

Self-Medication With Antibiotics By The People Of East Mamungaa Village

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ABSTRACT

The unsupervised use of antibiotics continues to be a pressing public health issue because it may contribute to antimicrobial resistance and increase the likelihood of unwanted health effects. A community's understanding of when and how antibiotics should be used is one factor that can influence self-medication practices. For this reason, research sought for evaluating level knowledge related to independent antibiotic use among residents of East Mamungaa Village. A quantitative descriptive observational approach was selected as it enables a clear depiction of knowledge patterns within the population. A total of 172 individuals 18–65 years asked by purposive sampling, and information was obtained using a structured questionnaire assessing knowledge of indications, safety considerations, and appropriate antibiotic use. The results indicate that 60.5% of participants possessed a moderate level of knowledge, 28.5% demonstrated a good level of knowledge, and 11.0% showed limited knowledge. These outcomes reveal that although most respondents have a basic awareness of antibiotics, important gaps remain—especially in recognizing the dangers of using these medications without clinical guidance. Accordingly, continuous community-based education efforts are needed to strengthen proper antibiotic practices and minimize the risks associated with self-medication.

Keywords: Antibiotics, Melf-medication, Public Knowledge

Introduction

Individuals engage in self-medication with pharmaceutical products when they self-assume responsibility for obtaining, distributing, and using these products without a formal medical prescription. They do this because they believe that these practices are reasonable and acceptable (Stratchounski et al., 2023). To properly cure bacterial infections, it is crucial to utilize antibiotics as prescribed by a doctor. Because antibiotics are so widely available, many people in the community continue to use them without a doctor's prescription. There are a number of negative health consequences that might result from using antimicrobial agents obtained outside clinical consultation supervision. The development of germs that are no longer able to withstand the effects of antibiotics is a major concern. Consequently, once-treatable illnesses become more difficult to cure and may even cause the spread of more tough-to-control diseases. Furthermore, severe adverse effects, including gastrointestinal problems, allergic responses, and impairment of liver and renal function, may result from the irresponsible use of antibiotics. Furthermore, antibiotic use alters the composition of the gut microbiota, which in turn affects brain function and may have consequences for mental health, such as an increased likelihood of depressive and anxious symptoms (Djawaria et al., 2018).

When people take it upon themselves to acquire and use pharmaceutical items according to their own standards of what is suitable, rather than with a doctor's prescription, this practice is known as self-medication. Because their improper and uncontrolled usage accelerates the development of antibiotic resistance, antibiotics pose the greatest threat among pharmaceutical products. Eltom et al. (2022) found that this condition leads to an increase in morbidity, mortality, and length of hospital stay.

There is a great deal of geographical diversity in the incidence of antibiotic self-medication globally. The percentages in Southern European nations are much higher, with Greece at 76% and Portugal at around 19%; in Eastern Europe, the rates are modest, especially in Romania and Poland, at about 41.1%. Within the region, Saudi Arabia ranks among the nations with the greatest occurrence rates, at almost 80%, while Jordan has the lowest percentage, at 40.7%. Similarly widespread reliance on unsupervised antibiotic use have been found in studies undertaken in Central African nations, such as Guatemala (79% prevalence) and Nigeria (80% prevalence) (Aslam et al., 2020).

A substantial risk to international public well-being and development is the rise of microorganisms and viruses that are resistant to antibiotics. Approximately 4.95 million people died in 2019 due to AMR, with 1.27 million of the casualties being directly attributed to the disease. An estimated 133,800 people died that year in Indonesia alone as a result of antimicrobial resistance. In terms of age-standardized AMR mortality rates, this puts Indonesia at position #78 among the 204 nations studied (Kemenkes & BKPK, 2023)

Antibiotic self-medication was found to be 40.8% common, with an even greater incidence among male patients and older adults, who tended to take antibiotics without a doctor's prescription. In 73.2% of instances, infections of the upper respiratory tract were found to be the most common reason for antibiotic

usage. For 82.8% of those who took the survey, antibiotics were mostly sourced from commercial pharmacies. When asked for advice on dose, only 27.8% of participants went to a doctor. The main reasons why people self-administered their medications were because they had previous experience with comparable symptoms (67.2%) and because they had limited access to professional healthcare services (29.3%). Among those who stopped using antibiotics, 57.8% did so because their health improved, whereas 62.5% changed to a different antibiotic because their condition didn't improve (Al-Qahtani et al., 2018).

Among the 2,494 community members who participated in the AMRIN-study, 43% of *Escherichia coli* germs exhibited antibiotic resistance. Ampicillin (34%), cotrimoxazole (29%), and chloramphenicol 25% are among the antibiotics with high degrees of resistance. Research including 781 inpatients revealed that 81% of *E. coli* bacteria exhibited resistance to several medicines. Specifically, 73% of the bacteria tested positive for ampicillin, 56% for cotrimoxazole, 43% for chloramphenicol, 22% for ciprofloxacin, and 18% for gentamycin. Antibiotic resistance is rampant in Indonesian hospitals and the general public, according to these results. Dianita Rifqia and Tutut Setyowati observed that respondents' understanding was significantly poor before they were educated about health. The following percentages of respondents were rated: 31 (39.7% of the total) had less knowledge, 30 (38.5% of the total) had excellent knowledge, and 17 (21.8%) had adequate knowledge (Putri & Setyowati, 2024)

This review analyzed data from 242 research. A total of 27.7% (95% CI: 24.9%-30.5%) of people self-medicate with antibiotics. Quantitative studies found that SMA was more likely to occur among those with greater incomes, relatives working in healthcare, those individuals storing antibiotics domestically, and those acquiring antibiotics without a prescription. Individual characteristics, healthcare-related variables, pharmacy practices, and social network impacts were the four primary areas that were uncovered by qualitative analyses (Wang et al., 2024).

According to the research done by Dewi Paskalia et al., the majority of respondents (76.00%) seldom purchase antimicrobial drugs acquired absent formal authorization, but a tiny proportion (23.60%) still do so regularly. Almost half of all antibiotic purchases occurred once a month, with only a small percentage occurring more often, ranging from two to three times per week (3.40%). While a minor fraction purchased antibiotics for others (9.36%), the majority of responders (56.55%) purchased them for personal use. Antibiotic resistance prevention efforts should be concerned about these results because they represent the habit of administering antibiotics without medical supervision (Djawaria et al., 2018).

A study by Hadiuzzaman, et al, showed that of the 79 participants, 37 (46.8%) consulted a doctor, while 42 (54.2%) did not consult a general practitioner. Between 42 participants did not consult MBBS/GPs, 14 (17.7%) visited a local pharmacy for advice/medicine, 10 (12.7%) consulted a traditional healer/village doctor/medical assistant, 9 (11.4%) used medicines stored at home/family/friends, 3 (3.8%) consulted an alternative medicine practitioner (Homeopathy/ Unani/ Ayurveda/ Other), and 6 (7.6%) engaged in other health-seeking behaviors (Khanum & Nazila, 2022)

Based on the problem of using antibiotics in oneself, research purpose for see knowledge self-medication of antibiotics by community in East Mamungaa Village.

Methodology

In order to determine and quantify the extent to which the general population understands and makes use of antibiotics, this research used an observational descriptive methodology. A questionnaire instrument was developed to inquire about people's knowledge and practices about antibiotic self-medication, and primary data was gathered directly from them. In order to capture the true state of affairs in the field, this approach was selected for data collection.

A total of 172 participants, chosen using purposive sample approaches, participated in this research. The researcher uses predetermined criteria to consciously choose samples for this approach. People between the ages of 18 and 65 were regarded to be of legal drug-using age, meaning they had the mental ability and autonomy to make their own decisions about which medications to take, including antibiotics. Through this approach, it is hoped that the research can provide useful information in formulating more effective educational strategies and public health interventions.

Result and Discussion

After the data is collected through a questionnaire to informants about public knowledge about hard drugs, data analysis will be carried out. The search, the data analysis utilized through a descriptive stage by calculating the percentage in describing the characteristics of the respondents which included gender, age, education, and occupation displayed in the form of a table. The findings of this study are described through a narrative format and a table of percentages.

Table 1. Characteristics of Respondents

Respondent Characteristics		Frequency	Presentase (%)
Gender	Man	39	22,7
	Woman	113	77,3
Age	17 - 25 Years	29	16,9
	26 - 35 Years	136	79,1
	36 - 45 Years	7	4,1
Education	SD	28	15,1
	SMP	34	19,8
	SMA	80	46,5
	College	32	18,6

Based on the data collected, the number of male respondents was 39 people or 22.7%, while women amounted to 113 people or 77.3% of the total respondents. The high proportion of women in this survey provides an initial idea that the majority of perceptions and behaviors analyzed, including the independent use of antibiotics, are more influenced by the experiences and decisions of the women's group. In the context of antibiotic use without a doctor's prescription, sex differences can be a factor that influences behavior patterns. Women, who in some studies tended to be more involved in family health management. Meanwhile, men tend to seek health care less often and fewer report using antibiotics without a prescription. Previous studies have demonstrated inconsistent findings. Hidayah et al. reported individuals higher socioeconomic status, greater educational attainment, residence in urban settings,

higher income levels, and female gender tend to exhibit more favorable levels of knowledge, attitudes, also practices related to antibiotic (Karuniawati et al., 2021)

A total of 187 people took part in the survey, with 80% of those people being female. The response rate was 75%. Nearly nine in ten people who took the survey had taken antibiotics at some point, and nearly half of those people think they may help you get over a cold faster if you take them. In addition, 65 percent admitted to buying antibiotics without first seeing a doctor, and 62 percent admitted to buying them without a prescription. Additionally, the results showed that some respondents didn't fully grasp the difference between viruses and bacteria. While 52% of people got the part about how antibiotics work against bacteria, 55% of people thought they worked against viruses as well. Overwhelmingly, 80% of participants said they trusted doctors. Access to antibiotics outside authorized prescriptions was comparatively lower when knowledge levels were higher (Kandelaki et al., 2015a). Several studies have shown that dads tend to have a skewed view of how well medicines work against viruses. According to Kumar et al. (2024), the most common reasons people self-medicate include coughing, common cold, elevated temperature, and gastrointestinal upset. Most antimicrobial drugs were found to be received from hospitals.

Judging from the age distribution of respondents, the majority are in the age range of 26-35 years, which is 136 people or 79.1% of the total respondents. This age group is in a productive period and generally has a high level of independence in making health-related decisions, including decisions in the use of drugs independently. Meanwhile, respondents in the age range of 17-25 years amounted to 29 people or 16.9%. This group is in the early stages of adulthood, where access to information through the internet and social media is very large, which has the potential to influence self-medication behavior, including utilized antimicrobial agents procured outside medical authorization. The age group of 36-45 years is the least group, only 7 people or 4.1%. Although small in number, these groups often have more experience in managing health problems, both personal and family, which can affect the way they perceive and use antibiotics.

The research included 742 adult volunteers from the state of Georgia. The findings indicated that 23.8% (n = 177) of the participants admitted to self-medicating with antibiotics, while 12.7% (n = 94) admitted to medicating younger relatives. In all, it was determined that 32.6% of people self-medicate. Factor F1 ("personal experience") together with sex displayed notable linkage (p = 0.042, F = 2.6) according to statistical analysis. Factor F2 ("lack of trust in medical practitioners") and age were also shown to be significantly associated (p = 0.047, F = 4.691). Adults aged 60 and over and those between the ages of 18 and 24 showed stronger connections. Additionally, whilst the correlation between educational attainment and Factor F1 was weak (p = 0.04; F = 2.2), the correlation between educational attainment and Factor F2 was much larger (p = 0.00; F = 7.9). "Darakhvelidze et al., 2024"

Eighty persons, or 46.5% of the population, have completed high school, according to the most recent data on education levels. Students in this cohort have completed at least some secondary school and have a rough idea of what's going on

with their bodies, but they may lack experience with or knowledge about how to properly utilize medications, such as antibiotics. A total of 34 respondents (19.8%) had finished secondary school, while 28 (15.1%) had only completed elementary school. Both groups are likely to have a lack of formal education, which puts them at greater risk of self-medicating with antibiotics without fully comprehending its uses and possible adverse consequences. At the same time, 32 respondents (18.6%) had college degrees. Although this demographic may continue to self-medicate for reasons of convenience or personal experience, they often have greater access to information and a better grasp of the hazards of taking antibiotics without a prescription.

Table 2. Respondents' knowledge of antibiotic use

Category		Frequency	Percentage (%)
Knowledge	Good	49	28,5
	Enough	104	60,5
	Less	19	11,0
	Total	172	100

One hundred forty-four persons, or 60.5% of all participants, showed sufficient understanding of antibiotic application on their own. This shows that most people already have a basic understanding of antibiotics, but do not fully understand the risks and procedures for their correct use. A total of 49 respondents (28.5%) had a good level of knowledge, which reflects that they relatively understand the importance of using antibiotics according to a doctor's prescription, and are aware of the risk of antibiotic resistance due to improper use. However, there are still 19 respondents (11.0%) with a lack of knowledge. This group has a high potential to practice antibiotic use independently without adequate understanding, such as stopping use prematurely or using antibiotics for diseases that do not require them, i.e. viral infections. The practice of antibiotic self-medication is widely observed in Northwest Nigeria, where the majority of antibiotics are obtained from unlicensed outlets without a physician's prescription. In addition, a substantial deficiency in respondents' understanding regarding the escalation of antibiotic resistance was identified, indicating limited awareness of the broader public health implications associated with inappropriate antibiotic use (Ajibola et al., 2018)

The findings explained that although the majority of the public has sufficient knowledge, broader and in-depth educational efforts are still needed to increase public understanding of the dangers of using antibiotics without medical supervision. Especially for groups with less knowledge, direct, practical, and easy-to-understand interventions are crucial in preventing antibiotic abuse and reducing potential resistance in the future. The statement is relevant to the findings (Pratiwi & Sugiyanto, 2019) which shows that respondents' knowledge is in the category of lack of 17%, sufficient by 60%, and good by 23%. In general, level knowledge of respondents regarding the use of antibiotics is quite sufficient. Assessment of utilize of knowledge was carried out by calculating the respondent's percentage knowledge score. (Nursalam, 2015), Based on the percentage of correct answers, there are three levels of knowledge: good (76-100%), adequate (56-75%), and poor (< 56%).

This situation arises because some respondents are not aware that the drugs they buy are considered prescription drugs, which if not used as directed, can have serious negative consequences. The physical, non-physical, and socio-cultural aspects surrounding a person are some of the external forces that shape a person's knowledge. These factors then form experiences that are understood, perceived, and believed by the individual, which in turn encourages the formation of motivation, the intention to act, and ultimately reflected in the behavior (Yarza et al., 2015). The results show that people have a poor grasp of the idea of antimicrobial resistance and a lot of misunderstandings about when and how to take antibiotics. Despite expressing a high degree of confidence in healthcare providers, a considerable fraction admitted to using antibiotics without a prescription or consultation. There is a significant disconnect between people's faith in medical professionals and their willingness to seek their advice, as this paradox shows. Public health officials, healthcare providers, and the Georgian government should all take note of this trust as a chance to improve intervention efforts. Furthermore, these results provide an important basis for designing targeted educational programs and awareness campaigns to promote rational antibiotic use and enhance public engagement in efforts to prevent antibiotic resistance (Kandelaki et al., 2015)

A quarter of the 1,699 parents who took part in the study admitted to using antibiotics for self-medication (SMA) on their children in the last year. The predominant complaint prompting independent treatment was cough (59.6%), while the most common antibiotic administered was penicillin (85.4%). In both rural and urban areas, parents who were more knowledgeable about antibiotics (OR = 1.163, 95% CI: 1.067-1.268) and who were able to get antibiotics over-the-counter (OR = 1.475, 95% CI: 1.097-1.983) were more likely to give their children SMA, according to hierarchical regression analysis. Those in urban areas were showed a higher probability of self-treatment when antibiotics were available at home, but those in rural areas did not have this tendency. In addition, the odds ratio (OR) for obtaining antimicrobial agents acquired absent authorized approval was 1.959 (95% CI: 1.072-3.578) among children who did not have chronic diseases. Research by Kannelaki et al. (2015)

The findings show that having more knowledge and access to more sources of information is favorably related with sticking to the prescribed antibiotic regimen. Research out of Lithuania lends credence to the idea that most people don't fully grasp the need of taking antibiotics as prescribed; this lack of knowledge might lead to higher rates of non-adherence and even self-medication. The source is PavydŲ et al. (2015).

Chinese youngsters continue to exhibit an alarmingly high rate of antibiotic self-medication (SMA). It was shown that parents are more likely to give antibiotics to their children unsupervised if they have a high degree of information about the procurement and storage of antibiotics that are not recommended. Hence, it is critical to enhance educational programs that are both practical and successful in order to encourage children to take antibiotics rationally (Qu et al., 2023)

Conclusion

The results showed that 60.5% of the public, or 104 individuals, had enough knowledge of antibiotics to use them independently. Of the total population, 49 individuals (28.5%) had good knowledge and 19 individuals (11.0%) had poor knowledge. Although most people have a basic understanding of antibiotic use, these results suggest that there are still groups of people with lower knowledge who are more likely to use antibiotics inappropriately. Therefore, more intensive and sustainable educational efforts are needed to increase public literacy, especially in understanding the risks of using antibiotics without a prescription or medical supervision.

Declaration of Competing Interest

The authors affirm that this study, entitled “Self-Medication With Antibiotics by the People of East Mamungaa Village,” was carried out without any financial, institutional, or personal interests that might compromise the integrity of the findings. No conflicts of interest—either direct or indirect—were present throughout the design, implementation, analysis, or reporting of this study.

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