

The Relationship between Stress Level and the Incidence of Gastritis in Final Year Pharmacy Students at the University of Muhammadiyah Kudus

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ARTICLE HISTORY

Submitted : December 21, 2025
Reviewed : January 06, 2026
Revised : January 12, 2026
Accepted : February 18, 2026
Published : February 28, 2026

Conflict of Interest Statement:

The author(s) declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

ABSTRACT

Purpose: This study aimed to analyze the relationship between stress level and the incidence of gastritis among final-year Pharmacy students at the University of Muhammadiyah Kudus. It was hypothesized that higher stress levels would be associated with a greater incidence of gastritis.

Research Method: This study employed a quantitative observational, cross-sectional design. The sample consisted of 103 seventh-semester Pharmacy students selected through purposive sampling. Stress level was measured using the Perceived Stress Scale-10 (PSS-10), while gastritis incidence was identified using a validated gastritis symptom questionnaire. Data were analyzed using univariate analysis and the Mann-Whitney test.

Results and Discussion: Most respondents were 21 years old (63.1%), female (86.4%), and had no prior disease history (38.8%), although a history of stomach acid was common (32.0%). The majority experienced moderate stress (72.8%), and 20.4% experienced gastritis. Statistical analysis showed a significant relationship between stress level and gastritis incidence ($p = 0.001$), indicating that increasing stress level was associated with a higher risk of gastritis.

Implications: These findings emphasize the importance of stress management and the promotion of digestive health among university students. Further research should include additional risk factors such as diet, sleep quality, and medication use.

Keywords: stress level; gastritis incidence; pharmacy students; PSS-10; cross-sectional study; student health.

1. Introduction

Stress is a psychological disorder that is commonly faced by students due to academic, social, and personal burdens. The World Health Organization (WHO) notes that the prevalence of severe stress levels is around 26% worldwide, especially among the productive age group of 18-35 years which is also the largest age group, WHO also estimates that the prevalence of gastritis cases ranges from 30-40% worldwide and is directly related to psychological stress, especially in college students (World Health Organization, 2023). Data from Riskesdas (2018) noted that the achievement of the indicator of the percentage of the population aged 15 years and above with potential mental health problems who have undergone screening reached 10.1%, while gastritis is one of the ten most common diseases in



Indonesia with a prevalence rate of 40.8% (Riskesdas, 2018). The prevalence of stress in Central Java reaches 9.2% of the entire adult population, followed by the prevalence of gastritis of around 11.6% of all cases of non-communicable diseases with the highest number of cases detected in urban areas such as Semarang, Surakarta, and Banyumas (Suminar et al., 2024). Research by Shraida and Kareem (2025) states that the prevalence of gastritis in college students reaches 42%, this is influenced by irregular eating habits and high stress levels (Shraida et al., 2025).

This study has two main variables, namely stress level as an independent variable and gastritis incidence as a dependent variable. Study by Magdalena et al. (2025) at Nusa Cendana University revealed that there is a very important relationship between food consumption patterns, stress levels, and the incidence of gastritis. Based on the results of data analysis using the Mann-Whitney test on the incidence of gastritis, a significance value ($p < 0.05$) was obtained (Magdalena et al., 2025). Similar findings were also revealed by Vinata and Purwanti (2025) that nursing students who experienced severe stress before exams had a greater risk of suffering from gastritis. This shows that the relationship between psychology and somatics in students is real and requires more in-depth research in various academic environments (Vinata & Purwanti, 2025).

The urgency of this research is even more important because gastritis can damage quality of life, interfere with attention in learning, and affect students' academic achievement. Without treatment gastritis can develop into a peptic ulcer or more serious complications. As an educational institution, the University needs to have factual information about student health in order to provide appropriate interventions. This research is also expected to be the basis for designing stress counseling programs, health education, and the promotion of healthy lifestyles in the campus environment. The results of this study are expected to provide benefits not only for students, but also for educational institutions.

The novelty of this study is the application of a cross-sectional quantitative method focused on pharmacy students that has not been widely researched before. Combining the Perceived Stress Scale (PSS-10) instrument and a simple clinical instrument (gastritis incidence questionnaire), the study offers a comprehensive view of the relationship between mental and physical health. This study provides a new contribution in the form of local empirical data on pharmacy students at the University of Muhammadiyah Kudus that has been rarely researched before.

2. Research Method

This study is a research that applies a quantitative method with an analytical observational design and aims to understand the relationship between stress level and the occurrence of gastritis among students of the Faculty of Pharmacy at the University of Muhammadiyah Kudus. This study uses the cross-sectional approach method (cross-sectional). Independent variables or known as independent variables are variables that undergo changes and can affect other variables in a study. (Setyowati) et al., 2017).

The independent variable used in this study was the level of stress in students of the Faculty of Pharmacy, University of Muhammadiyah Kudus. Bound variables or known as dependent variables are research variables to identify how much impact other variables have (Setyowati) et al., 2017). The incidence of gastritis in this study functions as a bound or dependent variable. The population in this study is 7th semester students at the Faculty of Pharmacy, University of Muhammadiyah Kudus. Through an initial survey, it was shown that the number of 7th semester students at the faculty of pharmacy of the University of Muhammadiyah Kudus was 138 students. The number of samples in this study is . 102,6 atau 103The instrument of this research is a questionnaire. The data analysis method used in this study



is observational analysis which includes descriptive analysis (Univariate) to describe bivariate data and analysis (Test Mann-Whitney) to test the relationships between variables. The ethical approval was submitted to the Health Research Ethics Commission (KEPK) at the University of Muhammadiyah Purwokerto, based on the guidelines from the Regulation of the Ministry of Health of the Republic of Indonesia (Permenkes No. 74 of 2016 with Registration Number: KEPK/UMP/272/XI/2025).

3. Results and Discussion

4.1 Analysis Results

4.1.1 Respondent Characteristics

Table 1. Frequency Distribution of Respondent Characteristics

Respondent Characteristics	Number of Respondents (n = 103)	Percentage (%)
Age		
20 years	8	7,8%
21 years old	65	63,1%
22 years old	25	24,3%
23 years old	3	2,9%
24 years	1	1%
25 years	1	1%
Gender		
Male	14	13,6%
Women	89	86,4%
Disease History		
None	40	38,8%
Stomach Acid	33	32%
Stomach	27	26,2%
Headache	1	1%
Typhoid	1	1%
Strep	1	1%

Source: primary data, 2026

Based on table 1, the results of the frequency distribution and percentage in the study at the University of Muhammadiyah Kudus from 103 respondents show that the majority of respondents are at the age of 21 years with a total of 65 (63.1%) respondents, then at the age of 22 years as many as 25 (24.3%) respondents, then at the age of 20 years as many as 8 (7.8%) respondents, at the age of 23 years obtained as many as 3 (2.9%) respondents, and the smallest number of respondents were at the age of 24 and 25 years, which was 1 (1%) of respondents.

The next frequency distribution is gender, in this study data was obtained that the largest number of respondents were female, namely 89 (86.4%) respondents and the smallest number of respondents were male, which was 14 (13.6%) respondents. Based on the frequency distribution of disease history, it is known that most of the respondents have no disease history, namely as many as 40 (38.8%) respondents, there are respondents who have a history of certain diseases, where acid reflux disease is the most common disease history experienced by respondents, which is as many as 33 (32%). The history of ulcers was experienced by 27 (26.2%) respondents, then the history of other diseases such as headache, typhoid, and strep throat was only experienced by 1 respondent (1%) each.



4.1.2 Characteristics of Respondents Based on Stress Level

Table 2. Distribution of stress levels based on respondent characteristics

Characteristics of Stress Levels by Age								
	Low		Medium		Weight		Total	
	N	%	N	%	N	%	N	%
20	1	1,0%	7	6,8%	0	0%	8	7,8%
21	10	9,7%	47	45,6%	8	7,8%	65	63,1%
22	9	8,7%	16	15,5%	0	0%	25	24,3%
23	0	0%	3	2,9%	0	0%	3	2,9%
24	0	0%	1	1,0%	0	0%	1	1,0%
25	0	0%	1	1,0%	0	0%	1	1,0%
TOTAL	20	19,4%	75	72,8%	8	7,8%	103	100%
Characteristics of Stress Levels by Gender								
	Lightweight		Medium		Weight		Total	
	N	%	N	%	N	%	N	%
Male	2	1,9%	7	6,8%	5	4,9%	14	13,6%
Women	18	17,5%	68	66,0%	3	2,9%	89	86,4%
TOTAL	20	19,4%	75	72,8%	8	7,8%	103	100%
Characteristics of Stress Levels Based on Disease History								
	Lightweight		Medium		Weight		Total	
	N	%	N	%	N	%	N	%
None	13	12,6%	26	25,2%	1	1%	40	38,8%
Stomach Acid	2	1,9%	28	27,2%	3	2,9%	33	32,0%
Stomach	4	3,9%	19	18,4%	4	3,9%	27	26,2%
Headache	1	1,0%	0	0%	0	0%	1	1,0%
Typhoid	0	0%	1	1,0%	0	0%	1	1,0%
Strep	0	0%	1	1,0%	0	0%	1	1,0%
TOTAL	20	19,4%	75	72,8%	8	7,8%	103	100%

Source: primary data, 2026

Based on Table 2. It is known that age characteristics show that the most respondents are at the age of 21 years, namely 65 respondents (63.1%), with the distribution of stress levels including moderate stress as many as 47 respondents (45.6%), low stress 10 respondents (9.7%), and severe stress 8 respondents (7.8%). Gender characteristics showed that female respondents dominated the number of samples, namely 89 respondents (86.4%), with most of them in the moderate stress category as many as 68 respondents (66%), while male respondents amounted to 14 respondents (13.6%) with 7 respondents (6.8%) experiencing moderate stress, then the characteristics of disease history showed that respondents without a history of disease were the largest group, namely 40 respondents (38.8%), With 26 respondents (25.2%) in the moderate stress category, followed by respondents with a history of stomach acid as many as 33 respondents (32%) and ulcers as many as 27 respondents (26.2%) who were also mostly also in the moderate stress category.

4.1.3 Univariate Test Results of Stress Level Variables in Students

Table 3. Distribution of Respondent Frequencies by PSS-10 Stress Level



Categories Stress Level	Score Categories	Number of Respondents (n = 103)	Percentage (%)
Low	0-12	20	19,4%
Medium	13-24	75	72,8%
Weight	25-36	8	7,8%

Source: primary data, 2026

Based on table 3 in this study, it is shown that the stress level of most respondents is in the medium category, namely 75 (72.8%) respondents. Respondents with low stress levels amounted to 20 (19.4%), while respondents with severe stress levels were the least group, namely 8 respondents (7.8%).

4.1.4 Univariate Test Results of Gastritis Incidence Variables in Students

Table 4. Distribution of Respondent Frequency Based on Gastritis Incidence

Categories Gastritis	Score Categories	Number of Respondents (n = 103)	Percentage (%)
Ada Gastritis	6	21	20,4%
No Gastritis	≤ 6	82	79,6%

Source: primary data, 2026

Based on table 4. It can be seen that from a total of 103 respondents, as many as 82 respondents (79.6%) did not experience gastritis, while respondents who experienced gastritis amounted to 21 (20.4%) respondents.

4.1.5 Normality Test

Table 5. Normality Test Results

Kolmogorov-Smirnov			Shapiro-Wilk		
Categories	Number of Respondent	Significance	Categories	Number of Respondent	Significance
Stress Level	103	0,086	Stress Level	103	0,292
Gastritis	103	0,000	Gastritis	103	0,000

Source: primary data, 2026

Based on table 5. The normality test was carried out using Kolmogorov-Smirnov because the number of respondents was 103 people. The stress level variable shows a significance value above 0.05 so that the data is declared to be normally distributed. The gastritis variable showed a significance value below 0.05 so the data was declared not to be normally distributed. This condition requires the use of nonparametric statistical tests such as the Mann-Whitney Test.

4.1.6 Homogeneity Test

Table 6. Homogeneity Test Results



Categories	Living Statistic	Significance
Gastritis	1.625	0,077

Source: primary data, 2026

In Table 6, the results of homogeneity testing using the Levene test were obtained which showed a Levene Statistic value of 1.625 and a significance value (p-value) of 0.077 in the gastritis category. This significance value is higher than $\alpha = 0.05$, so it can be concluded that the variance of the data is homogeneous.

Table 7. Age Characteristics Based on Stress Level

Characteristics of Age Respondents													Mann-Whitney U	p-value (Asymp.Sig)		
Stress Level	20		21		22		23		24		25				Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Low	1	1	10	9,7	9	8,7	0	0	0	0	0	0	20	19,4	2.500	0,001
Medium	7	6,8	47	45,6	16	45,6	3	2,9	1	1	1	1	75	72,8		
Weight	0	0	8	7,8	0	0	0	0	0	0	0	0	8	7,7		
TOTAL	8	7,8	65	63,1	25	24,3	3	2,8	1	1	1	1	103	100		

Table 8. Gender Characteristics Based on Stress Level

Characteristics of Respondent Gender							Mann-Whitney U	p-value (Asymp.Sig)
Stress Level	Male		Women		Total			
	N	%	N	%	N	%	2.500	0,001
Low	2	1,9	18	17,5	20	19,4		
Medium	7	6,8	68	66	75	72,8		
Weight	5	4,9	3	2,9	8	7,8		
Total	14	13,6	89	86,4	103	100		

Table 9. Characteristics of Disease History Based on Stress Level

Characteristics of Disease History Respondents												Mann-Whitney U	p-value (Asymp.Sig)			
Stress Level	None		Stomach Acid		Stomach		Heada che		Typhoid		Inflammat ion			Total		
	N	%	N	%	N	%	N	%	N	%	N	%	N		%	
Low	13	12,6	2	1,9	4	3,9	1	1	0	0	0	0	20	19	2.500	0,001
Medium	26	25,2	28	27	19	18,4	0	0	1	1	1	1	75	73		
Weight	1	1	3	2,9	4	3,9	0	0	0	0	0	0	8	7,8		
Total	40	38,8	33	32	27	26,2	1	1	1	1	1	1	103	100		

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Table 10. The Relationship of Stress Level with the Incidence of Gastritis in College Students

Stress Level	Incidence of Gastritis						Mann-Whitney U	p-value (Asymp. Sig)
	Gastritis		No Gastritis		Total			
	N	%	N	%	N	%		
Lightweight	1	1,0%	19	18,4%	20	19,4%	52.500	0,001
Medium	16	15,5%	59	57,3%	75	72,8%		
Weight	4	3,9%	4	3,9%	8	7,8%		
TOTAL	21	20,4%	82	79,6%	103	100%		

Source: primary data, 2026

Table 10 shows that out of 103 respondents, the majority of respondents were in the category of moderate stress level, which was 75 respondents (72.8%). In the group experiencing moderate stress, 59 respondents (57.3%) did not experience gastritis, while 16 respondents (15.5%) were recorded to have gastritis. The mild stress category included 20 respondents (19.4%), with 1 respondent (1.0%) having gastritis and 19 respondents (18.4%) not having gastritis. The severe stress category consisted of 8 respondents (7.8%), with the same proportion of respondents who experienced and did not experience gastritis of 4 respondents each (3.9%). Overall, there was an incidence of gastritis in the respondents, namely 21 respondents (20.4%), while 82 respondents (79.6%) did not experience gastritis. The results of the statistical test using the Mann-Whitney test produced an Asymp. Sig. (2-tailed) value of 0.001 which is smaller than the value of $\alpha = 0.05$. Based on the concept of Mann-Whitney test decision-making, H_0 was rejected and H_1 was accepted, which means that there is a meaningful relationship between the level of stress and the incidence of gastritis in students of the Faculty of Pharmacy at the University of Muhammadiyah Kudus.

4.2 Discussion

4.2.1 Characteristics of Age Respondents

Based on the results of the respondents' age distribution research, most of the respondents were 21 years old, with a total of 65 respondents (63.1%) out of a total of 103 respondents. Respondents who are 22 years old are in second place with a total of 25 respondents (24.3%). There were 8 respondents (7.8%) who were 20 years old, then respondents with the age of 23 years were recorded as many as 3 people (2.9%). The least number of respondents were between the ages of 24 and 25, each consisting of only 1 respondent (1%). In the distribution of stress levels with the age of the respondents, namely 21 years old, there was the highest number and also the highest level of stress, namely of the 65 respondents aged 21 years (63.1%), most of them, namely 47 respondents (45.6%), experienced moderate stress. Respondents who were in the low stress category were 10 (9.7%) respondents, while 8 respondents (7.8%) experienced severe stress. A total of 25 respondents (24.3%) aged 22 years experienced the majority of moderate stress, namely 16 respondents (15.5%), while there were 9 respondents (8.7%) aged 22 years who showed low stress. None of the respondents in this age group experienced severe stress. Among respondents aged 20 years, 8 respondents (7.8%) were mostly in the moderate stress category with 7 respondents (6.8%), and only 1 respondent (1.0%) experienced low stress. Respondents aged 23 years consisting of 3 respondents (2.9%) all experienced moderate stress



with the same number of 3 respondents (2.9%). None of the respondents experienced low or heavy stress in this age group. Similarly, in the age group of 24 and 25 years, each consisted of only 1 respondent (1.0%) and all of them were classified as moderate stress. The overall distribution shows that moderate stress dominates almost all age groups, with the highest proportion being at the age of 21. This suggests that early adulthood, especially at the age of 21, is the most vulnerable time to academic-related stress. Task pressure, demands in the academic field, and the process of adjusting to college responsibilities play a role in increasing stress levels among students at that age. The results of this study are in line with research by Saraswati and Saraswati (2022) which revealed that students between the ages of 20-22 tend to experience moderate to severe stress. The study explains that the initial phase of adult life is a critical period, where increased academic demands and increased psychosocial adjustment make students in that age range more susceptible to psychological distress (Saraswati et al., 2022).

4.2.2 Characteristics of Respondent Gender

The gender distribution of respondents showed that out of a total of 103 respondents, some were female with 89 respondents (86.4%) and the number of male respondents was much less, namely 14 respondents (13.6%). The level of stress in female respondents showed that most of them were in the category of moderate stress, namely 68 respondents (66.0%), while female respondents who experienced low stress amounted to 18 respondents (17.5%), and there were only 3 respondents (2.9%) who felt severe stress. The dominance of moderate stress among female respondents illustrates that the academic burden they face is quite significant, but still within the limits of their ability to adjust. Stress levels in male respondents showed that 7 respondents (6.8%) experienced moderate stress. Meanwhile, there were 5 respondents (4.9%) with the male gender who experienced severe stress, and only 2 people (1.9%) experienced low stress. The percentage of severe stress in male respondents was seen higher compared to female respondents, although the overall number was less. The distribution of the results showed that women were more in the moderate stress category, while men tended to experience severe stress more often. This difference may be due to different ways of coping with stress between men and women. Women are usually easier at expressing their emotional feelings, while men tend to keep stress inside so they can be at risk of experiencing heavier stress.

4.2.3 Characteristics of Disease History Respondents

The distribution of disease history showed that most of the respondents without a history of disease amounted to 40 respondents or 38.8% of the total 103 respondents. Respondents who have a history of acid reflux disease are in second place with a total of 33 respondents (32.0%). Respondents who had a history of ulcer disease were recorded as many as 27 respondents (26.2%). In respondents who had a history of other diseases such as headache, typhoid, and strep throat, there was only 1 respondent (1.0%) each. This very small number suggests that diseases other than indigestion are quite rare among the respondents in this study. This proportion shows that stomach acid disorder is a fairly common health problem among college students. This condition can be related to irregular eating habits, lifestyle, and academic burden that is often felt during college. The distribution of health history by stress level showed that respondents without a history of illness were the largest, with a total of 40 respondents (38.8%). The majority of respondents were classified as moderate stress, namely 26 respondents (25.2%). There were 13 respondents (12.6%) who experienced low stress, while there was only 1 respondent



(1.0%) who experienced severe stress. This indicates that even though they have no history of illness, most respondents still face moderate levels of stress due to academic demands. Respondents who had a history of acid reflux disease consisted of 33 respondents (32.0%), of which they felt moderate stress which was the most common with 28 respondents (27.2%), and there were 2 respondents (1.9%) who experienced mild stress, while 3 respondents (2.9%) experienced severe stress. A fairly significant percentage for moderate and severe stress levels in this group suggests that a history of stomach acid is closely related to the increased psychological distress felt by college students. The group of respondents who had a history of ulcers amounted to 27 respondents (26.2%).

The division of stress levels in this group showed that 19 respondents (18.4%) experienced moderate stress. Meanwhile, the number of respondents who experienced low stress and severe stress was 4 respondents (3.9%) each. The results of this distribution show that students with a history of ulcers tend to be in moderate to severe stress conditions, which can worsen their stomach health. The group of respondents who had a history of diseases such as headache, typhoid, and strep throat each consisted of only 1 respondent (1.0%). Respondents who experienced headaches were classified as low stress, namely as many as 1 respondent (1.0%), while respondents who had a history of typhoid and strep throat each experienced moderate stress, including 1 respondent (1.0%). None of the respondents experienced severe stress among the three groups with a history of the disease. The results of this analysis showed that moderate levels of stress were more experienced by all respondents who had a history of the disease, with the largest proportion of respondents having a history of acid reflux and ulcers. This condition shows that students who have a history of certain diseases, especially those related to digestive problems, tend to experience stress at a more significant level than respondents who do not have a history of disease. If this stress continues, it can worsen health and reduce students' ability to adapt to academic demands. Research conducted by Firdausy (2022) and Hamzah (2020), revealed that students who have a history of certain diseases experience a more significant level of academic stress than students who do not have health problems. Existing health problems are reported to increase the risk of stress caused by physical limitations and decreased body strength. The results of this study are in line with the results that showed that respondents who had a history of acid reflux and ulcer disease tended to experience stress in the moderate to severe category (Paradise et al., 2022; Hamzah et al., 2020).

4.2.4 Overview of Stress Levels in Students of the Faculty of Pharmacy at Muhammadiyah Kudus University

The results of the univariate analysis on stress levels showed that most of the students were in the category of moderate stress, namely out of a total of 103 respondents, there were 75 respondents (72.8%) who were included in the moderate stress level, which shows that the majority of students feel significant psychological stress but are still in the manageable range. Low stress levels were found in 20 respondents (19.4%), which indicates a group of students who have good coping skills and stress management. Severe stress levels were recorded in 8 respondents (7.8%), although the number was the least, reflecting the presence of students who face high pressure and may need special attention. This distribution confirms that the level of stress among students is dominated by the medium category with a much larger proportion than the other categories. This study is in line with a study conducted by Damayanti (2021) showing that (68.6%) nursing students experienced moderate levels of stress, while (22.9%) experienced mild stress and (8.5%) experienced severe stress. This percentage indicates that

moderate stress is the most common experienced by students in academic situations (Damayanti) et al., 2021).

4.2.5 Overview of the Incidence of Gastritis in Students of the Faculty of Pharmacy at the University of Muhammadiyah Kudus

A total of 82 respondents (79.6%) were classified as not having gastritis, while 21 respondents (20.4%) were among those who had gastritis. These results show that the majority of students are in a fairly normal stomach state, but there are still cases of gastritis that occur in some students that require attention because they can be influenced by diet, academic stress, and lifestyle habits. Research conducted by Jusuf (2022) revealed that gastritis cases among college students still exist in a considerable number, even though most respondents are included in the category of those who do not experience gastritis. This study identified that students' lifestyles, late meals, and pressures faced in the academic field are factors that cause the onset of gastritis in some students. A study conducted by Firdausy (2022) also found that the prevalence of gastritis among college students ranges from 20-40%. The study emphasized that although the majority of college students did not experience gastritis, the group that was diagnosed still needed attention because they were at risk of recurrence and a decrease in quality of life (Paradise) et al., 2022; Jusuf et al., 2022).

4.2.6 Bivariate Analysis

The results of the study regarding stress levels and the incidence of gastritis showed a descriptively significant pattern. The number of respondents was 103 students with the majority being in the medium stress category. Only 20 students (19.4%) were in the mild stress group, while 75 students (72.8%) experienced moderate stress, and 8 students (7.8%) were identified as being severely stressed. The incidence of gastritis was detected in 21 students (20.4%), while 82 students (79.6%) did not experience gastritis. This proportion suggests that most respondents do not have gastritis, but the distribution varies across stress level categories. Respondents with mild stress had a very low incidence rate of gastritis, namely there was only 1 student (1.0%) who had gastritis, while 19 students (18.4%) did not have gastritis. This means that mild stress is not significantly associated with the incidence of gastritis, in the moderate stress group, the number of gastritis cases is the highest, with 16 college students (15.5%), while 59 college students (57.3%) do not have gastritis. The number of respondents in this category has an effect on the total incidence of gastritis. The severe stress group showed a more balanced distribution, with 4 students (3.9%) experiencing gastritis and the other 4 students (3.9%) not experiencing gastritis. This same proportion suggests that the risk of gastritis in people who experience moderate to severe stress is greater than in those who experience mild stress. The Mann-Whitney U test gave a statistical value of 52,500 with a p-value of 0.001. A significance value of less than 0.05 indicates a statistically significant relationship between stress levels and the incidence of gastritis in college students. These findings support the conclusion that increased stress levels are related to an increased likelihood of gastritis. Overall, bivariate analysis and the Mann-Whitney test showed that as stress levels in college students increased, the proportion of detected gastritis incidence increased.

4. Concluding Remarks and Recommendation



The majority of students of the Faculty of Pharmacy, University of Muhammadiyah Kudus experience moderate stress (72.8%), which reflects academic pressure but can still be controlled. Most students did not experience gastritis (79.6%), while 20.4% had gastritis, indicating that this disorder is still found in some students. Gastritis was most common in college students with moderate stress levels (15.5%). The Mann-Whitney test showed a p-value of 0.001 which indicates a significant relationship between stress levels and the incidence of gastritis.

Statement of Use of Generative AI

During the preparation of this work, the author used ChatGPT to assist in improving clarity and readability of the text. The author reviewed and edited the output and takes full responsibility for the content of the publication.

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