



SELF-MEDICATION PRACTICES IN REMOTE, BORDER, AND ISLAND AREAS: A LITERATURE REVIEW

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ABSTRACT

Health is defined as a state of physical, mental, and social well-being that enables every individual to lead a socially and economically productive life. One of the initial efforts in treatment is the practice of self-medication. Self-medication is the independent use of medication without supervision or direct consultation with a health professional, with the aim of addressing health complaints experienced. The purpose of this study was to examine the description and risk factors of self-medication in Indonesia and globally. This research method is a descriptive observational study using a literature review design, with the following databases: Wiley Online Library, PubMed, and ScienceDirect From 2021 to 2025, a total of 25 articles were reviewed. The search strategy for articles in Wiley Online Library, PubMed, Google Scholar, and ScienceDirect used four keywords: "Self-medication"; "Drugs"; "Remote Areas"; and Risk Factors." Search results that met the criteria were then subjected to article analysis. Self-medication is common in various parts of the world, especially in areas with limited access to healthcare. This practice is increasingly prevalent in Indonesia, particularly in remote areas such as border and coastal areas. These areas face numerous challenges, including difficult-to-reach locations, limited healthcare facilities, and a shortage of medical personnel. These conditions encourage people to self-medicate without the supervision of healthcare professionals. This self-medication practice carries significant potential risks, such as inappropriate medication use, which can lead to increased drug resistance and other health problems. Therefore, it is crucial to understand the factors influencing self-medication in remote areas to effectively mitigate its negative effects.

Keywords: medication; remote area; risk factors; self-medication

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INTRODUCTION

Health is a fundamental aspect encompassing physical, mental, and social well-being, enabling individuals to live socially and economically productive lives (World Health Organization, 2021). However, access to professional healthcare services remains a challenge, especially in remote, border, and island areas. In Indonesia, the geographic condition—comprising thousands of islands and hard-to-reach regions—results in disparities in the availability of healthcare facilities and personnel, thereby influencing how communities manage their health (Ministry of Health, Republic of Indonesia, 2023).

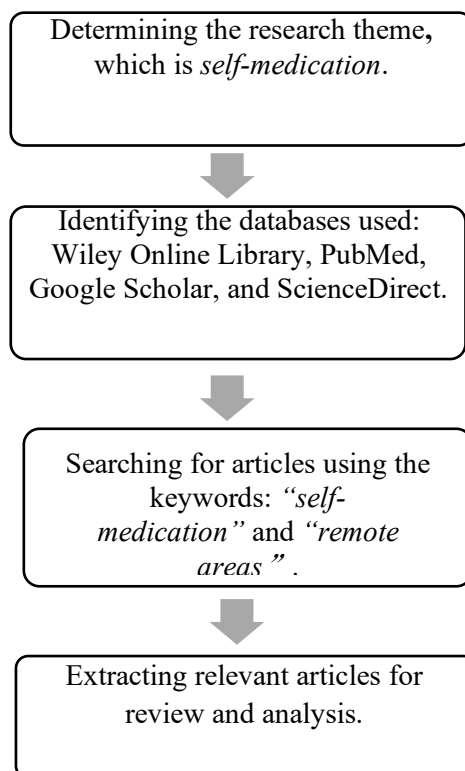
One commonly observed health practice in such areas is self-medication, which refers to the use of medication without supervision by healthcare professionals to treat minor ailments (Prasetyo et al., 2023). This practice is often chosen due to its accessibility and the limited availability of formal healthcare services in remote areas. However, self-medication poses significant health risks, including medical complications and medication errors that may worsen the patient's condition or lead to drug resistance (Rahmawati & Nugroho, 2022; WHO, 2023).

Remote, border, and island regions in Indonesia face significant geographic challenges that exacerbate the limited access to healthcare facilities. Factors such as difficult terrain, long

distances, and a lack of transportation infrastructure serve as major barriers to obtaining optimal healthcare services (Santoso et al., 2024). These conditions compel local communities to rely on self-medication as a practical solution, despite the increased health risks associated with such practices (Ministry of Health, Republic of Indonesia, 2023). This literature review aims to examine the practice of self-medication in remote, border, and island areas by exploring the underlying factors, health consequences, and strategies that can be implemented to control and minimize the risks of unsupervised medication use. Understanding these dynamics is essential for designing targeted health policies to improve service quality and patient safety in regions with limited access.

METHOD

The method used is descriptive observational in the form of a literature review. A literature review is a synthetic review and summary of what is known and unknown about the topic of a collection of scientific works, including the current workplace in existing knowledge. The literature review uses databases: Wiley Online Library, PubMed, Google Scholar and ScienceDirect. The articles used are articles from 2021 to 2025, a total of 25 articles were reviewed. The article search strategy in Wiley Online Library, PubMed, Google Scholar and ScienceDirect uses 4 keywords, namely: "Self-medication"; "Drugs"; "Remote Areas"; and Risk Factors". The work procedure of this literature review can be seen in Figure 1 below



RESULT

Table 1.
The extracted results from the 25 articles

No	Title/Author/Year	Country	Sample	Study Type	Findings
1	Factors Influencing Self-Medication Practices in Remote Areas in Indonesia / Fitriani, L., et al. / 2023	Indonesia	Communities in remote areas	Observational study	Limited healthcare access and low health literacy encourage self-medication.
2	Self-medication Behavior and Health Literacy in Indonesian Communities during the Post-Pandemic Period / Prasetyo, A., et al. / 2023	Indonesia	Indonesian communities	Quantitative study	Health literacy affects self-medication behavior; post-pandemic increase observed.
3	Accessibility and Self-Medication Practices in Rural Indonesia / Rahmawati, N., Nugroho, A. / 2022	Indonesia	Rural populations	Survey study	Limited healthcare access correlates with increased self-medication.
4	Healthcare Challenges in Border and Island Regions of Indonesia: Implications for Self-Medication / Santoso, E., et al. / 2024	Indonesia	Border and island communities	Qualitative study	Health service challenges lead to greater reliance on self-medication.
5	Understanding Risk Factors of Self-Medication in Remote Indonesian Areas / Yuliana, T. / 2022	Indonesia	Remote communities	Cross-sectional study	Key risks include lack of health info and facilities.
6	Self-medication Profiles in School-Age Adolescents in Surabaya City / Dewi, Y. P., et al. / 2021	Indonesia	Adolescents in Surabaya	Descriptive study	Explores self-medication behavior and influencing factors among students.
7	Understanding Public Knowledge and Behavior on Antibiotic Usage in Indonesia / Putri, L. D., et al. / 2023	Indonesia	General population	Survey	Sociodemographic factors affect antibiotic self-medication behavior.
8	Mobile-Based Self-Medication Application / Ferawati, F., et al. / 2022	Indonesia	App users	Application development	Mobile app delivers info on minor illnesses treatable without a doctor.
9	Community Knowledge on Traditional Medicine for Self-Medication / Suparman, E., et al. / 2018	Indonesia	Mangngi Village residents	Descriptive study	94.74% recognize traditional medicine as valid for self-care.
10	Improving Knowledge on Self-Medication and Child Pharmacist Training / Nur Fadilah Bakri, et al. / 2024	Indonesia	Students in Jayapura	Training study	Student knowledge improved significantly after training.
11	Health Education Program on Cough Self-Medication / Sarina, et al. / 2023	Indonesia	Talang Jambe residents	Community development	Counseling, leaflets improved community understanding of cough meds.
12	Knowledge and Attitudes Toward Gastritis Self-Medication / Agustina, E., et al. / 2025	Indonesia	Bello Village community	Quantitative descriptive	Low knowledge and attitudes; education needed.
13	Prevalence of Self-Medication in Mothers with Children Under Five in Yogyakarta / Tri Wahyuni, et al. / 2025	Indonesia	Mothers with <5-year-old children	Cross-sectional study	Prevalence >50%, more common in rural and educated mothers.

No	Title/Author/Year	Country	Sample	Study Type	Findings
14	Antibiotic Self-Medication Among Indian Medical Students / Ajay Jambo, et al. / 2023	India	360 medical students	Cross-sectional	67.78% practice; mostly for fever, respiratory issues.
15	Knowledge and Practice of Self-Medication with Leftover Antibiotics in Saudi Arabia / Zowawi, et al. / 2024	Saudi Arabia	738 residents	Descriptive survey	High use of leftover antibiotics; storage and resistance risks.
16	Antibiotic Knowledge and Practices in Jordanian Households / Sawalha, et al. / 2023	Jordan	Households	Survey	Improper disposal and self-medication threaten resistance efforts.
17	Parental Knowledge and Practice on Antibiotics in Bandung / Nurul, et al. / 2024	Indonesia	Parents	Instrument development	Tool validated to assess parental behavior on antibiotics.
18	National Survey of Antimicrobial Self-Medication in Indonesia / Yuliana, et al. / 2025	Indonesia	General population	Cross-sectional	High self-medication due to access and lack of risk knowledge.
19	Self-Medication Among Pregnant Women in Tamil Nadu, India / Muthalvan, E., et al. / 2024	India	403 pregnant women	Cross-sectional	53.6% prevalence; driven by cost, access, and socioeconomics.
20	Self-Medication in Indigenous Communities in Bangladesh / Saha, A., et al. / 2022	Bangladesh	Indigenous Chittagong communities	Cross-sectional	49.9% prevalence; higher in men and educated individuals.
21	Self-Medication with Antibiotics Among Indian Undergraduates / Jambo, A., et al. / 2023	India	Medical students	Cross-sectional	67.78% prevalence; linked to cost-saving and convenience.
22	Behavior Toward Self-Medication with Leftover Antibiotics in Saudi Arabia / Zeleke, T. K., et al. / 2024	Saudi Arabia	738 residents	Survey	Common practice; risk of resistance and misstorage.
23	Questionnaire Validation for Antibiotic Use in Children in Bandung / Nurul, J., et al. / 2024	Indonesia	Parents	Instrument validation	Validated tool for assessing parent knowledge and use.
24	Antibiotic Use in Livestock in Sumbawa, Indonesia / Nurul, J., et al. / 2024	Indonesia	Farmers	Descriptive study	Non-prescribed antibiotic use due to lack of education programs.
25	Antibiotic Practices in Jordanian Households / Author 8 / 2023	Jordan	Households	Survey	Improper household use and disposal risks antibiotic resistance.

DISCUSSION

Self-Medication Behavior in Indonesian Communities

According to the World Health Organization (2021), self-medication is an important part of self-care that can be beneficial when done correctly but also dangerous if conducted without proper guidance. To ensure that self-medication has a positive impact on public health, WHO emphasizes the importance of education and support from health systems. In Indonesia, the Ministry of Health of the Republic of Indonesia (2023) reported that the limited availability of health services in remote and border areas has led people to use self-medication as an alternative treatment.

Self-medication behavior remains prevalent in Indonesia, particularly in remote and rural regions. According to Fitriani et al. (2023), the lack of health services and low health literacy contribute to the tendency of communities to engage in self-treatment. Public reliance on self-medication also increases due to hard-to-reach geographical locations, such as small islands and border areas (Santoso et al., 2024). This indicates that access to healthcare services is a key factor influencing self-medication practices. The level of health literacy has changed as a result of the COVID-19 pandemic. Increased health literacy has encouraged unsupervised self-treatment, while the easy accessibility of medicines from pharmacies further promotes self-medication (Prasetyo et al., 2023). Rahmawati and Nugroho (2022) highlighted the complexity of the problem from an infrastructural perspective by linking the rise in self-medication to limited access to healthcare facilities.

Moreover, adolescents demonstrate significant self-medication behavior. A study by Dewi et al. (2021) found that socio-environmental factors, such as peer influence and knowledge levels, greatly impact the prevalence of self-medication among students. Additionally, the cultural role in public health behavior is evident in the continued use of traditional medicines as a part of self-medication practices, especially in communities such as Mangngi Village (Suparman et al., 2018). Educational programs have proven effective in modifying this behavior. Nur Fadilah Bakri et al. (2024) stated that training in elementary schools successfully increased knowledge and positive attitudes towards medicine use. Similarly, Sarlina et al. (2023) showed that counseling through leaflets and lectures could enhance community understanding of proper cough medicine usage. However, the use of antibiotics without prescriptions remains a serious issue that contributes to the risk of antibiotic resistance. Studies by Yuliana et al. (2022, 2025) and Putri et al. (2023) warned that high levels of antibiotic self-medication worsen the threat of drug resistance. Therefore, educational interventions and regulations on medication use are crucial for managing and controlling self-medication practices.

Factors Influencing Self-Medication

Remote, border, and island areas in Indonesia face complex challenges in accessing health services. The Ministry of Health of Indonesia (2023) stated that healthcare facilities and personnel in these regions are extremely limited, prompting communities to rely heavily on self-medication. Geographical difficulties and limited transportation infrastructure add to the barriers preventing people from accessing formal healthcare services. Lack of access to health services is a major factor influencing self-medication. Yuliana et al. (2022) found that the risk of self-medication increases due to a lack of information and healthcare facilities, especially in remote areas. Santoso et al. (2024) emphasized that this condition increases the risk of medication errors and the use of drugs without supervision, potentially causing serious health hazards such as antibiotic resistance and undetected side effects. WHO (2021) recommends implementing health literacy strengthening programs in remote communities, providing safe and affordable essential medicines, and training local health cadres to support responsible self-medication practices.

Health literacy is also crucial. Research by Prasetyo et al. (2023) showed that low health literacy contributes to inappropriate self-medication practices, whereas higher literacy levels help reduce these risks. Additionally, Agustina et al. (2025) found that public awareness of the dangers of antibiotic use remains relatively low. Therefore, further education is essential. Social and demographic factors also influence self-medication behavior. Dewi et al. (2021) identified age, education, and peer influence as three major factors affecting self-medication practices among adolescents. Furthermore, Agustina et al. (2025) and Putri et al. (2023) demonstrated a significant socio-economic influence on drug access and treatment costs, which drives people to choose self-medication as a solution.

Another important factor is local culture. Suparman et al. (2018) stated that the use of traditional medicine remains a commonly accepted part of self-medication in many communities. This cultural aspect offers two sides: it can serve as an alternative treatment that supports proper self-medication or pose a potential risk if not properly supervised. Economic practicality is also significant, especially for certain types of work. According to Nurul et al. (2024), livestock farmers tend to use antibiotics without prescriptions due to limited education and cost considerations. This shows that current challenges in antibiotic resistance education programs remain substantial in reducing high-risk self-medication practices.

CONCLUSION

Due to limited healthcare services and knowledge, self-medication behavior remains high among the Indonesian population, particularly in remote areas. The difficult-to-reach geographical conditions increase reliance on self-treatment, including the use of traditional medicines, which is influenced by local culture. Improved health literacy following the COVID-19 pandemic has helped reduce inappropriate self-medication, yet the ease of accessing non-prescription drugs remains a major issue. Social factors and lack of education significantly affect adolescents. As the risk of resistance increases, the use of antibiotics without prescriptions poses a serious threat. Therefore, to control risky self-medication and promote appropriate drug use, educational efforts, regulation of drug use, and improved healthcare access must be implemented concurrently.

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