

Knowledge, attitude, and practice of parents among preschool vaccination

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Abstract: The Vaccination Program applied all over the world to reduce the prevalence of diseases that can be avoided by vaccination. *The study aimed to assess the knowledge, attitude, and practice of parents in Riyadh City, Saudi Arabia among the preschool child vaccination schedule. Design:* Cross-sectional design. *Setting:* in the primary health care settings. *Tools:* Structured self-administered questionnaire was established which contain five parts. **Tool 1:** Demographic data of parents such as age, relationship to the child & education. **Tool II:** Source of knowledge about vaccination such as family and friends, doctor or nurse, leaflets and brochures, and interested in researching the subject. **Tool III:** Knowledge of parents about importance, effect, complications, and benefits of vaccination. **Tool IV:** Attitude of parents toward vaccination. **Tool V:** Practice of vaccination as restrained by culture/religion, and commitment to vaccination. **Results:** The findings show that majority of the parents have good knowledge about vaccination; however, there are also few of them who are restrained by religion, culture, information from friends and relatives, and their personal experience about childhood vaccination. The Parents trust the doctors and nurses as sources of information about vaccination more than any other sources like media. Majority of the parents perceived the childhood vaccination schedule as effective. **Conclusion:** The study concluded that there is a satisfactory coverage of the Saudi Childhood vaccination schedule as shown by the good level of knowledge and practice of parents toward childhood vaccination schedule. However, there are still parents who have misconceptions and hesitations to comply with the vaccination schedule. **Recommendation:** The study recommends that the public health sector should strengthen implementation of the vaccination schedule by improving access and coverage of the information drive about vaccination.

Keywords: Childhood vaccination schedule, Knowledge, Practice, Experience, Parents.

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1. INTRODUCTION

In the last several years, the risk of infectious diseases was lowered via vaccination. (Shiferaw Birhanu et al, 2015). Vaccinations listed in the Vaccination Certification since birth to school. They work to guard children around the world and all specific groups in the society from disease. (WHO, 2019). Vaccination showed key elements of illness, impairment and mortality avoidance. Rubella, diphtheria, pertussis, tetanus, measles, and polio were the most important preventable disease of the vaccines. (Yousif et al, 2013). Vaccination is a mechanism in which an individual makes a disease immune or resistant, primarily through the application of a vaccine. Vaccinations activate the immune system to

guard a self toward consequent infection or disease. (WHO, 2019). Providing preschool children with a suitable type of vaccine will markedly lower the price of illness medical care leading to improve children's life. (Siddiqi et al, 2010).

Various researches identified parents' knowledge attitudes and practices as determinants that leading to the completion or breakdown of the vaccination programs. (Salem et al, 2013) (Bamatraf and Jawass, 2018). Recognition of a vaccine schedule relies to an extent on the understanding and perceptions of parents, the requirement of facilities, the groups of a therapeutic team and the long-term costs. Community views are crucial for the effectiveness of a program. (Malkar et al, 2013 and Chia-Wan et al, 2011). In Saudi Arabia, the key vaccines listed by the Ministry of Health in the Vaccine schedule, starting from birth to the first grade, to protect children from immunization-targeted diseases, to prevent infection with any of these diseases. (MOH, 2019). This wide vaccination performance of nearly 99.5 % of most infectious diseases in Saudi Arabia rendering to the WHO vaccine-preventable diseases. (WHO, 2019). The compulsion to provide proof of preschool vaccination is required for school enrollment appears as powerful contributor to elevated vaccination rates in Saudi Arabia. (Alshammari et al, 2018). Prior studies have reported myths about parent awareness and practicing regarding childhood vaccination, even if evidence has shown that millions of children were saved in the first step of preventive measures and that vaccine makes it work. (Siddiqi et al, 2010). The assumption that vaccines induce autism is the most common parental consideration in the U.S. survey. (Smith et al, 2009). Clear education of vaccination is needed to develop parents' perception. Doctors and other healthcare professionals will therefore supply parents with information on the benefits and risks of vaccinations. (Alfahl, 2017 and Bernsen et al, 2011). Providing preschool children with a suitable type of vaccine will markedly lower the price of illness medical care leading to improve children's life. (Siddiqi et al, 2010). This study It can help to establish a plan to reach the aims of Saudi Ministry of Health's goals by assess knowledge, attitude, and practice of the parents among preschool child Vaccinations Schedule in Riyadh Primary Health Care Settings.

Significance of the study

The results of the study will be utilized to increase parents' awareness and compliance to vaccination, thereby preventing children whose parents will comply with the vaccine schedule against diseases preventable by vaccination.

The aim of the study

This research was prepared to assess the knowledge, attitude and practice of the parents among the preschool child schedule of vaccinations in Riyadh primary healthcare setting.

Research Question:

1. What is the demographic of the participants?
2. What is the knowledge of the participants about Childhood Vaccination?
3. What is the attitude of the participants about childhood vaccination?
4. What is the Practice of the participants about childhood vaccination?
5. What is the perceived effectiveness of the childhood vaccination?

2. MATERIAL AND METHODS

2.1 Design Research

Cross-sectional design.

2.2 Setting

The study carried out among parents in primary healthcare setting in Riyadh City, Saudi Arabia.

2.3 Subjects and Sampling

This study included the parents in a primary healthcare setting in Riyadh from September to December 2019 by using convenient sampling. The sample size equation $n = (p)(1-p)(Z)^2/e^2$ yields that a sample size of 377 is required to represent large populations with 95% confidence, an error rate (e) of 5%. However, online survey that conducted

electronically through iPads online in the primary health care settings. According to the size of the population, around 448 questionnaires were filled, and valid for analysis.

2.4 Inclusion and Exclusion criteria

The inclusion criteria include the parents from the primary health care settings with preschool children from 1 month to 6 years Arabic and non-Arabic speakers. The exclusion data include the parents with school age.

2.5 Tools of Data Collection

Structured self-administered questionnaire was established in Arabic language by the researchers after reviewing the related literatures to use for collect data according the following classification:-

Tool I: Demographic data of parents such as age, relationship to the child & education.

Tool II: Source of knowledge about vaccination such as family and friends, doctor or nurse, leaflets and brochures, and interested in researching the subject.

Tool III: Knowledge of parents about importance, effect, complications, and benefits of vaccination.

Tool IV: Attitude of parents toward vaccination.

Tool V: Practice of vaccination as restrained by culture/religion, and commitment to vaccination.

2.6 Validity and reliability of tools

A pilot study in a group of 50 parents is completed in order to test the applicability, relevance and clarity. The tools have updated based on the results of the pilot study. Reliability of the statistical kit SPSS tested to yield a Cronbach alpha of 0.92.

2.7 .Methods:

1. Ethical consideration:

Princes Nourah University IRB approved the study protocol and the questionnaire. The participated parents gave a written informed consent for being involved in the study.

2. Data analysis:

Statistical Package for the Social Sciences (SPSS) version 20.0 were used to analyze data. Descriptive statistics specifically

Frequency and percentage were utilized to describe the variables the knowledge about vaccination, the attitude of the parents related to vaccination, and their practice towards childhood vaccination.

3. RESULTS

Table (1): Shows 31% of the participants belong to the age range of 29-38, 29% age range 18-28, then 23% who are from 39-49 years old, and 17% with ages from 49 to 50. The results show that majority which is 80% of the participants are the mothers. According to their educational level. Majority, which is 90% of the participants, are college graduates, 6.6 % are postgraduates, and 3% finished middle school and 0.4% until primary level.

Table (2): Shows that 82% of the participants have good knowledge about vaccination while only an average of 18% have poor knowledge. Specifically, 96% have good knowledge in terms of the importance of vaccination. Regarding harm of vaccination 69% who have good knowledge while 31% with poor; 67% have good knowledge and 33% with poor knowledge about the dangerous effects of vaccination, 91% with good knowledge and 9% with poor knowledge about the effects of vaccination to better health. Regarding the complications of vaccination, there are 66.8% who have good knowledge and 34.2% with poor knowledge. Almost all of the participants have good knowledge 93% and 7% with poor knowledge for both the benefits of vaccination and the association of vaccination to chronic illness. Findings revealed that the participants have poor knowledge on common areas including harm, dangerous effect, and the complications of vaccination compared to other facts about vaccination covered in this study.

Table (3): Shows that slightly more than half of the participants (56%) have Hearing that vaccination as dangerous to the child. Also 23% recognize someone exposed to problems of vaccinations for the child, and 27% of them Remember who has cultural or religious constraints. 23% Hearing of incidents can make someone reluctant to vaccinate a child. Lastly, a minimal percentage (5%) claimed for any complications for the child after vaccination.

The result further implies that mothers have various sources of information, whether right or wrong, which influence their understanding and practice about vaccination.

Table (4): shows that majority that is 91% of the participants not restrained by religion or culture in taking their child for vaccination, while, 9% of them who claimed that religion and culture influenced them from not taking their children for vaccination. The findings show that only 84% of the participants commit between 80-100% of the scheduled vaccination of their children; while 11% commit to only 40-70%, and a few of them 5% commit to just 10-30% of the scheduled vaccination of their children.

The findings mean that the vaccination program in Saudi Arabia is successful but not extensive as shown by the 16% below 80-100%.

Table (5): Shows that majority of the participants 83% gained knowledge regarding vaccination from doctor or nurse, and 10.5% from family and friends while only 6.5% from leaflets and brochures. The finding shows that doctors and nurses remain to be the most trusted and reliable source of information about vaccination.

Table (7): There are 73% of the participants' who perceived that vaccinations are very good, while 19% perceived effectiveness of vaccinations as moderate or good, and still there are participant who perceived that vaccinations are poor or not quite effective (8%). The findings imply that there are still parents who are not fully satisfied or convince with the vaccination program

Table (1): Demographic characteristics among participants (n=448).

Items	No	%
Age range		
18-28	130	29
29-38	138	31
39-48	102	23
49-50	78	17
Relationship to child		
Father	35	8
Mother	359	80
Others/relative	54	12
Level of Education		
Primary	2	.4
Middle	12	3
College graduate	404	90
Post graduate	30	6.6

Table (2): Distribution of the participants according to their knowledge on vaccination

Knowledge about vaccination	Good level of knowledge		Poor level of knowledge	
	No	%	No	%
Importance of vaccination to child	428	96	20	4
Harm of vaccination	308	69	140	31
Effect of vaccination to better health	407	91	41	9
Dangerous effect of no vaccination	300	67	148	33
Complications of vaccination	295	65.8	153	34.2
Vaccination Causes Chronic illness	415	93	33	7
Benefits of Vaccination	416	93	31	7
Over all		82%		18

Table (3): Distribution of the participants according to their information regarding their attitude with vaccination.

Attitude about vaccination	yes		no	
	No	%	No	%
Hearing that vaccination as dangerous to the child	249	56	199	44
recognize someone exposed to problems of vaccinations for the child	101	23	347	77
Complications for child after vaccination	22	5	426	95
Hearing of incidents can make someone reluctant to vaccinate a child	101	23	347	77
Remember who has cultural or religious constraints	120	27	328	73

Table (4) distribution of participants according to their Practice of vaccination

Items	No	%
Practice by religion/culture		
Restricted from vaccination by culture/religion		
Yes	40	9
No	408	91
Vaccination contribution		
10-30%	21	5
40-70%	49	11
80-100%	378	84

Table (5) Distribution of participants according to their source of information regarding vaccination.

Sources	No	%	Rank
Family and friends	47	10.5	2
Doctor or nurse	372	83	1
Through leaflets and brochures	29	6.5	3

Table (6) Distribution of the participants' perceived effectiveness of vaccination

Range	No	%
1-3 (Poor)	35	8
4-7 (Good)	85	19
8-10(Very Good)	328	73

4. DISCUSSION

Knowledge about vaccination

"Prevention is better than cure" is the first step toward attaining the goal of population health for that vaccination remains worldwide put into place. Vaccination avoids population from the prices and load of diseases. The study's results have revealed that the parents' knowledge about vaccination is generally good at 82%. It indicates that the community health program, especially on the spread of information on vaccination, is great in Saudi Arabia, and that most mothers are well aware, Even though there is quite a number of parents who have inaccurate information about vaccination as harmful or dangerous to their kids. This implies the necessity to extra strengthens the vaccination knowledge push, particularly to discuss misunderstandings. The study results regarding the knowledge of parents about vaccination is consistent with the findings of the study done by *Alagsam and Alshehri (2019)* when they find that parents have a good understanding of childhood vaccination. Similar study conducted in Taif, Saudi Arabia revealed that parents have great knowledge of the overall concept of vaccination in the avoidance of disease (*Albarraq et al., 2013*). Another study done in Najran city, Saudi Arabia also found parallel results that mothers have acceptable and good knowledge about the importance of vaccination (*Alyami et al., 2018*), same finding was found in Almadinah, Saudi Arabia *Alfhal & Alharbi, 2017; Alshammari, et al 2018; Alqahtani et l., 2019*).

The findings of our study in combination with all other similar studies done in Saudi Arabia show good and adequate knowledge about childhood vaccination. This further imply that the information campaign about vaccination is satisfactory and should be sustained and improve further.

This outcome is predicted because the Kingdom of Saudi Arabia has routinely made commitments to protect 100% of children and recently introduced an e-service, the vaccine alert system. This program provides a mobile and e-mail alert to parents to guarantee that they are aware of their child's vaccination schedules. (MOH, 2019).

Attitude of Parents about childhood vaccination

It is common for parents to be held accountable for the safety of their children. As a concerned citizen, parents engage and explore health concerns, including vaccines, and communicate their views and learn from one another to some degree. The findings of this study presented that social media, stories from other parents and personal attitude of the parents have contributed in both positive and negative way to their outlook about childhood vaccination. The findings of this study is consistent with the results of other studies indicating that parents learn about vaccination attitude and information from their relatives and friends (Al-Zahrani, 2013; Alfhal & Alharbi, 2017; Alshammari et al., 2018).

The results indicate that peers, social networks, and family can be important information sources and need to be-informed to guarantee that confusion is not distributed. Therefore, it implies that government health professionals need to be more informed about myths to extra inform the population and improve awareness and adherence with routine vaccination.

Practice of Parents about Childhood Vaccination

In this research, parents determine how religious and culturally restrictive children's vaccination activities are, how often they comply with their children's vaccine, and by whom they trust to obtain information. The findings have shown that the parents are not restrained by culture or religion to comply with vaccination, in fact the government of Saudi Arabia strictly require every family to comply with the vaccination schedule of their children and requires vaccination certificate completed from birth to grade one stated from the National Immunization Schedule (MOH, 2019). Despite the government's mandate, there are still very few claims that religion and culture are restricting them.

Compliance to the vaccination schedule is still not 100% but it is above 50%. This finding is similar to other studies conducted in Saudi Arabia where 100% compliance is high but 100% coverage is not achieved in any city within the kingdom despite the government mandate (Habib et al. 2018; Alshammari et al., 2018; Alagsam and Alshehri 2019). It implies that more attempts should be performed by the community health service and other units towards making the vaccination program more accessible particularly to places where adherence is less than the appropriate rate. A monitoring process was needed to target families or individuals who are non-compliant and to find out the explanations for this.

The same result in India the Compliance to the vaccination schedule was 90% (Kumar and Kavinprasad 2018)

The rate of success of the vaccination program can be due to the Wide Immunization program designed to improve the quality of life and health care around the country and the enforcement by the Decree that all children must fulfill their vaccinations prior to the issuance of their birth certificates. What is worthy of praise in the Saudi vaccination system is the tangible evidence of the eradication of diseases that were used to be very popular. (Tufenkeji & Rattan, 1994).

It has been found that parents trust physicians and nurses more than any other source of information, including friends, family, relatives, and the press. Various studies have similar findings concerning parents receiving information on vaccination (Alfhal & Alharbi, 2017; Alshammari, et al 2018; MOH, 2019; Alagsam and Alshehri, 2019). This is a good indication, but at the same time it is also a major challenge on health team to be able to cover more families or communities using different means or media to disseminate information or provide health education on vaccination, and hopefully to improve parents' adherence.

In general, the findings of the study indicate that the knowledge, attitude, and practice of the parents among child vaccination is good and is similar to the attitude of other parents in various cities in Saudi Arabia.

5. CONCLUSION AND RECOMMENDATION

The study concludes that the vaccination program in Saudi Arabia is above the satisfactory level as shown by the level of knowledge and compliance of the families. This further indicates that diseases that can be prevented by vaccinations like polio, measles, and others are satisfactorily covered by the National vaccination schedule. Although the vaccination practices of the parents are above satisfactory, there are still significant number no matter how small it is among parents that need to be properly addressed to achieve complete coverage of the children eligible for vaccination.

6. RECOMMENDATION

The researcher recommend the following:

Because parents rely on physicians and nursing staff need to be more responsible for providing data on vaccination by the use of different media that are commonly available to the public.

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