

AWARENESS AND USE OF ANTIBIOTICS AMONG JORDANIAN MOTHERS FOR TREATING UPPER-RESPIRATORY-TRACT INFECTIONS

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Abstract

Aim: We sought to evaluate the awareness and use of antibiotics among Jordanian mothers for treating upper-respiratory-tract infections.

Methods: A cross-sectional design was used for this research, involving a questionnaire sent to 300 Jordanian mothers by the Internet who was selected from a Face book group. Two hundred seventy responded; their ages were between 23 and 47 years old. The questionnaire measured respondents' awareness and use of antibiotics in treating upper-respiratory-tract infections in their children.

Results: A large number of participant mothers did ask physicians to prescribe antibiotics for their children. Most mothers also used antibiotics even without prescription and without differentiating between viral and bacterial infections, despite antibiotics only being useful in the latter. A significant number of mothers thought that antibiotics improved their children's symptoms.

Conclusion: Jordanian mothers cannot differentiate between bacterial and viral infections and did not use antibiotics properly. National campaigns are needed to support a positive public attitude toward the usage of antibiotics.

Keywords: knowledge, antibiotics, mother, children

Introduction:

Upper-respiratory-tract infections (URTIs) are more commonly known as the "common cold." The common cold may be caused by several virus families, including mostly by rhinoviruses, and usually is self-limiting. URTIs are one of the most common causes of morbidity in children requiring visits to the physician. Since URTIs are caused by viruses, there is no evidence that antibiotics (AB) would be useful in such infections. (1, 2) The use of AB is only required when secondary bacterial infection is suspected. However, the improper use of AB in treating the common cold is widely implemented worldwide.

The wide inappropriate use of AB can be attributed to either improper prescription for viral infections or self-medication by parents due to the availability of purchasing AB without a prescription in most Arab countries and specifically Jordan. (3–8) This in turn has contributed to the wide spread of AB resistance along with clinical and economic consequences. (9)

There are several studies that support the direct association between the overuse or the improper use of antibiotics and the occurrence of AB resistance. (10, 11)

Some studies have reported that the overuse of AB is associated with parents' beliefs. These studies suggest that most physicians prescribe AB for children with URTIs just to meet their parents' expectations. On the other hand, other research postulates that physicians don't respond to parents' pressure for prescribing AB but rather their decisions are based on their own beliefs. (2, 12, 13)

Epidemiology

Jordan, more specifically known as the Kingdom of Jordan, is an Arab country populated by around 10 million citizens. Jordan is located in the western part of Asia. (14) Of every 100 Jordanians, there are at least 82 Jordanians with medical insurance and 11 with double insurance. Insured Jordanians have access to high-quality primary health care. (15)

As mentioned before, antibiotics are readily available in community pharmacies within Jordan and anyone can purchase them without prescription at low prices. These factors have contributed thus to the overuse of antibiotics and, hence, increased bacterial resistance. Our study sought to evaluate the awareness and use of antibiotics among Jordanian mothers in URTIs

Methodology

Three hundred Jordanians mothers were randomly selected from a Facebook group for mothers and contacted through direct messages and consent signed from 1/03/2019 to 17/10/2019. Of these, 270 mothers responded to our message and agreed to participate in our cross-sectional study. A questionnaire was sent to the respondent mothers to fill out online. The questionnaire consisted of two parts: the first part collected general information about the participant, while the second one assessed the level of awareness regarding antibiotics use in URTIs. The questionnaires are available in Tables 1 and 2.

Table 1: Questionnaire about the awareness regarding the use of antibiotics in URTIs

When you visit your doctor to treat a URTI in your children, do you ask then to prescribe antibiotics no matter the cause?	Yes
	No
Do you use antibiotics in your children without a doctor's prescription?	Yes
	No
In your opinion, do antibiotics improve symptoms of URTIs?	Yes
	No
Can you differentiate between viral and bacterial URTIs?	Yes
	No
Do you agree that antibiotics overuse leads to decreased effectiveness in the future?	Yes
	No

RESULTS

A total of 270 mothers participated in our survey, all of whom were aged above 20 years old. More than 90% of the participating mothers were highly educated. Most of the participants were working mothers but only a small percentage of them worked in the medical field. More than half of the participants were insured and had a family income of 500 or more Jordanian dinars. The full characteristics of the participants are shown in Table 3.

Table 2: Participants' answers to the general characteristics questionnaire

		Number	%
Age (years)	< 20	0	0
	20–29	149	55.1
	30–40	96	35.6
	> 40	25	9.3
Mother's education	Less than high school	19	7
	More than high school	251	93
Father's education	Less than high school	2	0.7
	More than high school	268	99.3
Mother's occupation	Medical field	45	16.7
	Nonmedical field	188	69.6
	Housewife	37	13.7
Number of children	1	14	5.2
	2–3	129	47.8
	4 or more	127	47
Health insurance	Insured	195	72.2
	Not insured	75	27.8
Monthly family income	< 500	94	34.8
	500 or more	176	65.2

By reviewing the participants' answers, it was found that a little less than half of Jordanian mothers (43%) have asked their children's doctor to prescribe antibiotics each time they had cold symptoms. Also, a good percentage of them (> 25%) have used antibiotics even without getting back to the physician. One hundred eleven mothers thought that antibiotics actually improved their child's symptoms, while the rest did not think so. In total, 78% of the mothers who responded found it difficult to differentiate between viral and bacterial infections. Surprisingly, 233 mothers noticed that antibiotics didn't retain their effectiveness in treating their child's infections after being used several times. The full list of participant mothers' answers is shown in Table 4.

Table 3: Participants' answers regarding awareness about the use of antibiotics in URTIs

		Number	%
when you visit your doctor to treat a URTI in your children, do you ask then to prescribe antibiotics no matter the cause?	Yes	116	43
	No	154	57
Do you use antibiotics in your children without a doctor's prescription?	Yes	69	25.6
	No	201	74.4
In your opinion, do antibiotics improve symptoms of URTIs?	Yes	111	41.1
	No	159	58.9
Can you differentiate between viral and bacterial URTIs?	Yes	59	21.9
	No	211	78.1
Do you agree that antibiotics overuse leads to decreased effectiveness in the future?	Yes	233	86.3
	No	37	13.7

CONCLUSION

Jordanian mothers are not adequately aware of the differences between viral and bacterial infections. Most of them believe that antibiotic use is necessary for any URTI. This has led to the overuse of antibiotics and the development of bacterial resistance, rendering antibiotics noneffective in treating bacterial infections. This problem is increasing worldwide, making education about antibiotics essential for health promotion. The performance of national campaigns targeting Jordanian mothers is recommended to boost positive attitudes towards the usage of antibiotics.

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