



INFLUENCES ON TREATMENT-SEEKING AND ANTIBIOTIC USE FOR COMMON ILLNESSES

Juweria Abid^{1*}, Dr. Ridhaa Amman Anis², Dr. Hasan Afaq Zaidi³, Dr. Madiha Raees⁴,
Dr. Syed Muhammad Abdullah Salman⁵, Dr. Saba Izhar⁶

^{1*}Department of Nutrition and Dietetics National University of Medical Sciences Rawalpindi, Pakistan, Email: Juweria.abid@numspak.edu.pk

²House Officer, Railway General Hospital, Rawalpindi, Pakistan, Email: ridhaa-11@hotmail.co.uk

³Assistant Professor, Operative Dentistry, Baqai Dental College, Karachi, Pakistan, Email: drhasanafaq@baqai.edu.pk

⁴MD trainee (Internal Medicine), Fatima Hospital, Baqai Medical University, Karachi, Pakistan, Email: madiharacees@outlook.com

⁵Assistant Professor and Head of the Department of Oral & Maxillofacial Surgery, Baqai Dental College, Karachi, Pakistan, Email: abduallah_salman@yahoo.com

⁶Assistant Professor, Department of Medicine, CMH Kharian Medical College, Kharian Pakistan, Email: sizhar87@gmail.com

***Corresponding Author:** Juweria Abid

*Department of Nutrition and Dietetics National University of Medical Sciences Rawalpindi, Pakistan, Email: Juweria.abid@numspak.edu.pk

Abstract

Introduction: The growth of drug-resistant bacteria is an increasing global public health issue. A key driver in the acceleration of antimicrobial resistance (AMR) is the overuse and misuse of antibiotics.

Objectives: The basic aim of the study is to find the influences on treatment-seeking and antibiotic use for common illnesses.

Material and methods: This cross-sectional study was conducted in one of the Public Hospital of Karachi from June 2022 to December 2022. Data was collected from 120 patients. Participants were individually interviewed using a structured questionnaire developed for this study. The questionnaire was designed to capture a wide range of information, including demographic details, health beliefs, knowledge about antibiotics, prior healthcare experiences, and healthcare-seeking behavior.

Results: Data was collected from 120 patients from both genders. The mean age of the participants was 42.5±10.2 years, with a range of ages from 19 to 65. The gender distribution was nearly equal, with 61 participants identifying as female (50.8%) and 59 as male (49.2%). All participants reported experiencing at least one common illness episode within the past year, with upper respiratory tract infections (URTI) being the most frequently reported (72.5%), followed by urinary tract infections (UTI, 18.3%), sinusitis (6.7%), and acute bronchitis (2.5%).

Conclusion: It is concluded that the challenge of antibiotic resistance requires a concerted effort involving patients, healthcare providers, and policymakers to promote responsible antibiotic use and preserve the effectiveness of these vital drugs. Comprehensive strategies targeting both patients and healthcare providers are needed to promote responsible antibiotic use and mitigate the threat of antibiotic resistance.

Keywords: Antibiotic, Resistance, Health, Provide, Patients, Drugs

Introduction

The growth of drug-resistant bacteria is an increasing global public health issue. A key driver in the acceleration of antimicrobial resistance (AMR) is the overuse and misuse of antibiotics. Children are particularly susceptible to infections and have a high rate of antibiotic use [1]. Thus, the role of parents, who are the primary decision-makers in the acquisition and administration of medication, is important in understanding the appropriate use of antibiotics in children [2]. International studies demonstrate that parents may persist in their request for antibiotic prescriptions from prescribers, not adhere to treatment instructions, or may use antibiotics without consulting a doctor. These behaviors are considered sub-optimal and can facilitate the development of antibiotic-resistant bacteria. Parents' behavior with antibiotics is influenced by their knowledge and beliefs, the perceived severity of the child's illness, the availability of antibiotics, the child's age, and the context [3]. From a contextual perspective, several studies have found a strong association between poor access to healthcare and parental self-directed antibiotic use. Access to health care is often challenged in rural and remote locations, a contextual variable likely to affect parental decisions about meeting the health care needs of their children. Parents have also been found to make decisions about their children's antibiotic use based on advice from their social group or support network [4].

Antimicrobial resistance (AMR) refers to the evolution of drug-resistant pathogens, which is a global threat that causes over 700,000 deaths every year and is a major economic burden worldwide [5]. Antibiotic resistance (ABR), which occurs specifically when antibiotics become ineffective against bacteria, has become a major challenge within the larger problem of AMR, and the widespread use of antibiotics is the most important factor contributing to ABR. Although AMR threatens all countries, it has a disproportionate impact in low and middle-income countries (LMICs), including China, where the level of overuse of antibiotics is high and there are high resistance rates to common antibiotics [6].

The utilization of healthcare services and the decision to seek medical treatment, particularly for common illnesses, are complex behaviors influenced by a multitude of factors. The process of recognizing symptoms, seeking professional advice, and following prescribed treatment regimens plays a pivotal role in individual health outcomes and the broader context of public health [7]. In recent years, there has been growing concern worldwide regarding the overuse and misuse of antibiotics, which has contributed to the emergence of antibiotic resistance, a global health threat. A significant portion of antibiotic consumption is associated with the treatment of common, often self-limiting illnesses, such as respiratory tract infections, urinary tract infections, and gastroenteritis [8]. Understanding the factors that influence individuals' decisions to seek medical care and their subsequent antibiotic use for these common ailments is essential for designing effective interventions aimed at promoting rational antibiotic use and preserving antibiotic efficacy [9].

The decision-making process related to treatment-seeking and antibiotic use is multifaceted and influenced by a range of individual, social, cultural, and healthcare system factors. Key determinants include the perception of illness severity, previous experiences with healthcare providers, knowledge and awareness of antibiotic resistance, socio-economic status, access to healthcare services, and healthcare-seeking behavior patterns [10]. This comprehensive study aims to delve into the intricate web of influences on treatment-seeking and antibiotic use for common illnesses. By examining the interplay of these factors, we seek to gain a deeper understanding of the drivers behind medical consultation and antibiotic consumption in the context of everyday health issues. Furthermore, this research seeks to identify potential points of intervention, such as public health campaigns, patient education initiatives, and healthcare system improvements, to promote prudent antibiotic use and optimize healthcare-seeking behavior.

Objectives

The basic aim of the study is to find the influences on treatment-seeking and antibiotic use for common illnesses.

Material and methods

This cross-sectional study was conducted in one of the Public Hospital of Karachi from June 2022 to December 2022. Data was collected from 120 patients.

Inclusion criteria

- Individuals aged 18 years and older were eligible to participate in the study.
- Participants should have experienced at least one common illness episode within the past year, such as upper respiratory tract infections, sinusitis, acute bronchitis, or urinary tract infections.

Exclusion criteria

- Participants with serious or chronic medical conditions, such as cancer, autoimmune diseases, or severe cardiovascular diseases, were excluded, as these conditions may have unique healthcare-seeking patterns.
- Individuals with significant cognitive impairment or inability to provide informed consent were excluded.

Data collection

Participants were individually interviewed using a structured questionnaire developed for this study. The questionnaire was designed to capture a wide range of information, including demographic details, health beliefs, knowledge about antibiotics, prior healthcare experiences, and healthcare-seeking behavior. It included both closed-ended questions with predefined response options and open-ended questions to allow participants to express their views and experiences fully. The questionnaire was pre-tested with a small sample to ensure clarity and was adjusted accordingly. For participants who reported recent episodes of common illnesses, their relevant clinical records were reviewed. This review encompassed the assessment of any recent prescriptions for antibiotics, healthcare-provider interactions, and medical recommendations about the common illnesses in question.

The data collection process was carried out with the utmost sensitivity to ethical considerations. Informed consent was obtained from each participant, emphasizing the voluntary nature of their participation.

Statistical analysis

Data was collected and analyzed using SPSS v29.0.

Results

Data was collected from 120 patients from both genders. The mean age of the participants was 42.5 ± 10.2 years, with a range of ages from 19 to 65. The gender distribution was nearly equal, with 61 participants identifying as female (50.8%) and 59 as male (49.2%). All participants reported experiencing at least one common illness episode within the past year, with upper respiratory tract infections (URTI) being the most frequently reported (72.5%), followed by urinary tract infections (UTI, 18.3%), sinusitis (6.7%), and acute bronchitis (2.5%).

Table 1 Demographic data of patients

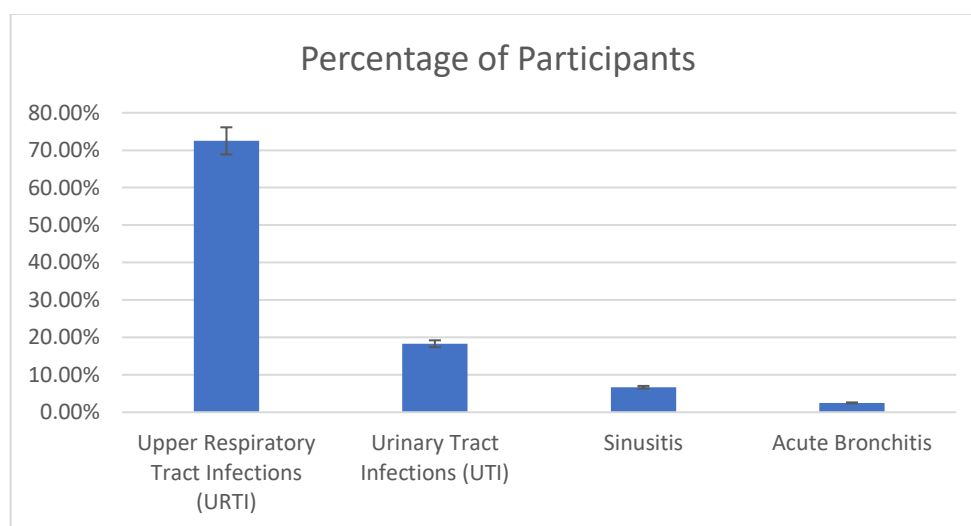
| Characteristic | Participants (N=120) |
|-------------------|----------------------|
| Mean Age (years) | 42.5 |
| Age Range (years) | 19-65 |
| Gender (% Female) | 50.8% |
| Gender (% Male) | 49.2% |

78.3% of participants indicated that they sought medical care for their most recent common illness episode. Among those who sought medical care, 62.5% did so because they perceived the illness as

severe or worsening, while 37.5% sought care due to social pressure or prior experiences. 42.1% of participants who sought medical care received antibiotic prescriptions.

Table 2 Common Illness experience of patients

| Common Illness | Percentage of Participants |
|---|----------------------------|
| Upper Respiratory Tract Infections (URTI) | 72.5% |
| Urinary Tract Infections (UTI) | 18.3% |
| Sinusitis | 6.7% |
| Acute Bronchitis | 2.5% |



Of the participants who received antibiotic prescriptions, 58.9% completed the full course of antibiotics as prescribed, while 41.1% did not adhere to the prescribed regimen. 69.2% of participants believed that antibiotics could treat common viral illnesses. 48.3% of participants were aware of antibiotic resistance as a public health issue. 33.3% of participants who did not receive antibiotic prescriptions reported self-medication with antibiotics obtained from previous prescriptions.

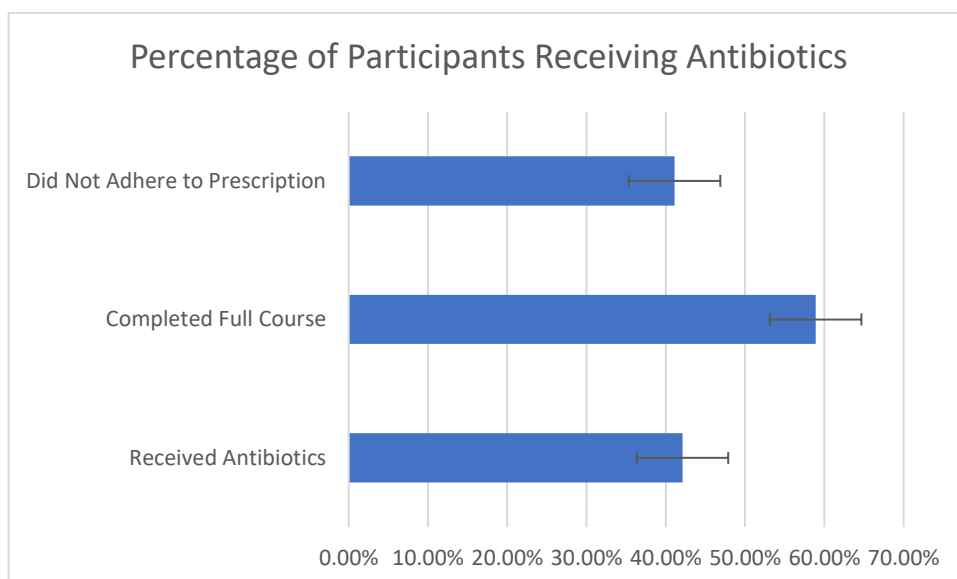
Table 3 Factors influencing treatment-seeking behavior

| Factor | Percentage of Participants Seeking Medical Care |
|--------------------|---|
| Perceived Severity | 78.3% |
| Social Pressure | 37.5% |
| Prior Experiences | 62.5% |

The majority of participants (76.7%) reported that healthcare providers explained the reasons for antibiotic prescriptions. 58.3% of participants reported that healthcare providers sometimes prescribed antibiotics to meet patient expectations.

Table 4 The pattern of use of antibiotics

| Antibiotic Use | Percentage of Participants Receiving Antibiotics |
|--------------------------------|--|
| Received Antibiotics | 42.1% |
| Completed Full Course | 58.9% |
| Did Not Adhere to Prescription | 41.1% |



61.7% of participants considered illness severity as the primary factor influencing their decision to seek medical care. 39.2% of participants indicated that prior experiences with healthcare providers influenced their decisions. 28.3% of participants cited social pressure as a factor in seeking care. 54.2% of participants expressed trust in healthcare providers' recommendations for antibiotics. 46.7% of participants believed that antibiotics were effective against all types of infections.

Table 5 Knowledge and beliefs regarding antibiotics

| Knowledge and Beliefs | Percentage of Participants |
|---|----------------------------|
| Belief in Antibiotics' Effectiveness for Viral Infections | 69.2% |
| Awareness of Antibiotic Resistance as a Public Health Issue | 48.3% |
| Self-medication with Antibiotics from Previous Prescriptions | 33.3% |
| Explanation of Antibiotic Prescriptions by Healthcare Providers | 76.7% |
| Perception of Healthcare Providers Prescribing Antibiotics to Meet Expectations | 58.3% |

Table 6 Factors influencing on use of antibiotic

| Factors Influencing Decisions | Percentage of Participants |
|---|----------------------------|
| Illness Severity | 61.7% |
| Prior Experiences | 39.2% |
| Social Pressure | 28.3% |
| Trust in Healthcare Providers' Recommendations | 54.2% |
| Belief in Antibiotics' Effectiveness for All Infections | 46.7% |

Discussion

The study found that a significant proportion of participants (78.3%) sought medical care for their most recent common illness episode, indicating a proactive approach to managing their health. This aligns with the perception that individuals often seek medical attention when they perceive their illness as severe or worsening (61.7%). Social pressure and prior experiences with healthcare providers also played a notable role in influencing treatment-seeking behavior [11-13].

Approximately 42.1% of participants who sought medical care received antibiotic prescriptions. This suggests that antibiotics continue to be prescribed for common illnesses, even though they are often caused by viral pathogens for which antibiotics are ineffective [14]. Furthermore, a substantial proportion of participants did not adhere to the prescribed antibiotic regimen (41.1%). This underscores the importance of interventions to promote proper antibiotic use [15].

Participants displayed varying levels of knowledge and beliefs regarding antibiotics. While a majority believed in antibiotics' effectiveness for viral infections (69.2%), fewer were aware of antibiotic

resistance as a public health issue (48.3%). This gap in awareness highlights the need for public health campaigns to educate individuals about the consequences of antibiotic misuse [16].

Healthcare providers play a crucial role in influencing antibiotic use. The study revealed that most participants (76.7%) reported that healthcare providers explained the reasons for antibiotic prescriptions. However, a substantial proportion (58.3%) also indicated that providers sometimes prescribed antibiotics to meet patient expectations. This points to the complexity of the clinician-patient relationship in antibiotic prescribing decisions [17].

The study identified several factors that influenced treatment-seeking and antibiotic-use decisions. Illness severity was the primary driver of healthcare-seeking behavior, followed by prior experiences with healthcare providers [18]. Social pressure also played a role, highlighting the impact of societal norms and expectations on individual choices. These findings have important implications for public health interventions aimed at curbing antibiotic resistance. The study highlights the need for multifaceted strategies that target both patients and healthcare providers [19-20].

Conclusion

It is concluded that the challenge of antibiotic resistance requires a concerted effort involving patients, healthcare providers, and policymakers to promote responsible antibiotic use and preserve the effectiveness of these vital drugs. Comprehensive strategies targeting both patients and healthcare providers are needed to promote responsible antibiotic use and mitigate the threat of antibiotic resistance.

References

1. Marsh, Stephanie A., et al. "What Influences Parental Decisions about Antibiotic Use with Their Children: A Qualitative Study in Rural Australia." *PLOS ONE*, vol. 18, no. 7, 2023, p. e0288480, <https://doi.org/10.1371/journal.pone.0288480>.
2. Souto-López L, Vazquez-Cancela O, Vazquez-Lago JM, López-Durán A, Figueiras A. Parent-related factors influencing antibiotic use in a pediatric population: a qualitative study in Spain. *Acta Paediatr.* 2020;109(12):2719–26. pmid:32239527
3. Bosley H, Henshall C, Appleton JV, Jackson D. Understanding antibiotic-seeking behavior: a qualitative case study of mothers of children aged 5 and under. *J Adv Nurs.* 2022;00:1–10. pmid:35864378
4. Biezen R, Grando D, Mazza D, Brijnath B. Dissonant views—GPs' and parents' perspectives on antibiotic prescribing for young children with respiratory tract infections. *BMC Fam Pract.* 2019;20(1):46. pmid:30922238
5. Lum EPM, Page K, Nissen L, Doust J, Graves N. Australian consumer perspectives, attitudes and behaviors on antibiotic use and antibiotic resistance: a qualitative study with implications for public health policy and practice. *BMC Public Health.* 2017;17(1):799. pmid:29017473
6. Hawking MKD, Lecky DM, Touboul Lundgren P, Aldigs E, Abdulmajed H, Ioannidou E, et al. Attitudes and behaviors of adolescents towards antibiotics and self-care for respiratory tract infections: a qualitative study. *BMJ Open.* 2017;7(5):e015308–e. pmid:28592579
7. Flayelle M, Brevers D, Billieux J. Commentary on Englund et al. The advantages and downsides of online focus groups for researching addictive online behaviors. *Addiction (Abingdon, England).* 2022;117(8):2142–4.
8. Namey E, Guest G, McKenna K, Chen M. Evaluating bang for the buck: a cost-effectiveness comparison between individual interviews and focus groups based on thematic saturation levels. *Am J Eval.* 2016;37(3):425–40.
9. Zhang, Tingting, et al. "Influences on Treatment-seeking and Antibiotic Use for Common Illnesses in Eastern China." *BMC Public Health*, vol. 23, 2023, <https://doi.org/10.1186/s12889-023-16700-w>.
10. Pokharel S, Raut S, Adhikari B. Tackling antimicrobial resistance in low-income and middle-income countries. *BMJ Specialist J.* 2019;4:e002104.

11. Qu J, Huang Y, Lv X. Crisis of Antimicrobial Resistance in China: Now and the Future. *Front Microbiol.* 2019;**10**:2240. doi: 10.3389/fmicb.2019.02240.
12. Wang S, Hu YJ, Little P, Wang Y, Chang Q, Zhou X, et al. The impact of the national action plan on the epidemiology of antibiotic resistance among 352,238 isolates in a teaching hospital in China from 2015 to 2018. *Antimicrob Resist Infect Control.* 2019;**8**(1):22. doi: 10.1186/s13756-019-0473-y.
13. Lin L, Fearon E, Harbarth S, Wang X, Lu C, Zhou X, et al. Decisions to use antibiotics for upper respiratory tract infections across China: a large-scale cross-sectional survey among university students. *BMJ Open.* 2020;**10**(8):e039332. doi: 10.1136/bmjopen-2020-039332
14. Yu M, Zhao G, Stålsby Lundborg C, Zhu Y, Zhao Q, Xu B. Knowledge, attitudes, and practices of parents in rural China on the use of antibiotics in children: a cross-sectional study. *BMC Infect Dis.* 2014;**14**(1):112. doi: 10.1186/1471-2334-14-112.
15. Bianco A, Licata F, Zucco R, Papadopoli R, Pavia M. Knowledge and practices regarding antibiotics use Findings from a cross-sectional survey among Italian adults. *Evol Med Public Health.* 2020;**2020**(1):129–138. doi: 10.1093/emph/eoaa028.
16. Diao M, Shen X, Cheng J, Chai J, Feng R, Zhang P, et al. How patients' experiences of respiratory tract infections affect healthcare-seeking and antibiotic use: insights from a cross-sectional survey in rural Anhui, China. *BMJ Open.* 2018;**8**(2):e019492. doi: 10.1136/bmjopen-2017-019492
17. Li X, Lu J, Hu S, Cheng KK, De Maeseneer J, Meng Q, et al. The primary healthcare system in China. *Lancet.* 2017;**390**(10112):2584–2594. doi: 10.1016/S0140-6736(17)33109-4
18. Cai S, Wang N, Xu L, Yan F, Jiang Q, Zhao X, et al. Impacts of Antibiotic Residues in the Environment on Bacterial Resistance and Human Health in Eastern China: An Interdisciplinary Mixed-Methods Study Protocol. *Int J Environ Res Public Health.* 2022;**19**(13):8145.
19. Torres NF, Solomon VP, Middleton LE. Patterns of self-medication with antibiotics in Maputo City: a qualitative study. *Antimicrob Resist Infect Control.* 2019;**8**:161. doi: 10.1186/s13756-019-0618-z
20. Kotwani A, Joshi J, Lamkang AS, Sharma A, Kaloni D. Knowledge and behavior of consumers towards the non-prescription purchase of antibiotics: An insight from a qualitative study from New Delhi, India. *Pharm Pract (Granada)* 2021;**19**(1):2206. doi: 10.18549/PharmPract.2021.1.2206.