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Medication Literacy on Antacid Use in Kedak Village, Kediri Regency Based on a Cross-Sectional Study

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ABSTRACT

Antacids are over-the-counter medications commonly used to relieve symptoms of gastrointestinal disorders such as dyspepsia, gastritis, and gastroesophageal reflux. Although widely used, an incomplete understanding of their proper use may lead to suboptimal therapeutic outcomes. This study aims to evaluate the level of understanding among residents of Kedak Village, Bungas Hamlet, Kediri Regency, regarding the use of antacids. A descriptive cross-sectional survey was conducted among 81 respondents who met the inclusion criteria. The primary outcome was overall knowledge about antacids, assessed across subdomains of obtaining, using, storing, and disposing, with composite scores reported as mean ± SD. Results showed that 91% (95% CI: 83-96%) understood the definition and dosage, 49% (95% CI: 38-60%) knew the correct method of chewing antacid tablets before swallowing, 65% (95% CI: 54-75%) were aware of side effects like constipation or diarrhea, 52% (95% CI: 41-63%) understood proper storage, and 36% (95% CI: 26-47%) knew safe disposal methods; overall knowledge score was 58.6 ± 12.4%. These findings indicate that public understanding remains partial and lacks coverage of essential aspects of safe and rational drug use. Therefore, more comprehensive education is needed, especially through the active role of healthcare workers and community health posts (posyandu), to improve medication literacy in rural communities.

Keywords:
Antacid; Medication; Gastrointestinal; Community Health; Cross-sectional Study

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1. Introduction

Digestive tract disorders such as dyspepsia, gastritis, and gastroesophageal reflux are increasingly prevalent in communities [1]. A common treatment approach is the use of antacids, which act by neutralizing stomach acid and thereby alleviating symptoms of burning or epigastric pain [2]. Improper use of antacids, for instance without professional healthcare supervision, without sufficient understanding of indications, dosage, interactions, storage, or side effects, can lead to suboptimal therapeutic outcomes and even the risk of other drug interactions. For example, a study at a family practice clinic reported that 51.3% of adult patients had used antacids at least once in the past six months, yet their use was often unknown to the treating physician

[3]. The use of this medication increased to 88.3% during the COVID-19 pandemic. This increase was due to several factors, namely education level and ease of access to obtain the medication [4].

Research in Indonesia shows that the public's knowledge regarding the use of antacid drugs is still limited. In one survey among university students, only 11.8% of respondents had good knowledge about dyspepsia, gastritis, GERD, and the use of antacids as treatment, 39.2% were in the moderate category, and 49% were in the low category [5]. Another study showed similar results, where 5.1% had good knowledge, 27.1% were in the moderate category, and 67.8% were in the low category [6]. Therefore, public understanding of antacid medications, including indications, proper usage, side effects, storage, and disposal, is important to support rational and safe use of medicines in the community.

Good knowledge regarding the use of antacids should also be disseminated to rural communities to increase awareness about using antacids without a doctor's prescription. Various surveys have been conducted among the Makassar community regarding the DAGUSIBU principle (Obtain, Use, Store, Dispose) in the use of antacids, and they found that although most respondents had good knowledge for the 'obtain' aspect, the aspects of 'use', 'store', and 'dispose' were still low. Respondents who have knowledge about drug use and how to obtain it average 77.77%. Meanwhile, respondents with knowledge about the dosage and storage of antacids are only 56.33% [7]. Research in Bojonegoro Regency showed that although public knowledge about antacids was fairly good, ignorance regarding the risks of drug interactions and improper use still appeared among the community [8]. However, to date, very few studies have specifically examined the level of understanding of antacid use in rural communities in Indonesia, particularly in Kedak Village, Bungas Hamlet, Kediri Regency.

The level of understanding of antacid use in Kedak Village, Bungas Hamlet, Kediri Regency is influenced by various factors, such as socio-cultural aspects, access to health services, education level, and local treatment habits. The education level of Kedak Village residents is 42% elementary school graduates, 30% junior high school, 25% senior high school, 1% diploma (D1), and 2% bachelor's degree (S1). Health facilities in this village include two maternity homes, nine integrated health posts (Posyandu), two pharmacies, one midwife, and two paramedics. While the majority of residents in the village are engaged in farming and agricultural labor [9], the study sample reflected a different occupational profile, with entrepreneurs accounting for 65%. Considering these factors, this study is important to empirically determine the extent of Kedak Village residents' understanding of antacid use. The results are expected to illustrate the level of medication literacy in rural communities and serve as a basis for more targeted educational interventions by healthcare professionals, particularly pharmacists and local health center staff.

The results of this study are also expected to contribute to the development of health promotion policies at the village level, particularly in the Community Healthy Living Movement (GERMAS) program and the optimization of the role of posyandu in educating about drug use. Thus, this study not only serves as an academic review but also as a form of support for increasing public awareness about the safe and rational use of over-the-counter drugs.

2. Methods

Descriptive cross-sectional survey [10] conducted March–June 2025 in Kedak Village, Bungas Hamlet (RT 01/RW 04), Kediri Regency.

Population, Sample, and Sampling Techniques

Population, sample, and sampling technique of this study were, respectively, the residents of Kedak Village, Semen District, Kediri Regency, the residents of Bungas Hamlet, and purposive sampling. Purposive sampling is a technique for determining a sample based on certain considerations [10]. However, those who met the criteria were only 81 people with a history of gastritis. The respondents were aged 17 to 55 years, including both female and male participants. The sample had to meet the following inclusion criteria: Residents of RT 01 RW 04 Bungas Hamlet, Kedak Village, Semen District, Kediri Regency. Residents with a history of gastritis. Residents with a history of gastritis who are taking antacid medication. Residents who are willing to become respondents. Exclusion criteria included: Residents who declined to participate or withdrew consent during data collection. Residents with incomplete or inconsistent responses in the questionnaire. Residents with severe comorbid conditions that could interfere with participation. Residents outside the specified age range (below 17 or above 55 years)

This study uses a single variable, namely the level of knowledge about the use of antacid drugs possessed by the residents of RW 04 Bungas Hamlet, Kedak Village, Semen District.

Research Instrument

The instrument used in this study is a questionnaire, which serves as a tool to collect data from respondents. In order for the questionnaire to be used effectively, validity and reliability tests need to be conducted to ensure that the questionnaire can measure accurately and consistently according to the research objectives. Validity testing is conducted using SPSS, where if the correlation is significant (calculated r value > table r value or significance value <0.05), it is declared valid. Reliability testing uses the Cronbach's Alpha value; if the value is > 0.60, then the instrument has good internal consistency and can be relied upon [10].

Data Analysis

Data collection was carried out by distributing questionnaires to the respondents, and the data obtained consisted of primary data. Data processing in this study went through several stages, namely Editing, Coding Sheet, Data Entry, and Scoring [10]. Data analysis was conducted using descriptive analysis presented in percentage units. Each percentage score was calculated based on the following formula [12]:

$$P = F/N\ x100\%$$

Description: P: Percentage of value
F: Total score obtained
N: Highest possible score

The results of the data processing were interpreted based on the following percentages (Yusuf et al., 2024): Good category, which is answering correctly between 76% and 100% of the expected. Sufficient category, which is answering correctly between 56% and 75% of the expected. Poor category, which is answering correctly 55% or less of the expected. Data collection involved distributing self-administered questionnaires to 81 respondents, yielding primary data that underwent processing via editing, coding, data

entry, and scoring stages. Descriptive analysis summarized knowledge levels in percentages using the formula is maximum score), with categories adapted from Yusuf et al. (2024): good (≥76%), sufficient (56-75%), poor (≤55%). Bivariate chi-square tests examined associations between knowledge categories and demographics (age, education, occupation), while logistic regression assessed predictors of good knowledge (vs. sufficient/poor), adjusting for age, sex, and education; overall, 28% had good knowledge, with education showing significant association (p=0.002) and odds ratio of 3.2 (95% CI: 1.5-6.8) for higher education levels.

Ethical Considerations

This study has obtained ethical approval with the number 1017/FF/EP/V/2025.

3. Results and Discussion

The respondents were dominated by males at 74% and females at 26% out of 81 respondents. Most respondents were aged 40 to 49 years at 40%, with an education level of elementary school graduates at 46%, and an occupation as entrepreneurs at 65%, as shown in **Table 1**.

Table 1. Distribution Data of Age, Education, and Occupation from Respondents

No.	Distribution	Percentage
1.	**Age**	
	<20	3%
	20-29	5%
	30-39	20%
	40-49	40%
	>50	32%
2.	**Education**	
	Not attending school	20%
	Elementary School	46%
	Junior High School	20%
	Diploma	10%
	Bachelor's degree	4%
3.	**Job**	
	Civil servant	2%
	Private employee	7%
	Entrepreneur	65%
	Housewife	26%

In data Data collection ensured all 81 respondents had experience with antacids (ranitidine excluded as H_2 blocker) for gastric issues: generic antacids (48%), Promag (33%), Mylanta (19%). These OTC medications are readily accessible at local Kediri pharmacies. This study assessed antacid knowledge levels among residents of Kedak Village, Bungas Hamlet, Kediri Regency, as illustrated in **Figure 1** and **Figure 2**. **Figure 1** demonstrates strong comprehension of drug definition and dosage (91% correct), while **Figure 2** reveals substantial gaps in usage, storage, and disposal (51% average correct), indicating partial community knowledge.

Bivariate chi-square tests showed no significant associations between knowledge levels and education (p=0.581) or occupation (p=0.723). These non-significant findings contrast with prior studies linking higher education to better health knowledge, though local rural contexts may moderate such effects. Educational background and occupation are the main factors influencing the ability to absorb and process health information comprehensively. This aligns with previous research, which found that individuals with higher education have broader knowledge compared to those with lower education. Education is the process for someone who wants to develop abilities, attitudes, and shape positive behavior in society [13]. This educational factor, as stated by Musnelina, Putri, and Ayunda (2024), plays an important role in increasing an individual's capacity to receive information [14].

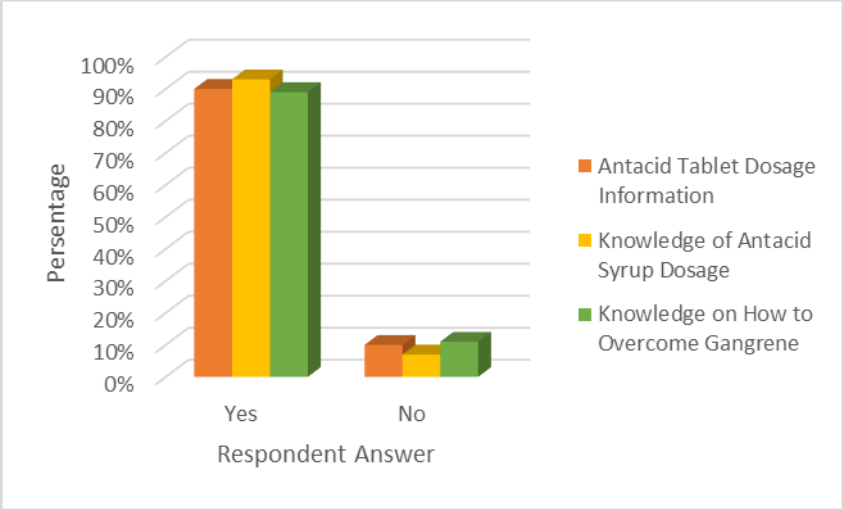

Figure 1. Knowledge on Definitions and Dosing of Antacid Products

One of the most prominent findings in this study is the discrepancy in knowledge regarding the use of antacids in tablet form. As many as 90% of respondents claimed to know the correct tablet dosage; however, ironically, 51% of them did not know that the tablet should be chewed before swallowing. This contradiction suggests that the information received by the public likely focuses only on 'how much' (dosage) without an explanation of 'how' (the proper method of consumption). In fact, the correct method of consumption, such as chewing the tablet, is crucial for the effectiveness of the drug in neutralizing stomach acid, according to the guidelines explained by the Indonesian Ministry of Health [15]. Failure to chew the tablet can reduce the dissolution rate and effectiveness of the drug, thus the therapeutic goal of relieving gastric symptoms is not optimally achieved [16].

Knowledge about the side effects of antacid drugs also shows results that need serious attention. Although the majority of respondents (65%) reported being aware of the side effects, there are still 35% of respondents who have no knowledge about this. This lack of awareness is very risky, considering that antacids can cause side effects such as constipation (from aluminum hydroxide) or diarrhea (from magnesium hydroxide). Self-medication without an understanding of the risks can lead to improper management of side effects or even worsen the patient's health condition, in accordance with warnings stated by [17].

These findings highlight the importance of strengthening medication literacy through the DAGUSIBU framework (Dapatkan, Gunakan, Simpan, Buang). Actionable education should emphasize that chewable tablets must be chewed, suspensions should be shaken before use, and antacids should be taken at least two hours apart from tetracyclines or fluoroquinolones to avoid drug interactions. Proper storage below 30 °C should be reinforced to maintain drug stability, and disposal practices should follow safe methods such as take-back programs or the mix–seal–trash approach. Embedding these practical messages into community health education can help ensure that antacid use is both effective and safe [7].

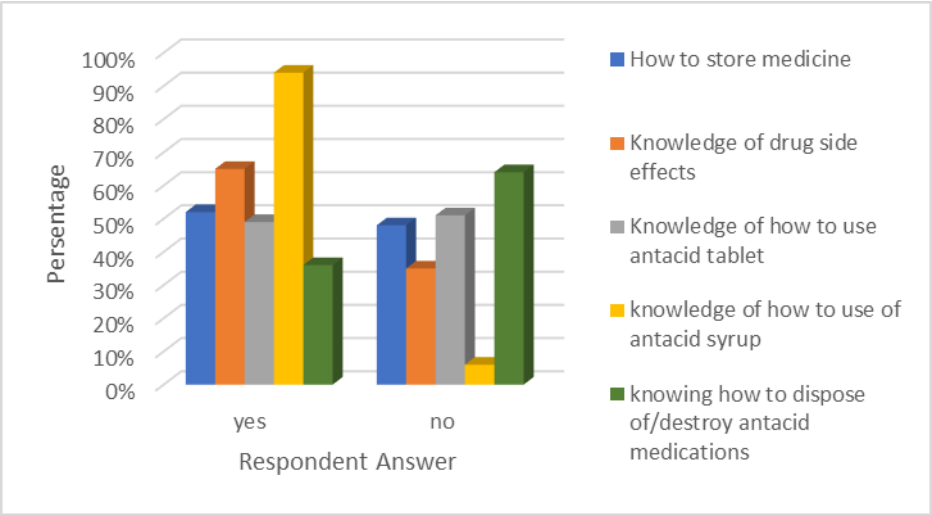

Figure 2. Respondents' Level of Knowledge About Antacid Drugs

Another aspect of knowledge showing unsatisfactory results is regarding the storage and disposal of antacid drugs. Concerning storage, respondents' knowledge is almost evenly split, with 52% knowing the correct method and 48% not. A more worrying condition is seen in the knowledge of drug disposal methods, where the majority of respondents (63%) admitted not knowing the proper procedures. This indicates that information about the post-consumption lifecycle of drugs is often overlooked in patient education. In fact, improper storage can damage drug stability and reduce its effectiveness, while incorrect disposal poses a risk of environmental contamination and potential misuse. This knowledge is an integral part of safe and effective drug use, as indicated in various pharmaceutical guidelines. This knowledge gap underscores the need for more holistic education, not just focusing on how to take the medication. Healthcare workers need to proactively provide information on how to store medicine in a cool and dry place and how to dispose of it safely. Without this knowledge, self-medication practices carried out by the public are still far from ideal. This survey was only conducted on antacid users and those with a history of gastritis.

4. Conclusion

This study shows that residents of Kedak Village, Bungas Hamlet, have partial understanding of antacid use. While most respondents demonstrated good knowledge of definitions and dosage (around 90%), fewer understood technical aspects such as chewing tablets before swallowing (49%). Awareness of side effects was moderate (65%), and knowledge of proper storage (52%) and disposal (36%) was limited. These findings

indicate that although access and basic knowledge are relatively high, comprehensive education is still needed, particularly on correct use, storage, and disposal. Educational background and occupation influenced knowledge levels, highlighting the importance of tailored interventions to improve drug literacy and safe self-medication in rural communities.

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Conflicts of Interest:
The authors declare no conflict of interest regarding the publication of this paper.

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