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Research Article

ASSESSMENT OF AWARENESS AND KNOWLEDGE OF PARENTS TOWARDS CHILDHOOD VACCINATION IN EASTERN PROVINCE OF SAUDI ARABIA

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Abstract:

Immunization is defined as the process of inducing immunity and protection against infectious diseases through administration of vaccines and immunizations. Vaccinations have made a major impact on reducing the rate of morbidity and mortality, particularly among pediatric patients. Unfortunately, vaccination coverage is not as optimum as it should be in most of the communities in developing countries.

It gained a lot of attention and effort in many countries worldwide, and eastern province Saudi Arabia is not an exception. Parents knowledge and awareness about the importance of vaccination wasn't given enough attention and care as it is shown to be poor and insufficient. A lot of aspects of knowledge and attitudes toward vaccination and practice of vaccination must get more effort and time. Some studies have showed that the parent's knowledge and attitude had a huge impact on getting their children vaccinated and immunized. Parents' education by health care worker regarding vaccination and immunization each visit seems to be the most effective way which directly impacts on better practice of vaccination and minimizing the chance for vaccination delay. The aim of this study to assess childhood vaccination and to evaluate parents of under-fives knowledge and awareness toward childhood vaccination in Maternity and children hospital Dammam.

Methods:

This study will be a cross-sectional study design which will involve parents of children under five years old who have access to immunization services and antenatal care at maternity children hospital –Dammam utilizing structured questionnaire developed for the study.

Results:

The knowledge score regarding the towards childhood vaccination showed that 18.4% have poor knowledge, 53.4% have moderate knowledge, 26.6% have good knowledge and 1.6% have Excellent Knowledge.

Conclusion and recommendation:

The study conclude that 18.4% have poor knowledge, 53.4% have moderate knowledge, 26.6% have good knowledge and 1.6% have Excellent Knowledge. This study findings indicate that more research is needed to educate parents about the importance of childhood vaccination and how it can prevent deaths and the effects of vaccination delay.

Keywords: immunization, vaccine, parents, children, awareness, knowledge

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INTRODUCTION:

Immunization and vaccination are the process in which a person is made immune and protected to infectious diseases and illnesses. It is achieved by giving the vaccine, as per the WHO statistics and records, 10.6 million children die every year before they reach the age of 5 years old (1). Immunizations and vaccines can save lives more than three million every year; it also protects millions of people from getting diseases and disabilities (2). According to statistics around 5 million healthy people are perfectly walking today who would probably have been paralyzed by the poliovirus have they not been vaccinated (3). So, keeping on a standard way of getting immunization and vaccination coverage is very crucial in the controlling and eradication of many cases of diseases that are vaccine-related (4). Vaccination and immunization is a major child surviving strategy it has clearly defined target groups ,it can be provided easily and given to the community ,and there will be no life style change in order to get the vaccine , It is always a challenge to convince the parents to vaccinate their children as they are having their own fears and opinions about the immunization, lack of tools and materials are factors affecting providers ability to make parents understand vaccines risks and benefits that might address their fears and worries that lead to lack of trust (5). Vaccinations and Immunizations are the most important strategy in reducing the prevalence and the risk of infectious illnesses in the community, especially in poor areas, vaccinations and immunizations are very highly effective way for developing healthy community and environment for the people to live in (6). Although they have a lot of health benefits for the children, yet a lot of parents still do not use vaccinations effectively and regularly as per the recommendation and guidelines in a way that they don't complete their vaccination program, or they don't vaccinate their children at all (7).

Although worldwide immunization coverage has increased in few last decades, still the uptake of

immunization in many poor low-and-middle-income countries is still behind the standard community immunization and vaccination threshold aiming to a situation in which a sufficient percentage of the population is vaccinated fully to the infectious illness to make sure that sustained spread from person to another person is not possible (8). There is sizable variance across the sub-populations in their immunization and vaccination coverage, therefore it is needed to furthermore understand the reasons and the factors that related to why children and infants in poor and low-income countries are not fully immunized or not immunized and so the solutions and the interventions can be more accurately targeted (9). Households with poor maternal knowledge and awareness as well as lack of parents trust in the benefits of the vaccines are more likely to not get their children vaccinated fully (10). Community survey is very crucial step toward knowing and understanding the influencing factors that lead to vaccine non-acceptance. Yet, developing strategies and ways that will help improve vaccination and immunization rates need more focus and time to be developed (11).

Aim and Objectives:

The aim of this study to assess childhood vaccination and to evaluate parents of under-fives knowledge and awareness toward childhood vaccination in Maternity and children hospital Dammam. The findings will aid in raising vaccine awareness and knowledge among parents.

Objectives:

- 1- To investigate knowledge and attitude towards childhood vaccination among parents.
- 2- To illustrate the knowledge and awareness of vaccination among parents living in city and rural areas

Study methodology:**Study design:**

This study will be a cross-sectional study design which will involve parents of children under five years old

who have access to immunization services and antenatal care at maternity children hospital – Dammam utilizing structured questionnaire developed for the study.

Study population and study subjects:

All parents of children under five-years old attending health care services in MCH-D in Saudi Arabia and children. Access to the immunization was done by checking the immunization booklet of each child that was involved in the study.

Study Area/Setting:

I will collect the data applying the attached from/questionnaire. I will interview parents of the pediatric age group attending OPD setting in MCH-Dammam.

Sample size calculation:

In our study the sample size was calculated upon study done six years ago, which has reported “approximately 88% of these children received age-appropriate vaccination and it was on time, others either they did not receive vaccination on time or not received vaccination at all”. We used this prevalence as effect size and applied it in the categorical variable question below with 95% confidence interval level and accepting a narrow margin of error, the estimated sample size was 162 parents (12).

Sampling technique:

- I am planning to recruit 5 participants (parents) every day for a period of 6 week to reach the target of my full sample size 162 applying convenience sampling technique. Access to the immunization was done by checking the immunization booklet of each child that was involved in the study.

Data collection and statistical analysis:

Data collection method:

I will interview parents of children under five years of age in the hospital from OPD setting by the attached questionnaire.

Additional source of data and study instruments:

- No additional source

Variables and measurements:

- Mainly knowledge and attitude, please see the attached data collection form.

Data collection and statistical analysis plan:

The data will be entered from the questionnaire into Excel to be revised and cleaned for any possible mistakes, missing or inaccurate variables. After that data will be imported to SPSS for statistical analysis. I will do both descriptive and inferential statistics.

In the descriptive statistics I will count the mean and standard deviation for all continuous variables like age and we will count percentage and proportions for all categorical variables like gender.

In inferential statistics I will conduct chi-square to examine the associations between categorical dependent and categorical independent variables, example (good and poor knowledge vs. complete and incomplete immunization). Educational level vs. vaccination status (categorical high low income vs. complete and incomplete immunization).

P value will be considered significant for all statistical tests when it is ≤ 0.05 .

Outcome:

Results will help to raise the awareness and knowledge of vaccinations among parents

RESULTS:

A total of 162 participants completed the questionnaire. The results are shown in Table 1, the minimum age was 18 and the maximum age was 50 years of age. It demonstrates that 35 (14.9%) of the subjects were the age group 18-29, 55 (40%) of the subjects were the age group 30-39, 43 (34.5%) of the subjects were the age group 40-49, 29 (10.6%) of the subjects were the age group of 50 and above. Most of the participants are parents to female child 100 (64.4%) and 62 (35.6%) are male child. Most of the participants are living in the city 100 (64.4%) and 62 (35.6%) are living in rural areas. In addition, 15 (11.2%) of parents have one child, 45 (27.3%) have 2-3 children and 102 (61.5%) have more than 3 children. Regarding the educational status, 7 (3.5%) were not educated, 14 (5.7%) primary school, 20 (9.2%) middle school, 30 (19.8%) secondary school and 91 (61.8%) university.

Table I: Demographic table

Variables	Frequency (%)
Age :	
18-29	35 (14.9%)
30-39	55 (40%)
40-49	43 (34.5%)
50 and above	29 (10.6%)
Living area :	
City :	100 (75.4%)
Rural :	62 (24.6%)
Child gender:	
Male	62 (35.6%)
Female	100 (64.4%)
Number of children:	
One	
2-3	15 (11.2%)
More than 3	45 (27.3%)
	102 (61.5%)
Educational status:	
Not Educated	
	7 (3.5%)
Primary school	
	14 (5.7%)
Middle school	
	20(9.2%)
Secondary school	
	30 (19.8%)
University	
	91(61.8%)

Table 2 illustrates the results based on whether the respondents are living in city or rural areas. It demonstrates that majority of parents living in city 88.8 % and in rural area 90.3% believe that routine vaccination can prevent children from several infectious disease and complications. Also, 98.5% of children living in the city and 80% living in the rural have received the first vaccine at birth. In addition, 83.9% of parents living in city and 88.5% of parents living in rural think Multi-doses of the same vaccine given at intervals are important for child immunity. Moreover, 14.1 % of parents living in the city and 34% living in the rural believe that one dose of the vaccine is enough and further more doses of vac`cines are not important. The results of our study reflect that there was significant differences when correlated maternal sleeping status during pregnancy among smokers and non-smokers mothers (p value < 0.05).

Table II: Illustrates the knowledge and awareness of vaccination among parents living in city and rural areas.

Variables	Frequency		P value
	Living in city	rural area	
Do you think that Routine vaccination can prevent children from some infectious diseases and its complications?			0.036
Yes	90 (88.8%)	35 (90.3%)	
No	10 (11.2%)	27 (9.7%)	
Was the First dose of vaccination given at birth?			0.0001
Yes	98 (98.5%)	40 (80%)	
No	2(1.5%)	26 (20 %)	
Do you think Multi-doses of the same vaccine given at intervals are important for child immunity?			0.001
Yes	77 (83.9%)	32(88.5%)	
No	23 (16.1%)	30(11.5%)	
Do you think that it is important to vaccinate children during immunization campaigns?			0.042
Yes	60 (60.8%)	24 (40%)	
No	40 (39.2%)	76(60%)	
Do you think that it is recommended to vaccinate children against seasonal influenza?			0.043
Yes	70 (70.3%)	30(45%)	
NO	30 (29.7%)	32 (55%)	
Do you think that one dose of the vaccine is enough and further more doses of vaccines are not important?			0.0014
Yes	20 (14.1%)	20(34%)	
No	80 (85.9%)	42(66%)	

Table 3 illustrates the results of awareness and knowledge of parents towards childhood vaccination. It demonstrates that majority of parents living in the city 154 (88.7%) and in rural area 150 (73%) are aware that vaccination is important. Also, Majority of parents living in the city 159 (90.6%) and in rural area 140 (60.5%) are aware that immunization are safe and beneficial more than harmful. The results of our study reflect that there was no significant differences when correlated parental awareness and knowledge of childhood vaccination among parents living in city and in rural areas (p value < 0.05).

Table III:

Que stio ns	N. (%)	P value
	Living in city in rural area	

Q1- Do you think that Child immunization is important ?			0.062
Agree	154 (88.7%)	150 (73%)	
Disagree	8 (11.3%)	12 (27%)	
Q2 - Immunization is more beneficial than harmful?			0.783
Agree	159 (90.6%)	140 (60.5%)	
	3 (9.4 %)	22 (39.5%)	
Q3- Do you think that Vaccines for child immunization are safe?			0.714
Agree	130 (73.5%)	100 (69.7%)	
Disagree	32 (26.5%)	62 (30.3%)	
Q4 - Do you think that Immunization associated with side effects?			0.397
Agree	150 (80.4%)	122 (60.5%)	
Disagree	12 (19.6%)	40 (39.5%)	
Q5- Do you think that Child can become infected after immunization with the disease/s against which he/she was vaccinated?			0.432
Agree	99 (78.3%)	70 (33.1%)	
Disagree	63 (21.7%)	92 (66.9%)	
Q6- Do you think that Compliance to immunization schedule is important?			0.0732
Agree	100 (80.3%)	70 (33.1%)	
Disagree	62 (23.7%)	92 (66.9%)	
Q6- Do you think that Immunization keeps your child healthy?			0.542
Agree	133 (85.3%)	60 (23.1%)	
Disagree	29 (28.7%)	102 (76.9%)	

Table IV: demonstrates the knowledge score regarding the towards childhood vaccination, it showed that 18.4% have poor knowledge, 53.4% have moderate knowledge, 26.6% have good knowledge and 1.6% have Excellent Knowledge.

Knowledge's scores	NO. (%)
Poor Knowledge	18.4%
Moderate Knowledge	53.4%
Good Knowledge	26.6%
Excellent Knowledge	1.6%
The mean of the knowledge	7.602564

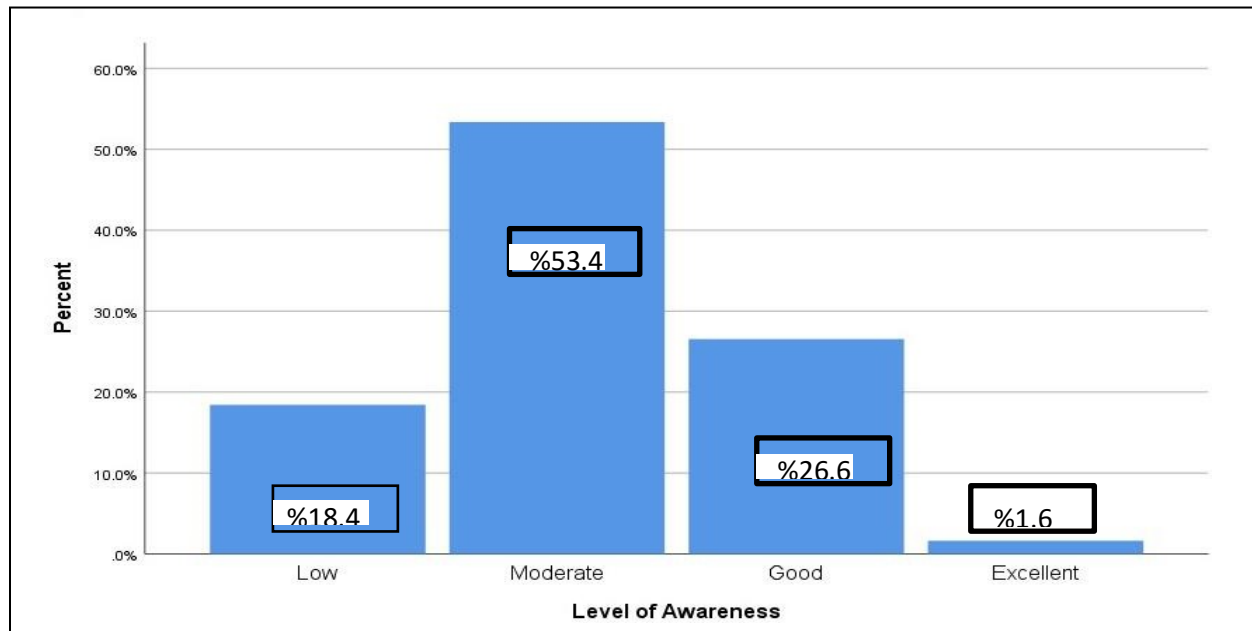


Figure 1: shows the knowledge score of towards childhood vaccination

DISCUSSION:

The study's purpose is to examine parental vaccination of children under the age of five, as well as to assess parents' knowledge and awareness of childhood immunization in Dammam's maternity and children's hospital. The findings of the study indicated that most respondents scored 53.4 percent, which is considered moderate knowledge, and just 1.6 percent of respondents have excellent understanding of childhood vaccination, 26.6 percent revealed good knowledge, and 18.4 percent revealed poor awareness (Table IV). In general, there was no significant

difference in understanding about childhood vaccinations between those who lived in cities and those who lived in rural regions (Table II). 88.8 percent of city parents and 90.3 percent of rural parents agree and believe that routine immunization can protect children against a variety of infectious diseases and consequences. Moreover, 98.5 percent of city children and 80 percent of rural infants have gotten their first immunization at birth.

Additionally, parents in city areas 88.7 percent and rural areas 73 percent are aware of the importance of

immunization. Furthermore, 90.6 percent of city parents and 60.5 percent of rural parents are aware that vaccination is safe and useful rather than dangerous (Table III).

Another research was conducted out by Helvinder Kaur Balbir Singh, Vishal Bhagwan Badgujar, Rose Suzila Yahaya, Santibuana Abd Rahman, Farheen Mohd Sami, Sangeeta Badgujar, Subhashini Nair Govindan & Mohammed Tahir Ansari for Assessment of knowledge and attitude among postnatal mothers towards childhood vaccination, it demonstrates that 73.5 percent of respondents agreed that routine vaccination plays an important role in protecting children from infectious diseases and 43.5 percent of the respondents agreed that it is good and important to vaccinate children during vaccination campaigns (13).

This study has certain limitations, such as the fact that the participants were all parents seeking health treatment at maternity and children's hospital in Saudi Arabia. Furthermore, some survey questions promote guessing, therefore the results may not accurately reflect respondents' understanding of childhood vaccination awareness.

Appendix:

Dear parent,

You are invited to participate in this study about: parent's knowledge and awareness about vaccination in Eastern region of Saudi Arabia. By completing this questionnaire, you will help to better understand of vaccination benefits and therefore providing better health.

Thank you for your participating.

SEC 1: IDENTIFICATION DATA

Serial number:

MRN:

City:

SEC 2: SOCIODEMOGRAPHIC

Child gender:

- ☐ Male.
- ☐ Female.

Parents Age groups (in year):

- ☐ 18-29.
- ☐ 30-39.
- ☐ 40 -49.

CONCLUSION AND RECOMMENDATIONS:

The process of making a person immune and protected against infectious diseases and illnesses is known as immunization and vaccination. It is accomplished by injecting the vaccine. By observing the survey results, we can clearly see that the majority of those who completed the survey have moderate knowledge of the importance of childhood vaccination, and we believe that the survey results will help to increase awareness and knowledge of the importance of vaccination. This study findings indicate that more research is needed to educate parents about the importance of childhood vaccination and how it can prevent deaths and the effects of vaccination delay.

Acknowledgment:

We would like to thank the hospital of maternity and children for their ongoing assistance and direction during this research. We would also like to thank all the parents who assisted in filling out the surveys for their time and effort, which was helpful in completing the study.

- ☐ 50 & above.

Residence:

- ☐ City.
- ☐ Rural.

Educational level:

- University.
- Secondary school.
- Middle school
- Primary school.
- Not educated.

Number of children:

- One.
- 2-3.
- >3.

SEC 3: CLINICAL DATA

Do you think that Routine vaccination can prevent children from some infectious diseases and its complications?

- Yes
- No

Was the First dose of vaccination given at birth?

- Yes.
- No.

Do you think Multi-doses of the same vaccine given at intervals are important for child immunity?

- Yes.
- No.

Do you think that it is important to vaccinate children during immunization campaigns?

- Yes.
- No.

Do you think that it is recommended to vaccinate children against seasonal influenza?

- Yes.
- No.

Do you believe that children who are healthy don't need to get further more vaccination?

- Yes.
- No.

Do you think that one dose of the vaccine is enough and further more doses of vaccines are not important?

- Yes.
- No.

Do you think that Child immunization is important?

- ☐ Strongly Agree.
- ☐ Agree.
- ☐ Not sure.
- ☐ Disagree.
- ☐ Strongly Disagree.

Immunization is more beneficial than harmful:

- ☐ Strongly Agree.
- ☐ Agree.
- ☐ Not sure.
- ☐ Disagree.
- ☐ Strongly Disagree.

Do you think that Vaccines for child immunization are safe?

- ☐ Strongly Agree.
- ☐ Agree.
- ☐ Not sure.
- ☐ Disagree.
- ☐ Strongly Disagree.

Do you think that Immunization associated with side effects?

- ☐ Strongly Agree.
- ☐ Agree.
- ☐ Not sure.
- ☐ Disagree.
- ☐ Strongly Disagree.

Do you think that Child can become infected after immunization with the disease/s against which he/she was vaccinated?

- ☐ Strongly Agree.
- ☐ Agree.
- ☐ Not sure.
- ☐ Disagree.
- ☐ Strongly Disagree.

Do you think that Compliance to immunization schedule is important?

- ☐ Strongly Agree.
- ☐ Agree.
- ☐ Not sure.
- ☐ Disagree.
- ☐ Strongly Disagree.

Do you think that Immunization keeps your child healthy?

- ☐ Strongly Agree.
- ☐ Agree.

- Not sure.
- Disagree.
- Strongly Disagree.

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