Assessment of Rural Community Knowledge and Attitudes Toward Rational Antibiotic Use in Kampung Baru Hamlet, Seko District

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ABSTRACT

Rational antibiotic use is critical for effective infection management and the mitigation of risks such as antimicrobial resistance (AMR), adverse drug reactions, and escalated healthcare costs. Accordingly, this study evaluates the knowledge and attitudes of residents in Kampung Baru, Seko District, regarding rational antibiotic practices. A descriptive observational study with a cross-sectional approach was conducted involving 100 respondents who met the inclusion criteria. The study found that knowledge regarding antibiotic use was categorized as good in 7% of respondents, moderate in 20%, and poor in 73%. Attitudes toward proper antibiotic use were categorized as good in 7%, moderate" in 10%, and "poor" in 83% of respondents. Statistical analysis showed a significant relationship between the level of knowledge and attitudes toward antibiotic use (p = 0.001). These findings indicate that most of the community lacks adequate knowledge and appropriate attitudes regarding rational antibiotic use, highlighting the need for targeted health education programs to promote safer and more effective antibiotic practices.

Keyword: *Knowledge Level, Antibiotic Use, Attitude, Rational Antibiotics*

ABSTRAK

Penggunaan antibiotik yang rasional sangat penting untuk mencegah dan mengobati infeksi secara efektif serta menghindari dampak negatif seperti resistensi, peningkatan efek samping, dan biaya pengobatan yang lebih tinggi. Penelitian ini bertujuan untuk menilai tingkat pengetahuan dan sikap masyarakat Dusun Kampung Baru, Kecamatan Seko, mengenai penggunaan antibiotik yang rasional. Penelitian ini merupakan penelitian deskriptif observasional dengan pendekatan cross-sectional yang melibatkan 100 responden yang memenuhi kriteria inklusi. Hasil penelitian menunjukkan bahwa tingkat pengetahuan masyarakat termasuk kategori baik sebesar 7%, cukup 20%, dan kurang 73%. Sikap terhadap penggunaan antibiotik yang benar berada pada kategori baik sebesar 7%, cukup 10%, dan kurang 83%. Analisis statistik menunjukkan adanya hubungan yang signifikan antara tingkat pengetahuan dan sikap penggunaan antibiotik dengan nilai signifikansi 0,001. Temuan ini menunjukkan bahwa sebagian besar masyarakat belum memiliki pengetahuan dan sikap yang memadai mengenai penggunaan antibiotik, sehingga diperlukan edukasi kesehatan yang lebih intensif untuk meningkatkan praktik penggunaan antibiotik yang rasional.

Kata Kunci: *Pengetahuan, Sikap, Antibiotik, Penggunaan Rasional*

INTRODUCTION

The prevalence of non-prescription antibiotic use in Indonesia remains a critical public health concern, with approximately 92% of community usage deemed inappropriate (Pambudi, 2022). This trend has directly contributed to a surge in resistance rates, which escalated from 40% in 2013 to 60.4% by 2019 (Kementerian Kesehatan, 2011).

Previous rural studies consistently demonstrate that low health literacy and misconceptions such as confusing antibiotics with analgesics for pain managementdrive irrational self-medication practices (Pratomo & Dewi, n.d.; Meinitasari et al., n.d.). While these issues are well-documented in various regions, research focusing on remote areas like Seko District remains insufficient. Geographical barriers and limited pharmaceutical access in such areas further exacerbate the risk of misuse.

Kampung Baru Hamlet in the Seko District represents a critical study site due to its extreme isolation and the total absence of licensed pharmacies. Residents rely heavily on kiosks and small shops for medicine, where antibiotics are sold unsupervised and without professional guidance. This unique environment creates a high-risk landscape for the emergence of antimicrobial resistance. Accordingly, this study evaluates the knowledge and attitudes of residents in Kampung Baru to provide empirical evidence for tailored health interventions in isolated rural communities.

RESEARCH METHODS

This study employed a quantitative descriptive design with a cross-sectional approach. The research was conducted in Kampung Baru Hamlet, Seko District, North Luwu Regency, Indonesia, involving community members who met the predefined inclusion and exclusion criteria. The study population included all 400 residents of Kampung Baru Hamlet. A sample size of 100 respondents was determined using the Slovin formula with a 10% margin of error (e = 0.10).

This margin of error was chosen primarily due to the pragmatic constraints associated with the study's geographically isolated location, which presented significant logistical and accessibility challenges for data collection. Furthermore, considering the relatively homogeneous socio-economic characteristics and uniform healthcare access among the residents of this rural hamlet, a sample of 100 is considered statistically sufficient to provide a representative overview of the community's knowledge and attitudes for descriptive observational purposes.

The primary data were obtained through a structured questionnaire divided into three sections: (1) socio-demographic characteristics, (2) knowledge of antibiotics (multiple-choice), and (3) attitudes toward antibiotic use (Likert-type scale). To ensure instrument accuracy, a pilot study was conducted. Validity was evaluated using the Pearson Product-Moment correlation (items were considered valid if r - calculated > r - table at a 5% significance level). Reliability was determined using Cronbach's Alpha, with a minimum threshold of 0.60. This preliminary testing ensured that the instrument was methodologically sound for measuring knowledge and attitudes among the target population.

Data analysis was performed using descriptive and inferential statistics with the aid of SPSS version 21. Descriptive analysis (frequencies and percentages) was employed to characterize the distribution of respondents' knowledge levels and attitudes. For inferential analysis, the Chi-square test was utilized to examine the association between knowledge and attitudes toward rational antibiotic use.

This test was selected as it is the most appropriate statistical method for evaluating relationships between two categorical variables. Prior to the analysis, the

assumptions for the Chi-square test were verified: it was ensured that the expected frequency in each cell of the contingency table was at least 1, and no more than 20% of the cells had an expected frequency less than 5. These conditions were met, ensuring the validity of the statistical results. The significance level for all tests was set at p < 0.05.

RESULTS AND DISCUSSION
A. RESEARCH RESULTS
1. Quantitative Analysis
1.1 Instrument Validity and Reliability

Prior to the primary data analysis, the research instrument underwent validity and reliability testing to ensure its methodological robustness.

Table 1. Instrument Validation and Reliability Results

Parameter	Value / Range	Description
Validity (r-calculated)	0.361 - 0.914	All items > r-table (0.361) = Valid
Reliability (Knowledge)	0.902	alpha > 0.6 = Highly Reliable
Reliability (Attitude)	0.769	alpha > 0.6 = Reliable

The validity analysis performed using SPSS 21 demonstrated that all questionnaire items effectively measured the targeted variables. Cronbach's Alpha values for both knowledge and attitude exceeded the 0.60 threshold, confirming high internal consistency.

1.2 Socio-Demographic Characteristics (N=100)

The study involved 100 respondents with diverse demographic profiles. These characteristics are essential for understanding the context of antibiotic use in Kampung Baru.

a. Gender: Predominantly female (64%) and male (36%).
b. Age: The 46–55 age group was the largest (33%), followed by 36–45 years (29%).
c. Education: Majority were elementary school graduates (55%), followed by high school (25%).
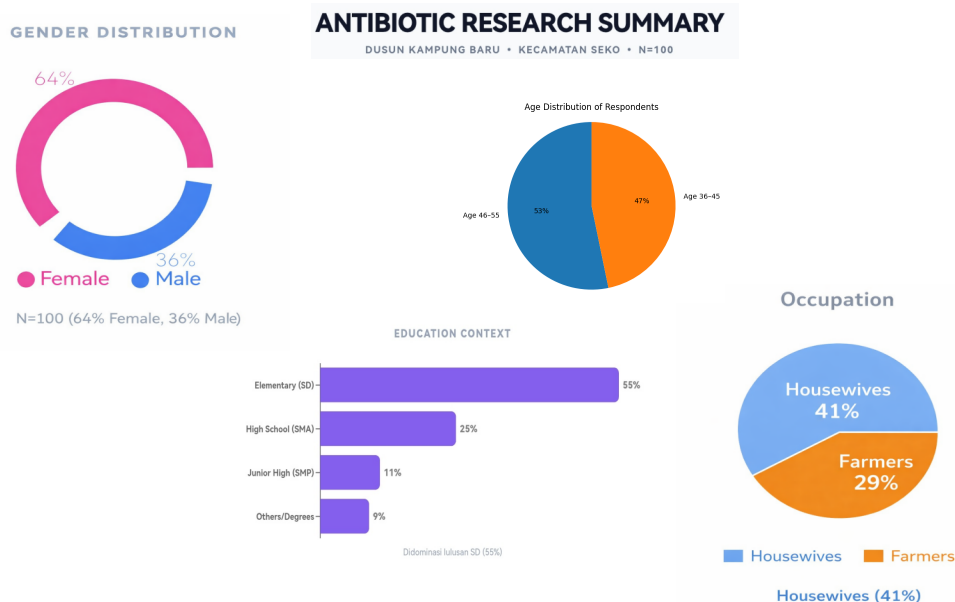d. Occupation: Highest among housewives (41%) and farmers (29%).

Figure 1: Demographic Profile

1.3 Antibiotic Consumption Patterns

Research findings indicate that Amoxicillin is the most widely consumed antibiotic in the community (51%), followed by Ampicillin (30%).
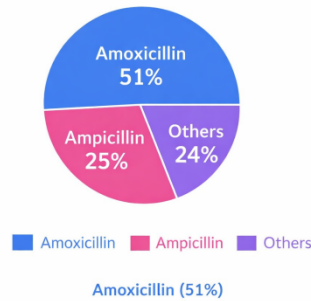

Figure 2: Distribution of Used Antibiotics

Qualitatively, the high prevalence of Amoxicillin use is linked to its accessibility in local kiosks, where it is frequently sold without professional medical oversight or a valid prescription.
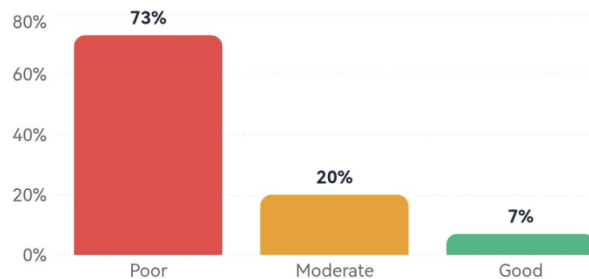
1.4 Knowledge and Attitude Assessment

The primary objective was to assess the community's knowledge and attitudes toward rational antibiotic use. The results revealed a critical gap in health literacy.

Table 2. Knowledge and Attitude Levels Distribution

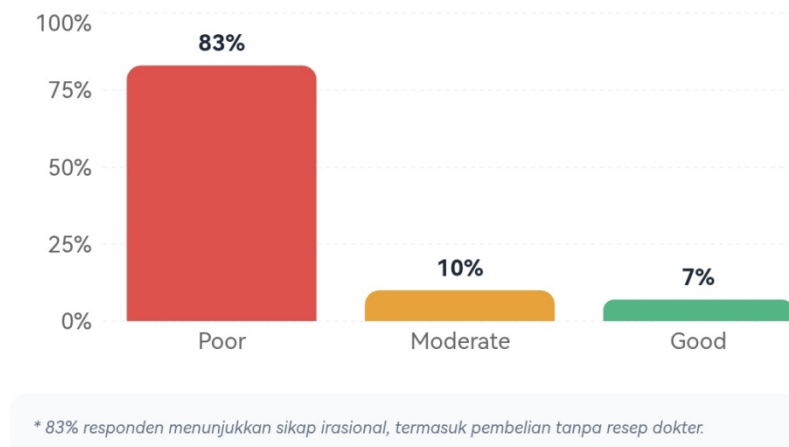| Category	Knowledge (%)	Attitude (%)
Good	7%	7%
Moderate	20%	10%
Poor	73%	83%

* Mayoritas responden (73%) memiliki pemahaman terbatas mengenai indikasi klinis antibiotik.

Figure 3: Comparative Analysis of Knowledge vs Attitude

The data shows that 73% of respondents have poor knowledge, while 83% exhibit irrational attitudes, indicating that even those with moderate knowledge may still practice unsafe medication behaviors.

Figure 4:Attitude toward antibiotic Use

The results indicate that the majority of respondents exhibited poor attitudes toward antibiotic use (83%), suggesting a high prevalence of irrational or inappropriate perceptions regarding antibiotics. Only a small proportion of respondents demonstrated good attitudes (7%), while 10% showed moderate attitudes. This finding highlights a significant gap in awareness and understanding of proper antibiotic use among the respondents. The dominance of poor attitudes may contribute to improper antibiotic practices, which can increase the risk of antibiotic resistance. Therefore, targeted educational interventions are urgently needed to promote rational antibiotic use.

1.5 Statistical Correlation

Statistical analysis using the Chi-square test was conducted to examine the relationship between the two main variables.

a. Significance (p-value): $p = 0.001$ (Statistically Significant)

b. Correlation Coefficient: 0.237 (Positive Association)

This significant p-value confirms that higher levels of knowledge are directly associated with more rational attitudes toward antibiotic use.

2. Qualitative Analysis

2.1 The Non-Prescription Amoxicillin

Data indicates that 51% of respondents utilize Amoxicillin. Qualitatively, Amoxicillin has undergone "commodification" in Kampung Baru Hamlet. It is no longer perceived as a potent drug requiring medical supervision but rather as a daily necessity obtainable at local kiosks. This phenomenon is driven by:

1) Social Normalization: Neighbors and family members frequently recommend the same medication to one another.

2) Accessibility: The significant distance to licensed healthcare facilities or pharmacies establishes local kiosks as de facto health centers.

2.2 The Paradox of Life Experience vs. Health Literacy

Despite the dominance of respondents in their mature years (ages 46–55), knowledge levels remain critically low (73% poor). This suggests that life experience does not inherently correlate with health literacy. In the absence of formal education or intervention from healthcare professionals (Pharmacists/Doctors), years of

experience may inadvertently reinforce incorrect behaviors, such as terminating medication prematurely upon symptomatic relief.

2.3 Misconception: Antibiotics as Analgesics

There is a notable tendency among respondents to equate antibiotics with analgesic (pain-relieving) medications. Qualitatively, the community seeks "instant results" to facilitate a swift return to labor (farming or domestic duties). The placebo effect or temporary symptomatic improvement is often mistaken for a complete cure, leading to the storage of leftover antibiotics for future use a practice that poses a high risk for the development of antimicrobial resistance.

2.4 The Knowledge-Attitude Nexus

The value of p=0.001 provides qualitative evidence that the community's poor attitudes are not rooted in negligence but in structured ignorance. A lack of fundamental information (knowledge) creates a low perception of risk, which subsequently fosters an indifferent attitude toward clinical dosage protocols.The correlation coefficient (0.237) shows a positive association.

B. DISCUSSION
1. Multi-Dimensional Interpretation
1.1 The Persistence of Knowledge Deficits in Pharmacy Deserts

The discovery that 73% of respondents possess poor knowledge highlights a significant failure in the traditional top-down dissemination of health information. While national Antimicrobial Resistance (AMR) awareness programs exist, they often fail to penetrate remote regions like the Seko District. This area functions as a Pharmacy Desert a geographical location where the absence of licensed pharmacies removes the pharmacist as the primary educational gatekeeper.

In this information vacuum, health literacy is not built on clinical evidence but on Social Orality. Misinformation regarding antibiotics is passed down through generations, creating a structured ignorance where residents do not realize that antibiotics are ineffective against viral infections. This explains why low knowledge persists: there is no local professional presence to counteract long-standing myths.

1.2 Socio-Economic Survival and the Pragmatism of Non-Adherence

The irrational attitudes (83%) found in this study are deeply rooted in the socio-economic realities of rural life. For the 29% of respondents who are farmers, the opportunity cost of illness is high. In a labor-dependent economy, feeling better is immediately translated into being cured.

When symptoms recede, respondents stop taking antibiotics to save costs and return to the fields as quickly as possible. This is not mere negligence; it is a pragmatic survival strategy to minimize the financial burden of medication and maximize productive labor days. To the residents, completing a full 5-day course seems redundant if they already feel physically capable of working on day three. Addressing this requires educational messaging that explicitly links incomplete doses to the future economic threat of prolonged, untreatable illnesses.

1.3 Commodification and the Painkiller Myth

The study reveals a profound Commodification of Prescription-Only Medicines (POM). By selling Amoxicillin (51%) in kiosks alongside daily groceries

like sugar or soap, the drug is psychologically downgraded from a potent clinical agent to a common household item. This normalization strips the antibiotic of its clinical significance.

Furthermore, there is a recurring analgesic misconception. Qualitatively, residents often use antibiotics for physical fatigue or aches caused by strenuous farming activities. They mistakenly believe antibiotics provide extra strength or faster recovery from physical exhaustion. This misconception is the most dangerous driver of resistance, as it leads to high-frequency, low-dose consumption that provides the perfect environment for Superbugs to emerge.

1.4 Paradox of Mature Experience and Survivor Bias

The 46–55 age group, despite having extensive life experience, still showed poor knowledge. This can be interpreted through Survivor Bias. Residents who have self-medicated irrationally for decades without immediate visible failure (such as anaphylaxis) perceive their habits as safe. Their long-term survival validates their misuse of drugs, making them less receptive to new clinical advice. This necessitates a change in educational strategy moving away from generic posters toward using local religious or community leaders to provide culturally persuasive counseling.

1.5 Study Limitations

Geographical Specificity: The results are specific to a remote hamlet and cannot be generalized to urban populations with better pharmaceutical oversight.

a. Social Desirability Bias: Respondents may have over-reported positive behaviors to satisfy the researchers.
b. Methodological Snapshot: The cross-sectional design only provides a snapshot and does not account for seasonal variations in infection rates or antibiotic availability in local kiosks.

CLOSING

A. CONCLUSION

This research establishes that in Kampung Baru, knowledge (73% poor) and attitudes (83% irrational) toward antibiotics are critically suboptimal, with a significant statistical correlation (p=0.001). The study proves that geographic isolation, low educational attainment (55% elementary), and the unregulated "kiosk culture" are the primary drivers of irrational drug use.

B. SUGGESTIONS

a. Regulatory Enforceability: The local health office must prioritize Informal Market Regulation. Kiosk owners should be integrated into a monitoring network to ensure antibiotics are not sold over-the-counter.
b. Rural Stewardship Programs: Government should incentivize the placement of clinical pharmacists in remote community health posts to act as local educators.
c. Culturally-Tailored Education: Health campaigns must be designed in local dialects and specifically target the distinction between infection and fatigue to dismantle the analgesic myth.
d. Subsidized Rational Supply: Ensuring that licensed healthcare posts have a steady, affordable supply of antibiotics to discourage residents from turning to unregulated kiosks for self-medication.

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