

Knowledge of Mothers Toward the use of Antibiotics for Their Children in Babylon Province

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Abstract

Introduction: Antibiotics have saved countless lives by preventing infectious diseases. Antibiotic resistance is a new worldwide health problem. Antibiotic resistance causes treatment challenges, increased mortality, and higher healthcare costs. **Method:** From March to August 2022, researchers surveyed 255 women at Babylon Teaching Hospital for Maternity and Children and Al-Imam Al-Sadiq Teaching Hospital. The questionnaire was self-administered. The questionnaire included data on parents' and children's demographics, antibiotic knowledge, indications for usage, administration practices, and side effects. **Results:** Cross-sectional study of 255 mothers; most are 20–29 [67.8%] and 3–39 [16.9%]. Most females live in cities, [80%] of mothers have higher education, and earn > 1,000,000 IQD/month. 92% of women have 3 or fewer children. The most prevalent complaint was fever (34.51%), followed by cough (26.67%) and coryza (22.75%). Amoxil (amoxicillin) [53.333%], flagyl (metronidazole) [19.22%], then azithromycin [9.41%]. [60. Mother's knowledge is linked to [age, education, and number of children]. **Conclusion:** Most mothers in Hilla City, Iraq have moderate knowledge of antibiotic use. Most of the complaints of children's fevers. Most antibiotic used by mothers is amoxil (amoxicillin).

Keywords

Knowledge, Mothers, use of Antibiotics, Children, Babylon Province.

Introduction

Antibiotics have drastically altered the course of infectious illnesses and saved many lives. However, antibiotic resistance has recently become a serious concern for worldwide public health. Challenges in treating common infectious illnesses, as well as increases in mortality and healthcare expenditures, are brought on by

antibiotic resistance (World Health Organization, 2014). Antibiotic-resistant illnesses account for over 700,000 deaths annually (World Health Organization, 2019). Antibiotic resistance happens naturally, but it gets worse when antibiotics aren't used well, when patients don't take their antibiotics as prescribed, or when antibiotics aren't regulated well enough (World Health Organization, 2020). The misuse of

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antibiotics is the leading source of resistance. Especially in underdeveloped nations where antibiotic usage is generally poorly controlled, allowing for self-medication (Cars, 2019). More than half of all antibiotics are purchased from pharmacies or street sellers without a prescription (Klein et al., 2018). Children get a lot of antibiotics because they have so many infections. Also, parents often use these drugs in the wrong way (Cantarero-Arévalo, Hallas, & Kaae, 2017; Ecker et al., 2013; Paredes et al., 2019; Yu et al., 2014), which is influenced by what they know, how they feel, and what they do with these drugs (Cantarero-Arévalo et al., 2017). Some studies show that parents have important misconceptions about antibiotics. Some parents, for instance, believe antibiotics are effective against viruses (Cantarero-Arévalo et al., 2017), that their kids need to take them if they have a fever (Paredes et al., 2019), and that it's best to give their kids shorter courses of antibiotics (Paredes et al., 2019; Yu et al., 2014). There are a lot of common bacteria that are resistant to antibiotics (García et al., 2012), and parents often given antibiotics to their children without a prescription (Paredes et al., 2019; Valle Mendoza et al., 2016). Most studies about antibiotic resistance and the use of these drugs have been done in cities (Paredes et al., 2019; Valle Mendoza et al., 2016). Even though not much is known about how parents in rural areas use antibiotics, high rates of resistant pathogens in children in rural areas have been reported (Alzamora et al., 2019; Kristiansson et al., 2008). The aim of study is to determine the knowledge of mothers toward the use of antibiotics for their children.

Method

Cross sectional study of 255 mothers of children attended the emergency department or the wards of Babylon Teaching Hospital for Maternity and Children and Al-Imam Al-Sadiq Teaching Hospital for the period from 1st of March

to 30th of August 2022. Participants were encouraged to independently complete the questionnaire based on the offered instructions. The questionnaire gathered data on the demographic features of parents and their children, as well as their knowledge and attitudes on antibiotic usage, covering the fundamental principles of antibiotics and their indications for use, administration techniques, and side effects. Thirty parents from both sites participated in a pilot study to refine the self-completion method. 35% of parents, according to the pilot survey's estimates, had a thorough awareness of antibiotic use. The questions were self-administered, and each participant took 20–30 minutes to complete them. Data management and analysis Questionnaires with replies to more than 90 percent of the questions were deemed to have been satisfactorily filled out and were included in the statistical analysis. The antibiotic knowledge of parents was evaluated using thirteen items on the questionnaire. The percentage of individuals who answered each question correctly was computed. Based on the number of right responses to the 13 questions, a score (0–13) was assigned to each parent's antibiotic knowledge. Good knowledge scores more than eight, intermediate scores between four and eight, and bad scores below four. Each right response is worth one point, while erroneous answers are worth zero. Age, level of education, monthly income, number of children, and place of residence are mother demographic features. Ethical considerations Consent was received from all parents who participated in the research before to their participation. Participants were informed that they might at any point withdraw from the study. The medical faculty of Babylon University authorised the research. Questions concerning mother's knowledge include:

1. Do you think anti-inflammatory drugs and antibiotics are the same thing?
2. Do you think antibiotics can treat illnesses

that are caused by viruses?

3. Do you ever give your child medicine that wasn't prescribed by a doctor?
4. When a child has a fever, antibiotics should always be given.
5. If a child has a cough, a runny nose, and a sore throat, the illness will go away faster if an antibiotic is given as soon as possible.
6. Most of the time, you don't need antibiotics to treat a common cold.
7. Giving more than one antibiotic has better results than giving just one.
8. The antibiotic will work better if it costs more money.
9. You should stop taking antibiotics as soon as the symptoms go away.
10. The risk of antibiotic resistance goes up when antibiotics are used too much.
11. Antibiotics do not have side effects.
12. Pathogens that can't be killed by antibiotics

are dangerous for children.

Did a pharmacy refuse to give you a certain antibiotic because you did not have a prescription? (Yu et al., 2014)

SPSS 22 was used for statistical analysis, and the mean, median, and standard deviation were calculated for numerical data. The degree of correlation between the variables was calculated using Chi-square tests. The significance level is set at a p-value of less than or equal to 0.05.

Results

Cross sectional study of 255 mothers with mean age $[27 \pm 8]$ years old, as show in table (1) below; most age group of mothers are 20-29 years [67.8%] and then 30-39 years old [16.9%]. Most females live in urban area, [80%] of mothers have higher education with monthly income $> 1000,000$ IQD. [92.2%] of mothers have 3 children or less.

Table 1: distribution of mothers according to demographic data

variables		frequency	percentage
Age groups (y)	10-19	15	5.9
	20-29	173	67.8
	30-39	43	16.9
	40-49	24	9.4
Residence	rural	111	43.5
	urban	144	56.5
Education	illiterate	3	1.2
	school	48	18.8
	higher education	204	80.0
Monthly income (IQD)	$< 500,000$	35	13.7
	500,000-1000,000	103	40.4
	$> 1000,000$	117	45.9
No. of children	≤ 3	235	92.2
	> 3	20	7.8

About [34.51%] of mother came to doctors due to child's fever, then [26.67%] of mother came to doctors due to child's cough and [22.75%] of mother came to doctors due to child's coryza, other achieve complain show in fig 1.

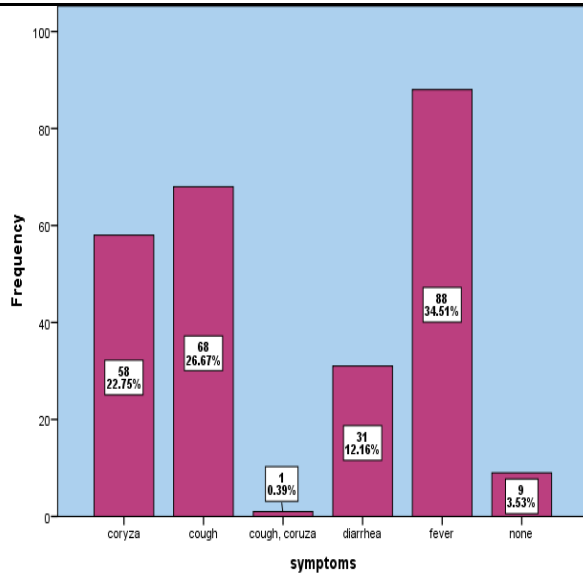


Fig 1: distribution of achieve complains.

Most antibiotics used by mothers is amoxil (amoxicillin) [53.33%], then flagyl (metronidazole) [19.22%], then azithromycin [9.41%]. As show in fig 2.

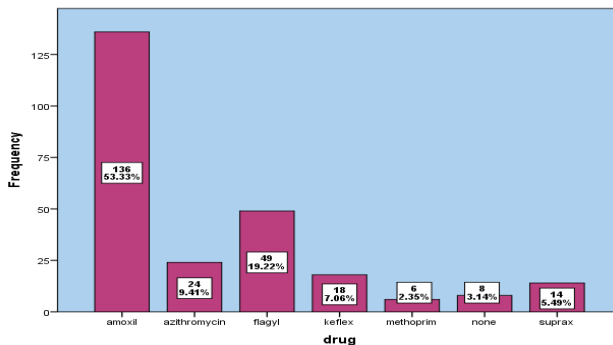


Fig 2: most important antibiotics used by mothers.

In fig 3, [60.78%] of mothers have moderate knowledge, [35.69%] good knowledge, [3.53%] of them poor knowledge.

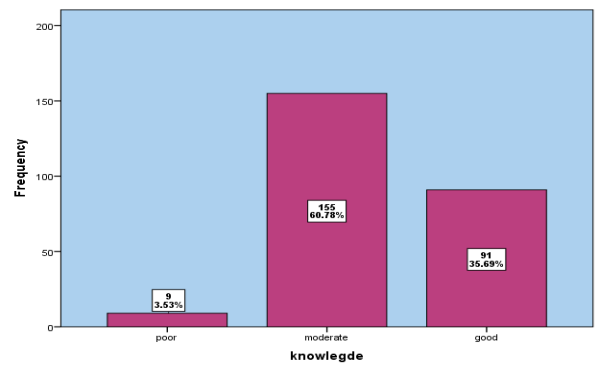


Fig 3: distribution of mothers according to their knowledge.

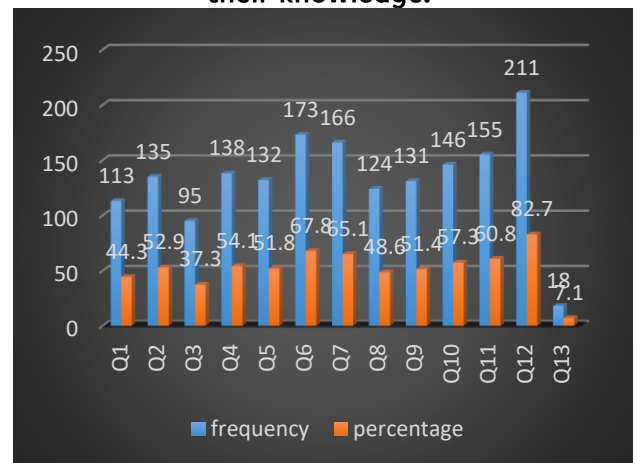


Fig 4: distribution of correct answers of knowledge's questions.

There is significant association between knowledge of mothers and mothers [age groups, education and no. of children], [53.3%] of mothers at age 10-19 years old have good knowledge, [38.2%] of mothers at age 20-29 years have good knowledge, [27.9%] of mothers at age 30-39 years have good knowledge. [37.5%] of mothers with school education have good knowledge and [35.8%] of mother with higher education have good knowledge. [36.6%] of mothers with 3 children or less have good knowledge. There is no significant association between knowledge of mothers and mothers [residency, monthly income]. As show in table 2.

Table 2: association between knowledge of mothers and demographic data.

variables		Knowledge			Total	P-value
		poor	moderate	good		
	10-19	0	7	8	15	
		0.0%	46.7%	53.3%	100.0%	
	20-29	4	103	66	173	

Age groups		2.3%	59.5%	38.2%	100.0%	0.0001
(y)	30-39	0	31	12	43	
		0.0%	72.1%	27.9%	100.0%	
	40-49	5	14	5	24	
		20.8%	58.3%	20.8%	100.0%	
	Rural	2	65	44	111	
Residence		1.8%	58.6%	39.6%	100.0%	0.26
	Urban	7	90	47	144	
		4.9%	62.5%	32.6%	100.0%	
	<500,000	2	22	11	35	
		5.7%	62.9%	31.4%	100.0%	
Monthly	500,000-	3	56	44	103	0.38
Income (IQD)	1000,000	2.9%	54.4%	42.7%	100.0%	
	>1000,000	4	77	36	117	
		3.4%	65.8%	30.8%	100.0%	
	illiterate	1	2	0	3	
		33.3%	66.7%	0.0%	100.0%	
Education	school	0	30	18	48	0.033
		0.0%	62.5%	37.5%	100.0%	
	higher	8	123	73	204	
	education	3.9%	60.3%	35.8%	100.0%	
	≤3	6	143	86	235	
No. of		2.6%	60.9%	36.6%	100.0%	0.012
children	>3	3	12	5	20	
		15.0%	60.0%	25.0%	100.0%	

P-value ≤ 0.05 (significant).

Discussion

The most common age groups of mothers in our study were 20–29 years old, followed by 30–39 years old. Similar to other studies done in China and Iraq, stated that the mean age of mothers was 30 ± 7 (ranging from 18 to 47 years), whereas a study in Egypt found the mean age was 28.73 ± 4.55 years old (Ismael & Al-Thabhwawi, 2021; Yu et al., 2014). In the present study, most females live in urban areas. Ismael et al. agreed with us and stated that concerning residency, nearly half of participant mothers live in urban areas (51.1%) while the remaining (48.9%) live in rural areas; a study in Saudi Arabia showed the same results as 90.63% of the respondents were living in urban areas (Al-Ayed, 2019; Ismael & Al-Thabhwawi, 2021). Most mothers in our study have a higher education level. Other studies in Iraq and Lebanon agree with our results that show the educational level. The majority of the mothers have had a school level of education (46.7%) and the remaining higher educational levels (Ismael & Al-Thabhwawi, 2021; Zahreddine et al., 2018). Our study also shows that most mothers have enough monthly income and most of them have 3 children or less. This is compatible with studies done in

India and Cyprus (Lakshmi, Geetha, & Vijayasamundeeswari, 2021; Rousounidis et al., 2011). In the current study, we found that about 35% of mothers have good knowledge and 65% of mothers have poor to moderate knowledge of the use of antibiotics in their children. This is similar to a study done in Iraq that stated that a higher percentage of mothers (73.7%) had inadequate knowledge about antibiotics; this may be due to insufficient information from our mothers. Research in the United Arab Emirates revealed similar results of our study that the majority of respondents had inadequate knowledge (Salama et al., 2018). Over two-thirds of the parents were unable to identify particular kinds or brands of antibiotics, indicating that Omani parents had a modest degree of awareness of antibiotic usage in children. A lack of information about pharmaceuticals, such as antibiotics, may have a significant impact on their abuse and noncompliance. Consequently, the health sector must make efforts to educate this population. The attending physician is expected to give parents thorough information on the antibiotic recommended for their child, including its indications, use instructions, and any adverse effects. Pharmacy technicians may also play a role

in reminding patients of proper drug administration (Al Hashmi, Al Shuhumi, & Al Kindi, 2021). In our study about [34.51%] of mother came to doctors due to child's fever, then [26.67%] of mother came to doctors due to child's cough and [22.75%] of mother came to doctors due to child's coryza, Omani paper agreed with this results stated that parents were more likely to request antibiotics for their children if they were experiencing earache (n = 215; 56%) or fever (n = 211; 54.9%), compared to more common symptoms like vomiting (n = 149; 38.8%) or coughing (n = 114; 29.7%), a sore throat (n = 122; 31.8%), or nasal drainage (n = 104; 27.1%) (Al Hashmi et al., 2021). Most mothers at age 10–19 have good knowledge, then mothers at age 20–29 have significant good knowledge. These results disagreed with a study done in Peru which stated that people do not know much about antibiotics. Most mothers under the age of 20 knew less about antibiotics than mothers over the age of 40. Participants under the age of 20 had twice as many people with low knowledge as participants over the age of 40 (Paredes et al., 2022). there was a significant association between knowledge score and maternal educational level, in current study most educated mothers have good knowledge than illiterate mothers, Iraqi study and UAE study agreed with this results (Al-Saleh, Abu Hammour, & Abu Hammour, 2020; Ismael & Al-Thabhwawi, 2021).

Conclusion

Most mothers in Hilla City, Iraq have moderate knowledge of antibiotic use. Most of the complaints of children's is fever. Most antibiotics used by mothers are amoxil (amoxicillin). Mothers between the ages of 10 and 19 have good knowledge; mothers with a secondary education have good knowledge; mothers with a higher education have good knowledge; and mothers with three or fewer children have good knowledge.

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