

# Knowledge, Attitude and Practices of Parents Regarding Antibiotics Use in Children

Knowledge of  
Parents  
Regarding  
Antibiotics  
Use in Children

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## ABSTRACT

**Objective:** To access parents' knowledge, practices, and attitudes on antibiotic use in their children.

**Study Design:** Cross-sectional study

**Place and Duration of Study:** This study was conducted at the PIMS Hospital, Islamabad from 28 September to 28 February 2023.

**Materials and Methods:** A sample size of 381 was selected by using the WHO sample size calculator. Parents of Children visiting the OPD of Children Hospital PIMS or parents of children treated in the in-patient department of Children Hospital PIMS were included. Data was collected through the questionnaire and analyzed using the latest version of SPSS.

**Results:** There were a total of 381 parents, of which 81.88 % of them were females and 18.11 % were males. 59.05 % of the parents said that if the child has a fever, then antibiotics must be given, while 54.06 % of parents opted that child can easily be cured with antibiotics if the child suffered from a cold. Moreover, 40.68 % of the parents said that antibiotics have no side effects. 67.97 %, and 54.59 % like the prescription of antibiotics due to cold, and nose drainage, moreover, 67.96 % due to cough as well. 49.34 % of parents always (95-100%) followed the instruction of the pediatrician.

**Conclusion:** The study concluded that the overall knowledge of the respondents was good, 74.01 % of them agreed that viral diseases like flu must not be treated with antibiotics. More than half of the participants followed the pediatrician's advice and were guided by the pediatrician.

**Key Words:** Antibiotics, knowledge, attitude, practice OPD

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## INTRODUCTION

Before the advent of antibiotics, it was regarded as one of the most important discoveries of the twentieth century, and infectious illnesses contributed to severe morbidity and mortality worldwide. The first known instance of penicillin announced the beginning of the pharmaceutical era. They showed to be quite effective in treating contagious diseases, but medical trials owing to antimicrobial resistance quickly followed. This requires the invention of entirely novel antibacterial categories. The conflict involving medicines and microorganisms began, and it followed a predictable pattern with the emergence of every fresh antibiotic category.

Following a beginning disappointment, the bacteria employed evolutionary forces and selective breeding to create multiple ways of opposition and ultimately triumph. The excessive consumption of antibiotics has resulted in the proliferation of antibiotic-resistant bacterium strains. This tendency has continued unimpeded, reaching worrying dimensions with the introduction of super-bugs' carrying the New Delhi metallo-lactamase-1 (NDM-1) gene<sup>[1]</sup>. A Ghafur encompasses properly identified this impermeable pattern. Ghafur: "The art of war is deception, deceiving the enemy. But we have deceived ourselves in the war against microbes by misusing, underusing, and overusing antibiotics"<sup>[2]</sup>. There is enough data to suggest that antibacterial overuse is linked to increased resistance among microbes.<sup>[3]</sup> Current consumption of antibiotics, for instance, has been demonstrated to have raised the incidence of nasal cavity transport of penicillin-resistant pneumonia-causing bacteria.<sup>[4]</sup> A shortage of information about the prudent use of antimicrobial agents in treating widespread young people's ailments can lead to their overuse<sup>[5]</sup>. The aggregate consequences of prescribing antibiotics impact not only sufferers but also everyone in the population as antibiotic resistance in bacterium increases, which has already become a worrying problem in our nation.<sup>[6]</sup> The extra issues increase the

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economic burden of long-term diseases and medical treatment costs. In Pakistan, unlike other developing countries, a prescription is not needed to buy prescribed-only drugs.<sup>[7]</sup> Most medications, especially antibacterials, may be bought without a prescription. Only one such study on parents with children was undertaken in Pakistan in 2014 in Peshawar.<sup>[2]</sup> Nearly everyone with families accepted antibiotic self-management. Our research aims to examine whether community attitudes change in this age of information technology and social media, when most individuals know about their ailments and pharmaceuticals and self-medicate.<sup>[8]</sup> On the other hand, practitioners often prescribe antimicrobials first for different diseases, blaming patient/parental pressure. Social factors and behaviors including self-medication, status, and knowledge are linked to antibiotics. Insufficient healthcare awareness contributes to antibiotic overuse<sup>[9]</sup>.

This study examines parents' views on antibiotics, talks with physicians, and antibiotic usage for their children. This study also examines the causes of conventional antibiotic prescription. This study will help us determine whether we need to take measures to promote safe antimicrobial usage and avoid unprescribed distribution. This study will show that parents and doctors need antibiotic awareness initiatives and tougher prescription rules.

## MATERIALS AND METHODS

**Study Design:** Cross-sectional study

**Study Setting:** Children's Hospital PIMS, Islamabad

**Duration of study:** 6 months after the approval of the synopsis from 28 September to 28 February 2023

**Sample Size:** A total of 381 parents were selected through the help of calculated using the WHO sample size calculator. With a 95 % of the confidence interval and 5 % margin of error with an anticipated population of 39.3%.

**Sampling Technique:** Non-probability sampling.

**Table No.1: Socio-demographic characteristics**

Parents (gender)	Number	Percentage			
Mother	312	81.88 %			
Father	69	18.11 %			
<b>Parent's educational status</b>					
Illiterate	Primary	Matric	Intermediate	Graduate	Postgraduate
61	77	112	51	57	23
<b>Economic status of the families in relation to the income.</b>					
<b>Very High</b>	<b>High</b>	<b>Moderate</b>	<b>Low</b>	<b>Very Low</b>	
0	07	66	241	67	
<b>Access to health services</b>					
<b>Very good</b>	<b>Good</b>	<b>Moderate</b>	<b>Bad</b>	<b>Very Bad</b>	
54	207	112	5	2	
<b>Child's a history of respiratory diseases like colds, ear infections, and sore throats.</b>					
<b>Yes</b>	368			96.58%	
<b>No</b>	13			3.41 %	

**Selection criteria:** non-probable convenient

**Inclusion criteria:**

Parents of Children visiting the OPD of Children Hospital PIMS or parents of children treated in the in-patient department of Children Hospital PIMS.

Parents showing a willingness to be a part of the study.

**Exclusion criteria:**

Parents having a background in the medical profession.

Parents not willing to be part of this study

**Data collection procedure:** 381 willing parents were included after their willingness to sign informed consent. Individually a well-structured questionnaire was filled out by each parent of their child. They were assured that their privacy and confidentiality will be maintained.

**Data Analysis:** All the data was adequately analysed by using the latest version of (SPSS) Statistical Package of Social Sciences software version 24. Statistical analysis was done using the prevalence ratio. The relationship between the respondents' KAP score with the sociodemographic characteristic and prior consumption of antibiotics was analyzed using the Chi-Square test. P-value ( $\leq 0.05$ ) was taken as significant. The data of the parents who had information and prior knowledge was analyzed, moreover, those parents who had a piece of knowledge regarding antibiotics filled out a questionnaire properly. A proper coding system was used in order to maintain privacy and confidentiality and avoid bias.

## RESULTS

The study's results were divided into three sections knowledge, attitude, and practice of the parents, which were assessed through simple questions. Table # 01 shows the sociodemographic characteristics. There were 381 parents, in which 312 (81.88%) of them were females, and 69 (18.11 %) were males. Most of them belong to low-income (80.83 %, n=241) families. According to their parents, 96.58 % of children had a previous history of respiratory infections.

**Table No.2: Sources of information regarding the judicious use of antibiotic**

Physician:	75.59%
Friend	7.61%
Radio	2.36%
Television	8.13%
Relative	5.51%
Newspaper	0.70%

**Table No.3: Knowledge of the parents about antibiotics use**

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
“Antibiotics must be administered in any case, once a child has a fever.”	27.03%	59.05 %	8.39 %	8.39 %	0.5 %
“As most Upper Respiratory Infections (like colds, flu, sore throats, and ear infections) are of viral cause, they must not be cured with antibiotics.”	0.7 %	13.91 %	74.01 %	9.7 %	1.5 %
“If a child suffers from flu or a cold, it will be quicker cured if it receives antibiotics on time.”	6.03 %	54.06 %	27.82 %	9.97 %	2.09 %
“Scientists can always produce new antibiotics that are able to kill resistant bacteria.”	5.51 %	37.79 %	41.73 %	13.64 %	1.31 %
Antibiotics do not present side - effects.	1.04 %	40.68 %	27.82 %	24.40 5	6.03 %
“When antibiotics are administered where there is no special reason, their efficacy is decreased and bacteria become more resistant.”	10.44 %	51.44 %	36.67 %	1.31 %	0.52 %
“Antibiotics decrease the complications of an Upper Respiratory Infection.”	3.14 5	55.11 %	13.61 %	1.31 %	0.52 %

**Table No. 4: Symptoms that would make the parents to visit a pediatrician for their child**

Cough	23.35%
Fever	36.48%
Sore throat	14.96%
Nose drainage	7.61%
Ear pain	7.08%
Hoarseness	25.92%
Change in behaviors	2.88%
Other	1.83 %

**Table No.5: Attitude of parents about prescribing antibiotic**

How often would you like your pediatrician to prescribe antibiotics for your child when it suffers from	Always (95-100%)	Most of the times (70-95%)	Often (30-70%)	Some times (5-30%)	Never (0-5%)
Cold	1.94 %	10.49 %	14.43 %	67.97 %	6.03 %
Nose drainage	1.57 %	4.98 %	17.06 %	54.59 %	21.78 %
Sore throat	1.94 %	8.66 %	22.04 %	50.91 %	17.32 %
Cough	1.94 %	10.49 %	14.43 %	67.97 %	6.03 %
Vomit	2.31 %	12.07 %	19.68 %	59.31 %	6.56 %
Fever	3.67 %	16.53 %	23.62%	55.11 %	1.94 %
Ear pain	2.31 %	7.87 %	18.11 %	58.00 %	13.64 %

**Table No. 6: Attitude of parents about prescribing antibiotic**

	Always (95-100%)	Most of the times (70-95%)	Often (30-70%)	Some times (5-30%)	Never (0-5%)
“In case your pediatrician prescribes an antibiotic, how often do you ask him – her if it is actually necessary?”	2.36 %	15.48 %	17.84 %	35.17 %	29.13 %
“How often do you follow all the pediatrician’s	49.34 %	32.54 %	17.06 %	0.7 %	0.26 %

instructions and advice?"					
"How often does your pediatrician explain to you about your child's condition and if it should or shouldn't receive antibiotics?"	1.04 %	10.49 %	14.4%	67.97 %	6.03 %

## DISCUSSION

The discussion section of the current study includes comparing the results with the related studies published previously. The results are comparable to the previous studies, but the variations in the results may be due to the sample size of the current less than in previous studies. There were a total of 381 parents of which 81.88 % of them were females and 18.11 % were males. Most of them belong to low-income (80.83 %) families. 96.58 % of children had a previous history of respiratory infections, according to their parents. According to the present, there were 96.58 % of the children had respiratory tract infections, while in the other study, 38.57% had previous illnesses<sup>[9]</sup>. According to the results, 75.59 % say that the physician was the source of information on antibiotics, which is significant. The other shows that 58.9 % of the respondents say that the physician was the source of information on antibiotics<sup>[10]</sup>. The parents respond that the antibiotic must be administered in any case once a child has a fever, 27.03 % strongly agreed, and 59.05 % agreed, which is comparable to the study conducted by Teck KC et al, that is 43.3 % agreed, moreover, the study revealed that 40.68 % agreed that antibiotics do not have side effects, but the other shows 26.2 %<sup>[11]</sup>. 54.06 % of parents agreed that if a child suffers from flu or a cold, it will be quicker cured if it receives antibiotics on time, the results are comparable to Agarwal S at 32.9 %<sup>[12]</sup>. 23.35 % of the parents visited a pediatrician because of their Child's cough. However, 67.97 % and 54.59 % like the prescription of antibiotics due to cold, and nose drainage, moreover, 67.96 % due to cough, which is comparable to studies<sup>[13]</sup>. 67.6 % of the participants said that the pediatrician had adequately explained to them the use of antibiotics, similar findings were revealed by the previous studies<sup>[14,15,16]</sup>. In accordance with our study, a previous study done by Saad Siddiqui et al. reported comparable results<sup>[2]</sup>. They reported that the majority of those who took part were mothers. Most of those polled had at least a high school education and were literate. 64% of respondents said they had easy access to healthcare. Doctors were the most frequent sources for antibiotic usage. A fever should always be treated with antibiotics, according to 35% of respondents. Meanwhile, 47% believed that medications lengthen the duration of recovery and 51% were aware that drugs had adverse effects. The same antibiotic that a doctor had previously given was the most frequent explanation for administering un-prescribed antibiotics, followed by recommendations from family members or pharmacists. Most parents refuted a lack of resources as a factor in

antibiotics self-administration. The major limitation of our study was the small sample size and single centre nature. Other studies with large sample sizes should be done for better results<sup>[2]</sup>.

## CONCLUSION

The study concluded that the overall knowledge of the respondents was good, 74.01 % of them agreed that viral diseases like flu must not be treated with antibiotics. More than half of the participants followed the pediatrician's advice and were guided by the pediatrician. Intervention is required to raise knowledge about judicious antibiotic usage and to stop the provision of antibiotics without a prescription.

### Author's Contribution:

Concept & Design of Study: Muhammad Sa'd Masood  
 Drafting: Maqbool Hussain, Iqra Rashid  
 Data Analysis: Iqra Rashid  
 Revisiting Critically: Muhammad Sa'd Masood, Maqbool Hussain  
 Final Approval of version: Muhammad Sa'd Masood

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

1. Heinz E, Ejaz H, Bartholdson Scott J, Wang N, Gujran S, Pickard D, et al. Resistance mechanisms and population structure of highly drug resistant *Klebsiella* in Pakistan during the introduction of the carbapenemase NDM-1. *Scientific Reports* 2019;9(1):1-3.
2. Siddiqui S, Cheema MS, Ayub R, Shah N, Hamza A, Hussain S, et al. Knowledge, attitudes and practices of parents regarding antibiotic use in children. *J Ayub Med Coll* 2014;26(2):170.
3. Al-Ayed MS. Parents' knowledge, attitudes and practices on antibiotic use by children. *Saudi J Med Med Sci* 2019;7(2):93.
4. Andrejko K, Ratnasiri B, Hausdorff WP, Laxminarayan R, Lewnard JA. Antimicrobial resistance in paediatric *Streptococcus pneumoniae* isolates amid global implementation of pneumococcal conjugate vaccines: a systematic review and meta-regression analysis. *The Lancet Microbe* 2021;2(9):e450-60.
5. Al-Saleh S, Abu Hammour K, Abu Hammour W. Influencing factors of knowledge, attitude, and practice regarding antibiotic use in children with

- upper respiratory tract infections in Dubai. *J Evaluation Clin Practice* 2020;26(1):197-202.
6. Gillani AH, Chang J, Aslam F, Saeed A, Shukar S, Khanum F, et al. Public knowledge, attitude, and practice regarding antibiotics use in Punjab, Pakistan: a cross-sectional study. *Expert Review Anti-Infective Therapy* 2021;19(3):399-411.
  7. Ahmed H, Bhimani S, Khanum I, Khan A, Khetpal A, Abbas MA, et al. Knowledge, attitude and perception survey of doctors regarding antibiotic use and resistance in Karachi, Pakistan. *JPM. J Pak Med Assoc* 2020;70(6):1023.
  8. JZK Z. Antibiotic Resistance: Recommendations for Procurement Agencies of Public Sector Hospitals in Pakistan. *J Coll Physicians Surgeons Pak* 2020;30(3):340-1.
  9. Khan FU, Khan FU, Hayat K, Chang J, Saeed A, Khan Z, et al. Knowledge, attitude and practices among consumers toward antibiotics use and antibiotic resistance in Swat, Khyber-Pakhtunkhwa, Pakistan. *Expert Review Anti-Infective Therapy* 2020;18(9):937-46.
  10. Mijović B, Aćimović J, Đaković-Dević J, Kralj J, Joksimović B, Lučić-Samardžija V, et al. Knowledge, attitudes and practices of parents regarding antibiotic use among children: Differences between urban and rural areas in the Republic of Srpska. *Scripta Medica* 2022;53(1):4-12.
  11. Teck KC, Ghazi HF, Bin Ahmad MI, Binti Abdul Samad N, Ee Yu KL, Binti Ismail NF, et al. Knowledge, attitude, and practice of parents regarding antibiotic usage in treating children's upper respiratory tract infection at primary health clinic in Kuala Lumpur, Malaysia: pilot study. *Health Services Res Managerial Epidemiol* 2016;3:2333392816643720.
  12. Agarwal S, Yewale VN, Dharmapalan D. Antibiotics use and misuse in children: a knowledge, attitude and practice survey of parents in India. *J Clin Diagnostic Res : JCDR* 2015; 9(11):SC21.
  13. Yao Q, Liu C, Ferrier JA, Liu Z, Sun J. Urban-rural inequality regarding drug prescriptions in primary care facilities—a pre-post comparison of the National Essential Medicines Scheme of China. *Int J Equity Health* 2015;14(1):1-9.
  14. Chinnasami B, Sadasivam K, Ramraj B, Pasupathy S. Knowledge, attitude and practice of parents towards antibiotic usage and its resistance. *Int J Contemp Pediatr* 2016;3(1):256-61.
  15. Panagakou SG, Spyridis N, Papaevangelou V, Theodoridou KM, Goutziana GP, Theodoridou MN, et al. Antibiotic use for upper respiratory tract infections in children: a cross-sectional survey of knowledge, attitudes, and practices (KAP) of parents in Greece. *BMC Pediatr* 2011;11(1):1-0.
  16. Rousounidis A, Papaevangelou V, Hadjipanayis A, Panagakou S, Theodoridou M, Syrogiannopoulos G, et al. Descriptive study on parents' knowledge, attitudes and practices on antibiotic use and misuse in children with upper respiratory tract infections in Cyprus. *Int J Environment Res Public Health* 2011;8(8):3246-62.