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The Relationship Between Dietary Patterns and Sleep Patterns on Pain in Dyspepsia Patients at the Tangkit Muaro Jambi Community Health Centre in 2025

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Abstract

Background: Dyspepsia is the most common digestive health problem. Dyspepsia is a syndrome of symptoms commonly found in the community, characterised by pain or discomfort in the upper abdomen or pit of the stomach. Several factors cause pain in dyspepsia patients, including irregular eating patterns and poor sleeping patterns. **Objective:** This study aims to investigate the relationship between eating patterns and sleep patterns in relation to pain in patients with dyspepsia. **Method:** This study is a quantitative analytical study with a cross-sectional approach. The population consists of all dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre, totalling 31 patients. A sample of 31 people was taken using a total sampling technique. This study was conducted at the Tangkit Muaro Jambi Community Health Centre in May 2025. Data collection was carried out using a questionnaire. Data were analysed univariately and bivariately using the chi-square test. **Results:**The results showed that most respondents had poor eating habits (74.2%), poor sleep patterns (51.6%), and moderate dyspepsia pain (45.2%). **Conclusions**: There was a relationship between eating patterns (p = 0.000) and sleep patterns (p = 0.000) with pain in dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre, with a p-value < 0.05. These findings indicate that diet and sleep patterns cause pain in dyspepsia patients. Health workers should prioritize community health education about diet, sleep, and dyspepsia.

Keywords: Dietary Patterns; Pain; Sleep Patterns

Introduction

Dyspepsia is one of the health problems related to non-communicable diseases and usually occurs not only in Indonesia but also widely throughout the world, greatly impacting patients and health services, commonly found among the general population, characterised by pain or discomfort in the upper abdomen or pit of the stomach. Dyspepsia can be influenced by several factors, including increased gastric acid secretion, dietary and environmental factors, and psychological factors such as stress. Dyspepsia can also be caused by a collection of symptoms such as nausea, vomiting, bloating, fullness, and pain in the epigastrium. (Saradika, 2023).

Dyspepsia is characterised by the onset of pain in the upper abdomen. Pain is a personal and subjective experience, and no two individuals experience pain in an identical pattern. Problems that can arise if the pain is not resolved include an impact on behaviour

and daily activities, characterised by the client frequently grimacing, frowning, biting their forehead, biting their lips, feeling restless, immobility, muscle tension, protective movements of the body, avoiding conversation, avoiding social contact, and focusing only on activities to relieve pain. Clients may participate less in routine activities and may experience severe abdominal pain that interferes with daily activities. (Hakim et al., 2025).

According to Zakiyah et al. (2021), the criteria for pain in patients with dyspepsia are: 1). Epigastric pain, burning pain in the epigastrium, at least moderate intensity, at least once a week, pain should not generalise to the abdomen or chest, or to other areas of the abdomen, pain does not resolve with bowel movements or flatus, pain does not meet the criteria for gallbladder pain or Oddi's sphincter pain. Criteria must be met for the past 3 months, with onset at least 6 months prior to diagnosis. With supporting criteria, the pain may be burning, but without retrosternal pain, the pain is usually induced or relieved by food consumption, and postprandial distress symptoms may occur together. 2) Postprandial distress type, such as feeling full after eating a normal portion, several times a week, feeling full quickly so that normal food portions are reduced, several times a week, in the last 3 months. Supporting criteria include a sensation of bloating or nausea after eating, and epigastric pain symptoms may occur concurrently.

Fikrinnisa (2018) in her research on poor eating habitssuch as consuming foods high in fat can trigger the onset of dyspepsia symptoms, such as nausea, bloating, pain, and a feeling of fullness in the stomach. Irregular eating patterns can make the stomach more sensitive when stomach acid levels rise. Excessive production of HCL (stomach acid) can cause friction on the stomach and small intestine walls, resulting in pain known as stomach ulcers. The friction becomes more severe when the stomach is empty due to irregular eating, which can ultimately lead to stomach bleeding (Dayanti et al., 2020).

Indicators of a healthy and good diet for dyspepsia patients explain that diet has three main components, namely: 1). Type, which refers to the source of food, how it is processed, and food groups. This includes lean meat, oatmeal, avocados, bananas, and ginger 2). Frequency, which is measured by how regularly or irregularly dyspepsia patients maintain their. et. 3). Food quantity, which refers to the amount of nutrients consumed in a day. Healthy food is food that contains carbohydrates, protein, fat, minerals, and vitamins in the right amounts and not in excess. In this condition, dyspepsia patients are advised to consume foods that are low in fat, low in acid, and rich in fibre. (Indonesian Ministry of

Health in Saradika et al. 2023)

According to Kandou, as cited by Prisylvia et al. (2021), unhealthy eating habits can lead to degenerative diseases later in life. For dyspepsia sufferers, a good dietary concept is certainly necessary. According to Putri and Rachman (2023), the concept of a 'balanced diet' refers to the regulation of the amount and type of different foods consumed each day. A balanced diet also includes adequate nutrition from various food groups such as carbohydrates, fats, proteins, vitamins, minerals, and water.

Another common disturbance associated with dyspepsia is sleep patterns. Wulandari & Pranata (2024) explain that there are several indicators of good or adequate sleep patterns, namely:1). Sleep quality, which encompasses both quantitative and qualitative aspects of sleep, such as sleep duration, the time required to fall asleep, frequency of awakenings, and subjective aspects like depth and restfulness, forming a complex sleep quality. 2). Sleep disorders, a collection of conditions characterised by difficulties in the quantity, quality, or timing of sleep. 3). Sleep efficiency, which occurs when a person has good sleep quality, is more than 85%. 4). Sleep duration, the amount of time spent sleeping from the moment of waking up in the morning, without specifying when they woke up. Adults have an ideal sleep duration of approximately 7–9 hours per day. 5). Sleep latency: A person is said to have good sleep quality if they only need 15 minutes or less to fall asleep. If it takes more than twenty minutes, this indicates insomnia, which means you have difficulty falling asleep and then entering the next stage of sleep. 6). Sleeping medication used for specific patients who often have difficulty sleeping. 7). Daytime sleep dysfunction, when a person feels sleepy during activities, lacks enthusiasm or attention, sleeps throughout the day, feels tired, is easily stressed, and does not engage in activities.

Sleep disturbances cause longer periods of wakefulness or consciousness, resulting in circadian rhythm disturbances that stimulate the anterior vagus nerve, which in turn stimulates increased gastric acid secretion and changes in gastric wall muscle activity, thereby triggering the risk of functional dyspepsia (Dragos, Ionescu, Micut, Ojog, & Tanasescu, 2022).

According to (Wulandari & Pranata, 2024), there are several indicators of good or adequate rest patterns, namely: 1). Sleep quality, which is a quantitative and qualitative aspect of sleep, such as the duration of sleep, the time needed to fall asleep, the frequency of waking up, and subjective aspects, such as depth and soundness, which form a complex

sleep quality. 2) Sleep disorders, which are a collection of conditions characterised by difficulties in the quantity, quality, or timing of sleep. 3) Sleep efficiency, which occurs when a person has good sleep quality, is more than 85%. 4) Sleep duration, which is the amount of time spent sleeping from the moment of waking up in the morning, without specifying when one wakes up. For adults, the ideal sleep duration is approximately 7–9 hours per day. 5) Sleep latency, an individual is said to have good sleep quality if they only need 15 minutes or less to fall asleep. If the time required exceeds twenty minutes, this indicates a level of insomnia, meaning you have difficulty initiating sleep and then progressing to the next stage of sleep. 6) Sleep medication is used for specific patients who frequently experience difficulty sleeping.

The World Health Organisation (WHO) (2020) reports that the incidence of dyspepsia in various Asian countries also shows a fairly high prevalence, namely 69% of 782 dyspepsia patients in China, 43% of 1,353 patients in Hong Kong, 70% of 476 patients in Korea, and 62% of 210 patients examined in Malaysia. The prevalence of dyspepsia in Indonesia reaches 40-50%. Dyspepsia ranks 10th with a proportion of 1.5% for the 10 most common diseases among outpatients in all hospitals in Indonesia (Saradika, 2023).

Jambi has a relatively high prevalence, with dyspepsia rates reaching 19.28% in 2018 and increasing to 20.2% in 2022. Meanwhile, the prevalence in the city of Jambi reached 7.73% and increased to 9.60% in 2022 (Jambi Provincial Health Office). Based on data obtained from the Tangkit Community Health Centre in 2025, dyspepsia was among the top 10 most common diseases. In 2023, there were 105 dyspepsia patients, while from January to July 2024, there were 115 patients (Tangkit Inpatient Health Centre).

Methods

This type of research is associative research using quantitative analytical methods. The design used in this study is cross-sectional, where the study only aims to capture eating patterns and sleep patterns as dependent variables and their relationship with dyspeptic pain as an independent variable in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025. The target population consisted of 41 patients with dyspepsia in the working area of the Tangkit Muaro Jambi Community Health Centre. The sampling technique used was accidental sampling, whereby the researcher took samples from patients who came to the Tangkit Community Health Centre for treatment over a period of one month, resulting

in 31 respondents in this study. within onemonth weeks. The researcher then analyze the data using the chi-square statistical test.

Results

Univariate Analysis

1. **Overview of dietary patterns among dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre in 2025.**

   The dietary patterns of dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre in 2025 can be seen in Table 1:

Table 1. Frequency Distribution of Dietary Patterns in Dyspepsia Patients at the Tangkit Muaro Jambi Community Health Centre in 2025

No.	**Dietary Pattern**	**f**	**(%)**
1.	Good	8	25.8
2.	Poor	23	74.2
Total		31	100.0

Based on Table 1, it was found that of the 31 respondents, 23 (74.2%) had poor eating habits.

2. **Overview of sleep patterns in dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre in 2025.**

   An overview of sleep patterns in dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre in 2025 can be seen in Table 2:

Table 2. Frequency Distribution of Sleep Patterns in Dyspepsia Patients at the Tangkit Muaro Jambi Community Health Centre in 2025

No.	Sleep Pattern	f	(%)
1.	Good	15	48.4
2.	Poor	16	51.6
	Total	31	100.0

Based on Table 2, it was found that of the 31 respondents, 16 (51.6%) had poor sleep patterns.

3. Description of pain in dyspepsia patients at the Tangkit Muaro Jambi Community Health Centre in 2025

Table 3 Frequency Distribution of Pain in Dyspepsia Patients at the Tangkit Muaro Jambi Community Health Centre in 2025

No.	Dyspepsia Pain	f	(%)
1.	Mild	12	38.7
2.	Moderate	14	45.2
3.	Severe	5	16.1
Total		31	100.0

Based on Table 3 above, it can be seen that of the 31 respondents, the majority, namely 14 (45.2%), experienced moderate dyspepsia pain.

Bivariate Analysis

1. The relationship between diet and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025.

   The relationship between diet and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025 can be seen in the table 4:

Table 4 Relationship between Dietary Patterns and Pain in Patients with Dyspepsia in the Working Area of the Tangkit Muaro Jambi Community Health Centre in 2025

Dietary Pattern	**Dyspepsia Pain**						**Total**		p-**value**
	Mild		Moderate		Severe				
	n	%	n	%	n	%	n	%	
Good	8	100	0	0	0	0	8	100	0,000
Poor	4	17.4	14	60.9	5	21.7	23	100	
Number	12	38.7	14	45.2	5	16.1	31	100	

Based on the table above, of the 8 respondents with good eating patterns, all respondents (100%) experienced mild dyspepsia pain. Of the 23 respondents with poor eating patterns, 14 (60.9%) respondents experienced moderate dyspepsia pain.

The statistical test yielded a p-value of 0.000 < 0.05, meaning that the alternative hypothesis (Ha) is accepted. Therefore, it can be concluded that there is a relationship between dietary patterns and pain in dyspepsia patients in the Tangkit Muaro Jambi Health Centre Service Area in 2025.

2. The relationship between sleep patterns and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025

   The relationship between sleep patterns and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025 can be seen in the table 5:

Table 5 Relationship between Sleep Patterns and Pain in Dyspepsia Patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025

Sleep Pattern	Dyspepsia Pain						Total		P value
	Mild		Moderate		severe				
	n	%	n	%	n	%	n	%	
Good	11	73.3	3	20	1	6.7	15	100	0,000
Poor	1	6.2	11	68.8	4	25	16	100	
Number	12	38.7	14	45.2	5	16.1	31	100	

Based on the table above, of the 15 respondents with good sleep patterns, 11 (73.3%) experienced mild dyspepsia pain. Of the 16 respondents with poor eating patterns, 11 (68.8%) experienced moderate dyspepsia pain.

The statistical test results obtained a p-value of 0.000 < 0.05, which means that Ha is accepted. Therefore, it can be concluded that there is a relationship between sleep patterns and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025.

Discussion

The results of a study on dietary patterns among dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025 showed that of 31 respondents, 23 (74.2%) had poor dietary patterns. These findings are consistent with a study conducted by Wibawani (2021) on factors associated with the incidence of dyspepsia in outpatients at the Internal Medicine Clinic of Koja Regional General Hospital, which showed that 201 respondents (53.2%) had poor eating habits. The results of this study are also in line with research by Sumarni (2019) on the relationship between eating patterns and the incidence of dyspepsia, which showed that 27 respondents (87.1%) had irregular eating patterns. An unhealthy diet is an eating habit that does not meet the body's nutritional needs and can cause various health problems. This often involves consuming foods that are high in fat, sugar, and salt and low in fibre, as well as a lack of consumption of vegetables and fruits (Indonesian Ministry of Health, 2014). Based on the results of the above study, the researchers assumed that most patients did not pay attention to their eating patterns.

This can be seen from the irregular amount, type, and frequency of meals. Poor eating patterns can cause various diseases, one of which is dyspepsia. Therefore, it is hoped that respondents will change their eating patterns, starting from the amount, type, frequency, and time of meals, so that the nutrients obtained are balanced and in accordance with the body's needs. The results of a study on sleep patterns in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025 showed that of the 31 respondents, 16 (51.6%) had poor sleep patterns.

These findings are consistent with a study conducted by Devani (2024) on the relationship between academic stress, sleep quality, and regularity of eating with the incidence of functional dyspepsia in first-year medical students at Al-Azhar Islamic University, which showed that most respondents had poor sleep quality, with 77 respondents (72.6%) reporting this.

The results of this study are also in line with research by Khairunisa (2024) on sleep quality in relation to functional dyspepsia in final-year medical students at the University of Muhammadiyah North Sumatra, which showed that the majority of respondents had poor sleep quality, namely 89 respondents (65.9%). Sleep is intended as a way to rest, to eliminate fatigue and reduce excessive tiredness. A sleep pattern is a condition in which an individual is able to maintain their sleep and get the right amount of sleep (Mulyadi & Nurilla, 2021). According to the National Sleep Foundation, lack of sleep can reduce concentration, memory, thinking ability, and increase the risk of diabetes, hypertension, and heart disease. Therefore, maintaining good sleep quality is very important for a person's health and well-being. According to the researchers' assumptions, the poor sleep patterns of most respondents were caused by insufficient sleep time and quantity each day. This led to various health problems due to a lack of at least 8 hours of rest per day. Therefore, it is hoped that respondents with poor sleep patterns will change their sleep patterns to obtain good sleep quality, which is also beneficial for their health.

The results of a study on pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025 showed that of 31 respondents, 14 (45.2%) experienced moderate pain. These findings are consistent with a study conducted by Laili (2021) on factors influencing dyspepsia in patients with abdominal pain complaints at Amelia Pare Hospital in Kediri District, which showed that the majority of dyspepsia patients experienced moderate abdominal pain, with 23 respondents (67.7%) while the rest

experienced severe pain (6 respondents, 17.6%) and mild pain (5 respondents, 14.7%). According to the researcher's assumption, most respondents experienced moderate to severe pain. This is because the patients were experiencing a recurrence of their dyspepsia. The pain that arises is a sign of the disease, so it is recommended that dyspepsia patients maintain their diet and lifestyle to prevent recurrence.

The statistical test results obtained a p-value of 0.000 < 0.05, indicating a significant relationship between dietary patterns and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025. The results of this study indicate that dietary patterns affect the pain scale in dyspepsia patients. This is because most respondents with good dietary patterns experienced moderate dyspepsia pain. Conversely, most respondents with poor dietary patterns experienced moderate dyspepsia pain. The results of this study are in line with the research conducted by Wibawani (2021) on factors related to the incidence of dyspepsia in outpatients at the Internal Medicine Clinic at Koja Regional General Hospital, which showed that there is a relationship between diet and the incidence of dyspepsia with a p-value = 0.000. The results of this study are also in line with Sumarni's (201) study on the relationship between dietary patterns and the occurrence of dyspepsia, which showed that there is a relationship between dietary patterns and the occurrence of dyspepsia, where 87.1% of patients with irregular dietary patterns experienced dyspepsia. According to Kandou, as cited by Prisylvia et al. (2021), unhealthy dietary patterns can cause dyspepsia. For dyspepsia sufferers, a good dietary concept is certainly needed. According to Putri and Rachman (2023), the concept of a ‘balanced diet’ refers to the regulation of the amount and types of different foods consumed each day. A balanced diet also includes adequate nutrition from various food groups such as carbohydrates, fats, proteins, vitamins, minerals, and water.Based on the results of this study, the researchers assume that diet affects the onset of pain in dyspepsia patients. Irregular eating habits, such as poor eating habits, rushing, and irregular schedules, can cause dyspepsia pain. The onset of dyspepsia pain in a person is due to poor eating habits, such as eating spicy foods, acidic foods, drinking tea or coffee, and carbonated drinks. According to the researchers' assumptions, dyspepsia pain will continue to occur in sufferers if it is not treated seriously by implementing a proper and healthy diet, namely a regular daily diet, consuming food in moderation, and eating at the same time every day, and reducing foods that contain preservatives.

The statistical test results obtained a p-value of 0.000 < 0.05, indicating a significant relationship between sleep patterns and pain in dyspepsia patients in the Tangkit Muaro Jambi Community Health Centre Working Area in 2025. The results of this study indicate that sleep patterns affect pain in dyspepsia patients. This is because most respondents with good sleep patterns experienced mild dyspepsia pain, while most respondents with poor sleep patterns experienced moderate dyspepsia pain. The results of this study are in line with research conducted by Devani (2024) on the relationship between academic stress, sleep quality, and regularity of eating with the incidence of functional dyspepsia in first-year medical students at Al-Azhar Islamic University, which showed that there is a significant relationship between sleep quality and the incidence of functional dyspepsia.

The results of this study are also in line with research by Khairunisa (2024) on sleep quality in relation to functional dyspepsia in final-year medical students at the University of Muhammadiyah North Sumatra, which showed that there is a significant relationship between sleep quality and the occurrence of dyspepsia. Sleep disorders cause longer periods of wakefulness or consciousness, resulting in circadian rhythm disturbances that stimulate the anterior vagus nerve, which in turn stimulates increased gastric acid production and changes in gastric wall muscle activity, thereby triggering the risk of functional dyspepsia (Dragos, Ionescu, Micut, Ojog, & Tanasescu, 2022).

Based on this study, the researchers hypothesize that sleep patterns are one of the causes of the onset or recurrence of pain in dyspepsia patients. Therefore, it is recommended that dyspepsia patients change their sleep patterns to healthier ones and engage in enjoyable physical activities rather than those done out of compulsion.

Conclusion

Based on the results of this study, researchers concluded that eating habits and rest patterns greatly affect patients with dyspepsia experiencing pain, so that proper management of eating habits and rest patterns can reduce dyspepsia pain.

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