers get execs to PHC center by walking 87.2% of them get information about vaccination from physicians or health care workers. While the lowest percentage (0.4%) of them were getting the information from education lecture or home visits.

Table (2): Accessibility of vaccination services

	Item	Frequency	Percent
Distance of mother ‘s house from PHCC	Less than 1 km	105	42.0
	2-4 km	58	23.2
	5-7 km	62	24.8
	More than 8 km	25	10.0
	Total	250	100.0
Mother’ s access way to PHCC	Walk	142	56.8
	Public car	52	20.8
	Private car	56	22.4
	Total	250	100.0
Source knowledge of mother	Physician or health worker	218	87.2
	Education lecture or home visit	1	0.4
	Members of family or relatives and neighbor	28	11.2
	Mass media	3	1.2
	Total	250	100.0

*PHCC (Primary Health Care Center

Table (3) shows that 93.2 % of children complete vaccine, while 6.8 % of children uncompleted vaccine. The barriers which lead to incomplete of immunization of children was 58.8 % of the child was sick, while 23.5 % and 17.7 % were the mother don’ t know immunization place and date and fear from side effect of immunization respectively.

Table (3): Immunization status and the barriers which lead to incomplete immunization of the child.

	Items	Frequency	Percent
Immunization status of children	Complete	233	93.2
	Uncompleted	17	6.8
	Total	250	100
The barrier which lead to incomplete of immunization of children	The mother don’ t know immunization place and date	4	23.5
	The child was sick	10	58.8
	Fear from side effect	3	17.7
	Total	17	100

Table (4) shows that 98.4 % of mother had good knowledge regarding general concepts about vaccine, while 0.4 % of mother had poor and fair knowledge.

Table (4): Mother knowledge regarding general concepts about vaccination

General concepts about child immunization	No		Uncertain		Yes	
	No.	%	No.	%	No.	%
Immunization protects child from several dangerous disease	4	1.6	0	0	246	98.4
Objectives of immunization provide the child with immunity against disease	2	0.8	0	0	248	99.2
To immunize child against disease by given them all immunization according to the number of doses and its time	4	1.6	1	0.4	245	98.0
It' s necessary for child to complete all his immunization schedule before the end of first year of age	7	2.8	4	1.6	239	95.6
It' s not dangerous to immunize the sick child	24	9.6	38	15.2	188	75.2

Table (5) showed that 94 %, 93.2% and 81.6 % do not know that the child should be vaccinated against rota virus disease, *haemophilus influenza* B disease and tuberculosis disease

Table (5): Disease should be vaccinated against them in first year of children life's

The child should be immunized in his first year of age against the following disease	No		Uncertain		Yes	
	No.	%	No.	%	No.	%
Tuberculosis	204	81.6	1	0.4	45	18.0
Poliomyelitis	120	48.0	1	0.4	129	51.6
Tetanus	170	68.0	1	0.4	79	31.6
Diphtheria	169	67.6	1	0.4	80	32.0
Pertusis	185	74.0	1	0.4	64	25.6
Hepatitis B	167	66.8	1	0.4	82	32.8
Haemophilus influenza B	233	93.2	5	2.0	12	4.8
Rota virus	235	94.0	5	2.0	10	4.0
Measles	155	62.0	0	0	95	38.0

Table (6) showed 58.8 % and 55.6 % of mother know that the fever and pain, redness or swelling at the injection site is expected side effect followed immunization respectively , while 67.2% and 67.6% of mother do not know that mild rash and local abscess in the injection site a side effects following immunization respectively.

Table (6): Mother knowledge regarding expected side effect after immunization

Expected side effect after immunization	NO		Uncertain		Yes	
	No.	%	No.	%	No.	%
Fever	101	40.4	2	0.8	147	58.8
Pain, redness or swelling at the injection site	105	42.0	6	2.4	139	55.6
Mild rash may occur approximately a week after immunization with measles vaccine	168	67.2	22	8.8	60	24.0
Local abscess in the injection site may occur after BCG vaccine	169	67.6	24	9.6	57	22.8
Small scar remain in the injection site after four weeks of BCG vaccine	127	50.8	11	4.4	1.2	44.8

Table (7) Showed that more than quarter of mother do not know the false contraindication of vaccination of children.

Table (7): Mother knowledge regarding false contraindication of vaccine

The condition which are not considered as true contraindication to immunization	NO		Uncertain		Yes	
	No.	%	No.	%	No.	%
Fever less than 38.5 C	220	88.0	21	8.4	9	3.6
Mild diarrhea	227	90.8	20	8.0	3	1.2
Malnutrition	231	92.4	18	7.2	1	0.4
Mild upper respiratory infection	231	92.4	18	7.2	1	0.4
Jaundice	231	92.4	18	7.2	1	0.4

Table (8) Shows that more than three quarter of mother do not know the true contraindications of vaccine. While table (9) reflect that the majority of the mothers have poor knowledge related to child immunization.

Table (8): True contraindication of vaccines

The contraindications which are considered as true contradictions to immunizations	NO		Uncertain		Yes	
	No.	%	No.	%	No.	%
Child infected with immunodeficiency disease is considered as contraindication to OPV	216	86.4	17	6.8	17	6.8
Child with long term immunosuppressive therapy is considered as contraindication to OPV	210	84.0	21	8.4	19	7.6
Dangerous reactions such as encephalopathy after administration of previous dose of DPT, Tetra and Penta vaccine	207	82.8	26	10.4	17	6.8

Table (9): Level of mother knowledge according to the range of total score

Level of mothers knowledge	No.	%
Poor	169	67.6
Fair	78	31.2
Good	3	1.2
Total	250	100

Discussion

The sample of the study consist of (250) mothers who had children aged (12- 24) months in primary health care centers in Baqubah-Diyala governorate.

Demographic characteristic of respondents show that (50%) of the mothers participated in the study, their ages were (26-40) years. Mohammed (2005) agree with this study and found that (63%) of mothers participated in the study, their ages were (26-40) years, another finding done by Mareena and Sujatha (2014) were found (52%) of the mothers participated in the study, their age were (25-30) years [10 ,11].

The mothers graduated recorded (30.4%) from primary school, this result agree with study done by Omole and Owodunni, which were found (35.1%) for primary school [12]

The majority (72.8%) of the mothers were housewife, agrees with this study and found that (71.4%) of mothers were housewife [12]. And shows that (40.8%) of mothers have (1-2) children. Kongxay *et al* 2007 agree with this study who found that most of the mothers have (1-2) children (71.2 %) [13].

Accessibility of vaccination services, the results of present study showed that (42%) of mothers house were far from PHC center less than 1 kilometer, (56.8%) of mothers get execs to PHC center by walking, Mohammad, 2005 found that (47%) of the mothers using private car to reach the PHC center and (38.6%) of the mother houses far from PHC center is less than 1 kilometer, this result found by Selvakumari 2011 [10, 14]. Also the study result shows that (87.2%) of them get information about vaccination from physicians or health care workers. Rachna and Sheetal (2010) found same result, they found that (63%) of mother had knowledge about vaccination from physicians or health care workers [15].

Immunization status and the barrier which lead to incomplete immunization of the child. This study shows that (93.2%) of the children complete vaccination , while (6.8%) of the children uncompleted vaccination, same result found by Bhatia *et al*. (2004) to observe a declining trend of routine immunization coverage and fully immunize children and to assess the immunization status among children in the age group of (12-23) months, they found that (72.2%) of children were fully immunized and (4.6%) were unimmunized [16]. Also Bhatia *et al.*, (2004) found that barriers which lead to incomplete the immunization were (4.0%) the was sick . Thomas *et al*., (2004) and Mabrouka, 2011; they found that the barriers that prevent mothers to complete their children immunization were having a sick child [17, 18].

Mother knowledge regarding vaccination. Study result shows that the mothers (98.4%) knowledge in general concepts about child immunization, (27.2%) target diseases, (0.8%) administration method, number of doses and child' s age for immunization, (48.8%) expected side effects after immunization, (0.4%) the conditions which are not considered true contraindication and (6.4%) the conditions which are considered true contraindications to immunization. Mc Cormick *et al.* ,(1997) found that the parents who interviewed in clinic sites in urban population of US exhibited no understanding of the nature of the diseases immunizations are given against. They knew that immunization are given to prevent diseases and could name most of the acronyms for vaccines, such as DPT. However, they less often knew what was included in combination vaccines or which diseases prevented; this is in agreement with this study, other study done by Abidoye and

Odeyemi, 2013; there are also the same findings [19, 20].

Level mother's knowledge according to the ranges of total score. Shows that (67.6 %) of the mothers have poor knowledge related to child immunization, Roodpeyma *et al.* (2007) found that there is (70.2%) of the mothers have poor knowledge related to child immunization ,also this study agree with the results found by Torun and Bakici ,2006 ,there were founded (68.5%) of mothers have poor knowledge, but only (34.7%)of mothers have poor knowledge ,were found by Anand and Baringhausen (2007) this finding disagreement with this study [21,22,23].

In conclusions. The study revealed that the mothers were not knowledgeable about child immunization, were majority of them had poor knowledge. The main barrier which prevent mothers to complete their children immunizations who age from 12- 24 months were the child was sick .There is a significant relationship between knowledge of the mothers regarding vaccination and their age and educational level. There is a significant relationship between mothers knowledge and immunization status of their children.

Our recommendations, improve the mothers knowledge related to child 's immunization ,through health providers who work in the primary health care centers; provide mothers with educational folders about child immunization and make coordination with non-governmental organizations ,mass media and Ministry of Education for the same purpose. Motivate the health workers in the field of immunization such as an additional financial support according to their responsibilities.

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