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Penilaian Pengetahuan Masyarakat tentang Swamedikasi Gastritis: Studi *Cross-Sectional* Nasional di Indonesia

Assessing Community Knowledge on Gastritis Self-Medication: A Nationwide Cross-Sectional Study in Indonesia

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Abstract

Gastritis is a common gastrointestinal disorder that affects global population, including Indonesia. Many individuals choose self-medication as a primary approach to manage gastritis symptoms. Inappropriate self-medication practices can lead to worsening symptoms and complications. Understanding the knowledge level is essential to improve self-medication safety. This study aims to assess the level of community knowledge regarding gastritis self-medication in Indonesia. An observational study with cross-sectional design conducted among Indonesia community. Data were collected through an e-questionnaire, which was distributed across 34 provinces. The instrument in this study has been tested for validity and reliability using Content Validity, Face Validity, and Cronbach's Alpha tests. Descriptive statistical analysis was performed using SPSS to summarize the characteristics of the respondents and to categorize knowledge levels into low, moderate, and high. The results of this study indicated that 921 respondents (78.1%) had a high knowledge level, 247 respondents (21%) had a moderate knowledge level, and 11 respondents (0.9%) had a low knowledge level of gastritis self-medication. In conclusion, knowledge level of Indonesian community regarding gastritis self-medication is categorized as high. Limited number of respondents still have low to moderate knowledge level, indicating the necessity for further roles and strategies from healthcare professionals in gastritis self-medication education.

Keywords: *Gastritis, Knowledge, Self-medication, Indonesia*

Abstrak

Gastritis merupakan gangguan saluran pencernaan yang umum terjadi di seluruh dunia, termasuk di Indonesia. Banyak individu memilih melakukan swamedikasi sebagai pendekatan utama untuk mengatasi gejala gastritis. Praktik swamedikasi yang tidak tepat dapat menyebabkan gejala memburuk dan risiko komplikasi. Mengetahui tingkat pengetahuan masyarakat sangat penting untuk meningkatkan keamanan swamedikasi. Penelitian ini bertujuan menilai tingkat pengetahuan masyarakat Indonesia mengenai swamedikasi gastritis. Studi observasional dengan desain *cross-sectional* dilakukan pada masyarakat Indonesia. Data dikumpulkan menggunakan e-kuesioner yang didistribusikan ke 34 provinsi. Instrumen dalam penelitian ini telah diuji validitas dan reliabilitasnya menggunakan uji *Content Validity*, *Face Validity*, dan *Cronbach's Alpha*. Analisis statistik deskriptif dilakukan menggunakan SPSS untuk mendapatkan karakteristik responden dan mengkategorikan tingkat pengetahuan menjadi rendah, sedang, dan tinggi. Hasil penelitian menunjukkan 11 responden (0,9%) memiliki tingkat pengetahuan rendah, 247 responden

(21%) tingkat pengetahuan sedang, dan 921 responden (78,1%) memiliki tingkat pengetahuan tinggi terkait swamedikasi gastritis. Secara keseluruhan, tingkat pengetahuan masyarakat Indonesia tentang swamedikasi gastritis tergolong tinggi. Namun, masih terdapat sebagian responden dengan tingkat pengetahuan rendah hingga sedang, sehingga diperlukan peran dan strategi lebih lanjut dari tenaga kesehatan dalam mengedukasi masyarakat terkait swamedikasi gastritis.

Kata kunci: Gastritis, Pengetahuan, Swamedikasi, Indonesia

INTRODUCTION

Gastritis is a prevalent health concern globally, with estimates suggesting it impacts as much as half of the world's population. In developing countries, the prevalence of gastritis may attain up to 70%, significantly influenced by socioeconomic conditions and geographical region [1]. The World Health Organization (WHO) reported that the prevalence of gastritis in Indonesia is 40.8%. Gastritis is one of the ten most prevalent diagnoses among hospitalized patients in Indonesia, accounting for 4.9% of all cases [2]. As a developing country, Indonesia has health problems associated with poverty, insufficient sanitation, and limited awareness of food hygiene, particularly in rural regions [3]. These factors can lead to elevated prevalance of gastrointestinal diseases, leading to higher mortality and morbidity if improperly managed. Gastritis condition is marked by inflammation of the stomach mucosa, which may result from various circumstances, including an irregular diet, stress, Helicobacter pylori infection, and the consumption of medications that can cause stress ulcer, such as Nonsteroidal Anti-Inflammatory Drugs (NSAID) [3]. Gastritis symptoms such as heartburn, nausea, vomiting, and flatulence frequently cause patients to self-medication prior to pursuing medical consultation.

Self-medication is the practice of using over-the-counter (OTC) medications to alleviate the symptoms of minor illness without health professional advice. The global prevalance of self-medication ranges from 11.2% to 93.7%, depending on the target demographic and geographic area [4]. Self-medication is a prevalent practice in Indonesia, facilitated by the ease of access to over-the-counter medications. According to the Central Bureau of Statistics (BPS), self-medication in Indonesia increased by more than 20% to around 84% in 2021 [5]. Antacids, proton pump inhibitors (PPIs), and H2 receptor antagonists (H2RA) are the medications that frequently employed in the self-medication of gastritis [6]. The improper use of OTC medications, along with insufficient knowledge and awareness, has emerged as a significant public and worldwide health issue [7]. Insufficient knowledge regarding self-medication may lead to ineffective therapy, increased risk of problems, and adverse drug reactions. A individual's level of knowledge can be influenced by factors such as age, education level, income, access to information, and personal experience with drug use [8,9].

The extent of public awareness concerning self-medication for gastritis significantly impacts the efficacy of treatment and the prevention of complications. Previous studies in Duren Mekar village, West Java showed a self-medication knowledge level was low at 68% [10]. Study conducted in Palu showed similar results of 51% [11]. Another study conducted in the Lombok region indicated that community knowledge level on self-medication was low at 24%, while sufficient knowledge was found at 34% [12]. The current data in

Indonesia indicates that knowledge of self-medication for gastritis still need improvement. This study is necessary due to the limitation of study in Indonesia's rural areas. This study aim to assess the knowledge level of Indonesian community on self-medication for gastritis. This assessment will serve as a basis for health professionals, particularly pharmacists, to create more effective educational strategies that will enhance the safe and rational self-medication practices.

METHOD

Study Design and Sampling

This study is an observational study with a cross-sectional design. The study was carried out throughout 34 provinces in Indonesia during February 2021, using a Google Form-based questionnaire for data collecting, which was distributed online via several social media platforms. This study has obtained ethical approval from the Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta, with letter number 017/EC-KEPK FKIK UMY/I/2021. Sampling was taken by non-probability sampling technique with the consecutive sampling method. Inclusion criteria for the respondents of this study included those aged 17-65 years, had a history of gastritis and had taken self-medication. The total number of respondents who met the inclusion criteria was 1179. Data collection was carried out by distributing Google Forms questionnaire to all Indonesian community with an even distribution according to the proportion of the population.

Instrument

This study used a knowledge level questionnaire instrument consisting of 25 statements. This study began by conducting a preliminary test to validate the knowledge level questionnaire using the content validity test, the face validity test and the reliability test. Based on the assessments that 5 experts had carried out, it was found that from the 25 statement items, the level of knowledge of self-medication therapy on the questionnaire sheet was stated to be very valid, as evidenced by the results ranging from 0.8 to 0.93. The face validation test using Microsoft Excel with 22 samples obtained a value of 0.8-0.9. The questionnaire can be considered to have very strong validation when it ranges from 0.8-0.9 or should not be less than 0.78 [13]. Meanwhile, based on the reliability test results using the SPSS, the instrument test measured on the knowledge level variable of gastritis self-medication showed a Cronbach's alpha coefficient of 0.984, where the Cronbach's alpha value was > 0.6. It was stated that the instrument was reliable.

Data Analysis

The data obtained were analyzed descriptively. Data regarding the knowledge of self-medication for gastritis therapy in this study was collected via an e-questionnaire utilizing Google Forms, comprising both positive and negative responses. Respondents provided true or false answers to 25 items including knowledge and general information about gastritis, pharmacological therapy, drug classification, procurement of medications, drug usage and delivery, side effects, storage, and disposal of medications. If the respondent answers properly, they will receive a score of 1; if the answer is incorrect, they will receive a score of 0. The number of correct responses signifies the value that reflects the respondent's knowledge level. Knowledge level was calculated by dividing the total number of correct answers by the total number of questions, then multiplying by 100%. Respondents' knowledge levels were categorized as low (<56%), moderate (56% – 75%), and high (76% – 100%).

Table 1. Characteristics of respondents

General Characteristic	Category	Frequency (n = 1179)	Percentage (%)
Gender	Female	1003	85.1
	Male	175	14.8
Age	17 – 25 years	1062	90.1
	26 – 45 years	89	7.6
	46 – 65 years	28	2.4
Latest Educational Background	Junior High School	33	2.8
	Senior High School	751	63.7
	Higher education	394	33.4
Province	Aceh	10	0.8
	Bali	30	2.5
	Banten	50	4.2
	Bengkulu	5	0.4
	Daerah Istimewa Yogyakarta	43	3.6
	Gorontalo	11	0.9
	Jakarta	68	5.8
	Jambi	27	2.3
	West Java	135	11.5
	Central Java	127	10.8
	East Java	118	10.0
	West Kalimantan	32	2.7
	South Kalimantan	30	2.5
	Central Kalimantan	19	1.6
	East Kalimantan	27	2.3
	North Kalimantan	17	1.4
	Bangka Belitung Islands	20	1.7
	Riau islands	10	0.8
	Lampung	38	3.2
	Maluku	8	0.7
	North Maluku	8	0.7
	West Nusa Tenggara	51	4.3
	East Nusa Tenggara	26	2.2
	Papua	14	1.2
	West Papua	13	1.1
	Riau	43	3.6
	West Sulawesi	12	1.0
	South Sulawesi	34	2.9
	Central Sulawesi	16	1.4
	Southeast Sulawesi	12	1.0
	North Sulawesi	17	1.4
	West Sumatra	31	2.6
	South Sumatra	40	3.4
	North Sumatra	36	3.1
Occupation	Employee	120	10.2
	Student	902	76.5
	Teacher	26	2.2
	Entrepreneur	57	4.8
	Farmer	3	0.3
	Civil servant	13	1.1
	Entrepreneur	1	0.1
	Others	56	4.7
Gastritis Medication Profile	Antacid	987	83.7
	Cimetidine	10	0.8
	Esomeprazole	1	0.1
	Lansoprazole	39	3.3
	Omeprazole	61	5.2
	Ranitidine	64	5.4
	Sucralfate	17	1.4

RESULT AND DISCUSSION

There were 1179 respondents who met the inclusion criteria in this study. Characteristics of the respondents in this study are shown in Table 1. Female respondents dominated at 1003 (85.1%) of the total, compared to 175 (14.8%) males. The age of respondents with gastritis varied from 17 to 65 years, with the dominant group being respondents aged 17 to 25 years, totaling 1,065 (90.1%). Respondents with a senior high school educational background represented the majority at 751 (63.7%). Among the 34 provinces in Indonesia, West Java reported the greatest incidence of gastritis patients, totaling 135 (11.5%), followed by Central Java with 127 (10.8%) and East Java with 118 (10%). In terms of occupation, 902 (76.5%) of respondents were students, while 120 (10.2%) were employees. Antacid medications are the most commonly utilized by respondents for the self-medication of gastritis, specifically 987 respondents (83.7%).

Gender Characteristics of Respondents

The majority of respondents with gastritis were female. It aligns with previous study stating that the number of female with gastritis was more than male, and gastritis in female could attack from young adulthood to the elderly [14]. Another study found that more female suffered from acute gastritis than chronic gastritis. The high prevalence of gastritis in female in this study may be due to more frequent visits to health facilities than male to get gastritis treatment and other health problems [15]. One of the causes of gastritis is stress, while research suggested that gender affects individuals' health status and behavior. Female may be more prone to gastritis due to stress and social roles they have, and social roles differences [16]. More female live in a stressful environment, have less time to rest, get up earlier from bed, deal with boredom physically, emotionally, and psychologically unstable. They are also more involved in household work, including serving and caring for the whole family.

Age Characteristics of Respondents

By observing the age characteristics, most respondents who carried out self-medication for gastritis were aged 17-25 years due to activity level and lack of attention to health. That age group is categorized as the adolescent age in the productive age (teenage-adult age). Adolescence is an age commonly associated with various activities and that they tend to be exposed to various factors that can increase the risk of getting gastritis, for example, irregular eating patterns, stress at work, smoking, and various unhealthy lifestyles due to various activities and busyness at the productive age [17]. Azizah et al. (2024) stated that gastritis mostly occurs in productive ages where they are susceptible to gastritis symptoms due to busyness and lifestyle and pays less attention to health and stress due to environmental factors [18]. At that age, the demands of a large job make a person have irregular eating patterns and frequencies, which then causes gastritis.

Characteristics of Respondents' Educational Background

Most of respondents' education level in this study is senior high school. Education can affect the pattern of life. Yulianti & Muazizah (2024) reported similar findings that self-medication is more commonly practiced by people with a high school education which can affect the level of knowledge [9]. Further, education plays an important role in increasing information about gastritis and influencing a person's behavior [19]. The findings of this study also supported by the statement of Rosiani et al. (2020), stating that the higher the person's education is, the higher the person's achievement will be [20]. The need for achievement can be shown by the desire to do something

better. It can be interpreted that the respondent who has extensive knowledge will impact the willingness to improve themselves and the willingness to prevent gastritis recurrence. Furthermore, education can affect a person, including their behavior towards how to live and motivate attitudes to play a role in their self-development [21]. Wahyuningtyas (2019) suggested that the mindset and belief in taking action began with the presence of information [22].

Occupation Characteristics of Respondents

The results of this study showed that the occupation of most respondents was students or college students. Farizal (2015) stated that the most dominant occupation of self-medication and experiencing gastritis were students or college students due to the level of activity, unhealthy lifestyle, foods that can stimulate the stomach, and stress that easily occurs due to environmental factors that cause gastritis symptoms to appear [23]. The high prevalence of gastritis among students can be affected by stress levels, NSAID consumption, and an unhealthy lifestyle or diet and their habit of frequently skipping meals which can cause gastritis. Unhealthy eating patterns can cause gastritis as many teenagers want a certain body shape by eating in the wrong way [18,20].

Characteristics of Respondent's Province of Origin

Most of the respondents in this study came from West Java. Previous study reported the prevalence of gastritis in West Java was 31%, with the highest percentage of suffering located in the city of Bandung at 15% [2]. The elevated prevalence can be related to individuals' preference for spicy and sour foods. Spicy and sour flavored foods are highly preferred by diverse age demographics in Indonesia, particularly in the West Java region. One of the favored spicy foods among community is "Seblak." Seblak is a common food enjoyed by the community of West Java. Sour foods such as "Rujak", which consists of sour fruits such as unripe mangoes and pineapples, are also generally favored by Indonesians. However, consumption of spicy and sour food provides a risk factor for gastritis [15,24–26]. Spicy foods can enhance gastrin secretion, hence stimulating stomach acid production. Increased stomach acid levels can induce inflammation and affect the gastric mucosal layer, leading to the development of gastritis [27].

Gastritis Medicines Used by Respondents

Respondents' experiences with self-medication for gastritis therapy were investigated in this study. The goal of gastritis management is to alleviate abdominal pain, reduce inflammation, and prevent potential complication [3]. Antacids were used by 987 respondents (83.7%). Sodium aluminum hydroxide and magnesium hydroxide are the components of antacid. The self-medication of gastritis can be managed with antacids and ranitidine, as outlined in the guidelines for over-the-counter and limited free medicine in Indonesia [28,29]. Sucralfate and omeprazole are pharmacist-only medicine (OWA) that pharmacists can dispense to patients without a prescription [30]. This finding contradicts with the results of a study conducted on the Brazilian population, which showed that proton pump inhibitors (PPIs) were the most frequently used medications for self-medication of gastritis. This was due to the easy access to free PPIs by the public health care system in Curitiba, Brazil [31]. Some respondents use cimetidine, esomeprazole, and lansoprazole for self-medication, despite these medications being classified as ethical medicines that require doctor's prescription to procurement. When individuals self-medicate and purchase medication at the

pharmacy, the pharmacist provides information regarding indications, dosage, and other considerations necessary to prevent harmful consequences of self-medication.

The level of knowledge was a variable that was analyzed in this study. The number of correct answers showed the value representing the respondent's knowledge level. The knowledge level category was divided into 3 levels: knowledge level is considered “Low” when the score less than 56%, "Moderate" when the score is in the range of 56% - 75%, "High" when the score between 76% - 100%. The results of respondents' knowledge in the descriptive analysis are shown in Table 2. Only 11 respondents (0.9%) who have a low level of knowledge regarding gastritis self-medication, the remaining respondents have a high and moderate level of knowledge.

Table 2. Knowledge Level of Gastritis Self-Medication in Indonesian Community

Knowledge Level	Frequency (n)	Percentage (%)
Low	11	0.9%
Moderate	247	21.0%
High	921	78.1%
Total	**1179**	**100%**

Based on the results of the analysis above, it is known that 921 respondents (78.1%) had a high level of knowledge. This high level of knowledge is likely influenced by several factors, including extensive access to information via the internet and social media, along with increased public awareness of health. Previous study has demonstrated that education, occupation, personal experience, and availability to healthcare experts, including pharmacists and physicians, contribute to enhancing individuals' knowledge of safe self-medication practices [9,32,33]. By optimizing these factors, an individual will pursue information from trustworthy sources to avoid misinformation. So it is expected that community can self-medicate correctly and appropriately.

However, there were still 21% of respondents with moderate knowledge and 0.9% with low knowledge, indicating a gap in the community's understanding of gastritis self-medication. This may result from insufficient valid information, misunderstandings regarding medication usage, and limited access to healthcare professionals who can provide proper education. An overall analysis of the gastritis self-medication knowledge questionnaire showed that respondents still lacked understanding and knowledge about drug storage and disposal. The Indonesian Ministry of Health stated that the problems that frequently arose in the community in the use of medicines included the lack of knowledge of self-medication such as the use of appropriate medicines, excessive use of over-the-counter medicines, and especially the lack of understanding of how to store and dispose of medicines correctly, while self-medication practitioners in Indonesia are quite high. The role of healthcare professionals is very important in providing reliable information and education to the community, especially regarding the proper storage and disposal of medications, ensuring that community self-medication is conducted effectively and without errors. Self-medication also prevalent in rural or isolated regions owing to restricted access to healthcare experts and facilities. Consequently, enhancing access to health information is crucial for mitigating disparities in health services. Enhancing individuals' knowledge about safe self-medication is anticipated to reduce the burden on healthcare facilities while enabling access to rational and effective therapy.

This study has the advantage of a wide research scope covering 34 provinces in Indonesia, allowing more representative study of the national population's knowledge regarding gastritis self-medication. This study is limited by its

inability to evaluate the causal association with self-medication practices. Therefore, further study is required to ascertain the application of knowledge in self-medication practices and its correlation with clinical outcomes.

CONCLUSION AND RECOMMENDATION

CONCLUSION

Overall, knowledge level of Indonesian community regarding gastritis self-medication is categorized as high. Limited number of respondents still have low to moderate levels of knowledge, indicating the necessity for further roles and strategies from healthcare professionals in gastritis self-medication education not only in urban but also rural or remote areas.

RECOMMENDATION

An analytical study design is advised for future research in order to assess the causal association between community knowledge level and the implementation of gastritis self-medication.

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