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Prevalence of Gastritis Symptoms Among Adolescents at an Islamic Boarding School in Aceh Besar, Indonesia

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Abstract

Gastritis symptoms are among the most common gastrointestinal health problems experienced by adolescents and may adversely affect their health and daily activities. Understanding the prevalence of gastritis symptoms among adolescents living in Islamic boarding schools is important for developing appropriate health promotion and prevention strategies. This study aimed to describe the prevalence of gastritis symptoms among adolescents at Al-Manar Islamic Boarding School in Aceh Besar, Indonesia. This study employed a descriptive cross-sectional design involving 160 adolescents selected through total sampling. Data were collected using a structured self-administered gastritis symptom questionnaire and analyzed using descriptive

statistics. The results showed that 120 respondents (75.0%) had a low level of gastritis symptoms, while 40 respondents (25.0%) had a high level of gastritis symptoms. These findings indicate that although most adolescents experienced a low level of gastritis symptoms, one in four adolescents reported a high level of symptoms, suggesting that gastritis remains a significant health concern among students living in Islamic boarding schools. These findings highlight the importance of implementing school-based health promotion programs focusing on healthy eating habits, early detection, and gastritis prevention to improve adolescents' gastrointestinal health.

Keywords: Gastritis Symptoms, Prevalence, Adolescents, Islamic Boarding School, Gastrointestinal Health

1. Introduction

Gastritis remains one of the most common gastrointestinal disorders worldwide because of its high prevalence and substantial impact on health-related quality of life. Gastritis is defined as an inflammation of the gastric mucosa that may occur in either acute or chronic forms and is clinically characterized by symptoms such as epigastric pain, nausea, vomiting, abdominal fullness, early satiety, and heartburn [1]. According to the Global Burden of Disease (GBD) 2021 study, the global prevalence of gastritis and duodenitis was approximately 454 cases per 100,000 population. Although the age-standardized prevalence has declined since 1990, the absolute number of cases continues to increase because of population growth and aging and is projected to rise further by 2050 [2, 3]. These findings indicate that gastritis remains a significant public health concern, particularly among younger populations.

Adolescents represent one of the populations most vulnerable to gastritis symptoms because adolescence is characterized by rapid biological, psychological, and behavioral changes. During this developmental stage, adolescents begin to establish independent dietary and lifestyle habits, which are often characterized by irregular meal patterns, skipping meals, frequent consumption of spicy and high-fat foods, excessive intake of caffeinated beverages, and increased psychological stress associated with academic and social demands. Previous studies have consistently demonstrated that these lifestyle factors are associated with an increased risk of gastritis among adolescents. In addition, *Helicobacter pylori* infection, the use of non-steroidal anti-inflammatory drugs (NSAIDs), and several underlying medical conditions also contribute to the development of gastritis [4, 5, 6].

Adolescents living in Islamic boarding schools may face additional factors that increase their susceptibility to gastritis symptoms. The structured daily schedule of academic and religious activities may influence regular meal timing, while many students continue to consume instant noodles, fast foods, spicy snacks, and carbonated beverages outside the meals provided

by the boarding school. These dietary behaviors have been associated with increased gastric acid secretion and may contribute to the development of gastritis symptoms. Furthermore, previous studies involving Islamic boarding school students have reported that unhealthy dietary habits and inadequate knowledge regarding gastritis prevention remain common, highlighting the need for greater attention to gastrointestinal health promotion in this population [7, 8].

Previous studies on gastritis among adolescents have primarily focused on identifying risk factors associated with the disease or evaluating educational interventions designed to improve knowledge and preventive behaviors. However, epidemiological evidence describing the prevalence of gastritis symptoms among adolescents living in Islamic boarding schools remains limited, particularly in Indonesia. Establishing the prevalence of gastritis symptoms is essential for determining the magnitude of the problem, identifying populations at greater risk, and providing baseline evidence to support the development of school-based health promotion programs and preventive strategies tailored to adolescents living in boarding school environments.

Understanding the prevalence of gastritis symptoms among adolescents living in Islamic boarding schools is essential for determining the magnitude of the problem and providing baseline evidence for planning school-based health promotion and preventive interventions. The findings may also assist healthcare providers and school administrators in developing targeted strategies to improve adolescents' gastrointestinal health.

Therefore, this study aimed to determine the prevalence of gastritis symptoms among adolescents at Al-Manar Islamic Boarding School, Aceh Besar, Indonesia.

2. Methods

This descriptive cross-sectional study was part of a larger quasi-experimental study using a pretest–posttest control group design. This report presents only the baseline prevalence of gastritis symptoms before the educational intervention. The study included 160 adolescents aged 12–15 years from Al-Manar Islamic Boarding School, Aceh Besar, Indonesia, who were recruited using total sampling. Data were collected from January to April 2026 using a structured self-administered questionnaire. The questionnaire consisted of two sections: demographic characteristics (age, grade level, and meal frequency) and the Perceived Symptoms Questionnaire developed by Shalahuddin [9]. The instrument comprises 16 dichotomous items ("Yes" = 1; "No" = 0), with total scores ranging from 0 to 16. Scores <8 indicated low gastritis symptoms, whereas scores ≥8 indicated high gastritis symptoms. The questionnaire demonstrated satisfactory validity and excellent internal consistency, with a Cronbach's alpha coefficient greater than 0.90.

Ethical approval was obtained from the Research Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala (Approval No. 112002251225; January 13, 2026). Permission was also obtained from the management of Al-Manar Islamic Boarding School. As all participants were minors, informed consent was obtained through the guardian officially appointed by the boarding school to represent the parents or legal guardians during the students' residence. Data were analyzed using IBM SPSS Statistics version 25. Descriptive statistics were used to summarize participant

characteristics and the prevalence of gastritis symptoms, with categorical variables presented as frequencies and percentages.

3. Results

A total of 160 adolescents participated in this study. The demographic characteristics of the participants are presented in Table 1. More than half of the participants were Grade VII students (53.1%, $n = 85$), while 46.9% ($n = 75$) were in Grade VIII. The majority of participants were 13 years old (52.5%, $n = 84$), followed by 14 years (35.6%, $n = 57$) and 12 years (11.9%, $n = 19$). Regarding meal frequency, 39.4% ($n = 63$) of participants reported eating three meals per day, 35.0% ($n = 56$) ate two meals per day, and 25.6% ($n = 41$) reported eating one meal per day. Concerning breakfast habits, 58.1% ($n = 93$) reported sometimes eating breakfast, whereas 41.3% ($n = 66$) reported eating breakfast every day. More than half of the participants (54.4%, $n = 87$) had never received gastritis-related health education, while 45.6% ($n = 73$) had previously received such education.

Table 1

Characteristics	n	%
Grade		
Grade VII	85	53.1
Grade VIII	75	46.9
Age (years)		
12	19	11.9
13	84	52.5
14	57	35.6
Meal frequency (times/day)		
Once	41	25.6
Twice	56	35.0
Three times	63	39.4
Breakfast habit		
Sometimes	93	58.1
Every day	66	41.3
Previous gastritis health education		
Yes	73	45.6
No	87	54.4

The prevalence of gastritis symptoms among the participants is presented in Table 2. Of the 160 participants, 120 (75.0%) were classified as having low gastritis symptoms, whereas 40 (25.0%) were classified as having high gastritis symptoms. Overall, low gastritis symptoms were more prevalent than high gastritis symptoms among the adolescents included in this study.

Table 2

Gastritis Symptoms	Frequency (n)	Percentage (%)
Low	120	75.0
High	40	25.0
Total	160	100.0

4. Discussion

This study found that most adolescents had low gastritis symptoms (75.0%), while 25.0% experienced high gastritis symptoms. Although the majority of participants reported low symptom levels, the proportion of adolescents with high gastritis symptoms indicates that gastritis remains an important health concern among adolescents living in Islamic boarding schools. This finding is consistent with the Global Burden of Disease report, which indicates that gastritis continues to be a significant global health problem,

with the absolute number of cases increasing because of population growth and demographic changes [2, 3]. In Indonesia, gastritis is also among the most frequently reported diseases in healthcare facilities, particularly among adolescents.

Although most participants experienced low gastritis symptoms, they remain exposed to several risk factors associated with gastritis. The structured daily routines in Islamic boarding schools may affect regular meal patterns. In addition, irregular eating habits, frequent consumption of spicy or instant foods, and psychological stress have been identified as important risk factors for gastritis among adolescents [4, 5]. Previous studies have also reported that irregular meal patterns are significantly associated with gastritis among Islamic boarding school students [7, 8].

More than half of the participants reported skipping breakfast occasionally, and approximately one-quarter consumed only one meal per day. Such eating habits may increase the risk of gastric discomfort because prolonged fasting allows gastric acid to remain in contact with the gastric mucosa for extended periods. The Indonesian Ministry of Health recommends consuming three main meals per day to maintain digestive health, and previous studies have also emphasized that regular meal patterns are an important component of gastritis prevention [10].

Another important finding was that most participants had never received health education regarding gastritis. Previous studies have demonstrated that health education interventions effectively improve adolescents' knowledge and attitudes toward gastritis prevention [11, 12, 13]. Therefore, collaboration among nurses, primary healthcare centres, and Islamic boarding schools is needed to strengthen health education programs promoting healthy eating habits and gastritis prevention among adolescents.

5. Conclusions

This study found that most adolescents living in an Islamic boarding school in Aceh Besar experienced low gastritis symptoms, while one-quarter reported high gastritis symptoms. Although the majority of participants had low symptom levels, the presence of high gastritis symptoms among a considerable proportion of adolescents indicates that gastritis remains a health concern in this population. These findings highlight the importance of implementing preventive strategies, including health education and the promotion of healthy dietary habits, to reduce the burden of gastritis among adolescents in Islamic boarding schools.

6. Limitations

This study has several limitations. First, the study was conducted in a single Islamic boarding school in Aceh Besar, which may limit the generalizability of the findings to adolescents in other boarding schools or regions with different demographic and environmental characteristics. Second, the cross-sectional design only provides a snapshot of the prevalence of gastritis symptoms and does not allow the identification of causal relationships between potential risk factors and gastritis symptoms. Third, the data were collected using a self-administered questionnaire, making the findings subject to recall bias and social desirability bias. Finally, gastritis symptoms were assessed based on self-reported responses without clinical confirmation or diagnostic examinations such as endoscopy or *Helicobacter pylori* testing. Future studies involving multiple boarding

schools, longitudinal designs, and clinical assessments are recommended to provide more comprehensive evidence regarding gastritis among adolescents.

7. Implications for Practice and Future Research

The findings of this study highlight the importance of implementing health promotion and gastritis prevention programs in Islamic boarding schools through education on healthy dietary habits and regular meal patterns. Future studies are recommended to involve multiple Islamic boarding schools, apply analytical or longitudinal study designs, and incorporate clinical assessments to provide more comprehensive evidence.

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