

## Assessment of Knowledge, Attitude and Practice of Parents Towards Immunization of Children in Saudi Arabia, 2018

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### ABSTRACT

**Background:** Immunization has shown a major preventive aspects of infectious diseases, disability and death.

**Objectives:** Assessing the Knowledge, attitude and practice (KAP) of Saudi parents in Saudi Arabia the immunization programs for children, Saudi Arabia (KSA), 2018.

**Methods:** It is a cross sectional survey study that was carried among 600 different Saudi parents form different Cities of Saudi Arabia for 3 months from Nov 2017 to Jan 2018. The parents completed a questionnaire that contains 4 different parts about the demographics, knowledge, attitude and practice of parents toward immunization. **Results:** The included parents have shown a high level of awareness about vaccination regarding the preventive measures and importance of vaccination which resulted in positive attitudes and practice pattern among most of them. The overall KAP was good among most of the parents (87.2%). The higher KAP level was significantly associated with female gender, higher educational degree and having higher number of children. **Conclusion:** Most of Saudi parents had good KAP toward immunization which was associated with female gender and higher educational degrees. However, educational programs are still needed to increase the parents' knowledge and practice especially among illiterate and less educated parents living in rural areas.

**Keywords:** Knowledge, Attitude, Practice (KAP), Immunization, Vaccination, Parents, Children, KSA, 2018.

### INTRODUCTION

During the last few decades, the burden of the infectious diseases has been reduced though immunization. Also, immunization has shown major aspects of disease, disability and death prevention. The most common vaccine preventable diseases are Rubella, measles, diphtheria, Tetanus, pertussis and Polio<sup>(1, 2)</sup>. Giving the child the appropriate vaccine would significantly decrease the costs of disease treatment and rates of disease thus enhance a good quality of life for children<sup>(3)</sup>. The WHO estimated a reduction in the death rate from infectious diseases between 2 and 3 million each year<sup>(4)</sup>. The main vaccines for children in Saudi Arabia are scheduled from birth to 6 years old by the Saudi Ministry of Health to protect children from the diseases that could be prevented through immunization<sup>(5)</sup>.

Despite the major efforts of health authorities to keep KSA free of Diphtheria, Pertussis, Tetanus, polio and measles, many physicians face major obstacles from the parents about the safety, efficiency and the necessity of regular childhood vaccines<sup>(6)</sup>. Most of parents in KSA believed that vaccines can cause autism and disabilities<sup>(7)</sup>.

Also, in a global report issued by the CDC, it was stated that the general attitude of parents was negative among most of them toward childhood vaccination programs<sup>(8)</sup>. Moreover, some parents thought that polio immunization will decrease the fertility rate thus the parents attitude plays important role in vaccination process as they are the decision makers for their children<sup>(9)</sup>. The knowledge, attitude

and practice pattern of parents toward vaccination from the first day of birth could provide early prevention from many communicable diseases, disabilities as well as other causes of death<sup>(10, 11)</sup>.

### AIM OF THE STUDY

This study aimed at assessing the Knowledge , attitude and practice (KAP) of Saudi parents in Saudi Arabia regarding the immunization programs for children as well as defining the correlation between KAP and parent's demographics.

### METHODS

#### *Study design*

It is a cross sectional survey study that was carried out in 600 houses that were randomly chosen using stratified sampling technique from the east, west, north and south parts of Saudi Arabia for 3 months from Nov to the end of Jan 2018.

#### *Study population*

The study included 600 different parents having at least one child. The participants have been interviewed in their own houses.

#### *Study tools*

This survey included an interview with the parents and were asked to complete a questionnaire. The questionnaire was collected and tested after searching the available search engines including Pubmed, Google scholar, science direct,..etc. using the key words including Knowledge , attitude, practice, parents, mothers, immunization, vaccination. The data of the questionnaire were collected and reviewed by 3 supervisors to test its

viability. The questionnaire contained 4 different parts. The first part included questions about the demographics as age, education, working status and number of children. The other 3 parts included questions including the knowledge, attitude and practice of parents toward immunization. The questionnaire were translated into Arabic and distributed among the participants. After finishing the questionnaire, all the respondents took handouts that contain all the available correct information about vaccination of children to enhance their knowledge and decrease the misconceptions about immunization.

**Ethical approval**

The study protocol and the questionnaire were approved by Jouf university . The participated parents gave a written informed consent for being involved in the study.

**Statistical analysis**

The collected data were Analyzed using SPSS, version 24. The descriptive analysis was shown as percentages and frequencies. P-value <0.05 was considered as significant.

**RESULTS**

**Demographics of the studied subjects**

The age of included parents ranged from 20-50 years old with a mean of 31.1 years. The majority of respondents were males (68%) and 32% were females. Most of The parents had bachelor degree (61%), 33.8% had secondary school and 5.2% went to primary school. About 47% of The parents had more than 3 children, 35.2% have two or 3 children and only 17.8% have one child (Table 1).

**Table (1): Demographics’ of included subjects (600):**

	Mean ± SD	Range
<b>Age (years)</b>	<b>31.1± 2.5</b>	<b>20-50</b>
	<b>No.</b>	<b>Percentage (%)</b>
<b>Gender</b>		
<b>Female</b>	<b>192</b>	<b>32%</b>
<b>Male</b>	<b>408</b>	<b>68%</b>
<b>Educational Level</b>		
<b>College</b>	<b>366</b>	<b>61%</b>
<b>Secondary School</b>	<b>203</b>	<b>33.8%</b>
<b>Primary School</b>	<b>31</b>	<b>5.2%</b>
<b>Number of children</b>		
<b>1</b>	<b>107</b>	<b>17.8%</b>
<b>2-3</b>	<b>211</b>	<b>35.2%</b>
<b>&gt;3</b>	<b>282</b>	<b>47%</b>

**Assessment of knowledge of included subjects:**

The included parents have shown a high level of awareness about vaccination as presented in Table. 2. All the parents have given their children the obligatory vaccination and know the importance of immunization For the child. Also, most of the parents rated that vaccination could prevent infectious disease (79.7%), decrease the mortality rates (76%), maintain child health (87.2%), control diphtheria, tetanus and pertussis (80.2%) and measles (88%) as well as prevention of hepatitis B infection (52.3%). About 89% of parents knew that some vaccines are associated with pain and fever while only 55.5% declared that vaccination is not supposed to cause convulsions and skin rashes. Almost 96.3% of subjects supposed that even healthy child need vaccination.

**Table (2): Awareness regarding the complications of diabetic foot**

• <b>Have you given your children the obligatory vaccines</b>	<b>600 (100%)</b>	<b>0 (0%)</b>
• <b>Vaccination is very important for children from the first day of birth</b>	<b>600 (100%)</b>	<b>0 (0%)</b>
• <b>Vaccination prevent infectious disease</b>	<b>478 (79.7%)</b>	<b>122(20.3%)</b>
• <b>Vaccination decreases the rates of mortality and disabilities</b>	<b>456 (76%)</b>	<b>144 (24%)</b>
• <b>Vaccination could maintain child health</b>	<b>523 (87.2%)</b>	<b>77 (12.8%)</b>
• <b>Diphtheria, Tetanus and pertussis could be controlled by vaccination</b>	<b>481 (80.2%)</b>	<b>119 (19.8%)</b>
• <b>Hepatitis B virus could be prevented by vaccination</b>	<b>314 (52.3%)</b>	<b>286 (47.3%)</b>
• <b>The childhood vaccines could control Measles</b>	<b>528 (88%)</b>	<b>72 (12%)</b>
• <b>Malnutrition, low fever and diarrhea are not contraindications for vaccination</b>	<b>486 (81%)</b>	<b>114 (19%)</b>
• <b>Some vaccines are associated with fever and pain</b>	<b>534 (89%)</b>	<b>66 (11%)</b>
• <b>Vaccination could result in convulsions and skin rash</b>	<b>267 (44.5%)</b>	<b>333 (55.5%)</b>
• <b>Even healthy child need vaccination</b>	<b>578 (96.3%)</b>	<b>22 (3.7%)</b>

**Evaluation of the subject’s attitude**

The parent’s attitude toward vaccination was positive among most of them as They all declared that the vaccination is beneficial and will advise relatives to immunize their children. Also, 83.5% felt that vaccination is safe and 89.3% were in favor of obligatory vaccination (Table 3).

**Table (3): Attitude of parents toward vaccination (n=600)**

	No.	Percentage (%)
<b>What do you think about vaccination benefits?</b>		
<b>Beneficial</b>	600	100
<b>Not beneficial</b>	-	-
<b>I don’t know</b>	-	-
<b>What do you feel when vaccinating your child?</b>		
<b>Save</b>	501	83.5
<b>Fear</b>	99	16.5
<b>Are you in favor of obligatory vaccination programs designed by the health authorities?</b>		
<b>Yes</b>	536	89.3
<b>No</b>	64	10.7
<b>Will you advice your relatives and family to immunize their children?</b>		
<b>Yes</b>	600	100
<b>No</b>	--	-

**Practice pattern of included parents**

The overall practice of parents toward vaccination was good among most of them as They all followed the obligatory vaccination programs. Also, 81.2% of

parents searched for other vaccines. As for pain and swelling management, about 85.2% of The parents used cold compresses and 87.2% used analgesics for pain control (Table 4).

**Table (4): parents’ practice toward immunization of children (n=600)**

	Yes	No
<input type="checkbox"/> Do you follow the obligatory vaccination programs?	600 (100%)	--
<input type="checkbox"/> Will you search for other available vaccines for your children?	487 (1.2%)	-18.80%
<input type="checkbox"/> Will you manage swelling by cold compress?	511 (85.2%)	-14.80%
<input type="checkbox"/> Will you use analgesics for swelling and pain after vaccination?	469 (87.2%)	-21.80%

**Level of parents’ KAP**

The overall KAP was good among most of The parents (87.2%) while it was poor among only 12.8% of them (Table. 5).

**Table (5): Parents KAP regarding vaccination programs**

KAP level	Frequency	Percent (%)
Good	523	87.2
Poor	77	12.8
Total	600	100.0

**Association between parents’ KAP and demographics**

The higher KAP level was significantly associated with female gender, higher educational degree and having higher number of children (Table. 6).

**Table 6: Association between KAP and demographics of included parents**

	Good (n=523)		Poor (n=77)		P-value
<b>20-30</b>	181	34.6%	26	33.8%	0.74
<b>31-40</b>	211	40.3%	30	39%	
<b>41-50</b>	131	25.1%	21	27.2%	
<b>Female</b>	179	34.2%	13	16.9%	0.051
<b>Male</b>	344	65.8%	64	83.1%	
<b>College</b>	327	62.5%	39	50.6%	0.001
<b>Secondary School</b>	196	37.5%	7	9.1%	
<b>Primary School</b>	-	0%	31	40.3%	
<b>1</b>	78	14.9%	29	37.7%	0.001
<b>2-3</b>	186	35.6%	25	32.5%	
<b>&gt;3</b>	259	49.5%	23	29.8%	

## DISCUSSION

The childhood vaccination has shown major aspects of disease and death prevention during the last decades especially among children under five years old. Thus the KAP of parents toward vaccination is important issue to enhance the children health as well as prevention of diseases.

The majority of parents had good KAP toward vaccination importance and efficiency. In the same respect, most of the parents had vaccinated their children according to the MOH vaccination schedule in Al-Madinah Al-Monawara in KSA<sup>(12)</sup>. The same aspects of high knowledge, attitude and practice were presented in other worldwide studies<sup>(13-16)</sup>. The present study showed a significant association between female gender, high educational degree as well as higher number of children with good KAP results. As for the gender, mothers are the care giver of their children and spend more time with their children than fathers. Also, various studies showed a relation between higher educational level of the parents and higher KAP results regarding child immunization<sup>(16, 17)</sup>. In addition, parents having more children were supposed to have higher KAP results<sup>(14, 18)</sup>.

The present study showed some limitations. Most of the parents were from urban areas as it was hard to

deal with many rural areas thus the results can't be generalized to the whole population.

## CONCLUSION

Most of Saudi parents had good KAP toward immunization which was associated with female gender and higher educational degrees. However, educational programs are still in need to increase the

parents' knowledge and practice especially among illiterate and less educated parents living in rural areas.

## REFERENCES

- 1.Yousif M, Albarraq A, Abdallah M, Elbur A (2013):** Parents' knowledge and attitudes on childhood immunization, Taif, Saudi Arabia. *J Vaccines Vaccin.*, 5: 2.
- 2.Shiferaw Birhanu AA, Yezabnesh Kibie, Ayalew Jejaw (2015):** Knowledge, Attitude and Practice of Mothers Towards Immunization of Infants in Health Centres at Addis Ababa, Ethiopia. *American Journal of Health Research*, 4: 6-17.
- 3.Siddiqi N, Siddiqi AE, Nisar N, Khan A (2010):** Mothers' knowledge about EPI and its relation with age-appropriate vaccination of infants in peri-urban Karachi. *JPMA. The Journal of the Pakistan Medical Association*, 60: 940-944.
- 4.WHO (2016):** Global Immunization Vision and Strategy. WHO/UNICEF. Geneva. Available at: <http://www.who.int/mediacentre/factsheets/fs378/en/>.
- 5.Al-Rukban MO, Al-Migbal TH, Al-Mutlaq AA, Al-Marshady MA, Al-Salhi AH, Al-Rsheed AA et al. (2005):** Characteristics Of Immunization Providers In Riyadh And Their Self-Perception Of Competency. *Journal of family & community medicine*, 12: 35-41.
- 6.Elbur A, Yousif M, Albarraq A, Abdallah M (2014):** KNOWLEDGE AND ATTITUDES ON CHILDHOOD VACCINATION A SURVEY AMONG SAUDI PARENTS IN TAIF REGION, SAUDI ARABIA. *International Journal of Pharmacy Practice & Drug Research*, 4: 92-97.
- 7.Smith MJ, Woods CR, Marshall GS (2009):** Parental vaccine concerns in Kentucky. *The Journal of the Kentucky Medical Association*, 107: 342-349.
- 8.CDC (2009):** Epidemiology of the Unimmunized Child: Findings from the Peer Reviewed Published Literature. Prepared for the World Health Organization. Arlington,

USA., Available at:  
[http://www.who.int/immunization/sage/Final2\\_CDC\\_UN\\_VACC\\_10\\_2009.pdf](http://www.who.int/immunization/sage/Final2_CDC_UN_VACC_10_2009.pdf).

- 9.Falade BA(2014):** Vaccination resistance, religion and attitudes to science in Nigeria: The London School of Economics and Political Science (LSE). Available at: [http://etheses.lse.ac.uk/911/1/Falade\\_Vaccination-resistance-religion-and-attitudes-to-science-in-Nigeria.pdf](http://etheses.lse.ac.uk/911/1/Falade_Vaccination-resistance-religion-and-attitudes-to-science-in-Nigeria.pdf).
- 10.Qutaiba BA-IO, Bahari MB, Al-Qazaz HK, Salih MR, Jamshed SQ, Elkalmi RM (2014):** Are parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance? a mixed method study. *BMC pediatrics*, 14: 20.
- 11.Bernsen R, Al-Zahmi FR, Al-Ali NA, Hamoudi RO, Ali NA, Schneider J *et al.* (2011):** Knowledge, attitude and practice towards immunizations among mothers in a traditional city in the United Arab Emirates. *Hamdan Medical Journal*, 4: 114-121.
- 12.Alfahl Aa (2017):** Parents' Knowledge, Attitude and Practice towards Childhood Vaccination, *AlMadinah, Saudi Arabia 2017. Neonatal and Pediatric Medicine*, 3: 1-8.
- 13.Joseph J, Devarashetty V, Reddy SN, Sushma M (2015):** Parents' knowledge, attitude, and practice on childhood immunization. *International Journal of Basic & Clinical Pharmacology*, 4: 1201-1207.
- 14.Ramadan HA, Soliman SM, El-kader RG (2016):** Knowledge, Attitude and Practice of Mothers toward Children's Obligatory Vaccination. *Journal of Nursing and Health Science*, 5: 22-28.
- 15.Andrew TK , Larry KP, Atkinson S (2011):** General recommendations on immunization recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR. Recommendations and reports : Morbidity and mortality weekly report. Recommendations and reports / Centers for Disease Control*, 60: 1-64.
- 16.Montasser NAE-H, Helal RM, Eladawi N, Mostafa E, Rahman FAE, Saad M *et al.* (2014):** Knowledge, Attitude and Beliefs of Caregivers of Children below 2 Years of Age towards Immunization. *Br J Med Med Res.*, 4: 2757-2767.
- 17.Agboola SM, Busari OA, Segun-Agboola BT, Olajide TJ, Shabi OM, Elegbede OT (2015):** Knowledge, attitude, perceptions of adult males towards childhood immunizations in southwest Nigeria. *American Journal of Health Research*, 3: 8-12.
- 18.Mabrouka A, Bofarraj M (2011):** Knowledge, attitude and practices of mothers regarding immunization of infants and preschool children at Al-Beida City, Libya 2008. *Egypt J Pediatr Allergy Immunol.*, 9: 29-34.