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Knowledge, Attitude, and Practice of Mothers in Reproductive Age Group About Childhood Immunization in Basra, Iraq

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Abstract

Background: Childhood immunization preserves children from a variety of dangerous or potentially fatal diseases. World health organization (WHO) study has shown that 2.5 million deaths occurred yearly due to vaccine-preventable diseases, mainly in Asia and Africa among children under 5 years old. Vaccines nowadays protect against many diseases such as whooping cough, measles, and polio, which were the main causes of death for many children before them despite the same germs. In order to protect children from dangerous diseases as well as keep the community from outside diseases by decreasing the spread of diseases, immunization is a simple and effective way to do so.

Aims: To assess the mother's knowledge, attitude, and practice concerning childhood vaccination.

Methodology: This was a cross-sectional study done in three PHCCs (primary health care centers) from the first sector in the center of Basrah city, for the period from 24th of April to 1st of September 2019 on 414 mothers who visit the PHCCs for vaccination of their children and having at least one child aged less than five years. The data were collected by the researcher by using face to face interview method.

Result: The results showed that (52.2%) of participants aged between 20 to less than 30, most of them were housewives and more than half of participants have 2-4 children. The majority of the mothers had good knowledge about childhood immunization apart from knowing of immunization schedule, more than half of the participants (60.4%) received their knowledge about vaccines from doctors and nursing staff in PHCCs and (77.3%) believed that the BCG (Bacillus Calmette-Guerin), hepatitis B or polio vaccines were the vaccines which should be given during the first week after delivery, nearly all of them (99.2%) agreed that the vaccines prevent diseases. Regarding the attitude and practice of the mothers (99.8%) recommend vaccines to every child, all of the mothers thought that compliance with the immunization schedule is important, and (94.2%) encourage mothers to vaccinate their children from campaigns. Nearly all participants fully immunized their children.

Conclusion: Mothers had poor knowledge about immunization schedules. Nearly all of the mothers (99.8%) recommend the vaccine to every child. All of the participants thought that adherence to and completion of the immunization schedule are important. The majority of participants encourage vaccination campaigns. Nearly all of the mothers vaccinate their children completely.

Recommendations: Explain to the mothers the importance of vaccines for children under five years and their role in the protection of children from serious diseases. Learn the mothers about the vaccines which is used in the immunization schedule.

Keywords: childhood immunization; vaccination campaigns; proteins; children; primary health care centers

Introduction

A vaccine is a biological preparation that enhances immunity to a particular disease. A vaccine typically consists of an agent similar to a disease-causing microorganism and is often made from weakened or killed forms of the microbe, its toxins, or surface proteins [1]. Vaccination is one of the most cost-effective child survival interventions which is practiced throughout the world All countries in the world have an immunization program to submit selected vaccines to the targeted recipients, especially concentrating on pregnant women, infants, and children, who are at high-risk of diseases preventable by vaccines [2].

Vaccines have thrived as one of the most successful health interventions that have reduced the

appearance of infectious diseases and improved the quality of life in the population. During the last decades, encumbrance of the infectious diseases has been decreased through immunization. It is a safe and effective method of inhibiting many severe infectious diseases.

Parents' knowledge about immunization is an important predictor of their children's immunization status [3]. Deficiencies in knowledge about immunization often lead to poor uptake or error in immunization dosage and timing [4]. So, it is important for the mothers to know the exact time of immunization pre age of the children specially the first 24 hours of age in addition to her knowledge to the side effects of the vaccines and the presence of some fever vaccines is a good sign of immunity this will prevent the default of vaccines. The positive attitude of the mother ensures a full commitment of the mothers to vaccinate their children according to schedule time and to achieve the mother's content of accepting immunization through campaign teams. Good parental practice regarding immunization will be able to decrease the incidence of infectious diseases [5]. Knowledge, attitude, and practice of parents contribute to the success or failure of immunization programs [6].

Methodology: This study is a descriptive cross-sectional study that was carried out during the period from the 24th of April to the 1st of September 2019. The study involved the mothers who visited three primary health care centers from the first sector in the city center of Basrah for vaccination of their children and had at least one child aged less than five years. The sample size was 414 mothers (100 mothers from Al-Rhazi PHCCs,125 from Al-Mishraq PHCCs, and 189 from Al-Seef PHCCs). The data was collected by researcher in PHCCs, face to face interview method was used to answer the questions. The questionnaire is composed of 4 main sections, (parental demo-graphics mothers knowledge, attitude, and practice about childhood immunization). The Answer yes for each question in attitude and practice is considered a correct answer while no and do not know are considered incorrect answers. For each question in knowledge, attitude and practice if the percentage of the correct answer was less than 50% considered poor, 50 to 74% considered moderate, and 75 to 100% considered good.

Each mother who participated in this study was told by the researcher that her participation is optional, and her information would be confidential and only for the purpose of this study. Data were fed on the SPSS computer program (statistical package for social sciences version 20) for checking and statistical analysis and handled by using descriptive statistics frequency and percentage.

Results

Socio-demographic characteristics of the study population

In this study, we had (52.2%) of women aged between 20 to less than 30 years, and (4.1%) of them aged between 40-45 years. Mothers who had a primary education showed the highest percentage (25.1%) and (6.0%) of them were illiterate. The highest percentage of mothers (87.0%) were housewives and (1.7%) were students. Nearly all of the study population were married (99.8%), and we had only one woman who was divorced. This study showed that more than half of parents (61.8%) had 2-4 children, and only (12.6%) had more than 4 children. Slightly higher than half of fathers (52%) aged between 25 to less than 35. Father education showed the same pattern as mother education (24.2%) had a primary education and (6.5%) were illiterate. The study showed that (70.3%) of fathers were self-employed and (0.7%) were students (Table-1).

Table 1: Socio-demographic characteristics.

Characteristics	Number	Percentage
Age of mothers (years)		
15-	28	6.7
20-	104	25.1
25-	112	27.1
30-	96	23.2
35-	57	13.8
40-45	17	4.1
Education		
Illiterate	25	6.0
Just read and write	74	17.9
Primary	104	25.1
Intermediate	54	13.0
Secondary	27	6.5
Institute	42	10.1
University and postgraduate	88	21.3
Occupation		
Housewife	360	87.0
Employed at any job	47	11.3
Student	7	1.7
Marital status		
Married	413	99.8
Divorced	1	0.2
Widow	0	0
Parity		
1	106	25.6
2-4	256	61.8
>4	52	12.6
Age of fathers		
20-	35	8.5
25-	100	24.2
30-	115	27.8
35-	83	20.0
40-	40	9.6
45-50	41	9.9
Education		
Illiterate	27	6.5
Just read and write	54	13.0
Primary	100	24.2
Intermediate	62	15.2
Secondary	32	7.7
Institute	45	10.9
University and postgraduate	93	22.5
Occupation		
Government employee	120	29.0
Self-employed	291	70.3
Unemployed	0	0.0
Student	3	0.7
Total	414	100.0

Knowledge of the mothers toward vaccination

Most of the participants in this study received information about vaccines from doctors and nursing staff in PHCCs. The highest percentage of them (54.6%) believed that the first vaccine that was given to the child is BCG, (21%) said that the first vaccine was hepatitis B and only (1.7%) said that polio, (69%) of them believed that the first vaccine is given in the

first week of life. The percentage of mothers who did not know the first vaccine was (22.7 %). Nearly all the participants believed that the vaccines prevented diseases. The participants had poor knowledge about the immunization schedule, more than half of them (56.3%) gave incomplete answers, (38.4%) didn't know and only (5.3%) gave complete answers. More than half of mothers knew the method of keeping the vaccines in the refrigerator Table 2.

Table 2: Knowledge of the mothers toward vaccination.

Variables	Numbers	Percent
What is (are) the source(s) of knowledge about vaccines?		
TV	7	1.7
Internet	46	11.1
Doctors and nursing staff in PHCCs	250	60.4
Relatives and neighbors	64	15.4
More than one source	47	11.4
What is the first vaccine that is given to a child?		
Hepatitis B, BCG, and Polio correct answer	320	77.3
Don't know incorrect answer	94	22.7
What is the age of the first vaccine that is given (in days)?		
<7 correct answer	288	69.6
>7 incorrect answer	126	30.4
Does the vaccine prevent disease?		
Yes correct answer	411	99.2
No incorrect answer	1	0.2
Don't know	2	0.5
What are vaccines that are given in the immunization schedule in Iraq?		
Complete answer correct answer	22	5.3
Incomplete answer incorrect answer	233	56.3
Don't know incorrect answer	159	38.4
What is the method of storing the vaccines?		
At room temperature incorrect answer	8	1.9
Refrigeration keeping vaccines correct answer	250	60.4
Don't know incorrect answer	156	37.7
Total	414	100.0

The attitude of mothers toward vaccination

Nearly all the mothers in the study believed that the vaccines should be given to every child, and all of them thought that the completion of the schedule was important. Most of them were encouraged vaccination campaigns Table 3.

Table 3: Attitude of the mothers toward vaccine.

Variables	Number	Percent
Do you recommend that vaccines should be given to every child?		
Yes	413	99.8
No	1	0.2
Don't know	0	0
Do you think that adherence to and completion of schedule are important?		
Yes	414	100.0
No	0	0
Don't know	0	0
Do you encourage the vaccination campaigns?		
Yes	390	94.2
No	23	6.5
Don't know	1	0.2
Total	414	100.0

Mothers' practice toward immunization of children

Nearly all the mothers in this study were fully immunized their children and most of them vaccinated their children from campaigns.

Table 4: Mothers' practice toward immunization of children.

Variable	Number	Percent
Are all your children fully vaccinated?		
Yes	411	99.3
No	3	0.7
Did you vaccinate your children from campaigns?		
Yes	383	92.5
No	31	7.5
Total	414	100.0

Discussion

The immunization system is a successful systemic program, especially during the last century [7]. In addition to immunization system characteristics and children's background, mother education was identified as affecting a child's complete vaccination status [8]. There is a great role for healthcare providers in child immunization represented by guidance on immunization timing and administration as well as its positive effects on parental decisions related to vaccination. Parents' decisions regarding immunization can impact immunization rates, including access to vaccination, the communication of risks and benefits, the maintenance of accurate vaccination records, and strategies for vaccination reminders [9]. The most factors that contribute to parental vaccination decision depends on parents' knowledge and practice regarding immunization and these decisions are very effective in increasing the immunization rate and complaints and decreasing any possible immunization errors. It is important to increase awareness and knowledge about the benefits and importance of vaccinations, as well as the harmful consequences of non-complete or partial immunization [5]. Parents' good understanding of vaccine-preventable diseases and the vaccination schedule will lead to children being vaccinated [10].

Regarding socio-demographic characters, in our study, (52.2%) of women aged between 20< 30, and the majority of them were housewives (87.0%) these result similar to a study which was done in Damietta governorate, Egypt (2016) which revealed (53.2%) of mothers aged 20< 30, and (81.0%) of them were housewives [11]. In our study, nearly all of the respondents were married (99.8%) and only (0.2%) were divorced and these results are similar to a study carried out in Nigeria (2010) which showed (97.8%) of participants were married and (0.4%) of them were divorced [12], regarding the age of fathers, our study revealed that (52%) of fathers aged between 25 < 35 which was same age group (76.3%) in a study which was done in south India (2016) [13]. Most of the mothers were housewives and most of the fathers were self-employers. The educational level of mothers and their partners showed the same patterns. The highest percentage of mothers had 2-4 children. Our study revealed that the main sources of information about vaccines were doctors and nursing staff in PHCCs (60.4%) followed by family and relatives (15.5%) (62.8%), A study in South India City (2016) revealed doctors (55.0%), internet (14.0%), and relatives (13.0%) [13], while the study in Minia city, Egypt (2013) showed more than half of mother's information sources were from television [14]. In the present study, the answer of participants about the first vaccines that should be given to children were BCG (54.6%), hepatitis B (21.0%), and polio (1.7%), the answer of participants in a study carried out in Nigeria (2010) were BCG (48.2%), DPT1 (13.2%) and OPV2 (4.7%) respectively [12].

In our study the knowledge about the age of the first vaccine showed that (69.5%) of participants believed that the age of the first vaccine was in the first week, other studies which were done in Al-Mosul (2014) [9], in Arar, Saudi Arabia (2018) [15], Al-Riyadh, Saudi Arabia (2013) [16] revealed (85.4%), (81.5%), (71.7%) of participants gave same answer while a study done in al-Mukalla, Yemen (2018) [17] revealed a lower percentage (41.2%). In this study, (99.2%) of women agreed that the vaccines prevent diseases which were also found in previous studies in Damietta governorate, Egypt (2016) [11], in Al-Riyadh (2018) [18] with percentages of (93.3%), (91.9%) respectively while another study in Jeddah (2017) [19] revealed a

lower percentage (79.7%). In our study, more than half of the participants (56.3%) gave incomplete answers about the immunization schedule in Iraq, and only (5.3%) of mothers gave complete answers. The highest percentage of women in our study knew that the vaccines should be kept in a refrigerator keeping vaccines.

In the present study, (99.8%) of participants recommended the vaccines to every child, and this result agreed with other studies which were done in Al- Riyadh, Saudi Arabia (2013) [18], Al-Mosul (2014) [9], and Hail City, Saudi Arabia (2018) [20] with the percentage of (96.9%), (96.0%), and (94.3%) respectively. In our study all mothers thought that adherence and completion of the vaccination schedule were important, other studies in Al-Riyadh (2018) [18] and Al-Ain, United Arab Emirates (2011) revealed (90.3%) and (82.9%) of mothers agreed with this.

The majority of participants encouraged vaccination campaigns (94.2%) and this percentage was higher than the percentage of another study in Al- Taif (2013) [21] (73.9%) and Jeddah (2017) [18] with a percentage of (73.9%) and (66.7%) respectively. In our study nearly all the mothers (99.3%) were fully vaccinated their children, other studies were done in Turkey (2018) [22], Al-Ain, United Arab Emirate (2011) [23], and in Baghdad (2017) [24] showed (97.5%), (93.1%) and (91.9%) respectively of mothers were fully immunized their children. In the present study (92.5%) of participants immunized their children during campaigns while only (75.4%) of children were immunized during campaigns in Enugu, Nigeria (2012) [25] and (68.0%) in Pulianthope urban health center in India (2018) [26].

Conclusions

The mothers in our study had poor knowledge about the immunization schedule in Iraq and the methods of keeping the vaccine, a moderate level of knowledge about the age of the first vaccine, and good knowledge about the first vaccine that was given and whether the vaccine prevented diseases or not. The participants had a good attitude and practice regarding immunization.

Recommendations

Learn the mothers about the vaccines which are used in the immunization schedule. Urge the mothers to respect the vaccine schedule time.

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