

Awareness Level of Parents about Antibiotics Those Are Given to Children in Riyadh Region 2017

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ABSTRACT

Background: Defect of use of antibiotics is bothering pediatricians. This defect is participating in the prevalence of one of global health problem called antibiotic Resistance. Many articles are supporting the idea that use of antibiotics is positively related to antibiotic resistance and this problem is increasing and growing up. By the way, incorrect use of antibiotics has many factors that contribute on, like patient attitude and deficiency of education from the physician who prescribed the antibiotic. Also, patient's knowledge and practice with the antibiotic like self-prescription. What is patient expecting from antibiotic and previous experience with antibiotics? Parents are responsible to give medications to children. So, we need to increase parents' knowledge, attitude and practice (KAP) toward antibiotics to reach new generation without antibiotic resistance. Regarding Saudi Arabia, antibiotic resistance already exists and the rate of resistance is increased in the last decade. **Aim of the work:** To assess how parents are aware of antibiotics those given to their children by evaluating knowledge, attitude, and practice of parents in Riyadh region, central Saudi Arabia.

Methods: This is questionnaire based cross-sectional study. Authors were circulating on Riyadh Region to find volunteers to fill questionnaires among parents of children in public places by selecting parents of children up to 12 years old by choosing random samples from each place. The questionnaire has two parts: the first part, as usual, is containing demographic data. While the second part: is the part that is evaluating KAP of parents towards antibiotics. Then we compared the final results by Chi-Square test and p-values less than 0.05 was considered as significant value.

Results: around 1058 parents volunteered to participate in this study (response rate was 88.16%) by mean age of 38. Around 89.6% used antibiotics for their children before. There are 9.5% of parents were believe that their children need antibiotics each time they get sick. More than 35% of our participants don't complete period of antibiotic use to their child as what is mentioned on prescription. About 82.3% believe that antibiotics can harm children. There are 41.7% of parents bought antibiotics to their children from the previous prescription. Around 61.1% don't know the term antibiotic resistance. There are 28.4% of participants could change their doctors if they don't prescribe antibiotics easily, while only 642(60.7%) could change their doctors if they prescribe antibiotics excessively. About 68.1% of participants believe that doctors prescribe antibiotics excessively. Nearly 49% have good KAP, 41% of participants have intermediate KAP and remaining 10% have poor KAP. Females are better than male in KAP, people with high degree education are better than other and parents who used antibiotics before are better than those who didn't (p-value < 0.05).

Conclusion: Level of knowledge, attitude, and practice of people in Riyadh region is ranging between good to moderate, and tends to be good. We can expect antibiotics resistance to happen among new generation in Riyadh region. There is an unacceptable idea that is highly prevalent among parents that doctors excessively prescribe antibiotics. Moreover, mothers have better awareness than fathers. People with high degree level of education have better awareness than others.

Keywords: Antibiotic, AMR, Saudi Arabia, KAP, Antibiotic resistance.

INTRODUCTION

We can begin our study by considering pediatric clinics as educational classes for parents more than clinics. So, we (as doctors) are responsible to educate parents how to protect

their children from getting harm by anyway. Antibiotics (AB) can be one of these harms. In which the treatment of children depends on perceptions of parents. Even though, antibiotics are one of best and biggest discovery of century

20. And infectious diseases before antibiotics were participating in increased mortality and morbidity all over the world ^[1]. Misuse/abuse of medications like antibiotics is bothering pediatricians ^[2]. This defect in using antibiotic is participating in the prevalence of one of global health problem called Antibiotic Resistance (AMR).

Anxiety from AMR came from nothing, as this problem has a negative effect on prevention and treatments of infections whatever are the causes ^[3]. In theoretical point of view, the main use of antibiotic is eradicating Bacterial infection ^[4]. Upper respiratory tract infection (URTIs) is one of the most common causes of prescribing antibiotic in pediatric ^[5]. But in fact, the virus is the main cause of most of URTIs cases ^[6]. Also, some bacterial infections are self-limited and don't need any kind of antibiotics such as otitis media and sinusitis ^[7]. By this mean, doctors are also contributing on AMR.

Many articles are supporting the idea that the use of antibiotics is positively related to antibiotic resistance and this problem is increasing and growing up ^[5, 8]. In addition, the incorrect use of antibiotics has Great effects that contribute on, like prescribers' knowledge and expertise, diagnosis accuracy, patient attitude, and deficiency of education from a physician who prescribed the antibiotic. Also, patient's knowledge and practice with an antibiotic like self-prescription, what patients are expecting from using antibiotic and previous experience with the use of antibiotics ^[9].

Regarding Saudi Arabia, antibiotic resistance is already existing and the rate of resistance is increased in the last decade when we compare it to rates in the 1990s ^[10]. In their study, they found that there is a high percentage of self-medication in Saudi Arabia and most of the self-medicated medicines are antibiotics ^[11].

In the present study, we are planning to assess how parents are aware of antibiotics handling with their children by evaluating knowledge, attitude, and practice of parents in Riyadh region, Saudi Arabia.

METHODS

The study is questionnaire based cross-sectional study. Our study site is Riyadh region, central Saudi Arabia. Study tool was an electronic questionnaire that has been made based on previous articles from our Review of literature, in which we examined several articles in the

scientific and medical journals that are dealing with the same problem among parents of children up to 12 years old or general population in different countries. Our questionnaire was using a computer by Google Drive Forms which is special for these types of surveys and has been saved through an internet link to facilitate sending the questionnaire to participants. Researchers examined all Riyadh Region in order to find volunteers to deal with questionnaires among parents of children in public places like clubs, mosques, schools, universities, restaurants, malls, gardens, etc. and private places like houses by selecting randomly parents of children up to 12 years old from each place .

The questionnaire has two parts, the first part, as usual, was containing demographic data like age, gender, number of children, occupation, nationality, educational level and site of residency either city or village. While the second part: included evaluating knowledge, attitude, and practice of parents towards antibiotics.

Knowledge, attitude, and practice (KAP) level have been assessed by giving a score for each question out of seven. Then, we categorized these scores into poor KAP (score 0-2), moderate KAP (score 3-4) and good KAP (score 5/7). Then we used the Chi-Square statistical method to compare the final result according to Age, gender, number of children, job, educational level and history of antibiotic use for children and p-values less than 0.05 was considered as significant value.

The questionnaire has been translated into the Arabic language to give the chance to people with different educational levels to fill the questionnaire.

Ethical considerations: we explained to parents the aim of the study and give them the chance to ask any question before they gave the verbal approval to fill the questionnaire. Also, we guaranteed that the personal data will be totally secret and will be used only for scientific research as previously mentioned at the head of the questionnaire .

Data analysis: analysis was done by IBM.SPSS Statistics version 24 computer applications.

RESULT

Questionnaires have been distributed to 1200 person, and 1058 persons of them volunteered to answer questionnaires (response rate is 88.16%). Mean age of participants was 38. Most of the participants were in age from 30 – 39 years

(38%), 86 persons were under 20 years (8.1%), 190 are above 20 to 29 years (18%), 316 (29.9%) are from 40 – 49 and remaining 64 (6%) were 50 years old or above. Female were more than male, in which females were 777 (73.4%) while males were 281 (26.6%). Around 200 (19.3%) of parents have only one child, while 332 (31.4%) of parents have two to three, 276 (26.1%) have 4-5 and remaining 246 (23.3%) have more. Only 48(4.5%) were still students, 614(58%) were employed, 94(8.9%) were retired, 29(2.7%) have a free business and remaining 273(25.8%) have no job. Regarding educational level, 5 parents (.5%) did not enter school, 38(3.6%) have primary school level of education, 217(20.5%) have high school level of education, 704(66.5%) have bachelor degree certificates and remaining 94(8.9%) have high degree level of education. All participants were Saudis from cities [Table 1].

Table 1: demographic data

		Frequency (%)	
Age	Mean: 38	Under 20	86(8.1)
		20 – 29	190(18.0)
		30 – 39	402(38.0)
		40 – 49	316(29.9)
		50 & above	64(6.0)
Gender		Male	281(26.6)
		Female	777(73.4)
Number of children		One	204(19.3)
		2 – 3	332(31.4)
		4 – 5	276(26.1)
		More than 5	246(23.3)
Job status of responders		Student	48(4.5)
		Employee	614(58.0)
		Retired	94(8.9)
		Free business	29(2.7)
		No Job	273(25.8)
Educational level		Did not enter school	5(0.5)
		Primary school	38(3.6)
		high school	217(20.5)
		Bachelor	704(66.5)
		High degrees	94(8.9)
Total			1058(100)

Knowledge, Attitude and Practice assessment were as follow; Only quarter of participants (25.5%) are aware of the main use of antibiotics to fight bacterial infection, 220 parents are considering fighting virus is the main use, while 126 (11.9%) mentioned both bacteria and virus, most of the participants (33.6%) mentioned that antibiotics are prescribed to fight all types of microorganism and remaining 87(8.2%) don't know the use at all. Around half of our participants (50.4%) mentioned that fever is the commonest cause of prescription of antibiotics, 141(13.3%) mentioned a cough, 32(3%) mentioned diarrhea, 30(2.8%) mentioned skin infections and remaining prefer to say 'I don't know'. Most of the participants (89.6%) used antibiotics for their children before.

In the last year, 192(18.1%) parents did not use antibiotics for their children, 226(21.4%) used them one time, 254(24%) used them two times, remaining used them more than that as mentioned in Chart 1.

There are 101 (9.5%) parents believe that their children need antibiotics each time they get sick and 86(9.1%) have a prescription. Most of the participants (82.3%) believe that antibiotics can harm their children, but remaining 81 and 106 (7.7% and 10%) are either not believing or have no experience respectively. There are 441(41.7%) of parents bought antibiotics to their children from the previous prescription. Most of the parents (61.1%) don't know the term antibiotic resistance. There were 301(28.4%) of participants could change their doctors if they don't prescribe antibiotics, while only 642(60.7%) could change their doctors if they prescribe antibiotics excessively.

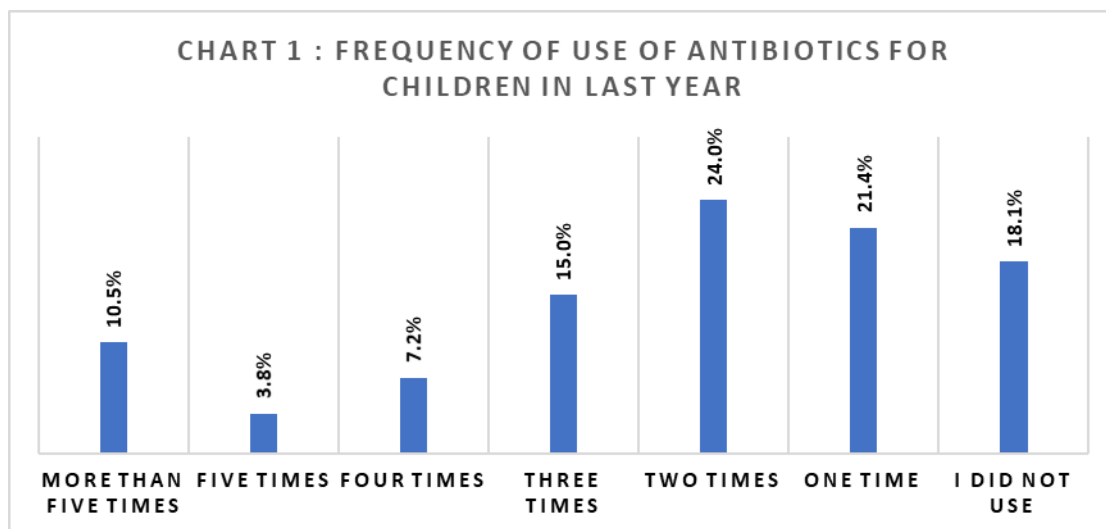
A large percentage (68.1%) of our participants believed that doctors prescribe antibiotics excessively [Table 2].

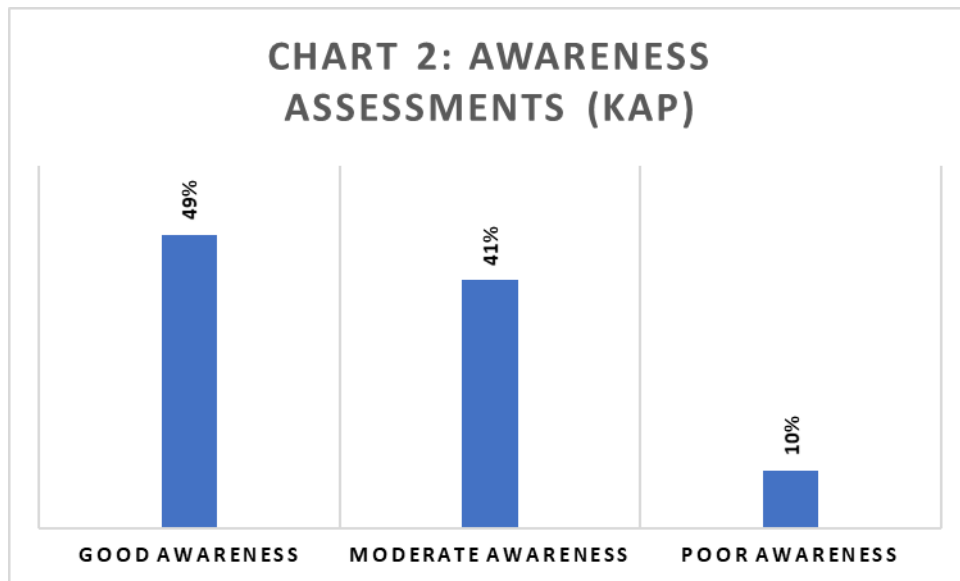
Table 2: Knowledge, Attitude and Practice (KAP) Assessment

	Frequency	Percent %	
What is the main use of antibiotics?			
To fight Virus	220	20.8	
To fight Bacteria*	270	25.5	
To fight Virus & Bacteria	126	11.9	
To fight all types of Microorganism	355	33.6	
I don't Know	87	8.2	
What is the popular cause of prescription of antibiotics?			
Fever	533	50.4	
Cough	141	13.3	
Diarrhea	32	3.0	
Skin Infections	30	2.8	
I don't know	322	30.4	
	Yes (%)	No (%)	Don't know (%)
Did you use antibiotic for your children before?	948(89.6)*	110(10.4)	-
Does your child need antibiotic each time he/she gets sick?	101(9.5)	861(81.4)*	96(9.1)
Do you give your child antibiotic in the same period as prescribed?	682(64.5)*	376(35.5)	
Do you think antibiotic can harm your child?	871(82.3)*	81(7.7)	106(10.0)
Did you buy antibiotic for your child from previous prescription?	441(41.7)	617(58.3)*	
Do you know Antibiotic Resistance?	412(38.9)*	646(61.1)	
Could you change your doctor if he/she don't prescribe antibiotic easily?	301(28.4)	757(71.6)	
Could you change your doctor if he/she prescribe antibiotic excessively?	642(60.7)	416(39.3)	
Do you ask your doctor to prescribe antibiotic to your child?	567(53.6)	491(46.4)	
Do you think doctors prescribe antibiotics excessively?	720(68.1)	338(31.9)	

Participants will be scored one point if he/she mentioned this*

Scores of assessments of Knowledge, Attitude and Practice (KAP) are as follow; nearly half of participants (49%) have good awareness (Score 5-7/7), 41% of participants have intermediate awareness (Score 3-4/7) AND remaining 10% have poor awareness (Score 0-2) [Chart 2].





After applying the Chi-Square test to compare results of KAP assessments with demographic data; we found that no significant differences in KAP assessment between different ages (p -value > 0.05). Females have good awareness more than male (p -value < 0.05). However, no significant differences in KAP level regarding number of children (p -value > 0.05). Also, there is no significant difference regarding job (p -value > 0.05). People with high degrees level of education have best KAP compared to other educational levels (p -value < 0.05). Finally, antibiotics use among parents affected the level of KAP, in which people who used antibiotics before to their children have better KAP than those who did not use before (p -value < 0.05) [Table 3].

Table 3: Chi-Square Test

		KAP score						P-value
		Poor Awareness		Moderate Awareness		Good Awareness		
		Count	Row N %	Count	Row N %	Count	Row N %	
Age	less than 20	7	8.1%	32	37.2%	47	54.7%	.395
	20 - 29	25	13.2%	80	42.1%	85	44.7%	
	30 - 39	35	8.7%	175	43.5%	192	47.8%	
	40 - 49	25	7.9%	134	42.4%	157	49.7%	
	50 & more	9	14.1%	22	34.4%	33	51.6%	
Gender	Male	47	16.7%	124	44.1%	110	39.1%	.001
	Female	54	6.9%	319	41.1%	404	52.0%	
No. of Children	1	29	14.2%	88	43.1%	87	42.6%	.056
	2-3	27	8.1%	139	41.9%	166	50.0%	
	4-5	17	6.2%	121	43.8%	138	50.0%	
	more than 5	28	11.4%	95	38.8%	122	49.8%	
Job	No job	24	8.8%	126	46.2%	123	45.1%	.071
	Employee	56	9.1%	252	41.0%	306	49.8%	
	Free business	6	20.7%	14	48.3%	9	31.0%	
	Retired	8	8.6%	30	32.3%	55	59.1%	
	Students	7	14.6%	21	43.8%	20	41.7%	
Educational level	Uneducated	3	60.0%	2	40.0%	0	0.0%	.001
	Primary School	4	10.5%	15	39.5%	19	50.0%	
	High School	27	12.4%	110	50.7%	80	36.9%	
	Bachelor degree	59	8.4%	288	40.9%	357	50.7%	
	High degrees	8	8.5%	28	29.8%	58	61.7%	
Use of antibiotics before	Yes	486	51.3%	388	40.9%	74	7.8%	0.001
	No	28	25.5%	55	50%	27	24.5%	

DISCUSSION

Our study was directed to parents because our main concern is about antibiotic resistance in next generation. In which parents are the main source of drug administration for children. We used to select a sample from public places to cover all social categories. Pediatrics clinics were suitable for us to reach parents for children on aging from 1 – 12 years, but we think there will be parents who are in continues contact with pediatricians and we aimed to reach general populations without any specific circumstances .

However, good knowledge, attitude and practice (KAP) is accounting 49% of our participants, moderate is 41% and poor is 10%. This is worse than India, in which they applied the same test and found results 82.1%, 14.8% and 3.1% respectively. This is may be because of the high incidence rate of infections and this will be directly proportional to the experience about antibiotic and it's used like what we found in this study and what they found also that people who used antibiotics before having better KAP that those who did not (p-value < 0.05). In India, males are better than females in KAP and this is different than what we found as high percentage of female here got high scores of KAP. As what they found in their study, people with high educational level are better in KAP^[1].

In our study, we found only around four out of ten know that it is mainly to fight bacterial infection. In India, it is a little bit more (28%). About 81.81% of non-medical students in China and 92.93% of medical students who agree with the effectiveness of using antibiotics in treating bacteria and only 43.44% of non-medical students agree that antibiotics cannot treat viral infection. Also in Lebanon, more than 80% know that antibiotic is antiviral and 73.5% don't know that antibiotics don't treat viral infection^[1, 12, 13].

Most of our participants agree that antibiotics can cause harm (82.3%) and this is better than another study like that in India (73.6%) and that is Palestine (78.1%). Also, in the same study that was done in Palestine, around 76% of participants will not change their doctors if they do not prescribe antibiotic easily and 27% will change their doctors if they prescribed antibiotics easily to their children. By comparing with our study, 71.6% will not change their doctors if they don't prescribe antibiotics easily and around 60% will change them if they prescribe it easily^[1, 5].

Two points have to be discussed; More than 53% of participants declared that they could ask their doctors to prescribe antibiotics to their children.

The question was about if the doctor would not prescribe the antibiotic or they are sure that doctors will prescribe antibiotic easily if parents asked. The second point that around 68% of parents agree that doctors prescribe antibiotic excessively, this point need to be studied and discussed in a separated research project.

CONCLUSION

Level of knowledge, attitude, and practice of people in Riyadh region, Saudi Arabia have is ranging between good to moderate and tends to be good. Some of the parents want their child to get antibiotics each time they got sick. Some parents don't give their children antibiotic in the period that prescribed. A high percentage of parents has the habit of buying antibiotic to their child using previous prescriptions.

However, from the present results, we could expect that antibiotics resistance will occur among the new generation in the near future. We need to increase our capacity to improve the awareness of parents to avoid the excessive use of antibiotics regardless the desire of the physicians as well as the parents. There is an unacceptable idea that is highly prevalent among parents that doctors excessively prescribe antibiotics. It is important to discuss this idea and check its reality. We need also regulations that prevent doctors from prescribing antibiotics without clarification to parents the obvious reason for it. Moreover, mothers have better awareness than fathers. People with high degree level of education have better awareness than others.

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