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RESEARCH ARTICLE

THE AWARENESS AND ATTITUDE TOWARDS VACCINATION IN MAKKAH REGION, SAUDI ARABIA, 2019

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Abstract

In the last few years there have been a lot of argument and false accusations about vaccination, resulting in decrease the rate of vaccines uptake. Researches has shown that parents vaccines compliance are highly influence by many factors. This study aims to understand the reasons behind vaccine hesitancy and if the parents believe in the existence of the preventable diseases by vaccination? In this context, vaccine hesitancy defined as “delay in acceptance or refusal of vaccines despite availability of vaccinations”. This was a cross- sectional study conducted across Makkah, Jeddah, and Taif city. An online survey was distributed in period between 1 September – 1 November targeting Saudi parents of all children under the age of 12 randomly. The survey included demographics data, parental knowledge and attitude, vaccine hesitancy prevalence. The sample size was 384. Descriptive statistics were used to evaluate the association between knowledge and awareness to vaccines uptake. Analysis of the responses demonstrate that 93.6% of the sample study favor of vaccines, 6.1% of the sample study not favor of vaccines because they don't have adequate knowledge on vaccines, 2.5% of them think that vaccines are not important, 3.8% of them think that vaccines can cause harmful effects over its benefits, 1.5% of them have previous bad experience regarding vaccination. We found significant relation between knowledge and attitude score to the education level with level of significance 95% (p-value <0.05). Raising the society education can help in minimizing the impact of vaccine hesitancy problem.

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Introduction:-

Vaccines are considered as an important factor in eliminating infectious diseases (1,2,3). As noticed: a revolution in social media against vaccinations had been going over the last few years aiming to change society's adherence to vaccinations, which in turns had affected compliance rates. Recently, vaccine had faced a refusal due to the numerous studies about the hypothesis of the increased association between some vaccines and diseases (e.g MMR vaccine and autism). However, the fear of the vaccine side effects and worries about its safety both had led to vaccine hesitancy, groups of parents in Saudi Arabia start to stand against vaccinations programs and adopting false convictions and concerns which can lead to re-emerging of preventable disease. In Saudi Arabia, There are many studies done to assess knowledge, attitude, practice and the concerns of parents regarding the child vaccinations.

A cross sectional study done over all Saudi Arabia regions, from Nov 2017 to Jan 2018 shows 100% of parents give their children the obligatory vaccine, 76% of parents knows the vaccinations decreases the rates of mortality and disabilities, and 79.7 % of parents believe the vaccinations prevent infectious diseases (2) There are another two studies done in Arar and Najran cities from January to July 2018, from June to September 2017 respectively, shows similar results as the good knowledge and assertiveness regard the importance of childhood vaccinations. Most of parents follow the child's compulsory immunization, However some of the parents have misconceptions and concerns about the vaccinations, some believes the vaccines weakening the child's immunity and of non-necessity. This resulted in non-compliance with the vaccination schedule, However they reported the reasons of parents non-compliance were the lack of knowledge about the vaccines benefits (48.1%), illness of the child at time of vaccination (13.5%), travel (9.6%) and the fear of side effects (7.7%). (5)(1)

In UK, the vaccinations program is not obligatory, so the consent of the parents must obtained before the child immunized. However it is nearby 95% of vaccines compliance. (8) in the main while there are multiple studies shows a significant correlation between parental knowledge and good vaccines compliance (9) including a study done in Skaka reported that the higher educated parents, specially the mothers, affected the vaccination programs positively (10)

The suboptimal vaccine coverage rate now a days consider the most serious public health challenges (11) in this study we aimed to understand the reasons behind vaccine hesitancy which defined as "delay in acceptance or refusal of vaccines despite availability of vaccinations services" (12) over Makkah region, Saudi Arabia.

Method:-

This cross sectional study involved parents from Makkah region - Saudi Arabia from September – November 2019. We included any Saudi parents and The primary Saudi caregiver whom living in Makkah regions, Saudi Arabia. We excluded non-Saudi and adoptive parents.

Total enrollment was 393 parents. The distributed questionnaire consisted of four parts: The first part of the questionnaire reflected on the demographics of respondents. Second part is designed to assess the parents knowledge whom answered more than 60% of the questions correctly were considered to have a good knowledge towards vaccination. The third part is designed to assess attitude of the parents. parents who answered more than 60% of the question is considered to have good attitude. the fourth part to assess hesitancy toward vaccination.

The questionnaire was an electronic self-administered questionnaire distributed to parents who agree to participate in the Study. All respondents who did not complete the questionnaire and the demographic data were excluded. Data were collected in an Excel sheet and analyzed with SPSS version 23. Descriptive statistics were used to describe all variables. Association between dependent variables (knowledge, attitude and hesitancy) and independent ones (parents' demographics) were tested using Chi-square test. P values of < 0.05 were considered statistically significant. Ethical committee approval was obtained from Al-Hada armed forces hospital, Research Committee in Taif. All participants agreed to participate in the questionnaire. All data were maintained in a secure and confidential manner.

Result:-

Demographic data:-

A total of 393 partners participated in the study. 284 (72.3%) of them were mothers and 109 (27.7%) were fathers. (35.6%) of parents had age lies between 21 to 30 years, (28.8%) of parents had age lies between 31 to 40 years,

(16.5%) of parents had age lies between 41 to 50 years, (11.2%) of parents had age 20 years or less, (7.9%) of parents had age 51 years or more, most of the participants (140) were between 21 to 30 years and all of them were Saudis. Spread of participants over the cities of Makkah region was (51.1%) in Taif, (19.3%) in Makkah Al Mukarramah, (17.0%) in Jeddah, (12.5%) in others. (53.2%) of mothers were bachelor degree and (51.7%) of fathers. (16.3%) of mothers were high school level of education and (22.9%) of fathers. Those participants (both or both) are working in medical field were (12.5%). **Table 1 shows count and percentage of the sample size for demographic variables.**

Table 1:-

		Count	%
Gender	Male	109	27.7%
	Female	284	72.3%
Age	20 years or less	44	11.2%
	21 to 30 years	140	35.6%
	31 to 40 years	113	28.8%
	41 to 50 years	65	16.5%
	51 years or more	31	7.9%
Level of education of the Mother	Illiterate	25	6.4%
	Primary school	27	6.9%
	Elementary school	35	8.9%
	High school	64	16.3%
	Bachelor	209	53.2%
	Postgraduate	33	8.4%
Level of education of the Father	Illiterate	15	3.8%
	Primary school	22	5.6%
	Elementary school	24	6.1%
	High school	90	22.9%
	Bachelor	203	51.7%
	Postgraduate	39	9.9%
One of the parents or both work as health provider?	Yes	49	12.5%
	No	344	87.5%
Residential area	Makkah al mukarramah	76	19.3%
	Jeddah city	67	17.0%
	Taif city	201	51.1%
	Other	49	12.5%

Knowledge and attitude:-

Overall parents knowledge about vaccination assessment, the scores mean was 6 with a standard deviation of 2. The level of knowledge among the participants was good (7 of 11 and above) in (70.3%) and poor (Less than 7 of 11) in (29.6%). Regarding the attitude of parents about vaccination, the majority of parents highly accepted the following: Child immunization is important (86.3%), there desire to vaccinate their children doesn't contradict the compulsory position of taking all vaccinations in Saudi Arabia (87.3%), there desire to vaccinate their children doesn't conflict

with their partner, family or friends (93.4%), compliance with multiple doses in the EPI schedule is very important (80.7%). (57.0%) of the sample said that It is very important to vaccinate their child for diseases that are not common anymore, however (34.1%) of them said that it is somehow important, and (8.9%) of them said that it is not important. (80.2%) don't agree on that "child better to get sick for immunity development". (93.6%) are in favor of vaccines. (62.8%) of the sample said that they are very sure the recommended EPI schedule is beneficial for their child, (31.6%) of them said that they are somewhat sure, and (5.6%) of them said that they arenotsure. **Table 2 and 3 shows the knowledge andattitude of the parents regarding vaccines respectively.**

Table 2

Variable	n	%
Vaccine Provide nutritional supplement	yes	61 15.5%
	no	271 69%
	Don't know	59 15%
Vaccine is a medicine that prevent infectious disease	yes	356 90.6%
	no	20 5.1%
	Don't know	16 4.1%
Vaccine prevent non communicable disease	yes	222 56.5%
	no	106 27%
	Don't know	64 16.3%
Vaccine support the immunity	yes	315 80.2%
	no	41 10.4%
	Don't know	37 9.4%
Vaccine is a medical product specific for children	yes	180 45.8%
	no	175 44.5%
	Don't know	35 8.9%
Vaccine have side effect as any other medications	yes	219 55.7%
	no	77 19.6%
	Don't	96 24.4%
Are there any contraindications for vaccination?	yes	205 52.2%
	no	111 28.2%
	Don't know	77 19.6%
Are vaccines harmful for your child?	Yes	23 5.9%
	no	325 82.7%
	Don't know	45 11.5%
Do you believe that there are some sort of vaccinations can cause autisms for your child?	yes	49 12.5%
	no	238 60.6%
	Don't know	106 27.0%
Do you think the polio vaccination is still needed?	yes	348 88.5%
	no	20 5.1%
	Don't know	25 6.4%
Do you believe vaccine preventable diseases can be serious?	yes	360 91.6%
	no	17 4.3%
	Don't know	16 4.1%
Knowledge score ($\bar{x} \pm SD$)*		
Knowledge level	good	3034 70.3%
	poor	1281 29.6%

Table3

Variable	n	%
Vaccinating a child is	Very important	339 86.3
	Somewhat important	44 11.2
	Not important	10 2.5
Does your desire to vaccinate your children contradict the compulsory position of taking all vaccinations in Saudi Arabia?	yes	50 12.7
	no	343 87.3
Does your desire to vaccinate your children conflict with that of your other partner, family or friends?	yes	23 5.9
	no	367 93.4
Some vaccines in the EPI schedule has multiple doses. Is it important to give them all?	Very important	317 80.7
	Somewhat important	62 15.8
	Not important	14 3.6
It is necessary to vaccinate your child for diseases that are not common anymore.	Very important	224 57.0
	Somewhat important	134 34.1
	Not important	35 8.9
It is better for my child to develop immunity by getting sick than to get a vaccination	Yes	44 11.2
	No	315 80.2
	Don't know	34 8.7
Are you in favor of vaccines?	yes	368 93.6
	no	25 6.4
How sure are you that the recommended EPI schedule are is beneficial for your child?	Very	247 62.8
	Some	124 31.6
	Not at all	22 5.6

Table 4

For correlation between score of knowledge and demographic							
Pearson Chi-Square Tests							
		Gender	Age	Level of education of the Mother	Level of education of the Father	One of the parents or both work as health provider?	Residential area
score of knowledge (Yes)	Chi-square	43.812	157.043	157.274	171.455	47.813	100.248
	Df	21	84	105	105	21	63
	Sig.	.002 [*]	.000 [*]	.001 [*]	.000 ^{ab}	.001 [*]	.002 [*]
	Results are based on nonempty rows and columns in each innermost subtable.						
* . The Chi-square statistic is significant at the .05 level.							
b. The minimum expected cell count in this subtable is less than one. Chi-square results may be invalid.							

Table 5

For correlation between score of attitude and demographic							
Pearson Chi-Square Tests							
		Gender	Age	Level of education of the Mother	Level of education of the Father	One of the parents or both work as health provider?	Residential area
Attitude (very important)	Chi-square	18.605	63.926	148.045	146.809	27.083	52.305
	df	13	52	65	65	13	39
	Sig.	0.136	.124 ^{ab}	<.001 ^{ab} *	<.001 ^{ab} *	.012 [*]	0.075
	Results are based on nonempty rows and columns in each innermost subtable.						
* . The Chi-square statistic is significant at the .05 level.							
a. More than 20% of cells in this subtable have expected cell counts less than 5. Chi-square results may be invalid.							
b. The minimum expected cell count in this subtable is less than one. Chi-square results may be invalid.							

Discussion:-

Vaccination during childhood is the most effective method of medical intervention to protect from several infectious diseases (3). In this study, we have assessed the knowledge, awareness and practice of parents about vaccination of children in Makkah region, Saudi Arabia. The demographic data showed that the majority of the parents were mothers ageing 21-30 years among which only 53. 2% have bachelor level education which is almost similar to fathers being 51.7%. In another study from UAE it was reported that about 85% parents were aware of the fact that vaccinations provides protection from infectious diseases (13). Similarly, in this study it was observed that a majority of the parents were aware that vaccines support immunity and prevent from infectious diseases. Most of the parents believed that vaccine can even prevent from non- communicable diseases. A large majority agreed that they came to know about vaccination through a healthcare professional. In another study, it was reported that only 41% thinks that it is important to give multiple doses (14). In this study, it was found that 86.3% think that vaccination is very important which is similar to the study conducted by Alruwaili et al., in Northern Saudi Arabian population (5). In our study, most of them agreed that the multiple doses in EPI schedule has to be given to the child.

But most of them were not ready to vaccinate themselves or their child when they have any other illness or infections and 8.9% believed that it is not important to vaccinate for diseases which are not common. While some of them believe that it is better to develop immunity by falling sick than vaccinating the child, a large majority didn't agree with that.

Saleh et al., reported that 87.2% parents in Saudi Arabia have good knowledge and attitude towards vaccination (2). In this study it was observed that most of the parents favoured vaccines and 62.8% were sure that the recommended EPI schedule is beneficial. But among the 6.4% parents who don't favour vaccines, most of them admitted that they don't have adequate knowledge on vaccines. This can be reduced by giving adequate knowledge about the importance of vaccinations to the public. While many parents believed that vaccine is a medicinal product only for children, only a small population think that vaccines have side effects or contraindications, or may even harm the child. Many parents told they may reject MMR, JEV and pentavalent vaccines for the same reason. 12.5% of parents believe that vaccines may cause autism. This could be due to the circulation of lot of hoax messages through various media, as a large population of parents admitted that they came to know about vaccination through social media or TV (6). It is a matter of concern and should be under check by the authorities. In an earlier study also, Alyami et al., reported that around 26.8% people came to know about vaccines through social media (1). There should be strict regulations upon such social media platforms where various false messages are often circulated and may result in non- compliance to vaccines. These platforms can be efficiently used by policy makers to spread information about the importance of vaccinations and its importance so that even common people who are not literate or very well educated can be educated about the same (4). Our study recommends regular assessment of immunization rates in children and providing accurate and adequate information related to the pros and cons of vaccination to parents to increase the same.

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