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### RESEARCH ARTICLE

#### KNOWLEDGE, ATTITUDE, AND PRACTICE OF PARENTS REGARDING ANTIBIOTIC USAGE IN TREATING CHILDREN'S UPPER RESPIRATORY TRACT INFECTION ATTENDING PRIMARY HEALTH CARE CENTERS IN AL-MADINAH CITY

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#### Manuscript Info

##### Manuscript History

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#### Abstract

**Background:** Upper respiratory tract infections are common in children and represent a significant cause of antibiotic abuse. Parents' knowledge and attitudes often contribute to inappropriate prescription of antibiotics and promoting antibiotics resistance.

**Aims and objectives:** This study was conducted to assess parental knowledge and to identify their attitudes and practices related to antibiotic use in the treatment of childhood upper respiratory tract infections (URTIs).

**Methods:** This cross-sectional study is conducted in Al-Madinahcity using validated and translated questionnaire which was distributed toattending parents in primary health care centers.

**Results:** The results show that the Parents have moderate level of knowledge of the use of antibiotics for upper respiratory tract infections in children. The majorityof parents (50.9%) correctly sated that respiratory infections are often caused by a virus and do not need antibiotics. In this study, the majority of parents (40.1%) sated that Antibiotics should be given to all children when they develop a fever (high temperature). 21.4% of the of parents indicate that Antibiotics do not have any side effects. Regard to Parents' practice toward the use of antibiotics for upper respiratory tract infections in children. The results of this study showed that (46.3%) Of therespondents stated the most common symptoms leading to a visit to the physician is fever. n this study, (64.7%) of the of parents indicate that they thought that their physiciansprescribed antibiotics only because they asked him or her to do so. Also, (68.9%) of the of parents indicated that they asked the doctor directly to prescribe their child an antibiotic. Regard to Parents' attitude about the use of antibiotics for upper respiratory tract infections in children. The results of this study showed that moderate level of attitudeof the use of antibiotics for upper respiratory tract infections in children(61.7%) of the parents stated that antibiotics are used too much and unnecessarily, And (28.8%) of the parents indicated that they would change pediatrician because he/she did not prescribe antibiotics for their child as you wanted.

**Conclusion:**the findings of this study demonstrated that most of the participants were educated but misconceptions regarding antibiotic use

in URTIs in children. This misconception's led to inappropriate attitude and practice. Thus, launching public educational campaigns and encouraging physicians to educate parents regarding the proper use of antibiotics are recommended.

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## **Introduction:-**

Upper respiratory tract infection (URTI) is the most common infectious disease among children. URTIs is an acute, self-limiting viral infection, that involve, to a variable degrees, sneezing, nasal congestion and discharge (rhinorrhea), sore throat, cough, low-grade fever, headache, and malaise. It can be caused by members of several families of viruses; the most common are rhinoviruses. The URTI is considered as the most common cause of visiting primary health care centers.(1)School-aged children experience on average 7 to 12 episodes of upper respiratory tract infection yearly, and young children frequently experience prolonged symptoms. (1)

The antibiotics are one of the most commonly prescribed drugs for children in primary health care clinics due to URTIs.(2)33% of consultations regarding URTIs in primary health care clinics end up with an antibiotic prescription.(3)In the United States, a study has been done to investigate the frequency and patterns of antibiotic prescriptions for children in ambulatory care, and it has been found that 23.4% of antibiotic prescriptions for URTI were not clinically indicated.(4)

This prescription behavior leads to the development of antibiotic resistance,(5)inappropriately used and unnecessarily prescribed antibiotics for self-limiting URTIs are well recognized public health problems worldwide.(6)

Therefore, governmental and regulatory agencies are strongly advised to control the prescription and utilization of antibiotics by physicians. In 2018 The Ministry of Health (MOH) has warned against selling antibiotics without prescriptions and highlighted the importance of abiding by the provisions of the Executive Regulations of Health Practice Law which prohibits the pharmacist from selling any drug without a prescription issued by a doctor. MOH stated that violators will face legal actions which include a fine of up to 100 thousand riyals, abolition of the license and prison for up to six months.(7)

Sometimes parents insist and influence the doctor's decision to prescribed antibiotics to their children who have URTIs. The misconceptions about using antibiotics among parents common.(8)The amount of information and knowledge about the etiology of upper respiratory tract infections and antibiotic therapy among parents is not enough. (3) Besides, researchers found parents malpractices related antibiotics use like stopping antibiotics when symptoms disappear, not completing the course or using the remaining antibiotics without consulting the physician.(9)Parents dissatisfaction about not prescribing antibiotics for their children who have URTIs.(9)

## **Rational**

Researcher found during his clinical rotation or experienthat majority of children attending Primary health care centers are suffering from upper respiratory tract infection and their demands for using unnecessary antibiotics.

## **General objective**

To evaluate Parents Knowledge, attitudes and practice of use of antibiotics for upper respiratory tract infections in children attending primary health care clinics in Al-Madinah.

## **Specific objectives**

1. To evaluate parents' knowledge about using antibiotics for URTIs in children.
2. To assess parents' attitudes and practice toward antibiotics for URTIs.
3. To investigate variations based on economic and educational level.

## **Literature Review:-**

In 2018 there was a study done in the al-Qassim region, 45 % of parents participants believed that URTIs are viral infections and its self-limited which no need for antibiotics.19% of parents thought any child with a fever should

give antibiotics. However, 29 % expect that antibiotics will decrease the period of the infections. Besides, 52% of the parents agreed that improper use of antibiotics could decrease the efficacy and causing antibiotics resistance. 73 % of parents when they visited primary health care clinics for URTI in their children, they expected antipyretics and analgesics as a possible treatment. However, 60% of parents chose antibiotics as expected treatment. The main symptoms making 21% of parents requesting antibiotics for their children It is a fever and it was the most worrisome symptoms. (12)

Another study was done in Saudi Arabia showed, 43.9 % of parent's participants believed that URTIs are viral infections and its self-limited which no need for antibiotics. 30% of parents thought any child with a fever should give antibiotics. However, 59.2% expect that antibiotics will decrease the period of infections. Also, 80.5% of the parents agreed that improper use of antibiotics could decrease the efficacy and causing antibiotics resistance. 67 % of parents when they visited primary health care clinics for URTI in their children, they expected antipyretics and analgesics as a possible treatment. However, 60% of parents chose antibiotics as expected treatment. The main symptoms making 27% of parents requesting antibiotics for their children Is fever and it was the most worrisome symptoms. Most of the parents 79% agreed that antibiotics were excessively and unnecessary used. 63% of parents would give antibiotics to their children without a physician's advice because the previous visit the physician prescribed antibiotic for the same symptoms, while 61% would give antibiotics due to pharmacists' recommendations. (13)

In 2018 There is study was done in Dubai, 20% of parents wrongly believed there are no side effects when using antibiotics, while almost 25% of parents thought their children with URTIs could improve faster when they used antibiotics. However, 33% of parents believed any child developed fever should be given antibiotics. On the other hand, 56.4% were aware that inappropriate use of antibiotics will lead to an increase in bacterial resistance. The most common symptoms leading to a visit to the physician is fever (76.0%). When parents were asked to select the possible treatment options, 38% chose antibiotics as a possible treatment. 90% of parents asked the physicians directly to prescribe antibiotics for their children, and 88% of them thought that their physicians prescribed antibiotics only because they asked him or her to do so. (14)

There is another study done in Palestine in 2012 that showed Palestinian parents have insufficient knowledge related to antibiotic use for URTIs in children. 73 % of parents choose antibiotics as a treatment for URTIs. However, 19% of parents believed there is no side effect for using antibiotics. Also, 59% of parents not agreed that most of the URTIs are virally cause and self-limited. While the most common reasons for which parents expected antibiotics were earache (68 %) and fever (64 %). Furthermore, 72.7 % of parents believed that antibiotics were used too much and unnecessarily.(15)

There was a study done in Jordanian mothers, 40% of them know the most common cause URTI is viral and no need antibiotics. Although more than 60 % of mothers believed anyone with URTI needed antibiotics, and that antibiotics improve their children faster.(16)

In 2015 there was a study done in Malaysia shown that parents often have inadequate knowledge and misconceptions about antibiotic use for URTI in children. Nearly 68% of them believed that antibiotics helped treat URTI. On the other hand, 17 percent believed that antibiotics were unnecessary when prescribed. 31 % of parents had requested for antibiotics for their child with URTI. However, 26% of parents admitted that their child did not finish the entire course of antibiotics given. (17)

In 2003 there was a study done in the USA, this study found that antibiotic misconceptions were common among parents. 30% of parents believed antibiotics could be helpful for viral illnesses, and more than 75% believed antibiotics were needed for treatment of green nasal discharge in the absence of fever or other signs of illness. 24% of parents demanded antibiotics, 41% of parents did not know that antibiotics were indicated for bacterial infections only. (18)

## **Methodology:-**

### **Study area**

This study will be conducted in Al-Madinah city. Al-Madinah is one of the main cities in Saudi Arabia with an estimated population of nearly 1.2 million. (19)

**Study design**

These objectives of this study can be achieved by using a cross-sectional study design.

**Study sample**

The primary data will be collected from participants visiting primary health care centers in Al-Madinah city.

**Inclusion criteria**

Parents who have at least one child

**Exclusion criteria**

Any participant who does not have a child

**Sample size**

The calculation of the sample size was done using anepi info sample size online calculator. An expected frequency of 50%, with a 5% confidence limits and a 95% confidence level, was used. The required sample size was estimated to be 384 participants calculate the sample size.

**Sample technique**

The The PHC centers in AL Madinah city distributed to clusters. Each cluster has several centers, I will take randomly two centers from every clusters. the PHC centers outside city not included.

**Data collection tool**

A validated and translated questionnaire has been obtained from a study conducted in Riyadh -Saudi Arabia, (13) which was obtained from a study done in Palestinian. (15)

The questionnaire included four main compartments. In the first part, the parents' demographic data such as age, gender, educational level, family income, and the number of children in the family was assessed. In the second part, the parents' knowledge about antibiotics and URTI has been assessed in seven questions. Moreover, it assessed some beliefs about the use of antibiotics in URTI and the outcome of the inappropriate use of antibiotics. In the third part, the parents' attitude about their behavior toward antibiotics in URTI was assessed in ten questions. In the end, six questions assessed the parents' practice regarding antibiotic use. The parents' responses regarding their knowledge (six questions) were recorded using a Likert scale from 1 to 5 (with 1 = Strongly Agree and 5 = Strongly Disagree). The questions regarding attitude were divided into two sections. The first one asked "How often would you give your child antibiotics without the pediatricians' advice. (For four different situations), with the responses ranging from 1 = Always to 5 = Never. The second set of questions regarding the attitude toward antibiotic use (five questions) were recorded on a Likert scale ranging from 1 to 5 (with 1 = Strongly Agree and 5 = Strongly Disagree). There were another four questions included for the practice of using antibiotics, using the scale of 1 = Always to 5 = Never. The total KAP scores were calculated by summing up the Likert scale responses for each category.

**Data entry and analysis**

All data will be entered and coded by SPSS software, then data will be analyzed by using appropriate statistical tests.

**Pilot study**

The researcher will give the questionnaire to 5 participants to assess the applicability of the questionnaire. The participants will be exclude from study sample.

**Ethical consideration**

1. The ethical approval for this study will be obtained from the ethical committee for health research in Al-Madinah.
2. Informed consent will be attained from all participants before their participation in the study and confidentiality will be assured during the study.

**Limitation**

The study may have time and resources limitations.

**Budget**

Self-funded

**Result:-****Demographic information**

The demographic data of the respondents are presented in Table 1. It shows that out of the 167 respondents, (71.3%) were males, and (28.7%) were females. Most of the respondents (39.5%) were in the age category within 26-30 years. The majority fathers (56.9%) and mothers (37.1%) had completed university. Most of the respondent (43.7 %) had Family income 5000-10000. Most of the parents (94.0 %) were not working in the health sector. The majority respondents (63.5%) had 1-3 children under 6 years old and (41.9 %) of the respondents had 1-3 children over 6 years old. (16.8%) of the respondents had at least one child suffer from chronic diseases related to the respiratory system. (44.3%) of the respondents state that Antibiotics are the first choice for treating upper respiratory infections in children. (38.3%) of the respondents indicate that if their child had symptoms of upper respiratory infections (runny nose, sore throat, vomiting, cough and fever) they will take one day only take him to the pediatrician?

**Table 1:-** The demographic data of the respondents.

Characteristics	Categories	Frequency	Percentage (%)
Gender	Male	119	71.3
	Female	48	28.7
Age	18-20 years	6	3.6
	21-25 years	24	14.4
	26-30 years	66	39.5
	31-35 years	34	20.4
	36-40 years	21	12.6
	More than 41 years	16	9.6
Father's educational level	Primary	15	9.0
	Middle school	13	7.8
	Secondary	44	26.3
	University	95	56.9
Mother's educational level	Primary	42	25.1
	Middle school	23	13.8
	Secondary	40	24.0
	University	62	37.1
Family income	Less than 5000	32	19.2
	5000-10000	73	43.7
	More than 10000	54	32.3

	More than 100000	8	4.8
Do parents work in the health sector?	Yes	10	6.0
	No	157	94.0
Number of children under 6 years old	No children	58	34.7
	1-3 children	106	63.5
	More than 3 children	3	1.8
Number of children over 6 years old	No children	56	33.5
	1-3 children	70	41.9
	More than 3 children	41	24.6
Does one of your children suffer from chronic diseases related to the respiratory system (asthma, for example)?	Yes	28	16.8
	No	139	83.2
Antibiotics are the first choice for treating upper respiratory infections in children	Yes	74	44.3
	No	93	55.7
If your child has symptoms of upper respiratory infections (runny nose, sore throat, vomiting, cough and fever) how many days do you have before you take him to the pediatrician?	One day	64	38.3
	Two days	56	33.5
	Three days	33	19.8
	Four days	3	1.8

	Five days	6	3.6
	More than 6 days	5	3.0

**Descriptive statistics**

This study applies the four-point Likert scale from 1 to 4 (with 1 = Strongly Agree ,4 = Strongly Disagree, and 0= I don't know). The questionnaire respondents were asked to specify the personal degree of agreement toward the scale's statements. The interpretation of the scale levels is showed in Table 2

**Table 2:-** Interpretation of Scales Values.

Mean Value	Meaning
From 1 to 1.49	Strongly disagree
From 1.50 to 2.49	Disagree
From 2.50 to 3.49	Agree
From 3.50 to 4	Strongly agree

In addition, the relative importance is calculated as it shows below

$$\text{Category length} = (\text{upper limit} - \text{lower limit}) / \text{the number of levels}$$

$$\text{Category length} = (4-1) / 3 = 3/3 = 1 \text{ and thus the levels are as follows:}$$

Low level of importance: 1.00-2

Moderate level of importance: 2.1-3

High level of importance: 3.1-4

**1.Parents' knowledge of the use of antibiotics for upper respiratory tract infections in children**

Descriptive statistics such as (percentage, mean, standard division, and relative importance) were used to evaluate Parents' knowledge of the use of antibiotics for upper respiratory tract infections in children. The parents' knowledge about antibiotics and URTI has been assessed in seven questions as shown in table 2. The results show that the overall mean is (2.81) and standard division is (1.34) which means the Parents have moderate knowledge of the use of antibiotics for upper respiratory tract infections in children. Moreover, the respondents indicate a neutral standpoint on all the statements where the mean ranges between (2.97 -2.20), except the statement that states (Antibiotics do not have any side effects) where the respondents show disagreement with it where the mean is (1.74).

**Table 2:-** Descriptive statistics of Parents' knowledge of the use of antibiotics for upper respiratory tract infections in children.

Statement	Percent %					Mean	SD	Relative importance
	Strongly agree	Agree	Disagree	Strongly disagree	I don't know			

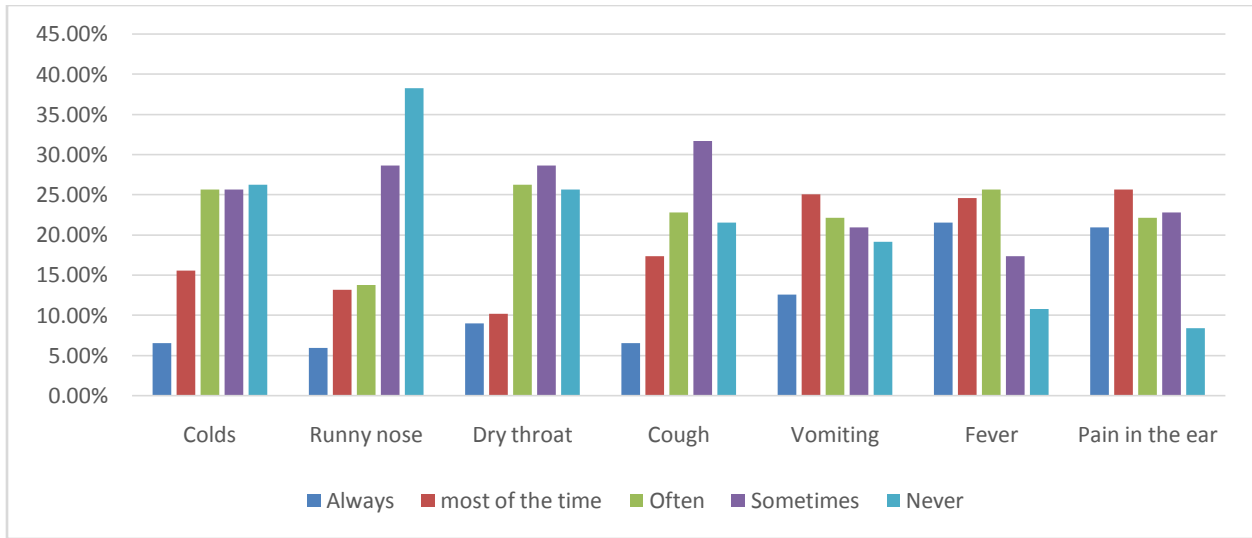
Antibiotics should be given to all children when they develop a fever (high temperature)	9.6	30.5	34.1	22.2	3.6	2.20	1.009	Moderate level
Children have flu symptoms get better faster when they are given antibiotics	15.0	46.7	23.4	8.4	6.6	2.55	1.057	Moderate level
Respiratory infections are often caused by a virus and do not need antibiotics	16.2	34.1	31.7	9.0	9.0	2.40	1.135	Moderate level
Antibiotics do not have any side effects	7.2	14.4	32.3	37.1	9.0	1.74	1.048	Low level
Excessive use of antibiotics reduces their effectiveness and leads to bacterial resistance.	42.5	32.3	10.8	8.4	6.0	2.97	1.189	Moderate level
The use of antibiotics can prevent complications of upper respiratory infections.	22.2	49.1	12.6	5.4	10.8	2.66	1.195	Moderate level
Scientists will be able to develop antibiotics capable of treating the types of bacteria that are resistant to the current antibiotics	20.4	41.3	13.2	2.4	22.8	2.34	1.434	Moderate level
<b>Overall men</b>						<b>2.81</b>	<b>1.34</b>	<b>Moderate level</b>

## 2. Parents' practice of the use of antibiotics for upper respiratory tract infections in children.

The questions regarding practice were divided into two sections. The first one asked how often you would like to prescribe an antibiotic to your child when he or she has the symptoms as shown in table 3. The results presented in table (3) show that the majority of the respondents (26.3%) state that will never prescribe an antibiotic to their child when he or she has Colds, while (25.7%) of the respondents said Sometimes or often. Most of the respondents (38.3%) indicate that will never prescribe an antibiotic to their child when he or she has a Runny nose and (28.7%) of them said Sometimes, (13.8%) of them indicate Often. The majority of the respondents (28.7%) indicate that sometimes they prescribe an antibiotic to their child when he or she has a Dry throat, (26.3%) of them said Often, and (25.7%) of them state Never. Most of the respondents (31.7%) state that sometimes they prescribe an antibiotic to their child when he or she has a Cough. The majority of the respondents (25.1%) indicate that most of the time they prescribe an antibiotic to their child when he or she has Vomiting. Most of the respondents (25.7%) state that often they prescribe an antibiotic to their child when he or she has a Fever. Lastly, Most of the respondents (25.7%) state that most of the time they prescribe an antibiotic to their child when he or she has Pain in the ear.

**Table 3:-** how often you would like to prescribe an antibiotic to your child when he or she has the symptoms.

symptoms	Percent %				
	Always 95-100%	most of the time 70- 95%	Often 30-70%	Sometimes 30-5%	Never 0-5%
Colds	6.6	15.6	25.7	25.7	26.3
Runny nose	6.0	13.2	13.8	28.7	38.3
Dry throat	9.0	10.2	26.3	28.7	25.7
Cough	6.6	17.4	22.8	31.7	21.6
Vomiting	12.6	25.1	22.2	21.0	19.2
Fever	21.6	24.6	25.7	17.4	10.8
Pain in the ear	21	25.7	22.2	22.8	8.4



**Figure 1:-** How often you would like to prescribe an antibiotic to your child when he or she has the symptoms.

The second section of questions regarding the attitude toward antibiotic use has been assessed in five questions as presented in table 4. The results presented in table 4 show that the majority of the respondents (38.9%) indicate that they always ask the doctor about the necessity or not the necessity of prescribing an antibiotic for their child. Most of the respondents (29.3%) state that they often want the doctor not to prescribe antibiotics for your child. The majority of the respondents (31.1%) indicate that they never ask the doctor directly to prescribe your child an antibiotic. Most of the respondents (45.5%) state that they always fully follow all the instructions and advice of pediatrician when using the antibiotic. the majority of the respondents (35.3%) indicate that they never think that pediatrician prescribes for their child an antibiotic just because they asked for it.

**Table 5:-** questions regarding the practice of antibiotic use.

Statement	Percent %				
	Always 95-100%	most of the time 70- 95%	Often 30-70%	Sometimes 30-70%	Never 0-5%
Do you ask the doctor about the necessity or not the necessity of prescribing an antibiotic for your child?	38.9	20.4	19.8	15.0	6.0
Do you want the doctor not to prescribe antibiotics for your child?	21.0	25.7	29.3	19.2	4.8
Do you ask the doctor directly to prescribe your child an antibiotic?	8.4	13.2	21.0	26.3	31.1
Do you fully follow all the instructions and advice of your pediatrician when using the antibiotic?	45.5	26.9	14.4	10.2	3.0
Do you think that pediatrician prescribes for your child an antibiotic just because you asked for it?	8.4	11.4	25.1	19.8	35.3

**3. Parents' attitude toward the use of antibiotics for upper respiratory tract infections in children.**

Descriptive statistics such as (percentage, mean, standard division, and relative importance) were used to evaluate Parents' attitude toward use of antibiotics for upper respiratory tract infections in children. six questions were used to assesses the parents' practice regarding antibiotic use as shown in table 6. The results show that the overall mean is (2.39) and standard division is (1.14) which means the Parents have moderate level of practice of the use of antibiotics for upper respiratory tract infections in children. Moreover, the respondents indicate a neutral standpoint on most the statements where the mean ranges between (2.71-2.16), except the statement that states (Do you think parents and pediatricians should be told about using antibiotics wisely?) where the respondents show strong agreement with it where the mean is (3.23). the results show that the respondents indicate disagreement on the

following statements (Have you ever changed your pediatrician because he did not prescribe antibiotics for your child as you wanted? and Do you give your child leftover antibiotics when they develop the same symptoms as before?) where the mean is (1.73 and 1.90) respectively.

Statement	Percent %					Mean	SD	Relative importance
	Strongly agree	Agree	Disagree	Strongly disagree	I don't know			
1- Do you think that antibiotics are used too much and unnecessarily?	21.6	40.1	20.4	11.4	6.6	2.59	1.142	Moderate level
2- Have you ever changed your pediatrician because he did not prescribe antibiotics for your child as you wanted?	6.6	22.2	26.3	27.5	17.4	1.73	1.179	Low level
Have you ever changed your pediatrician because every visit he prescribes antibiotics?	17.4	27.5	24.6	15.0	15.6	2.16	1.314	Moderate level
Do you give your child leftover antibiotics when they develop the same symptoms as before?	10.2	23.4	22.8	34.1	9.6	1.90	1.168	Low level
Do you think that most upper respiratory infections can be recovered without the use of antibiotics because they clear up on their own?	23.4	40.7	23.4	8.4	4.2	2.71	1.049	Moderate level
Do you think parents and pediatricians should be told about using antibiotics wisely?	51.5	29.9	11.4	4.2	3.0	3.23	1.010	High level
<b>Overall men</b>						<b>2.39</b>	<b>1.14</b>	<b>Moderate level</b>

### The relationship between the education level and the knowledge, practice, and attitude about using antibiotics for URTIs in children.

To assess the relationship between education level and the knowledge, practice, and attitude about using antibiotics for URTIs in children ANOVA test was used.

The table 3 presents the results of the relationship between the father's education level and the knowledge, practice, and attitude of using antibiotics for URTIs in children. The results showed that there was no significant relationship between the father's education level and knowledge ( $p = 0.081$ ), practice ( $p = 0.679$ ), and attitude ( $p = 0.649$ ) about using antibiotics for URTIs in children.

**Table 3:-** The relationship between the father's education level and the knowledge, practice, and attitude of using antibiotics for URTIs in children.

Father's education level	The knowledge of using antibiotics for URTIs in children		The practice of using antibiotics for URTIs in children		The attitude of using antibiotics for URTIs in children	
	N	Mean	N	Mean	N	Mean
Primary	15	2.75	15	3.06	15	2.20
Middle school	13	2.46	13	3.09	13	2.28
Secondary	44	2.24	44	3.11	44	2.41
University	95	2.42	95	3.24	95	2.41
Total	167	2.40	167	3.18	167	2.38

p.value	0.081	0.679	0.649
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The table 8 presents the results of the relationship between the mother's education level and the knowledge, practice, and attitude of using antibiotics for URTIs in children. The results indicated that there was no significant relationship between the mother's education level and knowledge ( $p = 0.265$ ), practice ( $p = 0.086$ ), and attitude ( $p = 0.647$ ) about using antibiotics for URTIs in children.

**Table 3:-** The relationship between the mother's education level and the knowledge, practice, and attitude of using antibiotics for URTIs in children.

Mother's education level	The knowledge of using antibiotics for URTIs in children		The practice of using antibiotics for URTIs in children		The attitude of using antibiotics for URTIs in children	
	N	Mean	N	Mean	N	Mean
Primary	42	2.29	42	3.02	42	2.28
Middle school	23	2.63	23	3.30	23	2.48
Secondary	40	2.45	40	3.40	40	2.45
University	62	2.37	62	3.09	62	2.37
Total	167	2.40	167	3.18	167	2.38
p.value	0.265		0.086		0.647	

### The relationship between the family income and the knowledge, practice, and attitude about using antibiotics for URTIs in children.

To assess the relationship between family income and the knowledge, practice, and attitude about using antibiotics for URTIs in children ANOVA test was used.

The table 5 shows the results of the relationship between the family income and the knowledge, practice, and attitude of using antibiotics for URTIs in children. The results showed that there was no significant relationship between the family income and knowledge ( $p = 0.338$ ), practice ( $p = 0.085$ ), and attitude ( $p = 0.878$ ) about using antibiotics for URTIs in children.

**Table 3:-** The relationship between the family income and the knowledge, practice, and attitude of using antibiotics for URTIs in children.

Family income	The knowledge of using antibiotics for URTIs in children		The practice of using antibiotics for URTIs in children		The attitude of using antibiotics for URTIs in children	
	N	Mean	N	Mean	N	Mean
Less than 5000	32	2.45	32	2.91	32	2.34
5000-10000	73	2.45	73	3.25	73	2.37
More than 10000	54	2.38	54	3.28	54	2.44
More than 100000	8	2.00	8	2.90	8	2.27
Total	167	2.40	167	3.18	167	2.38
p.value	0.338		0.085		0.878	

### Discussion:-

This study aims to evaluate Parents Knowledge, attitudes and practice of use of antibiotics for upper respiratory tract infections in children attending primary health care clinics in Al-Madinah.

The results show that the Parents have moderate level of knowledge of the use of antibiotics for upper respiratory tract infections in children, this result is in line with some studies were done in Greece (16) and Lebanon (17) who found that the parents had a moderate level of knowledge on antibiotic use for URTIs. In this study, the majority of parents (50.9%) correctly stated that respiratory infections are often caused by a virus and do not need antibiotics in contrast to study was done in Saudi Arabia (13) which scored slightly lower percentage of correct answers (45 %).

In this study, the majority of parents (40.1%) stated that Antibiotics should be given to all children when they develop a fever (high temperature) this percentage was higher than in a study was done in Saudi Arabia. In this

study (21.4%) of the of parents indicate that Antibiotics do not have any side effects which is in line with study was done in Dubai, (20%) of parents wrongly believed there are no side effects when using antibiotics.

The results of this study showed there was no significant relationship between knowledge on antibiotic use for URTIs and mother's ,father's education level and family income and. These findings differ from studies were done in Cyprus (18) and in Malaysia (15)

Regard to Parents' practice toward the use of antibiotics for upper respiratory tract infections in children. The results of this study showed that (46.3%) Of the respondents stated the most common symptoms leading to a visit to the physician is fever, this percentage is even smaller than other studies in Palestine and UAE (64% and 76.0% respectively), and it was higher than other studies in Saudi Arabia(27%). In this study, (64.7%) of the of parents indicate that they thought that their physicians prescribed antibiotics only because they asked him or her to do so in contrast to study was done UAE, where the percentage was (88%). Also, this study indicated that (68.9%) of the of parents indicated that they asked the doctor directly to prescribe their child an antibiotic, this percentage was smaller than a study was done in UAE (88%).

The results of this study showed there was no significant relationship between parent's practice on antibiotic use for URTIs and mother's, father's education level and family income and. These findings differ from studies were done in Cyprus (18) and in Malaysia (15)

Regard to Parents' attitude about the use of antibiotics for upper respiratory tract infections in children. The results of this study showed that moderate level of attitude of the use of antibiotics for upper respiratory tract infections in children which is in line with study was done in Lebanon (16). The results of this study indicated that (61.7%) of the parents stated that antibiotics are used too much and unnecessarily, this percentage is smaller than other study was in Palestine (72.7% ). The results of this study showed that (28.8%) of the parents indicated that they would change pediatrician because he/she did not prescribe antibiotics for their child as you wanted, this finding is almost similar to a study was done in Jordan where it reported (39.3%). The results of this study showed there was no significant relationship between parent's attitude on antibiotic use for URTIs and mother's, father's education level and family income and. These findings differ from studies were done in Cyprus (18) and in Lebanon(17), but were similar to study was done Malaysia (15) .

### **Conclusion:-**

This study aims to evaluate Parents Knowledge, attitudes and practice of use of antibiotics for upper respiratory tract infections in children attending primary health care clinics in Al-Madinah.The results show that the Parents have moderate level of knowledgebut misconceptions regarding antibiotic use in URTIs in children.This misconception's led to inappropriate attitude and practice. Thus, launching public educational campaigns and encouraging physicians to educate and counselparents regardingthe nature of the diseases , explaining the difference between viral and bacterial URTIs , the different options for treating them and the proper use of antibiotics are recommended.

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## Appendix:

### موافقة علنا للمشاركة في بحث علمي

عنوان البحث: المعرفة والسلوك وممارسة الوالدين فيما يتعلق باستخدام المضادات الحيوية في علاج عدوى الجهاز التنفسي العلوي للأطفال الذين يترددون على المراكز الصحية الأولية في المدينة المنورة

اسم الباحث: الطبيب/ عمر مبارك المطيري

أهداف البحث: تقييم معرفة المفاهيم والسلوك فيما يتعلق باستخدام المضادات الحيوية وممارسة الوالدين في علاج عدوى الجهاز التنفسي العلوي للأطفال الذين يترددون على مراكز الرعاية الصحية الأولية في المدينة المنورة

وسيلة البحث: استبيانياً مقبلاً للمشاركة

المنافع المتوقعة: زيادة وعي وتصحيح مفاهيم خاطئة حول استخدام المضادات الحيوية في علاج عدوى الجهاز التنفسي العلوي

الأضرار المحتملة: لا توجد

aa2se@hotmail.com : الإيميل : 0541274789 معلومات الاتصال بالباحث: رقم الجوال/

سرية المعلومات: جميع المعلومات مستعملة بسرية تامة ولا غرضاً للبحث العلمي فقط

إقرار:

لقد تم إعلامي بأهداف وسيلة البحث، والمنافع والمخاطر المحتملة بالمشاركة في البحث. كما أنه تم إعطائي الفرصة لطر حالي أسئلة وفهمتها بما كان لي إتصال بالباحث في أي وقت لطر حالي أسئلة أخرى.

لقد قرأت وفهمتها هذا النموذج، وأوافق على طوعاً وكرهاً، ويتوقع لي هذا النموذج، أنا أن أتناز لعنايكم حقوقاً قانونية، وفي حالة الشكوى يمكنني التواصل مع اللجنة المحلية لأخ

Madinah.search@gmail.com لإقيات البحث

تماماً علماً بالحصول على نسخة من هذا النموذج للاحتفاظ به.

أوافق على المشاركة في هذا البحث. ○

لا أوافق على المشاركة في هذا البحث ○

التاريخ/.....

التوقيع:

.....serial توقيعا للباحث/.....

المستوى التعليمي للأب :

1. ابتدائي
2. إعدادي
3. ثانوية عامة
4. جامعي

الجنس:

1. ذكر.
2. انثى.

العمر : .....

برأيك عد حصولك على الخدمات الصحية:

1. سيء
2. متوسط
3. جيد

مستوى الدخل للأسرة:

1. 5000(منخفض (أقل من
2. 5000 - 10000(متوسط )
3. 10000(مرتفع (أكثر من

المستوى التعليمي للأم:

1. ابتدائي
2. إعدادي
3. ثانوية عامة
4. جامعي

هل يعمل الأب أو ينفى في المجال الطبي؟

1. نعم

2. لا

عمر الطفل لأول

عمر الطفل لثاني

عمر الطفل لثالث

- هل يعاني أحد أطفالكم من أمراض مزمنة المتعلقة بالجهاز التنفسي (الربو مثلا) ؟

1. نعم
2. لا

- تعد المضاد الحيوي الخيار الأول والأنجح لعلاج التهابات الجهاز التنفسي العلوي عند الأطفال:

1. نعم
2. لا

- مقياس معرفة الوالدين فيما يتعلق بالمضاد الحيوي أو استخدامه مع معالجة التهابات الجهاز التنفسي عند الأطفال

لا رأي لي	أعراض بشدة	أعراض	أوافق	أوافق بشدة	
					1 يجب إعطاء المضاد الحيوي لجميع الأطفال عند ما يصابون بالحمى (ارتفاع درجة الحرارة)
					2 الأطفال الذين يعانون من أعراضاً أقل من نزلات البرد يجب إعطاء المضاد الحيوي
					3 التهابات الجهاز التنفسي غالباً ما يكون نسبياً فيروسي ولا تحتاج المضاد الحيوي
					4 المضاد الحيوي ليس لها أي مضاعفات جانبية
					5 الاستخدام المفرط للمضاد الحيوي يقلل من فعاليتها ويقود إلى المقاومة الجرثومية.
					6 استخدام المضاد الحيوي يمكنه من معالجة التهابات الجهاز التنفسي العلوي.
					7 سيتمكن العلماء من ابتكار مضاد حيوي قادر على معالجة أنواع البكتيريا المقاومة للمضاد الحيوي المتوفرة حالياً

- إذا كان طفلك يعاني من أعراض التهابات الجهاز التنفسي العلوي (سيلان الأنف، التهاب الحلق، القيح والسعال الحمى) ما عدد الأيام التي ترضيها قبل اصطحابها للطبيب بالأطفال؟ .....

أيمناً أعراض التالية تجعلك تلجأ لطبيب الأطفال؟ (ممكناً اختيار أكثر من إجابة)	ما هو نوع العلاج الذي تتوقعه من طبيب الأطفال (ممكن اختيار أكثر من إجابة)
1) حمى	1) المضاد الحيوي
2) سيلان الأنف	2) مسكنات الألم وخافضات الحرارة
3) احتقان الحلق	3) أدوية الحساسية
4) بحة في الصوت	4) بخاخات الأنف
5) ألم الأذن	5) أدوية السعال
6) تغيير السلوك	6) أدوية أخرى .....
7) أعراض أخرى .....	

- ما ممدد غيبك في وصف المضاد الحيوي يطفلك عند ما يعاني من أعراض التالية

مطلقاً	أحياناً	غالباً	معظم الوقت	دائماً	
0-5%	5-30%	30-70%	70-95%	95-100%	
					نزلات البرد
					سيلان الأنف

					جفاف الحلق
					السعال
					التقيؤ
					الحمى
					الم في الأذن

برأيكما هي مخاطر المضاد الحيوي؟ (ممكن اختيار أكثر من إجابة):

- 1) إيذاء الكبد
- 2) إيذاء الكلية
- 3) إيذاء المعدة
- 4) زيادة مقاومة الجراثيم للمضاد الحيوي
- 5) الحساسية
- 6) ضعف جهاز المناعة
- 7) ليس لها أي مخاطر
- 8) مخاطر أخرى.....

أي من الأمور التالية تؤذي الباطن إعطاء طفلك المضاد الحيوي؟ (ممكن اختيار أكثر من إجابة)

- 1) لأنه يمكن أن يدمر وقت الكافيلز يار الطبيب، أو عدم توفر المال الكافي
- 2) لأنه يمكن أن يدمر أنحالة طفلك غير خطيرة
- 3) لأنه يدمر الأطفال و صفتهم السابقاً لطفلك و لنفسه إلا عرضاً حالياً
- 4) لأنه يدمر أنحالة طفلك و صفتهم السابقاً لطفلك و لنفسه إلا عرضاً حالياً
- 5) لأنه يدمر الأقران أو الجيران أو صديقاتهم مضاد حيوي معين

في المكان المناسب: الرجاء الإجابة على الأسئلة التالية بوضع إشارة

مطلقاً 0-5%	أحياناً 5-30%	غالباً 30-70%	معظم الوقت 70-95%	دائماً 95-100%	
					1- هل تسأل الطبيب عن ضرورة أو عدم ضرورة وصف المضاد الحيوي لطفلك؟
					2- هل تتردد في عدم وصف المضاد الحيوي لطفلك؟
					3- هل تطلب من الطبيب شكلاً مباشراً أن يصف لطفلك المضاد الحيوي؟
					4- هل تتبع تعليمات الطبيب عند استخدام المضاد الحيوي؟
					5- هل تعتقد أن طبيب الأطفال يصف المضاد الحيوي فقط لأنك أنت طلبت وصفه؟

مقياس غيبه وسلوكي والديني في ما يتعلق بالمضاد الحيوي واستخدامه في معالجة التهابات الجهاز التنفسي عند الأطفال

لا رأي لي	أعراض بشدة	أعراض	أوافق بشدة	أوافق	في المكان المناسب الرجاء الإجابة على الأسئلة التالية بوضع إشارة
					1- هل تعتقد بأنهم يستخدمون المضاد الحيوي أكثر من اللازم بشكل غير ضروري؟
					2- هل تفتقر إلى تغيير طبي الأطفال لأنهم يصفون المضاد الحيوي لطفلك كما تريد؟
					3- هل تفتقر إلى تغيير طبي الأطفال لأنهم يصفون المضاد الحيوي لطفلك كما تريد؟
					هل تفتقر إلى إعطاء طفلك بقايا المضاد الحيوي السابق عند ما يصاب بنفس العرض السابق؟
					هل تعتقد أن معظم التهابات الجهاز التنفسي العلوي يمكن أن تحل من دون استخدام المضاد الحيوي لأنها تزول تلقائياً؟
					6- هل تعتقد أن هينبغي إبلاغ الآباء وأطباء الأطفال عن استخدام المضاد الحيوي بحكمة؟