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Original Article

Parents Perception on use of Antibiotics in Children

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ABSTRACT

Objective: To determine parents' perception on use of antibiotics in children.
Study Design: Cross-sectional study.
Place and Duration of Study: Department of Paediatrics, Combined Military Hospital, Kharian Pakistan, from Jul 2022 to Mar 2023.
Methodology: Fifty parents aged 18-50 years were included in the study. Their parity, education levels, knowledge and attitudes on antibiotic use, including basic concepts of antibiotics, indications of antibiotic, administration of antibiotics, Antimicrobial Resistance and other side effects; parental experiences and practices around buying antibiotics without a prescription and parental experiences regarding using antibiotics to treat their children themselves were noted.
Result: Sixteen respondents (32%) were male and 34(68%) were female. It was found that most parents used Cefixime 28(56%), followed by Amoxicillin, and Azithromycin. Twenty-three (46%) participants stated that antibiotics could cure infections caused by viruses. Eighty-eight percent participants knew that antibiotics should only be taken according to doctor's prescription. Almost half of parents believed that antibiotics should be withdrawn as soon as the symptoms disappear. About 26% of parents believed that antibiotics could prevent the common cold. Thirty-six (72%) parents agreed that overuse of antibiotics exists in Pakistan.
Conclusion: Poor knowledge or understanding of antibiotic usage persists among parents in Pakistan. A doctor's prescription for antibiotics may have an impact on how parents use those medicines on their children.

Keywords: Antibiotics, Antimicrobial agents, Antimicrobial resistance, Parental perception.

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INTRODUCTION

Antibiotics are helpful in bacterial infections treatment and lowers global mortality and morbidity rates, however ntibiotic resistance is a significant public health concern, with unnecessary antibiotic usage being one of the primary causes of antibiotic resistance.[1,2] Preschool children are particularly at risk of being given unnecessary antibiotics for respiratory tract infections (RTIs).[3,4] Antibiotic use has increased since they were first introduced.[5]

Overuse of antibiotic has several negative impacts that can affect people both individually and collectively, including the development of avoidable adverse effects.[6] The increase in prevalence of chronic diseases and the development of antibiotic resistance are two potentially more serious risk factors at the community level.[7] The misuse of antibiotics to treat viral URTIs is strongly connected with antibiotic resistance.[8] In several countries, the problem of antibiotic overuse is worsened as a result of policy shortfalls, or poor regulation on the antibiotics distribution.[9] Most of the countries, antibiotics may be purchased over-the counter at pharmacies without a prescription from a doctor. This removes the choice to use antibiotics from the hands of the healthcare provider and firmly places it in the hands of consumers and parents. The Parental Perceptions on Antibiotics (PAPA) tool was developed and has undergone initial validation to assess the1factors influencing parents' uses of antibiotics1in children.[10]

There is scant local data on this topic, which is why we chose to conduct this study at our set-up.

METHODOLOGY

This Cross-Sectional study was conducted in Pediatric Department of Combined Military Hospital Kharian, Pakistan from July 2022 to March 2023, after obtaining approval from the Institutional Ethical review Committee.

Inclusion Criteria: Parents of either gender aged 18-50 years presenting in Outpatient Department with their children were included.

Exclusion Criteria: Parents with the communication barrier were excluded.

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Sample size was calculated using OpenEpi Sample size calculator with the percentage of parental perception about antibiotics being 68.6%.[11] using antibiotics without prescription, which came to 50. A prevalidated questionnaire from Fudan University, China was adopted for this study.[14] Demographics of the child, socioeconomic information of the parents, their knowledge and attitude toward the use of antibiotics, including basic concepts of antibiotics, indications of antibiotic use, administration of antibiotics, AMR and other side effects, parental experiences and practices around buying antibiotics without a prescription, parental experiences regarding using antibiotics to treat their children themselves were recorded, after obtaining written informed consent.

Fourteen questions were chosen to test parents' knowledge of antibiotics, and one point was awarded for each accurate response. The range of scores was 0-14, with scores above the mean indicating understanding of antibiotics.

Data was analyzed using Statistical Package for Social Sciences version 26. Quantitative data including age was presented as Mean±SD. Qualitative data including antibiotic use, education level, gender and parent perception about antibiotic related questions was presented as frequency and percentages.

RESULT

A total of 50 respondents were included. The mean age of respondents was 33.2±12.2. Most parents were age between 31-40 years of age. There were 16(32%) male and 34(68%) female respondents. Regarding educational level, 4(8.0%) respondents were only primary pass, 7(14%) secondary pass, 19(38%) were Matric pass and 20(40%) were Bachelor's and above. Most parents had 2 or 3 children. Only 2(4.0%) parents had 7 children (Table-I).

Table-I: Distribution of Age, Gender and Education Level of Study Participants (n=50)

Variables	Categories	n (%)
Age (years)	Mean age	33.2±12.23
	<20	2(4.0%)
	21-30	14(28%)
	31-40	26(52%)
	>40	8(16%)
Gender	Male	16(32%)
	Female	34(68%)
Education Level	Uneducated	2(4.0%)
	Primary or under Matric	3(6.0%)
	Matric	19(38%)
	FA	13(26%)
	BA or above	13(26%)

Out of 50, 28(56%) parents were using Cefixime, followed by Amoxicillin (40%), and Azithromycin (4%), as seen in Table-II.

Table-II: Frequency of Antibiotic Usage (n=50)

Antibiotics	n (%)
Cefixime	28(56%)
Amoxicillin	20(40%)
Azithromycin	2(4%)

Only 20(40%) of the participants thought that antibiotics and anti-inflammatory drugs are same. Only 23(46%) participants knew antibiotics can cure infections caused by viruses. About 88% participants knew that antibiotics should only be taken according to doctor's prescription (Table-III).

Most participants (60%) believed that common cold does not need using antibiotics whereas 29(58%) feel that antibiotic is not necessary when a child has a fever. One in three parents 17(34%) preferred pricey drugs, and up to 15(30%) believe that administering numerous antibiotics would have greater results than just one. Half the parents 25(50%) thought antibiotics should be stopped as soon as the symptoms go away. Approximately 26% of parents thought that antibiotics could treat the common cold. Only 20(40%) parents thought that antibiotics do not have side effects, and 77% parents thought that antibiotic were dangerous to children.

DISCUSSION

The aim of this study was to assess parents' perception regarding use of antibiotics in children. Over 69% of respondents stated that a doctor had prescribed antibiotics for their children in the last six months, with the median number of prescriptions being one and ranging from 0-2. Even if recall bias might have an impact on our findings, we continue to hold that inappropriate antibiotic prescriptions are a serious issue in Pakistan.

In the previous 12 months, up to 42% of parents had self-medicated their children with antibiotics without a doctor's prescription. A Saudi study found that 31% of parents had self-medicated their children.[12] "The circumstance is not severe enough and there are certain antibiotics that were previously recommended by doctors". Only a small number of parents indicated that they "Don't have the money to go to the hospital", that are comparable to the outcomes of another Turkish study.[13]

Table-III: Parents Knowledge About Antibiotics (n=50)

Variables	Yes n(%)	No n(%)	Don't Know n(%)
Antibiotics and anti-inflammatory drugs are the same drugs.	20 (40%)	29 (58%)	1 (2%)
Antibiotics can cure infections caused by virus	24 (48%)	23 (46%)	3 (6%)
Antibiotics should only be obtained with a doctor's prescription	44 (88%)	6 (12%)	0 (%)
Antibiotics should be administered in all cases, once a child has fever	20 (40%)	29 (58%)	1 (2%)
If a child suffer from a cough, running nose, and a sore throat, it will be cured more quickly if he/she receives antibiotics as early as possible	28 (56%)	22 (44%)	0 (%)
In most cases, it is not necessary to treat a common cold with antibiotics	18 (36%)	30 (60%)	2 (4%)
Taking antibiotics in advance can protect children from a common cold	13 (26%)	34 (68%)	3 (6%)
Administration of multiple antibiotics has better effects than a single one	15 (30%)	35 (68%)	1 (2%)
The more expensive the antibiotic, the more effective it will be	17 (34%)	29 (58%)	4 (8%)
Antibiotics should be withdrawn as soon as the symptoms disappear	25 (50%)	24 (48%)	1 (2%)
Overuse of antibiotics increases the risk of antibiotic resistance	36 (72%)	10 (20%)	4 (8%)
Antibiotics do not have side effects	20 (40%)	28 (56%)	2 (4%)
Scientists can always produce new antibiotics	42 (84%)	5 (10%)	3 (6%)
It is dangerous to children if pathogens become resistant to antibiotics	37 (74%)	11 (22%)	2 (4%)

The World Health Organization suggests people to always take the entire medication, even if they feel better sooner.[14] However, more than 50% of participants in our study said that they thought antibiotics should be stopped as soon as the symptoms disappeared. Similar findings have been noted in other studies, where it was found that majority of respondents (53%) are more likely to quit taking antibiotics when they feel better, and that 60% cease using antibiotics.[15,16] In a prior survey at Xi'an Jiaotong University, it was found that about 30% of students were unsure of the answer to this question and that more than 60.7% of participants had taken antibiotics without first consulting a doctor.[17] According to our study, more parents choose a lesser dose of antibiotics than those who choose a greater dose to treat their child. This outcome is equivalent to that of a prior study conducted in China.[17]

According to our study, 72% of parents in Pakistan believe that antibiotic misuse occurs; this percentage is higher than that seen in earlier studies. The international statistics for the same are, in China, 71.6% in urban and 61% in rural (61.0%) areas,[18] and in Malaysia (67.5%).[19]

As high as 72% of the parents agreed that using antibiotics excessively leads to the development of antibiotic resistance. Antibiotic resistance will result in prolonged hospital stays, higher patient death rates, and higher healthcare expenses, particularly for young patients.[20] Additionally, children are more vulnerable than adults, and infections account for more than two-thirds of childhood fatalities.[21]

Unluckily, one-third of parents don't think that it's dangerous if the pathogens become resistant to antibiotics. The importance of antibiotic resistance must be better understood, especially among parents.

CONCLUSION

The conclusion of the study showed that incomplete and poor knowledge or understanding of antibiotic usage persists among parents in Pakistan. A doctor's prescription for antibiotics may have an impact on how parents use those medicines on their children.

Conflict of Interest: None.

Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

HHZ & SZ: Data acquisition, critical review, approval of the final version to be published.

MMK & MF: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

MTN & WPY: Conception, data analysis, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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