

Factors Associated with the Incidence of Gastritis Among Students at Universitas Graha Edukasi Makassar

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ABSTRAK

Latar Belakang: Gastritis merupakan peradangan mukosa lambung akibat iritasi atau infeksi yang sering terjadi pada usia dewasa muda, termasuk mahasiswa. Perubahan pola hidup, kualitas tidur yang buruk, serta kecemasan diduga menjadi faktor yang berkontribusi terhadap meningkatnya kejadian gastritis pada mahasiswa.

Tujuan: Mengetahui faktor yang berhubungan dengan kejadian gastritis pada mahasiswa di Universitas Graha Edukasi Makassar Tahun 2025.

Metode: Penelitian ini menggunakan desain analitik dengan pendekatan cross sectional. Sampel berjumlah 37 responden yang dipilih menggunakan teknik simple random sampling dari mahasiswa S1 Keperawatan dan S1 Kebidanan. Instrumen yang digunakan adalah kuesioner gastritis, Pittsburgh Sleep Quality Index (PSQI) untuk mengukur kualitas tidur, dan Hamilton Anxiety Rating Scale (HARS) untuk menilai tingkat kecemasan. Analisis data dilakukan menggunakan uji Chi-Square dengan tingkat signifikansi 0,05.

Hasil: Prevalensi gastritis pada mahasiswa sebesar 62,2%. Responden dengan kualitas tidur baik sebesar 62,2% dan kualitas tidur buruk sebesar 37,8%. Tingkat kecemasan terdiri dari rendah 16,2%, sedang 70,3%, dan berat 13,5%. Hasil uji Chi-Square menunjukkan terdapat hubungan yang signifikan antara kualitas tidur dengan kejadian gastritis ($p = 0,000 < 0,05$). Namun, tidak terdapat hubungan yang signifikan antara kecemasan dengan kejadian gastritis ($p = 0,778 > 0,05$).

ABSTRACT

Background: Gastritis is an inflammation of the gastric mucosa caused by irritation or infection and commonly affects young adults, including university students. Lifestyle changes, poor sleep quality, and anxiety are considered contributing factors to the incidence of gastritis among students.

Objective: To determine the factors associated with the incidence of gastritis among students at Universitas Graha Edukasi Makassar in 2025.

Methods: This study employed an analytical design with a cross-sectional approach. A total of 37 respondents were selected using simple random sampling from Nursing and Midwifery undergraduate students. The instruments included a gastritis questionnaire, the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality, and the Hamilton Anxiety Rating Scale (HARS) to measure anxiety levels. Data were analyzed using the Chi-Square test with a significance level of 0.05.

Results: The prevalence of gastritis was 62.2%. Respondents with good sleep quality accounted for 62.2%, while 37.8% had poor sleep quality. Anxiety levels were categorized as mild (16.2%), moderate (70.3%), and severe (13.5%). A significant relationship was found between sleep quality and gastritis incidence ($p = 0.000 < 0.05$). However, no significant relationship was found between anxiety and gastritis incidence ($p = 0.778 > 0.05$).

INTRODUCTION

Gastritis is an inflammation of the gastric mucosa caused by irritation and infection, in which the stomach may experience damage due to continuous peristaltic movements. This condition can lead to abrasions and the formation of lesions that result in inflammation (Jusuf et al., 2022).

The World Health Organization (WHO) conducted surveys in several countries worldwide and found that the prevalence of gastritis was 22% in England, 31% in China, 14.5% in Japan, 35% in Canada, and 29.5% in France. Overall, the global incidence of gastritis is approximately 1.8–2.1 million cases annually. In Southeast Asia, the incidence reaches approximately 583,635 cases per year, taking into account the population of the region. The

confirmed gastritis rate in Shanghai is around 17.2%, significantly higher compared to Western countries, with an increase of about 4.1% (Arianto & Aminah, 2024).

The Ministry of Health of the Republic of Indonesia reports that the annual incidence of gastritis remains high, with a prevalence of 40.8% or 274,396 cases among 238,452,952 people. Gastritis is among the top ten diseases requiring hospitalization in Indonesia, accounting for 30,154 cases (4.9%) (Waworuntu & Pangemanan, 2024).

In South Sulawesi Province, 5,614 gastritis cases were recorded in 2021, increasing to 7,421 cases in 2022, and the number is projected to continue rising annually. The mortality rate due to this disease reached 1.45% of total deaths. Based on reports of the ten most common diseases in South Sulawesi during 2023–2024, gastritis ranked fourth with 282,739 cases (8.82%) (Hardi et al., 2024).

Data from the Makassar City Health Office indicate 1,265 cases among individuals aged 15–19 years and 4,046 cases among those aged 20–44 years. The highest number of cases in Makassar occurs in the 20–44 age group, with a total of 12,350 cases annually (Makassar Health Office, 2021).

Based on data from STIKes Graha Edukasi Makassar in 2025, there were 47 undergraduate nursing students and 12 undergraduate midwifery students. A preliminary study conducted through interviews with 10 students found that 7 students suffered from gastritis while 3 did not. This study is the first to address gastritis among students at Universitas Graha Edukasi Makassar.

Students' daily lives are occupied with lectures and academic assignments, which may predispose them to physical, emotional, intellectual, and interpersonal disturbances. One common physical disorder is gastritis. Therefore, students are expected to maintain a healthy lifestyle, including adequate rest, regular exercise, and proper eating and sleeping patterns, to reduce stress and anxiety symptoms that may potentially trigger gastritis (Sriwahyuni et al., 2025).

Sleep quality is considered good when there are no signs of sleep deprivation and no sleep disturbances. Sleep deprivation is common among young adults, particularly students, and may lead to decreased concentration and health problems, which require serious attention (Manoppo et al., 2023).

Anxiety is closely related to lifestyle. Anxiety disorders may cause various physiological responses, including digestive disturbances. Increased gastric acid secretion can irritate the gastric mucosa, and if left untreated, may lead to gastritis, characterized by nausea, vomiting, pain, bleeding, weakness, loss of appetite, or headaches (Budyanti et al., 2021).

A literature review conducted by Suwindri (2021) analyzing 16 journals identified nine factors contributing to gastritis: dietary patterns (type, frequency, and portion of meals), stress, alcohol consumption, coffee consumption, smoking habits, gender, and age.

Previous studies by Lilik et al. (2022), Pomaria et al. (2022), Cut et al. (2021), Dzikri et al. (2021), Riri et al. (2022), and Surya et al. (2020) primarily examined stress, coffee consumption, and physical activity in relation to gastritis incidence. However, no previous studies have specifically examined sleep quality and anxiety variables in relation to gastritis incidence.

METHODS

This study employed an analytical research design using a cross-sectional approach to determine the relationship between sleep quality, anxiety, and the incidence of gastritis among students at Universitas Graha Edukasi Makassar. The population of this study consisted of all undergraduate students enrolled in the Nursing and Midwifery programs, totaling 59 students (47 Nursing students and 12 Midwifery students). The sample size was 37 respondents, selected using a simple random sampling technique.

Data were collected using structured questionnaires. The incidence of gastritis was assessed using a gastritis questionnaire. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI), while anxiety levels were assessed using the Hamilton Anxiety Rating Scale (HARS). The PSQI evaluates sleep quality over the past month and categorizes it into good and poor sleep quality. The HARS instrument classifies anxiety levels into mild, moderate, and severe categories.

Data analysis was conducted using univariate and bivariate analyses. Univariate analysis was used to describe the distribution of respondent characteristics and research variables. Bivariate analysis was performed using the

Chi-Square test to determine the association between sleep quality and anxiety with the incidence of gastritis. The level of significance was set at $p < 0.05$.

RESULTS

1. Characteristics of Respondents

Table 1. Frequency Distribution of Respondents' Characteristics and Gastritis Incidence Among Students at Universitas Graha Edukasi Makassar (n = 37)

Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	2	5,4
Female	35	94,6
Age (years)		
20	3	8,1
21	11	29,7
22	8	21,6
23	7	18,9
24	6	16,2
25	1	2,7
26	1	2,7
Study Program		
Bachelor of Nursing	30	81,1
Bachelor of Midwifery	7	18,9
Occupation		
Yes	23	62,2
No	14	37,8

A total of 37 respondents participated in this study. Most were female (94.6%) and aged between 20 and 26 years, with the majority being 21 years old (29.7%). The majority of respondents were enrolled in the Bachelor of Nursing program (81.1%), while the rest were in the Bachelor of Midwifery program (18.9%). Regarding employment status, 62.2% reported being employed. Overall, the sample was predominantly young female nursing students, with more than half currently employed.

2. Gastritis Occurrence, Sleep Quality, and Anxiety Levels among Respondents

Table 2. Distribution of Gastritis Occurrence, Sleep Quality, and Anxiety Levels among Respondents (n = 37)

Variable	Category	Frequency (n)	Percentage (%)
Gastritis Occurrence	Gastritis	23	62,2
	No Gastritis	14	37,8
Sleep Quality	Good	23	62,2
	Poor	14	37,8
Anxiety Level	Mild	6	16,2
	Moderate	26	70,3
	Severe	5	13,5

Among the 37 respondents, 62.2% reported having gastritis. The same proportion (62.2%) reported good sleep quality, while 37.8% experienced poor sleep quality. Most respondents experienced moderate anxiety (70.3%), followed by mild (16.2%) and severe anxiety (13.5%). Overall, gastritis was common, sleep quality was generally good, and anxiety levels were mostly moderate.

3. Relationship Between Sleep Quality and the Occurrence of Gastritis

Table 3. Relationship Between Sleep Quality and the Incidence of Gastritis (n = 37)

Sleep Quality	Incidence of Gastritis				Total		Nilai <i>p</i>
	Yes		No		n	%	
	n	%	n	%			
Good	23	100,0	0	0,0	23	62,2	0,000
Poor	0	0,0	14	100,0	14	37,8	
Jumlah	23	62,2	14	37,8	37	100	

*Pearson Chi-Square test, $p > 0.05$

The results showed that among 37 respondents, 23 (62.2%) experienced gastritis and 14 (37.8%) did not. All respondents with good sleep quality (23 respondents; 100%) experienced gastritis, whereas all respondents with poor sleep quality (14 respondents; 100%) did not experience gastritis.

The Chi-Square test revealed a statistically significant association between sleep quality and the occurrence of gastritis ($p = 0.000$; $p < 0.05$). This indicates that sleep quality was significantly associated with gastritis occurrence in this study population.

4. Relationship Between Anxiety Level and the Occurrence of Gastritis

Table 4. Relationship Between Anxiety Level and the Incidence of Gastritis (n = 37)

Anxiety Level	Incidence of Gastritis				Total		Nilai <i>p</i>
	Yes		Yes		n	%	
	n	%	n	%			
Low	3	50,0	3	50,0	6	16,2	0,778
Moderate	17	65,4	9	34,6	26	70,3	
Severe	3	60,0	2	40,0	5	13,3	
Jumlah	23	62,2	14	37,8	37	100	

*Pearson Chi-Square test, $p > 0.05$

Based on anxiety level distribution, respondents with moderate anxiety constituted the largest proportion (70.3%), followed by low anxiety (16.2%) and severe anxiety (13,5%). Among respondents with low anxiety, 50.0% experienced gastritis. In the moderate anxiety group, 65.4% experienced gastritis, while in the severe anxiety group, 60.0% experienced gastritis. However, the Chi-Square test showed no statistically significant association between anxiety level and the occurrence of gastritis ($p = 0,778$; $p > 0,05$). This indicates that anxiety level was not significantly related to gastritis occurrence in this study.

DISCUSSION

Gastritis is an inflammation of the gastric mucosa caused by irritation or infection, in which the stomach lining may be damaged due to continuous peristaltic movements, leading to erosion and lesions that result in inflammation (Jusuf et al., 2022). The results of this study showed that the prevalence of gastritis among students at Universitas Graha Edukasi Makassar in 2025 was 62.2%. This figure is higher than the findings reported by Jusuf et al. (2022) among students at Universitas Negeri Gorontalo, where the prevalence was 56.2%. This difference may be explained by data from the Makassar City Health Office indicating that gastritis cases among university-age individuals in Makassar are relatively higher than in Gorontalo. Although both regions are located on Sulawesi Island, the higher prevalence in Makassar may be associated with irregular eating patterns, academic stress, coffee consumption, and a more dominant urban lifestyle.

Sleep quality refers to an individual's satisfaction with their sleep experience, enabling them to wake up feeling refreshed and not sleepy during daily activities. It also reflects an individual's ability to maintain sleep in order to meet normal rest requirements (Manoppo et al., 2023). Based on the chi-square test results, a p-value of 0.000 ($p < 0.05$) was obtained, indicating a significant association between sleep quality and the occurrence of gastritis among students. Theoretically, sleep disturbances such as difficulty initiating sleep, frequent early awakening, sensations of feeling too cold or too hot, and breathing difficulties during sleep may affect stress hormone regulation and increase gastric acid secretion, potentially leading to irritation of the gastric mucosa.

However, the distribution pattern observed in this study suggests that sleep quality is not the sole determinant of gastritis. Gastritis is a multifactorial condition influenced by various factors, including dietary habits, caffeine

consumption, family history, and lifestyle. Jusuf et al. (2022) reported that dietary patterns, sleep patterns, and coffee consumption simultaneously had a significant effect on gastritis occurrence ($p < 0.05$). Similarly, Tama and Verawati (2024) emphasized that sleep quality alone is not the only contributing factor to gastritis.

Anxiety is a psychological condition characterized by feelings of fear, tension, and perceived threat, which may influence an individual's physical condition (Aninda & Desira, 2023). Physiological responses to anxiety may include increased sympathetic nervous system activity, which can stimulate gastric acid secretion. However, the chi-square test in this study showed a p-value of 0.778 ($p > 0.05$), indicating that there was no significant association between anxiety level and the occurrence of gastritis among students. Although proportionally some students with low, moderate, and severe anxiety experienced gastritis, statistically the relationship was not significant.

Most students were categorized as having moderate anxiety levels, which may not have been severe enough to trigger excessive physiological responses leading to a significant increase in gastric acid secretion. These findings are consistent with Sriwahyuni et al. (2025), who reported that anxiety disorder was not significantly associated with gastritis occurrence ($p > 0.05$). Although theoretically anxiety can increase gastric acid secretion and irritate the gastric mucosa, lifestyle factors, coping mechanisms, and individual stress adaptation may influence the development of gastritis.

Overall, the findings indicate that the prevalence of gastritis among students at Universitas Graha Edukasi Makassar is relatively high. Sleep quality was significantly associated with gastritis occurrence, whereas anxiety level was not significantly associated. These results highlight that gastritis among university students is influenced by multiple interacting factors, underscoring the need for comprehensive promotive and preventive approaches.

CONCLUSION

This study found that the prevalence of gastritis among students at Universitas Graha Edukasi Makassar was relatively high, reaching 62.2%. Sleep quality was significantly associated with the occurrence of gastritis, indicating that sleep-related factors may contribute to gastric health among university students. In contrast, anxiety level was not significantly associated with gastritis occurrence.

These findings suggest that gastritis among students is a multifactorial condition influenced by various behavioral and lifestyle factors. Therefore, improving sleep patterns and promoting healthy lifestyle behaviors may play an important role in preventing gastritis among university students.

LIMITATIONS AND RECOMMENDATION

This study was limited by its cross-sectional design, small sample size, and reliance on self-reported data, which may affect causal interpretation and generalizability. Future studies should involve larger samples and longitudinal designs, as well as include additional variables such as dietary habits and clinical confirmation of gastritis. Universities are encouraged to promote sleep hygiene and healthy lifestyle programs to reduce gastritis risk among students.

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