



RELATIONSHIP BETWEEN SLEEP QUALITY AND GASTRITIS SYMPTOMS IN STUDENTS

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ABSTRACT

Gastritis or often called stomach disease is one of the health problems with high prevalence. Gastritis occurs more often in productive age. Students are a productive age group who are busy with various activities. Sleep quality can be one of the factors that can worsen gastritis and even cause death. Objective to determine the relationship between sleep quality and gastritis symptoms in Nursing students of the Faculty of Health Sciences, University of West Sulawesi. Method: This type of research is observational analytic and the sampling technique used in this study is stratified random sampling. The research design used is Cross Sectional. The number of samples is 222 nursing students. Demographic data collection through questionnaires. The statistical test used is the Chi-Square test. There is a relationship between sleep quality and gastritis symptoms in nursing students of the Faculty of Health Sciences, University of West Sulawesi with a p value of 0.037 ($p < 0.05$). There is a relationship between sleep quality and gastritis symptoms in nursing students of the Faculty of Health Sciences, University of West Sulawesi.

Keywords: gastritis; sleep quality; students

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INTRODUCTION

Gastritis or often referred to as stomach disease is one of the health problems with a high prevalence (Ferry and Wijonarko 2022). Data from the World Health Organization (WHO) in 2019 stated that the prevalence of gastritis reached 1.8 million to 2.1 million people each year (Jusuf et al., 2022). In addition, the percentage of gastritis in several countries is 69% in Africa, 78% in South America, and 51% in Asia (Tama & Verawati, 2024). Then also the percentage of gastritis incidence in Indonesia in 2019 was 40.8% with a prevalence of 274,396 cases from 238,452,952 people in several regions in Indonesia. Data from the Majene Regency Health Office showed that the number of gastritis sufferers in January - April 2024 was 85 sufferers.

Gastritis is more common in productive age. Students are a productive age group who are busy with various activities. Symptoms of gastritis are generally ignored by students. Some symptoms of gastritis include anorexia, nausea and vomiting, a feeling of fullness in the stomach, abdominal discomfort with headaches, lethargy, accompanied by vomiting and hiccups (Ferry & Wijonarko, 2022). However, the signs and symptoms of gastritis should not be ignored because they can cause discomfort and even pain so that students cannot concentrate and focus on their studies, resulting in decreased academic performance, attendance at lectures, and mental health in students. Students may experience increased stress, anxiety or even depression which affects their overall well-being and ability to cope with academic challenges and overall well-being. In addition, gastritis that is continuously ignored will cause quite severe complications (Sepdianto et al., 2022).

Students are at risk of developing gastritis due to several factors, such as irregular eating patterns where they follow unhealthy diet patterns, stress, consuming spicy foods and poor sleeping habits. Lack of concern for sleep quality problems is often found in school children, workers who have high flying hours and students (Pitaloka et al., 2024). When students lack sleep, it can disrupt the work system of gastin cells which work more effectively at night which has an impact on increasing stomach acid and causing gastritis symptoms such as heartburn, nausea and vomiting (Jusuf et al., 2022). Students tend to be susceptible to sleep disorders due to academic activities, such as assignments, presentations or exams. Final year students often experience high academic pressure, social demands and significant lifestyle changes, all of which can affect sleep quality. Likewise, Nursing students who have many activities, such as working on theses, assignments, practices and OSCEs that take up time, significant changes in time because time will be divided more, and so on (Oktavina et al., 2022). This condition can affect the balance of the hormone cortisol in the body and trigger an increase in the production of stomach acid which can ultimately damage the stomach lining and cause inflammation (Hadiyanto & Tarwati, 2023).

Research Friska Putri Indahsari, (2020) and Bayti et al., (2021) found that there is a relationship between insomnia and gastritis where students who have insomnia can affect a person's digestive system and experience gastritis caused by gastin cells in the stomach to secrete stomach acid cannot work effectively at night because someone experiences insomnia which can interfere with the work of gastin cells. Based on a preliminary study conducted by researchers at the Faculty of Health Sciences, Unsubar by interviewing 10 nursing students, it was found that 5 students experienced gastritis symptoms such as nausea and vomiting, headaches, upper chest pain, dizziness and a sour taste in the mouth due to assignments that must be completed and activities that are outside the campus. In the Nursing study program, Fikes Unsubar, the lecture system used is a block system where it is slow to sleep because of the many assignments from the campus that must be completed that day, each course always has practice and OSCE that must be studied properly so that it is slow to sleep, as well as organizational or association activities that last until late at night, both on-campus and off-campus organizations. Considering the dangers of poor sleep quality in gastritis which will have an impact on health and decrease student achievement, researchers are interested in researching the relationship between sleep quality and gastritis symptoms to determine the relationship between sleep quality and gastritis symptoms in Nursing students at the Faculty of Health Sciences, West Sulawesi University.

METHOD

This type of research is analytical observational through a quantitative approach, with a cross-sectional design, namely to determine the relationship between independent variables (sleep quality) and dependent variables (gastritis symptoms). The location of this study was at the Faculty of Health Sciences, University of West Sulawesi in June 2024. The population in the study was 499, namely all Nursing students at the Faculty of Health Sciences, University of West Sulawesi. While the sample of this study was 222 students in the Nursing Study Program, Faculty of Health Sciences, University of West Sulawesi with a sampling technique using Probability Sampling with the Stratified Random Sampling method. The research instrument in the form of a questionnaire used in this study contained sleep quality using the Pittsburgh Sleep Quality Index (PSQI) questionnaire and a gastritis symptom questionnaire consisting of 14 questions using a Likert scale. Data analysis using the Chi-square statistical test.

RESULT

Table 1.
Characteristics of Respondents

Characteristics	f	%
Age		
Teenagers (16-17 tahun)	55	24.8
Adults (18-23 tahun)	167	75.2
Jenis Kelamin		
Male	11	5.0
Female	211	95.0
Generation		
2020	41	18.5
2021	69	31.1
2022	69	31.1
2023	43	19.4

Based on the results of the analysis of table 1 above, it is known that of the 222 respondents, the age group of respondents who were most numerous were adults (18-23 years), namely 167 respondents (75.2%). The gender of the male respondents was 11 respondents (5.0%) and the female respondents were 211 respondents (95.0%). The academic level of the respondents who were most numerous were in the 2021 and 2022 classes, namely 69 respondents (31.1%).

Table 2.
Overview of Respondents' Sleep Quality and Gastritis Symptoms

Characteristics	f	%
Sleep Quality		
Good	74	33.3
Bad	148	66.7
Gastritis Symptoms		
Yes	136	61.3
No	86	38.7

Table 2, it is known that out of 222 respondents. Respondents who have good sleep quality are 74 respondents (33.3%) and respondents who have poor sleep quality are 148 respondents (66.7%). Meanwhile, respondents who experience gastritis symptoms are 136 respondents (61.3%) and respondents who do not experience gastritis symptoms are 86 respondents (38.7%).

Table 3
Relationship between Sleep Quality and Gastritis Symptoms

Sleep Quality	Gastritis Symptoms				Total		p - value
	There are no symptoms of gastritis		There are symptoms of gastritis				
	f	%	f	%	f	%	
Good	13	32	61	12,31	74	31.3	0.039
Bad	11	15	137	28,15	148	68.7	

Based on table 3, it shows that out of 74 respondents, there are 13 respondents (32%) who have good sleep quality and do not suffer from gastritis, there are 61 respondents (12.31%) who have good sleep quality and have symptoms of gastritis, while out of 148 respondents, there are 11 respondents (15%) who have poor sleep quality and do not have symptoms of gastritis, and there are 137 respondents (28.15%) who have poor sleep quality and have symptoms of gastritis. The results of the Chi-Square test analysis on the sleep quality variable and the gastritis symptom variable in the table show that the p-value (0.039) < α (0.05) so that H_0 is rejected, which means there is a significant relationship between sleep quality and gastritis symptoms in Nursing students of the Faculty of Health Sciences, University of West Sulawesi. From the table, it can also be seen that the proportion of respondents who experience gastritis symptoms with poor sleep quality is more dominant when compared to respondents who have good sleep patterns.

DISCUSSION

Respondents' Sleep Quality

Based on table 2, it shows that the majority of Nursing students at the Faculty of Health Sciences, University of West Sulawesi have poor sleep quality of 66.7%. This is because the results of the study showed that the majority of respondents were female, namely 95.0%. The results of this study are in line with research (Fitri et al., 2021) which found that on average, female respondents, poor sleep quality in women was caused by women having difficulty sleeping, such as waking up in the middle of the night because they were thinking about assignments and not being able to fall asleep quickly because they were working on their thesis until late at night. The results of the questionnaire distribution conducted by the researcher showed that women were more focused on thinking about assignments, working on theses, thinking about exams (UTS, UAS and OSCE) and studying clinical practice and lab practice until midnight, while men were indifferent to assignments and practice so they had time to sleep faster. This is in line with the statement (Haryati et al., 2020) that boys tend to fall asleep easily, have long sleep duration and good sleep efficiency. Based on the results obtained, component 1 of sleep quality is subjective sleep quality obtained from 222 respondents, 138 respondents assessed their sleep quality as poor. Based on these data, it can be concluded that students. Nursing Faculty of Health Sciences, University of West Sulawesi have poor sleep quality. Nursing students of the faculty of health sciences have poor sleep quality due to reduced hours of sleep due to thinking about assignments, OSCE, lab and clinical practices and final assignments or theses.

Sleep is a physiological process in the body that aims to restore the body after a day of activity. Sleep generally occurs at night, with the normal duration of sleep for individuals being 7-9 hours a day. Sleep quality is a very elusive event, involving many areas including assessment of sleep quantity, sleep disturbance, sleep latency, daytime sleep dysfunction, sleep efficiency, sleep quality and consumption of sleeping pills. Therefore, if one of the seven domains is disturbed, it can then cause a decrease in sleep quality (Putri et al., 2021) (Safrudin et al., 2019). On average, respondents rated their sleep quality during the past week as poor. The majority of respondents slept for 5 hours in the past week. Students who had poor sleep quality were 148 respondents (66.7%). This study is in line with research Syiffatulhaya et al., (2023) and Cantay & Büyüksandalyacı Tunç, (2022) which states that the majority of students tend to have late bedtimes and are still awake late at night to do activities, such as doing activities that make the brain work actively when it is time to sleep. Such as staying awake to do college assignments, playing cellphones, laptops, doing social activities and so on. Sleeping late at night and irregularly makes it difficult for the body to relax. Students who sleep late at night will disrupt the body's rhythm to rest and affect poor sleep quality. Having poor sleep quality will have a negative impact on students' lives. Conversely, if someone has good sleep quality, it will bring various positive health benefits. In addition to avoiding disease, good sleep quality can increase short-term memory capacity or working memory/long-term memory and can support while studying in college.

Another cause related to poor sleep quality in students is because the majority of respondents are adults (18-23 years), namely 75.2%. This is in line with research Rahma et al., (2023) which states that the age range of 18-23 years has poorer sleep quality. Adults often have the habit of sleeping late at night which will affect sleep quality. In addition, mental conditions and excessive thoughts about off-campus activities in adulthood can interfere with sleep quality. The results of the distribution of questionnaires by researchers also found that the majority of respondents were 18-23 years old, where in addition to respondents on average having an age of 18-23 years, this age is also a transitional period, in productive age they are more susceptible to sleep disorders and gastritis due to activities such as working on final

assignments and irregular eating patterns. the developmental task of adulthood is to adapt and be required to become an adult individual in terms of behavior, thinking, and responsibility so that adjustments are needed (Munardi, 2023). One of the factors that greatly contributes to the quality of respondents' sleep is the biological clock pattern. Every individual has a biological clock pattern, normal humans will do more activities during the day and rest at night. Changes in the body's physiological rhythm repeat every 24 hours following the regular rotation of day and night, this rhythm is known as the circadian rhythm. If a person's lifestyle is irregular, the circadian rhythm that was previously owned will automatically change and can result in disruption of the biological clock between sleep and wakefulness, this will affect sleep patterns and quality (Martfandika, 2019).

Respondents' Gastritis Symptoms

Gastritis symptoms are very common symptoms but have different meanings for different people. They can be anorexia, nausea and vomiting, sour taste in the mouth, bloating, heartburn after eating, belching, feeling full even though you eat a little, black stools, and vomiting blood or thick colored fluids (Gunarsa & Wibowo, 2021). Based on table 2, it shows that the majority of Nursing students at the Faculty of Health Sciences, University of West Sulawesi have gastritis symptoms 61.3%. The results of the gastritis symptom questionnaire in this study are similar to the results of a study conducted by (Novitayanti, 2020) which showed that the majority of respondents experienced gastritis and gastritis recurrence. Gastritis recurrence in the respondents of the study occurred because the respondents had a high level of busyness and thinking during the transition period (anxiety, conflict, daydreaming, group activities, and the desire to try everything) which caused them to think about lifestyle and poor sleep quality so that they did not pay attention to health which triggered gastritis recurrence.

Another cause related to gastritis symptoms in students is because students who are writing their thesis, participating in laboratory practices and learning in class are required to adjust to the way the activity schedule is arranged. If you can't manage your time well, it can cause insufficient sleep, which can affect the immune system and cause inflammation in the body which can affect the health of the digestive tract, causing gastritis symptoms. This is in line with research that someone with quite dense activities causes irregular eating and sleeping patterns. One way to avoid and prevent gastritis symptoms is to get enough rest so that the body is healthy, make a schedule of activities for time management and pay attention to a healthy diet (Friska Putri Indahsari, 2020) (Suwignjo et al., 2023).

Based on the results obtained, point 2 on the gastritis symptom questionnaire was obtained from 222 respondents, 130 respondents became slow to sleep when they felt uncomfortable such as a burning sensation in the pit of the stomach. Based on these data, it can be concluded that nursing students at the Faculty of Health Sciences, University of West Sulawesi have symptoms of gastritis. Nursing students at the Faculty of Health Sciences have symptoms of gastritis due to dense activities, both on-campus activities and off-campus activities. This is in line with research (Hadiyanto & Tarwati, 2023) which states that physical activity is one of the factors that influences the occurrence of gastritis, this is because the physical activity carried out causes someone to ignore sleep and eating patterns, usually someone who has high activity tends to have irregular sleep and eating patterns which trigger gastritis (Nafisa et al., 2023).

Relationship Between Sleep Quality and Gastritis Symptoms

Sleep is an unconscious condition where an individual can be awakened by appropriate stimuli or sensors or can also be said to be a relative unconscious state, not just a state of

complete calm without any activity but rather a sequence of repeated cycles with characteristics of minimal activity, varying levels of awareness, changes in physiological processes and decreased response to external stimuli. Sleep quality is said to be good if it does not show various signs of sleep deprivation and does not experience problems in sleeping. Sleep disorders are common among students which can cause various other health problems (Sepdianto et al., 2022). Quality refers to how well or poorly a person sleeps during a given sleep period. Factors that can affect sleep quality include the length of time spent sleeping, the amount of time awake at night, the depth of sleep, and how often you wake up during sleep. Good quality sleep is important for a person's health and well-being. Good sleep helps the body and brain to repair and regenerate themselves, strengthens the immune system, and improves concentration, mood, and memory. Poor or inadequate sleep can lead to a variety of health problems, including cognitive impairment, emotional problems, obesity, a suppressed immune system, and an increased risk of various chronic diseases.

The analysis conducted to see the relationship between sleep quality and gastritis symptoms using Chi-Square analysis, the results of the analysis conducted by researchers showed that there was a relationship between sleep quality and gastritis symptoms in Nursing students of the Faculty of Health Sciences, University of West Sulawesi. Based on table 5.5, the results obtained $p = 0.039$ are smaller than the value of $p < 0.05$, so these results explain that there is a relationship between sleep quality and gastritis symptoms in nursing students of the Faculty of Health Sciences, University of West Sulawesi. If a person's sleep quality is poor, it can disrupt the function of organs in the body. One of the cells that can be disrupted is the gastrin cell found in the digestive tract. When gastrin cells do not work effectively to secrete stomach acid, this can make a person more susceptible to gastritis.

The results of this study are in line with research conducted in Turkey entitled "Association of gastritis with sleep and quality of life: a hospital-based cross-sectional study" by (Cantay and Tunç 2022), a p value of 0.001 was obtained, which means that there is a relationship between sleep quality and the incidence of gastritis in 82 gastritis patients at Kars Harakani State Hospital, Turkey. Sleep disorders can cause digestive system diseases such as gastroesophageal reflux, gastric ulcers, irritable bowel disease, inflammatory bowel disease, gastric and colorectal cancer. Sleep quality affects the pathogenesis and occurrence of digestive system diseases. Healthy circadian rhythms and the function of sleep in the digestive system are intestinal stem cell proliferation, motility regulation, digestion and absorption of proteins and carbohydrates, electrolyte balance, protection of the intestinal microbiota, and protection of the intestinal barrier. Sleep is regulated by the light-dark cycle and, therefore, by the circadian rhythm. Individual differential regulation or variation in circadian rhythms is a common cause of sleep complaints, which play an important role in the occurrence of many gastrointestinal disorders. In sleep disorders, pro-inflammatory cytokines that make the gastric mucosa unprotected and fragile increase, causing gastritis. The eating habits of people with sleep disorders also change.

This study is in line with research Cantay & Tunç, (2022) which states that there is a relationship between sleep quality and the incidence of gastritis in students due to several disorders such as frequent waking up in the early hours of the morning, feeling cold and hot, and having difficulty breathing properly that occurs during sleep, resulting in poor sleep quality. This study is also in line with research Friska Putri Indahsari, (2020) which found that there is a relationship between sleep quality and the incidence of gastritis in students, which states that students with insomnia can experience gastritis because the gastrin cells in the stomach to secrete stomach acid cannot work effectively at night because someone experiences insomnia which can interfere with the work of gastrin cells.

Based on the results of this study, it was found that there were 61 respondents (12.31%) with good sleep quality suffering from gastritis. One factor that can affect gastritis is the student's diet because they consume excessive types of food such as often consuming spicy foods which can cause the stomach to become sensitive so that stomach acid increases. The results of this study are in line with research Nindia et al., (2022) which states that spicy foods such as sauces, chili sauce, pepper and chilies contain capcaisin which is actually useful as a pain reliever, anti-inflammatory and can increase appetite. However, if consumed excessively, it can irritate the stomach. Consuming spicy food excessively will stimulate the digestive system, especially stomach and intestinal contractions. This results in a burning sensation and pain in the pit of the stomach accompanied by nausea and vomiting. Consuming excessive types of food (spicy food) will make it difficult for the stomach to adapt, if this continues it will cause excess stomach acid which causes irritation to the gastric mucosa and gastritis occurs (Merita et al., 2018).

The relationship between sleep quality and gastritis symptoms in students can also be caused by several things such as busy activities, both on campus and off campus such as participating in external and internal campus organizations. In line with research Rimbawati & Wulandari, (2022) which states that there is a Relationship between Physical Activity, Stress and Eating Patterns and the Incidence of Gastritis. Physical activity is one of the factors that influences the incidence of gastritis, this is because the physical activity carried out causes someone to ignore eating and sleeping, usually someone who has high activity tends to have an unbalanced diet and sleep pattern so that the sleep and eating schedule is not right or neglected, triggering gastritis. Rimbawati, (2022) stated that heavy physical activity carried out causes someone not to take the time to sleep and eat. Researchers concluded that students who have insomnia can experience gastritis because the gastrin cells in the stomach to secrete stomach acid cannot work effectively at night because someone experiences insomnia which can interfere with the work of gastrin cells. Sleep disorders can affect gastrointestinal motility, can slow down gastric emptying and can cause stomach acid and gastric mucosa to rise. Stomach muscle disorders cause the movement of the stomach to push food into the intestines to be slow.

CONCLUSION

Based on the results of the study and discussion above, it can be concluded that there is a significant relationship between sleep quality and gastritis symptoms in Nursing students of the Faculty of Health Sciences, University of West Sulawesi. Then also the majority of respondents in Nursing students of the Faculty of Health Sciences, University of West Sulawesi have gastritis symptoms. In addition, the majority of respondents in Nursing students of the Faculty of Health Sciences, University of West Sulawesi have poor sleep quality.

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