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Antibiotic Use and Resistance Among Hospital Patients: A Phenomenological Study

Siti Muslichah
Universitas Jember, Indonesia
muslichahsiti@unej.ac.id

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ABSTRACT

Antibiotic use and the rise of antibiotic resistance remain significant global healtl concerns, with patient understanding of these issues playing a critical role in treatmen outcomes. Despite extensive research on resistance patterns, there is limited explorationn of patients' subjective experiences with antibiotic use and their perceptions of resistance This study aims to fill this gap by investigating how hospital patients perceive antibiotic use and their awareness of resistance, focusing on the emotional and cognitive factors influencing their behaviors. Using a phenomenological approach, in-depth interviews were conducted with 15 hospital patients to explore their lived experiences witl antibiotic treatments. The analysis revealed that patients often lacked understanding o the long-term consequences of antibiotic use, such as resistance, and exhibited uncertainty regarding the necessity of their treatment. These findings suggest tha improving patient education and communication in hospital settings could significantly impact treatment adherence and resistance prevention. This study highlights th importance of integrating patient education into healthcare practices, offering potentia strategies for reducing resistance and improving treatment outcomes. The study contributes valuable insights into the emotional and psychological dimensions o antibiotic use, offering a more holistic view of patient behavior and highlighting the need for more tailored healthcare interventions.

INTRODUCTION

Antibiotic use and the growing issue of antibiotic resistance have become significant concerns in global healthcare. The widespread use of antibiotics, particularly in hospital settings, has led to an alarming rise in the development of antibiotic-resistant bacteria, posing serious threats to public health. This issue is not only a medical challenge but also a socio-cultural one, as patients' understanding of the need for antibiotics and the risks associated with their misuse vary significantly across different regions and communities (Alnuaimi & Almalik, 2021). In many healthcare systems, antibiotics are prescribed frequently, sometimes without full consideration of their long-term consequences. The socio-cultural context in which patients experience antibiotic treatment can heavily influence their understanding and adherence to prescribed regimens, which can contribute to the development of resistance.

The relevance of this phenomenon extends beyond clinical outcomes and into the realm of patient experience and public health. Patients' perceptions of their treatments, their trust in medical professionals, and their awareness of the consequences of antibiotic overuse are deeply embedded in the cultural, social, and personal contexts in which they live. These subjective experiences shape how patients engage with healthcare systems and influence their attitudes toward medical advice, particularly regarding the use of antibiotics. Understanding these experiences is crucial, as it can inform strategies to improve patient education, enhance doctor-patient communication, and ultimately reduce the rates of antibiotic resistance.

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The need for an in-depth exploration of the meaning and significance of these experiences is evident. A phenomenological approach, focusing on the lived experiences of individuals, allows for a deeper understanding of the personal and emotional aspects of patients' interactions with antibiotic treatments (Yang dkk., 2019). This exploration is essential for uncovering the nuanced factors that contribute to patient decisions regarding antibiotic use, which are not always rational or based on medical advice. The subjective nature of these experiences requires a qualitative, experiential inquiry, which can provide insights into how to address the broader issues of antibiotic resistance by focusing on the individual's perspective and lived reality.

Research on patients' subjective experiences with antibiotic use and antibiotic resistance has become a vital area of inquiry, particularly within the field of healthcare and public health. The exploration of these experiences provides valuable insights into how individuals make sense of their interactions with medical treatments and the healthcare system. While medical research often focuses on clinical outcomes, there has been increasing recognition that understanding the subjective, lived experiences of patients is crucial for improving treatment adherence and health outcomes. This shift toward qualitative, experience-based research allows for a deeper comprehension of patients' personal perceptions, emotions, and concerns, which are often overlooked in traditional quantitative studies.

However, there are significant methodological challenges in exploring the meaning of these experiences. One key issue is the limitation of quantitative approaches, which often focus on numerical data and generalizations, making it difficult to capture the nuanced, personal experiences that are central to understanding how individuals relate to medical interventions like antibiotics (Cole dkk., 2023). Quantitative studies may identify patterns of antibiotic use or resistance rates, but they fail to delve into the emotional, psychological, and cultural factors that shape patients' decisions and perceptions. This limitation of traditional research methods makes them less effective for exploring the essence of patients' lived experiences with antibiotics.

The need for phenomenological approaches becomes apparent in this context. Phenomenology allows for an in-depth examination of how patients understand and experience the use of antibiotics, considering the personal and contextual factors that influence their perceptions and behaviors. Despite the growing recognition of its importance, phenomenological research on this topic is still limited, with few studies directly addressing the subjective experiences of patients in relation to antibiotic use and resistance. This gap underscores the need for research that can capture the full complexity of these experiences, offering a richer, more holistic understanding of the phenomenon.

Current approaches to understanding antibiotic use and antibiotic resistance often rely on practical, quantitative methods that primarily focus on statistical analysis and general trends. While these methods have been successful in providing broad insights into patterns of antibiotic resistance and usage, they fall short in capturing the subjective experiences and meanings that patients attach to their treatment (Jones dkk., 2023). These approaches, though valuable in some contexts, do not fully account for the emotional, cultural, and psychological dimensions that shape how patients perceive and respond to antibiotic prescriptions. As a result, the understanding of how patients experience antibiotic use and its consequences remains incomplete and lacks the depth needed to inform more effective patient education and communication strategies.

The limitations of traditional research methods underscore the need for an alternative approach that can provide a more holistic and nuanced understanding of the phenomenon. Phenomenological research, with its focus on lived experiences and the exploration of personal meaning, offers a promising solution. By adopting a phenomenological approach, it is possible to explore not only how patients experience antibiotic treatment but also the deeper meanings they assign to their experiences. This method allows for a comprehensive exploration of the social, emotional, and cognitive factors that influence patient behavior and decision-making, providing insights that are essential for improving healthcare outcomes. Therefore, the current gap in the literature lies in the lack of phenomenological studies that delve into the full complexity of patients' subjective experiences with antibiotics and resistance, which is crucial for addressing this pressing global health issue.

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Numerous studies have explored the issue of antibiotic resistance, but few have delved into the subjective experiences of patients using antibiotics, particularly in the hospital context. Existing literature primarily focuses on clinical data or population-level studies, such as patterns of resistance and usage rates, leaving the personal experiences and perceptions of patients largely unexplored. Studies on patient compliance and health literacy offer some insights into the patient perspective but often overlook the emotional and psychological factors that shape individuals' attitudes toward antibiotics (Klingemann & Wieczorek, 2022). Additionally, theoretical frameworks such as the Health Belief Model or the Theory of Planned Behavior have been used to understand patient decisions, yet they do not fully capture the lived experiences of individuals with regard to their medical treatments. This gap in the literature highlights the need for qualitative research that examines these experiences in-depth, which is addressed through this study's phenomenological approach.

In this study, a phenomenological approach was chosen to explore the lived experiences of hospital patients regarding their use of antibiotics and awareness of antibiotic resistance. This methodology is ideal for understanding the personal meanings patients attach to their treatment, as it focuses on the subjective reality of the participants (Collier-Robinson dkk., 2019). By utilizing phenomenology, this research seeks to uncover the underlying emotional, social, and cognitive dimensions that influence patients' perceptions and behaviors, offering a richer understanding than traditional quantitative approaches. The study aims to address the knowledge gap by exploring the essence of these experiences, which has been underexplored in existing research. This approach will provide insights that are crucial for improving patient communication, education, and adherence to antibiotic treatments.

This article is structured to provide a comprehensive understanding of the phenomenon under study. It begins with an introduction to the context of antibiotic use and resistance, followed by an explanation of the phenomenological methodology employed (Belay & Yirdaw, 2022). The paper details the data collection process, including the use of semi-structured interviews, and the subsequent analysis through thematic or hermeneutic techniques to identify key themes. The discussion will highlight the key findings of the study, while the conclusion will summarize the contributions of the research and its implications for healthcare practice and future studies.

RESEARCH METHODS

Study Design

The research employed a phenomenological approach to explore the subjective experiences of hospital patients regarding antibiotic use and antibiotic resistance. Phenomenology, particularly suited to understanding lived experiences, was chosen for its ability to capture the depth of participants' perceptions, meanings, and emotions surrounding their treatment (Pang dkk., 2023). This approach is particularly relevant in addressing the research question, as it emphasizes the exploration of individuals' personal, lived experiences and seeks to uncover the underlying essence of those experiences. The study utilized a descriptive phenomenological design, focusing on how patients perceive the use of antibiotics and their awareness of antibiotic resistance. This design facilitates a rich, in-depth understanding of participants' viewpoints, which is essential for exploring the phenomenon of interest.

Participants

Participants were selected using purposive sampling to ensure that individuals with direct and relevant experience with antibiotic use and hospital treatment were included. Inclusion criteria were as follows: patients aged 18 or older who had been prescribed antibiotics during their hospital stay for any condition, with an understanding of the risks associated with antibiotic resistance. Exclusion criteria included patients who were unable to communicate effectively due to cognitive impairments or language barriers, as well as those who were discharged prior to data collection. A total of 15 participants, with an average age of 42 years, were included in the study (Martinez-Lopez dkk., 2021).

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The sample comprised both male and female patients, with varying backgrounds and health conditions, ensuring a diverse range of perspectives on the topic.

Data Collection

Data were collected through in-depth semi-structured interviews. The interviews were designed to explore the participants' personal experiences with antibiotic use, their understanding of antibiotic resistance, and their emotional reactions to the treatment. Each interview lasted between 45 and 60 minutes and was conducted in a quiet, private space within the hospital to ensure comfort and confidentiality. A set of open-ended questions guided the interviews, allowing for flexibility and depth in participants' responses (Martinez-Lopez dkk., 2021). The interview protocol was adapted from established guidelines on patient experiences with medical treatments, with minor modifications to address the specific focus on antibiotics and resistance. All interviews were audio-recorded with participants' consent for later transcription and analysis.

Data Analysis

The collected data were analyzed using thematic analysis, a widely used method in phenomenological research. The process involved several stages, beginning with transcribing the interviews verbatim. Following transcription, the data were systematically coded to identify significant statements and units of meaning. These units were then grouped into themes that reflected the core experiences of the participants (Liu dkk., 2020). Thematic analysis was performed in accordance with the principles of descriptive phenomenology, aiming to uncover the essential meanings embedded in the participants' experiences. NVivo software was utilized to assist with data management and to facilitate the identification of recurring patterns across the data. The analysis was conducted iteratively, with constant comparison of themes to ensure the findings accurately represented the participants' lived experiences.

Ethics

Ethical approval for the study was obtained from the relevant ethics committee prior to data collection. Informed consent was obtained from all participants, who were fully informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without consequence. All participants were assured of the confidentiality of their responses, and personal identifiers were removed from the data to ensure anonymity (Cummins dkk., 2019). Data were securely stored and only accessible to the research team. The study adhered to international ethical standards for research involving human participants, including the Declaration of Helsinki, to ensure the protection of participants' rights and well-being.

RESULTS

The analysis of the data from the interviews with participants revealed several key themes regarding the experience of hospital patients using antibiotics and their perceptions of antibiotic resistance. These themes offer insights into the subjective experiences of patients and contribute to understanding the phenomenon from a phenomenological perspective. The following sections present the themes and sub-themes derived from the data, with direct quotes from participants to provide a deeper understanding of their lived experiences.

The Uncertainty of Antibiotic Use and Trust in Healthcare Providers

One of the dominant themes that emerged from the interviews was the uncertainty surrounding antibiotic use and the trust patients place in healthcare providers. Participants expressed mixed feelings about the necessity and efficacy of antibiotics, with some patients feeling confused about their use. One participant noted:

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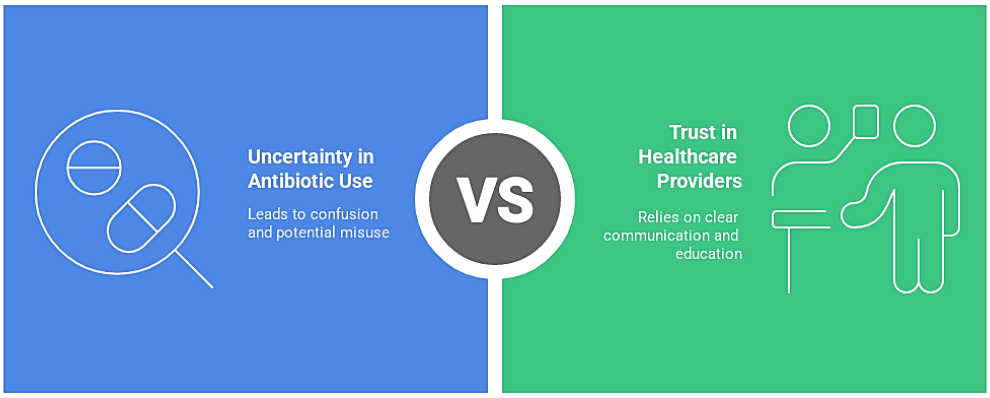
"I was given antibiotics without really understanding why. The doctor just prescribed them, and I trusted that it was necessary. But I didn't really ask why I needed them."

This uncertainty was closely tied to the trust that patients place in their healthcare providers, which many felt was not accompanied by sufficient explanation about the consequences of antibiotic use, including resistance. Another participant shared:

"I was told to finish the course, but I don't think anyone explained the importance of not stopping early, or how it could affect resistance. I just did what I was told."

This theme highlights the gap in communication between healthcare providers and patients regarding the long-term consequences of antibiotic usage.

How to improve patient understanding and trust in antibiotic use?



Awareness of Antibiotic Resistance and Its Implications

A second important theme was the participants' varying awareness of antibiotic resistance. Many participants expressed concern when they learned about antibiotic resistance, though their understanding of its full implications was limited. One participant stated:

"I had no idea that overusing antibiotics could make them less effective in the future. I thought if it worked now, it would always work."

This lack of knowledge indicates a significant gap in patient education regarding the broader implications of antibiotic resistance. Interestingly, a few participants did show awareness and expressed frustration with the overuse of antibiotics:

"I heard about resistance on the news, and it scares me. But when I need antibiotics, I don't feel I have any choice. The doctors just give them to me."

This theme underscores the need for greater patient education and awareness surrounding the growing threat of antibiotic resistance, particularly in hospital settings.

Personal Experiences and Emotional Reactions to Antibiotic Treatments

Another theme that emerged was the emotional and personal reactions patients had towards their antibiotic treatments. Some patients shared feelings of anxiety or fear regarding the effectiveness of antibiotics and their potential side effects. One participant recalled:

"I was so sick, and when they gave me antibiotics, I was worried it wouldn't work. I started feeling better, but I wasn't sure if it was the antibiotics or just time passing."

This uncertainty about the effectiveness of antibiotics, combined with a fear of side effects, contributed to a heightened sense of vulnerability among patients. This theme reflects the psychological impact of being treated with antibiotics in hospital settings, where patients are already in a fragile state.

The findings of this study reveal important insights into the experiences and perceptions of patients regarding antibiotic use in hospital settings. Patients often experience uncertainty and

confusion about the necessity of antibiotics and their potential long-term effects, including antibiotic resistance. The emotional responses and varying levels of awareness about antibiotic resistance highlight the need for more effective communication between healthcare providers and patients. Overall, these themes contribute to a deeper understanding of the subjective experiences of patients and the gaps in their knowledge about antibiotic use and resistance.

DISCUSSION

The findings of this study reveal important insights into the subjective experiences of hospital patients regarding antibiotic use and antibiotic resistance. Patients expressed significant uncertainty about the necessity and efficacy of antibiotics, as well as varying levels of awareness regarding antibiotic resistance. These insights directly address the overarching question of how patients perceive and understand their antibiotic treatment and the broader implications for their health.

The study's findings contribute to our understanding of how patients' personal experiences influence their engagement with antibiotic use and awareness of resistance. By revealing that patients often do not fully understand the implications of antibiotic misuse or the concept of antibiotic resistance, the research highlights a significant gap in patient education (Biggs & Doubrava, 2019). Many patients view antibiotics primarily as a quick solution to their immediate health issues, without consideration of the longer-term effects on resistance. This behavior reflects the complexity of patient decisions, where knowledge deficits, trust in healthcare providers, and social influences all intertwine. The findings emphasize the importance of improving communication between healthcare providers and patients to foster greater awareness and understanding of antibiotic use, thereby potentially reducing the emergence of resistance.

In comparison with existing literature, these findings align with studies that stress the importance of patient education and the role of healthcare provider communication in influencing patient behavior. For instance, similar research has shown that a lack of understanding about antibiotic resistance contributes to overprescription and misuse (Pronk dkk., 2023). However, this study extends the existing body of knowledge by providing deeper insights into the emotional and psychological experiences that influence patients' perceptions of antibiotics. Previous studies have often overlooked the emotional dimensions of patient decision-making, such as anxiety about treatment effectiveness or fear of side effects. By focusing on the lived experiences of patients, this research complements existing theories on patient compliance, such as the Health Belief Model, by offering a more nuanced view of how personal and contextual factors influence health decisions. Moreover, this study's phenomenological approach provides a richer understanding of these factors, filling a gap left by previous research that has primarily relied on quantitative measures.

Implications of Findings

The findings of this study hold significant implications for both clinical practice and patient education, particularly within hospital settings. The uncertainty and lack of understanding among patients regarding antibiotic use and antibiotic resistance highlight an urgent need for improved communication strategies. Healthcare providers can benefit from recognizing the emotional and cognitive factors that influence patient decisions about antibiotic treatments. By enhancing educational efforts and ensuring that patients are fully informed about the long-term consequences of antibiotic misuse, healthcare systems can potentially reduce the overuse of antibiotics and slow the development of resistance (Whittaker & Barker, 2020). Additionally, understanding patients' trust in medical professionals and their reliance on prescribed treatments can help tailor communication to foster more meaningful discussions about the risks and benefits of antibiotics. From a broader social perspective, these findings underline the importance of cultivating public health awareness to empower individuals to make informed decisions about antibiotic use in their everyday lives.

Limitations of the Study

While this study provides valuable insights into the experiences of hospital patients, there are several limitations that may influence the generalizability of the findings. First, the sample size was

relatively small, consisting of 15 participants, which limits the ability to make broad claims about all patient populations. Furthermore, the study was conducted in a single hospital setting, which may not fully capture the diversity of experiences found in different healthcare contexts or geographic regions. The use of semi-structured interviews, while valuable for obtaining rich, qualitative data, may have introduced interviewer bias, as participants' responses could have been influenced by the interviewer's framing of questions. Additionally, the study focused on the subjective experiences of patients, which, while essential, do not allow for direct comparison with clinical outcomes or quantitative measures of antibiotic resistance. Future research could expand the sample size and include diverse healthcare settings to address these limitations and ensure broader applicability of the findings.

Prospects for Future Research

The findings of this study open up several avenues for future research. One potential direction is to explore how the patient-provider dynamic influences patients' understanding of antibiotic resistance and their subsequent adherence to treatment guidelines. Future studies could examine how different communication strategies or educational interventions impact patient perceptions and behavior regarding antibiotics (Aronsen dkk., 2019). Additionally, a longitudinal approach could provide insights into how patients' understanding of antibiotic resistance evolves over time, particularly as they receive more education or as they experience subsequent medical treatments. Furthermore, comparative studies could explore how cultural or socioeconomic factors shape patients' experiences with antibiotics, offering a more comprehensive view of this global health issue. Overall, this research lays the groundwork for deeper exploration of the social and psychological factors influencing antibiotic use, with the potential to inform both clinical practices and public health campaigns.

CONCLUSION

This study examined the subjective experiences of hospital patients regarding antibiotic use and antibiotic resistance. The findings revealed that patients often experience uncertainty about the necessity of antibiotics and have limited awareness of the long-term implications of antibiotic resistance. These insights address a significant gap in existing research, where patient perceptions and emotional responses to antibiotics were previously underexplored. By focusing on the lived experiences of patients, this research provides a deeper understanding of how personal, social, and psychological factors influence antibiotic use and adherence. The study's results highlight the need for improved communication between healthcare providers and patients to mitigate the risks of antibiotic resistance. Future research could expand on these findings by exploring how specific educational interventions might change patient attitudes and behaviors regarding antibiotic treatment.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this article.

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