

## RECOGNIZING CHILD PARENTAL ANTIBIOTIC SELF-MEDICATION: ORIGINS, TRENDS, AND CONSEQUENCES

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### ABSTRACT

**Objective:** Identifying parental reasons for self-treating children under ten years of age with antibiotics and their public health implications for creating targeted interventions for antibiotic control reports of infectious disease.

**Study Design:** A Cross-sectional Study

**Place and Duration of Study:** From 11- January 2023 to 11-July 2023, this research was carried out at the Peoples university of Medical Health Sciences Namab Shah Department of Pediatrics.

**Materials and Methods:** 100 kids under ten who got antibiotics from their parents without a prescription were included in the study. Parents were questioned using a pre-made, structured questionnaire written in English and translated into Urdu. We investigated the factors that affect parents' understanding of the hazards associated with overusing antibiotics as well as their decision to self-administer antibiotics to their children.

**Results:** Important information on parental antibiotic self-medication was found in the research. The antibiotics most often overused were azithromycin, co-amoxiclav, cefixime, and clarithromycin. The most common reasons for self-administration of antibiotics were fever, skin rashes, vomiting, and diarrhoea. Mothers were the primary initiators of antibiotic use, closely followed by male children beginning their consumption. These findings highlight the need for focused initiatives, especially when it comes to treating common pediatric diseases, to raise parental knowledge of the proper use of antibiotics and the possible hazards associated with indiscriminate self-medication.

**Conclusion:** It is exceedingly unusual for parents to give their kids medications on their own, which leads to the excessive use of antibiotics and the development of antibiotic resistance. The entire public, especially parents, should be made aware of this situation to halt the danger to global health. Policies that prohibit easy access to antibiotics should be applied with greater efficacy.

**Keywords:** Parental antibiotic self-medication, Children Causes Awareness, Antibiotic resistance

### INTRODUCTION

In recent years, the practice of parental antibiotic self-medication for children has arisen as a severe concern in the area of pediatric healthcare<sup>1</sup>. This practice, when parents provide antibiotics to their children without the direction or prescription of a medical expert, has received attention owing to its pos-

sible consequences for antibiotic resistance and public health<sup>2,3</sup>. Understanding the underlying factors behind this behaviour is crucial in creating effective treatments to control its prevalence and alleviate its deleterious repercussions<sup>4</sup>. Against this context, cross-sectional research undertaken at the University of Medical & Health Sciences Nawab Shah Department of Pediatrics intended to explore the subtleties of parental antibiotic self-medication in children<sup>5</sup>. From January 2022 to July 2022, the study aimed to dive into the reasons and causes prompting parents to take such activities and their understanding of the accompanying hazards<sup>6</sup>. A cohort of 100 children under the age of ten who had obtained antibiotics from their parents without a doctor's prescription was the main focus of this investigation<sup>7</sup>. By

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deploying a precisely constructed questionnaire, first produced in English and later translated into Urdu to guarantee inclusiveness, parents were questioned to garner insights into their decision-making processes and understanding surrounding antibiotic usage for their children<sup>8</sup>. The outcomes of the research shed light on some critical trends and patterns. Alarming, a paltry 28% of parents demonstrated awareness of the possible hazards associated with overusing antibiotics, underlining a severe gap in information diffusion and healthcare literacy<sup>9</sup>.

The survey found that fever emerged as the significant cause claimed by parents for turning to antibiotic self-medication, underlining the need for specific educational campaigns to overcome misunderstandings around treating familiar children's diseases<sup>10</sup>. The research disclosed essential details about the demographics and socio-economic aspects impacting parental antibiotic self-medication habits<sup>11</sup>. Notably, parents with greater levels of education were shown to be more disposed towards self-administering antibiotics, reflecting the complexity of the underlying factors driving this behavior<sup>12</sup>. This study serves as a clarion call to action for healthcare policymakers, practitioners, and educators to redouble their efforts to raise awareness about the prudent use of antibiotics and foster a culture of responsible medication management, particularly within pediatric healthcare<sup>13</sup>. By clarifying the numerous factors of parental antibiotic self-medication, this research initiative lays the way for targeted treatments aimed at maintaining the health and wellbeing of children and minimizing the rising problem of antibiotic resistance on a worldwide scale<sup>14</sup>.

**METHODS**

The study adopted a cross-sectional design and was performed at the Peoples university of Medical Health Sciences NawabShah Department of Pediatrics from 11-January to 11-July 2023. A standardized questionnaire, initially prepared in English and translated into Urdu, was applied to interview 100 parents of children under ten who had taken antibiotics without a doctor's advice.

**RESULTS**

The study results indicated substantial changes in parental antibiotic self-medication. Cefixime, clarithromycin, co-amoxiclav, and azithromycin were the most commonly overused antibiotics, accounting for 25.4%,

28.6%, 23.4%, and 28.2% of cases, respectively. Fever was the predominant cause reported for antibiotic self-administration, comprising 72.4% of cases, followed by diarrhoea (22.0%), vomiting (8.0%), and skin rashes (3.0%). Mothers were the significant initiators of antibiotic use in 64.6% of instances, whereas male children began intake in 65.0% of cases and female children in 63.0%. These results underline the need

**Table 1: Demographic Characteristic**

Characteristic	Percentage
Gender	
Male	55%
Female	45%
- Under one year	
- 1-3 years	30%
- 4-6 years	25%
- 7-10 years	30%
Parental Education Level	
- High school or below	40%
- College	30%
- University degree	30%
Socio-economic Status	
- Low	35%
- Middle	40%
- High	25%

**Table 2: Antibiotics Over-used by Parents**

Antibiotic	Percentage of Respondents
Cefixime	25.4%
Clarithromycin	28.6%
Co-amoxiclav	23.4%
Azithromycin	28.2

**Table 3: Reasons for Antibiotic Self-Administration**

Reason	Percentage of Respondents
Fever	52%
diarrhoea	65%
vomiting	18%
Skin rashes	16%

**Table 4: Awareness of Hazards Associated with Antibiotic Overuse**

Level of Awareness	Percentage of Parents
High	28%
Moderate	45%
Low	27%

for focused initiatives to encourage optimal antibiotic usage.

## DISCUSSION

There needs to be more healthcare literacy and knowledge among parents, as seen by the high frequency of antibiotic misuse, especially the frequent administration of drugs like cefixime, clarithromycin, co-amoxiclav, and azithromycin without a doctor's order<sup>15</sup>. This result is consistent with other studies emphasizing the widespread issue of antibiotic abuse and its consequences for developing antibiotic resistance. The most frequent excuse given by parents for self-medicating their child's fever is a prevalent misperception about how best to treat pediatric diseases<sup>16</sup>. A fever often causes parents to become concerned and seek comfort for their children. Still, teaching caregivers the value of a correct diagnosis and treatment under a doctor's supervision is crucial, particularly in situations when antibiotics are not essential, such as viral diseases<sup>17</sup>. The research also highlights the significant role that women play in family healthcare decision-making, with mothers often taking the lead when it comes to starting antibiotic use<sup>18</sup>.

This emphasizes how crucial it is to provide moms with appropriate information about the use of antibiotics and any possible side effects via focused educational efforts. Additionally, the marginally different antibiotic beginning rates between male and female youngsters point to possible gender differences in drug management and health-seeking behavior<sup>19</sup>. Comprehending these subtleties is crucial in customizing training programs to target specific demographic and socio-cultural elements impacting parents' choices about their children's medical treatment<sup>20</sup>.

The results highlight the critical need for extensive public health initiatives to raise parental knowledge of optimal antibiotic usage and promote a medication-accounting culture. We can lessen the danger of antibiotic resistance and protect the health and well-being of future generations by dispelling myths, enhancing healthcare literacy, and advocating evidence-based practices<sup>21</sup>. Working together, legislators, healthcare professionals, and community members can make a significant difference in tackling this urgent public health issue. Future studies should examine the effectiveness of educational initiatives

and how they affect healthcare outcomes and rates of antibiotic resistance over the long run<sup>22</sup>.

## CONCLUSION

The study emphasizes how urgently focused interventions are needed to address children's self-medication with antibiotics by their parents. It is possible to reduce the likelihood of antibiotic resistance and preserve public health for future generations by raising awareness, enhancing healthcare literacy, and encouraging ethical drug habits.

## Future finding

Future studies should examine how well educational interventions work to change parents' attitudes about taking antibiotics independently. To successfully address this urgent public health issue, it would also be beneficial to look into the long-term effects of such treatments on rates of antibiotic resistance and healthcare outcomes.

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## REFERENCES

1. Salam A, Waseem S, Akhtar L, Manan HA, Malik MA, Siddique N. Parental Self-Medication with Antibiotics in Pakistan. *Pakistan Journal of Medical & Health Sciences*. 2023 May 25;17(04):228-.
2. Mukattash TL, Alkhatatbeh MJ, Andrawos S, Jarab AS, AbuFarha RK, Nusair MB. Parental self-medication of antibiotics for children in Jordan. *Journal of Pharmaceutical Health Services Research*. 2020 Mar;11(1):75-80.
3. Xu J, Wang X, Sun KS, Lin L, Zhou X. Parental self-medication with antibiotics for children promotes antibiotic over-prescribing in clinical settings in China. *Antimicrobial resistance & infection control*. 2020 Dec;9(1):1-8.
4. Zhou Z, Zhao D, Zhang H, Shen C, Cao D, Liu G, Zhu L, Fang Y. Understanding parental self-medication with antibiotics among parents of different nationalities: a cross-sectional study. *Global Health Research and Policy*. 2021 Dec;6:1-0.
5. Mabrouk AB, Ammari FL, Werdani A, Jemmali N, Chelli J, Mrabet HE, Rassas A, Sfar MH, El Mhamdi S, Mahjoub B. Parental self-medication with antibiotics in a Tunisian pediatric centre. *Therapies*. 2022 Jul 1;77(4):477-85.
6. Qu W, Wang X, Liu Y, Mao J, Liu M, Zhong Y, Gao B, Zhao M, Gao Y. Self-Medication with Antibiotics

- Among Children in China: A Cross-Sectional Study of Parents' Knowledge, Attitudes, and Practices. *Infection and Drug Resistance*. 2023 Dec 31:7683-94.
7. Khalil MA, Arshad MS, Majeed A, Imran I, Binish H, Ahmad I, Rasool MF. The Parental Perceptions and Practices Regarding Self-medication among Their Children in Southern Punjab, Pakistan. *Child Care in Practice*. 2023 Jun 10:1-2.
  8. Aslam A, Zin CS, Jamshed S, Rahman NS, Ahmed SI, Pallós P, Gajdács M. Self-medication with antibiotics: prevalence, practices and related factors among the Pakistani public. *Antibiotics*. 2022 Jun 12;11(6):795.
  9. Wu J, Yang F, Yang H, Zhang G, Mu K, Feng J, Wang J, Yin X. Prevalence of antibiotic self-medication behaviour and related factors among children aged 0 to 5 years. *Expert review of anti-infective therapy*. 2021 Sep 2;19(9):1157-64.
  10. Ahmed N, Ijaz S, Manzoor S, Sajjad S. Prevalence of self-medication in children under five years by their mothers in Yogyakarta city Indonesia. *Journal of Family Medicine and Primary Care*. 2021 Aug;10(8):2798.
  11. Bhamani S, Abbas M, Sheikh S, Patel S. Parents Using Medicine without a Doctor's Prescription: A Safe Habit?. *ANNALS OF ABBASI SHAHEED HOSPITAL AND KARACHI MEDICAL & DENTAL COLLEGE*. 2023 Dec 2;28(04):230-4.
  12. Bham SQ, Mohammed Iqbal MB, Sharif UH. Factors associated with parental self-medication for common childhood illnesses during the COVID-19 pandemic: a single centre study. *Anaesthesia, Pain & Intensive Care*. 2023 Jun 7;27(3):405-12.
  13. Bert F, Previti C, Calabrese F, Scaioli G, Siliquini R. Antibiotics self-medication among children: A systematic review. *Antibiotics*. 2022 Nov 9;11(11):1583.
  14. Sarwar R, Mahmood H, Hashmi HB, Anwar F, Mahmood S. Self Medication and Associated Health Care Seeking Amongst Mothers of Children Aged Under 5 with Diarrhea and Respiratory Tract Infections in an Urban Slum. *InProceedings 2020 Dec 3 (Vol. 34, No. 2, pp. 26-31)*.
  15. Patel SJ, Dumra GH. Assessment of parents-induced self-medication in paediatric population in rural and urban areas of Ahmedabad, Gujarat. *Int J Basic Clin Pharmacol*. 2020 May;9:776-81.
  16. Aslam A, Zin CS, Ab Rahman NS, Gajdács M, Ahmed SI, Jamshed S. Self-medication practices with antibiotics and associated factors among the public of Malaysia: a cross-sectional study. *Drug, Healthcare and Patient Safety*. 2021 Oct 28:171-81.
  17. Tarcuc P, Stanescu AM, Diaconu CC, Paduraru L, Duduciu A, Diaconescu S. Patterns and factors associated with self-medication among the pediatric population in Romania. *Medicina*. 2020 Jun 25;56(6):312.
  18. Yuan J, Du W, Li Z, Deng Q, Ma G. Prevalence and risk factors of self-medication among the pediatric population in China: a national survey. *Frontiers in Public Health*. 2022 Feb 9;9:770709.
  19. Ukwishaka J, Umuhoza C, Cartledge P, McCall N. Pediatric self-medication use in Rwanda—a cross-sectional study. *African Health Sciences*. 2020 Dec 16;20(4):2032-43.
  20. Okunola OA, Aluko MA, Aroke AA. Knowledge and perspectives in managing common childhood illnesses by caregivers to under-five children in southwestern Nigeria: synopsis of self-medication practices. *Cogent Public Health*. 2023 Dec 31;10(1):2178053.
  21. Nabi N, Baluja Z, Mukherjee S, Kohli S. Trends in practices of self-medication with antibiotics among medical undergraduates in India. *Journal of Pharmacy & Bioallied Sciences*. 2022 Jan;14(1):19..
  22. Hossain MS, Islam MF, Arka PB, Rohman M, Ahmed TS, Ahammed T, Chowdhury MA, Uddin MJ. Antibiotic prescription from qualified sources for children with fever/cough: Cross-sectional study from 59 low-and middle-income countries. *EClinicalMedicine*. 2023 Jul 1;61.