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Research Article

### AWARENESS OF PARENTS REGARDING CHILDHOOD VACCINATIONS AND THE FACTORS OF NEGLECTING OR REFUSING VACCINATION IN EASTERN PROVINCE, KSA

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#### Abstract:

**Background:** Parents' decisions concerning immunization are imperative for expanding the immunization rate and consistency and for diminishing any conceivable immunization blunders. Parents' learning and works on concerning immunization are the central points that add to their vaccination decisions.

**Objective:** to clarify the awareness of parents in Eastern Province regarding childhood vaccinations and the factors that are responsible for neglecting and refusing vaccination including causes, believes and rumors of Eastern Province population.

**Methods:** A cross-sectional community-based study conducted during the period from 1<sup>st</sup> October 2018 to 27<sup>th</sup> January 2019. A systematic random sampling technique was used. The study included 380 participants. Data collected using a pre-designed online questionnaire distributed among parents of children and adolescents. Data analyzed using the SPSS (version 15). The p-value of less than 0.05 was considered statistically significant.

**Results:** The majority of participants 79.3% agreed that immunization is very important, the most common sources of information was physicians in PHC center by 58%, followed by social media 22.6%, friends and relatives 16.8% and 2.6% for T.V and radio, 85.3% of parents think that immunizations decrease the child's morbidity and mortality, 90.4% think that immunizations decreases the infectious diseases and 94.3% think that immunizations keep the child health, 91.4 % of parents completed their child's immunizations schedule and 93.9% of them keen to complete all doses of vaccines if there was more than one. The majority 93.9% of parents think that immunizations have many side effects like fever and pain and only 28.5% think that immunizations may cause convulsions and skin rash, 63.9% of participants think that low-grade fever and diarrhea prevents vaccination.

**Conclusion:** Perception and acceptance of childhood vaccinations, perceptions of vaccine-related health benefits are right among parents in Eastern Province, Eastern Saudi Arabia.

**Keywords:** Children; Immunization; Parents; Eastern Province, Saudi Arabia

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## INTRODUCTION:

One of the most critical topics in Saudi Arabia and especially in Eastern Province is the immunization; immunization is the procedure whereby a man is made invulnerable or impervious to an irresistible infection, ordinarily by the administration of a vaccine (1). Routine childhood immunization is vital to both individual and public health, and it is strongly promoted by the World Health Organization, governments, public health authorities, and health professions worldwide (2). Persistent in safety, efficacy, and needed concerns of vaccines, have led a significant minority of parents to refuse vaccination (2,3).

The spread of antivaccine and vaccine-fear sentiments has become common through social networks, a lot of research up these to multi-factors and dimensions (4). And there is a direct relationship between those concerns and Parents' commitment to vaccinating their children or the time of vaccination (3).

As well as difficulties securing transportation to a health care provider or inability to pay for vaccination all these play a role in vaccinating or non-vaccinating their children. Some parents may mistakenly believe that vaccination is appropriate for others but not for their children, some perceive fewer benefits associated with vaccines, less likely to believe that vaccines are necessary to protect the children health, or perhaps believing that they are invulnerable to illness (3, 4).

Ethical concerns about pediatric vaccination span several public health domains, as the childhood vaccines involve a balance between the autonomy of parents' opinion and the benefits to public health from mandating vaccines (4).

American Academy of Pediatrics publishes guidelines that may assist positively in responding to parents to childhood vaccination (3). Vaccination can control and eliminate life-threatening infectious diseases and is estimated to avert between 2 and 3 million dies each year. On the other hand, vaccination is one of the most cost-effective health investments with proven strategies that make it accessible to reach, and vaccination does not require any major lifestyle change (1).

In the study done in Mosul- Iraq, 528 Iraqi parents were evaluated through a validated questionnaire. They reported that; more than half of the respondents/study population (66.1%) have

adequate knowledge- practice scores. Significant associations were noted for knowledge- practice groups with father's education level, mother's education level, mothers' age at delivery, number of preschool children, parents' gender, family income, provider types, and birthplace (5) — another study done in Jordan - Irbid City, collected from 506 mothers. Results show that the majority of mothers had acceptable knowledge and positive attitude toward vaccination. Vaccination delay was reported by about 36.6% of mothers and was shown to be associated with significantly ( $P = 0.001$ ) lower vaccination knowledge/attitude score. Many mothers are not offering vaccination to children because of injection associated pain.

39.2% of women strongly agreed or agreed that vaccines lead to side effects. None of the demographic variables including mother's age, social status, education level, type of work, number of working hours, monthly income, number of children, and age of last child/ infant were significantly associated with vaccination knowledge/attitude score (6). One more study done in Saudi Arabia – Taif, 731 parents were recruited revealed a significant association between parents' educational level and knowledge and attitudes on childhood immunization. Significant differences were documented in knowledge and attitudes of parents who were living in the city compared to those who were residing outside the town. The majority of 719 (98.4%) of the parents either strongly agreed or agreed that child immunization is important. Most 669 (91.5%) of them considered immunization is more beneficial than harmful and 534 (73%) strongly agreed or agreed that vaccines are safe. Out of parents 606 (82.9%) and 415 (56.8%) parents strongly agreed or agreed that child immunization is not prohibited in religion and the administration of vaccines is associated with side effects respectively. Nearly forty percent of parents were not sure if the child becomes infected after immunization with the disease/s against which he/she was vaccinated or not. The majority 660 (90.3%) and 680(93%) of the parents strongly agreed or agreed that compliance to immunization schedule is important and immunization keep the child healthy respectively (7).

Another study conducted in Nepal- Kathmandu show that younger parents were less likely to fully immunize their child than older parents. The people who lived in the rented home also are not immunizing child completely. If the parents are literate, living at own home and from the upper

caste, the chances of immunizing their child according to the recommended schedule were higher (8).

A study was done online reported that: out of 8 groups there are five groups of parents who completely refused vaccinations (n=39, 7-9 parents each), and three groups of parents partially refused vaccinations (n=21, seven parents each).

Refusal of vaccination was found to reflect multiple factors including family lifestyle; perceptions about the child's body and immune system; perceived risks of disease, vaccine efficacy, and side effects; perceived advantages of experiencing the disease; prior negative experience with vaccination; and social environment (9).

Our study is about parent awareness and believes regarding childhood vaccine among Eastern Province population. The number of parents who neglect or refuse to vaccinate their children is increasing. Usually that's happened due to several factors, and on the other hand, there is a lack of studies that concern about vaccination in Saudi Arabia.

In this study, the aim is to clarify the awareness of parents in Eastern Province regarding childhood vaccinations and the factors that are responsible for neglecting and refusing vaccination including causes, believes and rumors of Eastern Province population.

#### **METHODOLOGY:**

A cross-sectional community-based study conducted in Eastern Province, Saudi Arabia. The study included 380 participants. The study period was from 1st October 2018 to 27th January 2019. A systematic random sampling technique was used; we included parents of every 10th family using pre-designed online questionnaire distributed among parents of children and adolescents.

#### **Statistical analysis:**

Collected data were coded and analyzed using the statistical package for the social sciences (SPSS, version 22). Descriptive statistics for the prevalence and quantitative variables were used. The relation between knowledge of parents and competence of immunization schedule for children was determined using the chi-square test. The p-value of less than 0.05 was considered statistically significant.

#### **Ethical considerations:**

The research was approved by the institutional review board of king fahad medical city (IRB Log No. 19-014E) date: 22 january,2019. Participants were informed that participation is entirely voluntary and data collectors introduced and explained the research to participants.

#### **RESULTS:**

From the tables, it is clear that regarding the importance of immunizations our study reported, the majority of participants 79.3% said that immunization is very important, 16.4% of them said it is important and 3.6% moderately important. According to sources of information about vaccines, our study reported, the most common sources of information were physicians in PHC center by 58%, followed by social media 22.6%, friends and relatives 16.8% and 2.6% for T.V and radio. As regards the knowledge, attitude, and practice of parents towards immunizations of their children this study reported; 85.3% of parents think that immunizations decrease the child's morbidity and mortality, 90.4% think that immunizations decrease the infectious diseases and 94.3% think that immunizations keep the child health. Our study reported; 91.4 % of parents completed their child's immunizations schedule and 93.9% of them keen to complete all doses of vaccines if there was more than one. We found that the majority 93.9% of parents think that immunizations have many side effects like fever and pain and only 28.5% think that immunizations may cause convulsions and skin rash. As Regards the contraindication of vaccination, our study reported that 63.9% of participants think that low-grade fever and diarrhea prevents vaccination.

**Table (1): Sociodemographic characteristics of the studied children and parents, Dammam, 2019 (N=685)**

<b>Sex</b>	<b>No.</b>	<b>%</b>
• Female	323	47.2
• Male	362	52.8
<b>Child age group</b>		
• <12	467	68.2
• 12-24	99	14.5
• >24	119	17.4
<b>Father age group</b>		
• < 30	154	22.5
• 31-40	326	47.6
• >40	205	29.9
<b>Mother age group</b>		
• < 30	327	47.7
• 31-40	276	40.3
• >40	82	12.0
<b>Father education</b>		
• University or more	401	58.5
• Secondary	215	31.4
• Preparatory	49	7.2
• Primary	17	2.5
• Illiterate	3	.4
<b>Mother education</b>		
• University or more	488	71.2
• Preparatory	13	1.9
• Secondary	166	24.2
• Primary	15	2.2
• Illiterate	3	.4
<b>Number of children in the family</b>		
• 1-2	465	67.9
• 3-6	192	28.0
• >6	28	4.1
<b>Importance of immunizations in your mind</b>		
• Not important	5	.7
• Moderately important	25	3.6
• Important	112	16.4
• Very important	543	79.3
<b>What do you feel after immunization of your child</b>		
• Security	596	87.0
• Fear	89	13.0
<b>What is the source of your information about vaccines</b>		
• Physicians in PHC center of our area	397	58.0
• Friends and relatives	115	16.8
• T.V and Radio	18	2.6
• Social media	155	22.6

**Table (2): Questions which guide us to the knowledge, attitude, and practice of parents towards childhood immunizations of their children, Dammam, 2019**

Questions	No No.(%)	Yes No.(%)
Do you think that immunizations began from the first day of life	39(5.7)	646(94.3)
Do you think that immunizations decrease the child's morbidity and mortality	101(14.7)	584(85.3)
Do you think that immunizations decrease the infectious diseases	62(9.1)	623(90.4)
Do you think that immunizations keep the child health	39(5.7)	646(94.3)
Do you think that immunizations have an expiry date	248(36.2)	437(63.8)
Do you think that there are many types of vaccines	53(7.7)	632(92.3)
Do you think that immunizations have many side effects like fever and pain	42(6.1)	643(93.9)
Do you think that immunizations may cause convulsions and skin rash	490(71.5)	195(28.5)
Do you think that low-grade fever and diarrhea prevents vaccination	247(36.1)	438(63.9)
Do you think that a normal child needs immunizations	53(7.7)	632(92.3)
Did you complete your child immunizations schedule	59 (8.60)	626(91.4)
Do you follow the obligatory immunizations schedule for your child	62(9.1)	623(90.9)
Are you keen to give your child any additional immunizations	427(62.3)	258(37.7)
Do you support the EPI in your area	95(13.9)	590(86.1)
Do you advise your relatives to immunize their children	38(5.5)	647(94.5)
Do you think about the importance of immunization program from the first day of life	64(9.3)	621(90.7)
Do you read about the importance of immunizations before	176(25.7)	509(74.3)
Do you keen to complete all doses of vaccines if there was more than one	42(6.1)	64.3(93.9)

**DISCUSSION:**

Immunization is the most cost-effective and intercession which decreases hospitalization, treatment use, and mortality [10]. As per WHO; A vaccine is a biological preparation that improves immunity to a particular disease. It contains an agent resembling a disease-causing microorganism and is produced using debilitated or slaughtered types of the microorganism, its poisons or one of its surface proteins. The operator animates the body's insusceptible framework to perceive the specialist as remote, pulverize it, and "recollect" it with the goal that the safe framework can all the more effortlessly perceive and wreck any of these microorganisms that it later experiences [11]. Parents' decisions concerning immunization are vital for expanding the immunization rate and consistency and for diminishing any conceivable immunization mistakes. Parents' information and works on in regards to immunization are the primary considerations that add to their vaccination decisions[11].

This is across was conducted among 685 of the studied children and parents, Dammam, 2019. The study aim to determine the awareness of the parents about the importance childhood vaccine in Eastern Province, know the percentage of parents who are committed to vaccinating their children, determine the awareness of the parents about the risk of not vaccinating their children, clarify the factors that are

responsible for not vaccinating include causes, believes and rumors and to find out if there is any remorse in parents as a result of not vaccinating their children.

Regarding the importance of immunizations our study reported, the majority of participants 79.3% said that immunization is very important, 16.4% of them said it is important and 3.6% moderately important. In contrast to our results in Arar, another study conducted among 367 of parents and children found that only 48% think that vaccination of child is essential, 50.1% important [12]. Another study in Taif reported, the majority (98.4%) of the parents mentioned that child immunization is important [13].

According to sources of information about vaccines, our study reported, the most common sources of information were physicians in PHC center by 58%, followed by social media 22.6%, friends and relatives 16.8% and 2.6% for T.V and radio. In Riyadh, a study showed that physicians were the main source of information (77.7%) for the parents about immunization, followed by TV (37.6%), Internet (21.7%) and newspapers (13.3%) [14]. Another study reported; the information provider about immunization to a majority of the respondents was Maternity hospital/Healthcare provider (71.7%) followed by family 20.9% and only 6.3% for radio and television [15]. A study reported that Most of the parents (58.1%) got their information on child

vaccination from medical staff, followed by social media (17.4%) and books (14%) [16]. However, in Arar, another study found that the majority 41.1% have their information from relatives and friends [13]. Another study found that; the main sources of information on vaccination are medical institutions (92.2%)[17].

As regards the knowledge, attitude, and practice of parents towards immunizations of their children this study reported; 85.3% of parents think that immunizations decrease the child's morbidity and mortality, 90.4% think that immunizations decrease the infectious diseases and 94.3% think that immunizations keep the child health. In Taif, Saudi Arabia a cross-sectional survey was conducted among 731 parents found that the majority 91.9% of parents knew that routine vaccination prevents children from some serious infectious diseases and its complication [13]. In the study conducted in UAE, more than 85% of the participants knew the role of childhood vaccination in the prevention of life-threatening diseases [18]. In Arar, another study reported; only 68.4% of parents think that vaccination decreases the chance of death or illness of a child, 85.6% think that vaccinations reduce the number of infectious diseases [12]. In Jeddah, another study that carried out among 600 different Saudi parents, most of the parents estimated that vaccination could prevent infectious disease (79.7%), decrease the mortality rates (76%), maintain child health (87.2%) [19]. Another study found that only 40.2% of parents said that routine vaccination protects children against infectious diseases and their complications [20]. Most vaccines in the childhood immunization plan require two or more doses for the development of an adequate and persisting antibody response [17].

Our study reported; 91.4 % of parents completed their child's immunizations schedule and 93.9% of them keen to finish all doses of vaccines if there was more than one. Another study reported; 79.6% keen to complete all doses of vaccination when there is more than one dose [12]. However, another study found that only 41.6% of the participants effectively knew the significance of organization of multi-portions of a similar vaccine given at interims for kid invulnerability [5]. The result of this finding is that parents may imagine that just the main shot of the vaccine is adequate to create insusceptibility and secure their kids. For the most part, the organization of vaccines might be related to regular, nearby responses like torment, swelling, and redness at the infusion site [21].

Foundational responses, including fever, touchiness, languor, and rash, may likewise happen. We found that the majority 93.9% of parents think that immunizations have many side effects like fever and pain and only 28.5% think that immunizations may cause convulsions and skin rash. However, another study reported 69.8% of parents agreed that some vaccinations are linked with side effects like fever plus only 21.3% aware that some vaccinations cause convulsions and skin rash [12].

### CONCLUSION:

Parents have high perception and acceptance of childhood vaccinations in Eastern Province, Eastern Saudi Arabia. Also they have good perceptions of vaccine-related health benefits

### Limitations of the study:

- 1- the Little number of studies that are similar to our study.
- 2- The population of the study is limited.
- 3- Data will be administrated by an only educated person.
- 4- Inability to determine a person's credibility.

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