

Parents' Knowledge toward Pediatric Immunization and its Relation with their Compliance at Primary Health Care Centers in Karbala City

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Abstract

Parents are their children's primary health decision makers, their knowledge towards immunization in general have a significant effect on the immunization status of their children. A descriptive (cross-sectional study) was conducted to assess parents' knowledge toward immunization and its relation with pediatric immunization compliance at primary health care centers in Karbala city, Iraq

A non-probability (convenience) sample of 292 parents selected from (5) primary health care centers. These centers distributed throughout (2) primary health care sectors selected randomly as (20%) from each sectors. The results of the present study indicated that the majority of studied parents had moderate level of knowledge, which was a significant associated with their age of fathers, level of education of father and mothers, occupational status of mothers, family type, , more than sixty percent of studied parents have children partially immunized. In addition, the present study revealed that parents' knowledge not had a significant influence on child's immunization status. So, this study recommended it is necessary to raise parents awareness of the importance of immunization by implementing educational programs and by traditional and social media with emphasis on time, side effects, contraindication, and disease preventable by immunization and promote periodically assessment for immunization coverage.

Keywords: Parents, Knowledge, Immunization, Compliance.

Introduction

Immunization against diseases is one of the most important intervention in public health, with cost-effective ways of reducing childhood morbidity, mortality and disability. However, a proportion of children are not completely immunized with the recommended vaccines^[1]. Immunization is important to reduce disease burden in young children and it is estimated that it prevent 2 to 3 million deaths every year. There are currently an estimated 19.5 million children in the world who have not received basic vaccine. Global vaccination coverage has stalled at 86%, with no significant improvements during the past year^[2].

In the literature on public health, the contributors to lower immunization rates are well established. Increases in the number of vaccines required and changes to the

immunization schedule create difficulties for parents and care providers in tracking immunization status^[3].

More than 330,000 children die from VPDs per year. Perinatal disorders (20%), respiratory infection (18%), diarrheal diseases (17%), VPDs (15%), and malaria (7%) are among the top killers in children under five years old^[4]. Approximately 1 of 5 children worldwide have no received routine life-saving immunization every year, according to the (WHO), and 1.5 million children have died of diseases that could have been prevented by vaccines^[5].

Parents are their children's primary health decision makers, their knowledge towards immunization in general have a significant effect on the immunization status of their children, the tremendous amount of conflicting vaccine safety information and misinformation on the

internet may have a negative impact on the decisions of parents. Thus, there is a critical need to evaluate knowledge and practice of parents about their children's immunization in order to enhance and improve the coverage and completeness of vaccination^[6].

Parental behaviours such as unawareness of adverse effects follow vaccination and vaccine contraindications, negative views regarding vaccination in mild illness, negative attitudes, for example, the fear of vaccination by parents was considered as one of the major barrier to childhood vaccination^[7].

Methodology

Design of the Study:

A descriptive design (cross-sectional study) was approved throughout the present study aimed to assess parents' knowledge toward immunization and its relation with pediatric immunization compliance at primary health care centres in Karbala city through the period of 19th September 2020 to the 6th March 2021.

Ethical Consideration:

The participants were fully acquainted with the current study and its aims and then a voluntary verbal agreement was obtained in order to participate in the study. Besides, the confidentiality of information obtained from parents of children has been taken into account. Also, ethical approval was obtained from the ethical committee of research in the College of Nursing / University of Baghdad regarding confidentiality and anonymity of participants

Setting of the Study:

The accessible population included parents of children who attend to the immunization unit in the PHCCs in Karbala city. The study conducted in Karbala city including two primary health care sectors (Central Sector and Al-Hur Sector).

Sample of the Study:

Non probability "convenience" sample of (292) parents (father and/or mother) who attend the PHCCs where selected in and out of the unit of immunization at the (5) PHCCs which involved in the study in Karbala city. These centres distributed thought (2) primary

health care sectors.

Instrument of the study:

A questionnaire is constructed and developed as a tool for data collection by the researchers, after an extensive review of relevant literatures and consultation from panel of experts and related studies. A questionnaire format was contained three parts were constructed to include all aspect associated to the study (**Socio-demographic characteristics, Parents' knowledge toward immunization and Parental compliance with the routine immunization schedule**)

Methods of data collection:

Data were obtained through face to face interview techniques as a method of data collection. The period from (8th December 2020 to the 1st Febrile 2021), interview was conducted with parents who were attended to PHCCs in Karbala city to fill in the questionnaire after a permission was arranged from primary health care sector and an agreement of participation was obtained from the parents to the interview.

Statistical Analysis:

The researcher using the Statistical Package of Social Science (SPSS) version (22.0) to analyze the data and relation the results of study .The researchers used descriptive and inferential data analysis to obtain results.

Results and Discussion

Table (1): Distribution of parents by their socio-demographic characteristics variables.

The findings of the present study showed in the table (1) that more than 80% of the studied sample were mothers This finding agree with a study in Hail City that was carried out upon (420) parents found that the majority of the study sample were mothers and accounted 277 (66%)^[8].

Furthermore, most of fathers and mothers of the present study sample are within (30-34) and (25-29) years respectively. This result consistent with a descriptive study in Nigeria was reported that the majority of fathers within age group (30-34) and accounted 86 (19.46%), and most of mothers 116 (26.24%) falls within age group (25-29) years old ^[9].

The current study found that higher proportion of participants were married (represented more than three-quarters of the participants), These findings agree with study conducted in Saudi Arabia was reported that the majority of the study sample (mothers and fathers) were married and accounted 458 (91.6%)^[10].

This results is consistent with a study in Saudi Arabia was revealed that the majority of the study sample were living in urban environment. Furthermore, the current study indicate that more than half of the study sample was from a nuclear family ^[11].

The result of the current study that concerning with the educational level of the study sample mentioned that

the majority of fathers and mothers obtained institute / university degree and accounted 28 (49.1%), 79 (33.6%) respectively. they reported that most of the participants (fathers and mothers) graduated from college 366 (61%) . Furthermore, the result of the current study in table (1) founded that the majority of the participants got information about immunization (vaccination) by health care workers which accounted 241(82.5%). We thought that the health care workers can be a trusted source to promote parent’s knowledge and attitudes toward immunization. This result agree with a descriptive study done by (Verulava et al., 2019) Their study result mention that the majority of participants 93 (49.5%) got information about immunization by health care workers ^[12].

Table (2): Distribution of sub main domains of parents’ knowledge towards immunization and overall assessment of parents’ knowledge.

No.	Sub Domains	GMS	PSD%	Ass.
1	Parents’ Knowledge about concept of immunization	0.754	0.216	H
2	Parents’ Knowledge about the important of immunization	0.853	0.177	H
3	Parents’ Knowledge about the expected side effect vaccination	0.787	0.175	H
4	Parents’ Knowledge about routine immunization	0.490	0.237	M
5	Parents’ Knowledge about contraindication of immunization	0.329	0.210	L
A	Parents’ Knowledge about contraindication of immunization-False considered	0.354	0.267	M
B	Parents’ Knowledge about contraindication of immunization-True considered	0.304	0.235	L
6	Parents’ Knowledge about BCG vaccine	0.396	0.260	M
7	Parents’ Knowledge about oral polio vaccine	0.534	0.239	M
8	Parents’ Knowledge about hepatitis B vaccine	0.361	0.421	M
9	Parents’ Knowledge about (diphtheria, tetanus, pertussis) vaccine	0.170	0.261	L
10	Parents’ Knowledge about measles	0.425	0.336	M
11	Parents’ Knowledge about measles, mumps, rubella	0.091	0.241	L
12	Parents’ Knowledge about Haemophilus influenza type b vaccine	0.019	0.119	L
13	Parents’ Knowledge about Rotavirus vaccine	0.026	0.125	L
Overall assessment of parents’ knowledge		GMS	PSD	Ass.
	Parents’ Knowledge towards immunization (vaccination)	0.447	0.123	M

GMS: Global Mean of Score, PSD: Pooled Standard Deviation, , Ass. : Assessment(0.00 – 33.33) Low (L) ; (33.34 – 66.66) Moderate (M) ; (66.67– 100) High (H).

Overall assessment of parents' knowledge towards immunization:

The results of the study on hand showed that the majority of the studied parents had a moderate level of knowledge towards children immunization as shown in table (2). This findings was agree with the results in Yemen that was carried out a cross-sectional survey study on (400) parents, the study revealed that the (63.3%) of parents had a moderate level of knowledge^[13].

Furthermore, a descriptive prospective study conducted on (140) nursing mothers at a child hospital in south-west Nigeria was reported that the majority of study sample (71.4%) has adequate knowledge. On the other hand, another study in Jeddah City was indicated that most of the participants (87.2%) had a high level of knowledge about the preventive measures and the benefit of vaccination for children^{[14], [15]}.

Table(3): Association between overall assessment of parents' knowledge and their socio-demographic characteristics:

Demographical Characteristics variables	Parents' Knowledge towards immunization (vaccination)		
	C.C.	Sig.	C.S.
Gender	0.044	0.451	NS
Age of mother (Yrs.)	0.184	0.070	NS
Age of Father (Yrs.)	0.198	0.035	S
Marital Status	0.122	0.218	NS
Residency	0.009	0.881	NS
Level of Education of Father	0.306	0.000	HS
Level of Education of Mother	0.423	0.000	HS
Family Type	0.171	0.033	HS
Health care workers	0.130	0.025	S
Social media	0.121	0.035	S
Television	0.004	0.946	NS
Family, neighbor, relatives	0.016	0.787	NS

HS : Highly Sig. at $P < 0.01$; NS : Non Sig. at $P > 0.05$; S : Sig. at $P < 0.05$; Testing are based on a Contingency Coefficient test.

The findings of this study indicated that no significant association was found between parents' knowledge and their some socio-demographical characteristics.

From the researcher's point of view the educational level is the most important factors that helps the parents to understand the importance of immunization for the children. Otherwise, occupation although could be supposed that the employed mothers are better educated and have more access to information through a broader social environment. The results of the present study similar to results of study in Lagos State was reported that there was a statistically significant relationship between level of knowledge and some socio-demographic variables like (mother's occupation, level of education, and type of the family) [16].

Theses result supported by a study in Turkish was mention that there was a significant relationship between parents' knowledge and the economic status of the

family at $P < 0.001$. In other hand a descriptive study done in Iraq indicated that that there was no significant association between the level of participant's knowledge and their age, marital status, and residency [17],[18].

The findings of the study on hand stated that no significant association was existent between parents' knowledge, attitudes toward immunization and source of information, except the social media that has a significant correlations with parents' knowledge toward immunization, table (4-12).

The result of the present study go in line with a descriptive survey study done by Vinish (2016), who reported that no significant correlation between knowledge of participants and source of information. While study Saudi Arabia was found that there were a significant relationship between parents' attitudes and the source of information about immunization at P-value <0.001 [19][20].

Table(4): Parents' compliance and Association between (child's immunization status) and Parents' Knowledge

Immunization Status	Groups	F.	%	C.S. (*) P-value
Child's immunization status	Fully immunized	115	39.4	P=0.000 (HS)
	Partially immunized	177	60.6	
Child's immunization status and Parents' Knowledge				
Relationships	C.C.	Sig.	C.S.	
	0.044	0.409	NS	

NS : Non Sig. at $P > 0.05$; Testing based on a Contingency Coefficient test (C.C).

Regarding the immunization status of children, the present study findings as in table (4), indicated that more than half of the studied children 177 (60.6%) were partially immunized. These results consistent with a cross-sectional study in the Urban Slums of Bijapur city, Karnataka, India was revealed that the most of studied children were partially immunized and accounted 97 (62.58%) [21]. From the researcher's point of view child's illness lead to partial immunization of studied sample and not related to parents' knowledge

and attitudes toward immunization.

The results of the this study showed that no significant association was found between knowledge of parents towards immunization and their compliance (child immunization status) in a table (4-15). These results agree with Trushitkumar et al. (2017), they reported that no significant association was found between the parents' knowledge and the immunization status of their children.

From the researcher's view point a major reason for this can be the fact that most of the parents with moderate level of knowledge score, 82 (46.3%) of participants mention that the reason for non-compliance with paediatric immunization was sickness or illness of child this mean it's not related to parents lack of information about the important of immunization for their children^[21].

From the researcher's point of view, might be related to the reason that mentioned by the researcher previously.

Conclusion and Recommendation

The results of the present study indicated that the majority of studied parents had moderate level of knowledge, which was a significant associated with their age of fathers, level of education of father and mothers, occupational status of mothers, family type, , more than sixty present of studied parents have children partially immunized. In addition, the present study revealed that parents' knowledge not had a significant influence on child's immunization status. So, this study recommended it is necessary to raise parents awareness of the importance of immunization by implementing educational programs and by traditional and social media with emphasis on time, side effects, contraindication, and disease preventable by immunization and promote periodically assessment for immunization coverage.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq

Conflict of Interest: The authors declare that they have no conflict of interest.

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