Jurnal Kedokteran Methodist, Vol.18 No.1 Juni 2025
https://ejurnal.methodist.ac.id/index.php/jkm/issue/view/250

RESEARCH ARTICLE

The Relationship Between Dietary Patterns, Lifestyle, and Stress Levels with Dyspepsia Recurrence at Dalu X Public Health Center, Tanjung Morawa

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ABSTRACT

Background : *Dyspepsia can be caused by eating and drinking habits such as spicy food, excessive acidity or consumption of alcoholic drinks, carbonated and caffeinated drinks such as coffee, smoking, stress, Helicobacter Pylori infection, use of drugs and a history of disease (gastritis and gastric ulcers) which have an impact as risk factors for dyspepsia.*

Objective : *to determine the relationship between diet, lifestyle and stress levels on the recurrence of dyspepsia at the Dalu Research*

Method : *This research is an observational analytical research. The research will be carried out in Jully of 2024. The research was carried out at the Dalu*

Conclusion : *The number of respondents' eating patterns at the Dalu The number of respondents' lifestyle at the Dalu X Tanjung Morawa Community Health Center was in the good category (84.3%). The total stress level of respondents at the Dalu X Tanjung Morawa Health Center was in the medium category (47.1%). The number of recurrences of dyspepsia at the Dalu X Tanjung Morawa Health Center was in the dyspepsia category (52.9%). There was a relationship between diet and recurrence of dyspepsia at the Dalu X Tanjung Morawa Community Health Center (p=0.000). There was no relationship between lifestyle and dyspepsia recurrence at the Dalu X Tanjung Morawa Community Health Center (p=0.150). There was a relationship between stress levels and dyspepsia recurrence at the Dalu X Tanjung Morawa Community Health Center (p=0.000).*

Keywords : *Diet, lifestyle, stress, dyspepsia*

INTRODUCTION

Dyspepsia refers to a cluster of symptoms indicative of upper gastrointestinal diseases or disorders. These symptoms include belching, regurgitation (food flowing back into the mouth), nausea, vomiting, bloating, early satiety, and heartburn, in addition to epigastric pain or discomfort. The term "dyspepsia" is derived from the Greek words "dys" and "pepsis," which signify digestive problems. Based on its etiology, dyspepsia is categorized into two types: functional and organic. Organic dyspepsia is a condition where diagnostic techniques, including endoscopy, radiography, and laboratory testing, reveal structural abnormalities and biochemical pathologies. In contrast, functional dyspepsia is a type where the underlying cause is neither structural nor biochemical.

Globally, dyspepsia cases affect 13–40% of the population in various countries. According to research data, the prevalence of dyspepsia varies significantly between 5% and 43% in Europe and the United States. High prevalence is observed not only abroad but also in major Indonesian cities like Jakarta. Dyspepsia syndrome is a leading cause of morbidity in the community, with prevalence rates ranging from 23% to 41% in the US and Europe. In Asia, studies indicate that dyspepsia is found in 43–79.5% of patients across countries such as China, Hong Kong, Indonesia, Korea, Malaysia, Singapore, Taiwan, Thailand, and Vietnam.

In addition to dietary and drinking habits—which include the consumption of spicy foods, excessive acidity, alcohol, carbonated drinks, and caffeinated beverages like coffee—factors such as smoking, stress, *Helicobacter pylori* infection, drug use, and a history of gastric or peptic ulcers can also cause dyspepsia. Research has shown that irregular eating habits increase the likelihood of experiencing various symptoms, such as dyspepsia—abdominal pain radiating to the epigastrium—as well as nausea, vomiting, and belching. Digestive issues can be triggered by irregular eating patterns, overeating, and prolonged intervals between meals.

Additional factors contributing to dyspepsia include age, gender, lifestyle, and stress levels. Women are more frequently affected by dyspepsia, as they tend to prefer excessively spicy and sometimes acidic foods. In terms of age, it is most common among the elderly, who experience physical decline as bodily functions deteriorate with age. High stress levels can also trigger dyspepsia by stimulating the stomach to secrete excessive acid, which disrupts gastric function and may lead to mucosal damage.

METHOD

Research Methodology

This study is an observational analytical research designed to examine the relationship between independent and dependent variables. Observational analytics is a research method that correlates independent and dependent variables. Analytical observations, sometimes referred to as analytical surveys, investigate the mechanisms and underlying causes of these health conditions. Subsequently, a dynamic study is conducted to explore the relationship between phenomena and risk variables or effect factors.

The inclusion criteria for this study were respondents aged 17–50 years visiting the Dalu X Public Health Center in Tanjung Morawa, patients who were willing to participate and were diagnosed with dyspepsia, and outpatients who visited the Dalu X Public Health Center in July 2024. The exclusion criteria included uncooperative patients, such as those unable to read or write at the time of the study, and patients with comorbid complications, such as heart disease.

Table 1: Frequency Distribution by Age

Age Group	f	(%)
17–22 years	1	1.4
23–28 years	11	15.7
29–34 years	8	11.4
35–40 years	9	12.9

41–45 years	**16**	**22.9**
46–50 years	**25**	**35.7**
Total	**70**	**100.0**

Table 1 indicates that 25 respondents, or 35.7% of the sample, were aged between 46 and 50 years, while only 1 respondent, or 1.4%, was aged between 17 and 22 years.

Table 2: Frequency Distribution by Gender

Gender	f	(%)
Male	23	32.9
Female	47	67.1
Total	**70**	**100.0**

Table 2 shows that the majority of respondents were female, totaling 47 individuals (67.1%), while males accounted for 23 individuals (32.9%).

Table 3: Frequency Distribution by Education Level

Education Level	f	(%)
Elementary School (SD)	6	8.6
Junior High School (SMP)	12	17.1
Senior High School (SMA)	46	65.7
Associate Degree (D3)	3	4.3
Bachelor's Degree (S1)	3	4.3
Total	**70**	**100.0**

Table 3 demonstrates that high school graduates constituted the largest group with 46 respondents (65.7%), while those with Associate (D3) and Bachelor's (S1) degrees represented the smallest groups, with 3 respondents (4.3%) each.

Table 4: Frequency Distribution by Occupation

Occupation	f	(%)
Farmer	11	15.7
Housewife (IRT)	38	54.3
Private Sector Employee	18	25.7
Civil Servant (PNS)	3	4.3
Total	**70**	**100.0**

Table 4 shows that housewives were the largest respondent group with 38 individuals (54.3%), whereas civil servants were the smallest group, totaling 3 individuals (4.3%).

Table 5: Frequency Distribution by Dietary Patterns

Dietary Patterns	f	(%)
Good	38	54.3
Poor	32	45.7
Total	**70**	**100.0**

Based on Table 5, the majority of respondents had good dietary patterns (38 individuals, 54.3%), while 32 individuals (45.7%) had poor dietary patterns.

Table 6: Frequency Distribution by Lifestyle

Lifestyle	f	(%)
Good	59	84.3
Poor	11	15.7
Total	**70**	**100.0**

Table 6 reveals that the majority of respondents followed a good lifestyle, consisting of 59 individuals (84.3%), while 11 individuals (15.7%) had a poor lifestyle.

Table 7: Frequency Distribution by Stress Levels

Stress Level	f	(%)
Normal	1	1.4
Mild	8	11.4
Moderate	33	47.1
Severe	28	40.0
Total	**70**	**100.0**

Table 7 shows that the highest number of respondents experienced moderate stress levels (33 individuals, 47.1%), while the smallest group fell into the normal category (1 individual, 1.4%).

Table 8: Frequency Distribution by Dyspepsia Incidence

Dyspepsia	f	(%)
Non-dyspepsia	33	47.1

Dyspepsia	37	52.9
Total	**70**	**100.0**

Based on Table 8, the majority of respondents were in the dyspepsia category, totaling 37 individuals (52.9%), while 33 individuals (47.1%) did not have dyspepsia.

Table 8: The Relationship Between Dietary Patterns and Dyspepsia Recurrence at Dalu X Public Health Center, Tanjung Morawa

Dietary Patterns	Non-Dyspepsia n (%)	Dyspepsia n (%)	Total n (%)	p-value
Good	33 (100)	5 (13.5)	38 (54.3)	0.000
Poor	0 (0)	32 (86.5)	32 (45.7)	
Total	33 (100)	37 (100)	70 (100)	

Based on the research findings, 54.3% of respondents at the Dalu X Public Health Center, Tanjung Morawa, had dietary habits categorized as "good." Statistical test results at the center demonstrated a significant correlation between dietary habits and the recurrence of dyspepsia (p=0.000). This finding is supported by research from Nuraini (2023), which stated that there is a significant relationship between dietary regularity and dyspepsia syndrome.5

A similar correlation between food intake and dyspepsia syndrome was identified in a study by Kefi (2022), as indicated by a p-value of 0.005. However, with an r-value of 0.330, the correlation strength in that study was relatively weak. Meal scheduling and frequency are two of the most critical dietary factors and represent the most common links in nutrition. A consistent dietary pattern is essential for controlling gastric acid secretion because it facilitates the stomach's ability to anticipate meal times and regulate acid production. The stomach finds it difficult to adapt to irregular eating patterns. In the long term, excessive gastric acid production will irritate the gastric mucosa, leading to gastric ulcers that may further progress into peptic ulcers.6

Furthermore, research conducted by Anindia (2024) indicates a relationship between dyspepsia and dietary patterns. Beyond the type of food consumed, dyspepsia syndrome can also be caused by irregular eating patterns, such as improper schedules and eating habits.7 A study by Wijaya, Nur, and Sari (2020) also found a connection between the incidence of dyspepsia syndrome and irregular eating frequency. The stomach struggles to adjust to an inconsistent diet. If this persists, the stomach produces excessive acid, which irritates the mucosal lining and leads to the formation of ulcers. This condition can result in nausea and a burning sensation, which may also affect the esophagus.8

In contrast, a different study by Sesrianty (2022) reported statistical results for dietary patterns (p=0.497) and the consumption of irritating foods (p=0.271) in relation to dyspepsia syndrome, showing no significant association. That study noted that while most dietary patterns were irregular (60%) and many consumed potentially irritating foods, these habits did not correlate with the development of dyspepsia syndrome. Nevertheless, an increased risk of functional dyspepsia is generally associated with eating behaviors such as eating quickly, infrequent meals, consuming large portions, eating before sleep, and irregular meal intervals. Although the exact mechanism remains unknown, skipping meals and overeating are suspected to result in delayed gastric emptying, gastric digestive issues, antral hypomotility, gastric acid secretion abnormalities, and gastrointestinal hormonal imbalances.9

Table 9: The Relationship Between Lifestyle and Dyspepsia Recurrence at Dalu X Public Health Center, Tanjung Morawa

Lifestyle	Non-Dyspepsia n (%)	Dyspepsia n (%)	Total n (%)	p-value
Good	**30 (90.9)**	**29 (78.4)**	**59 (84.3)**	**0.150**
Poor	**3 (9.1)**	**8 (21.6)**	**11 (15.7)**	
Total	**33 (100)**	**37 (100)**	**70 (100)**	

The research results indicate that the lifestyle of respondents at Dalu X Public Health Center, Tanjung Morawa, falls within the "good" category (84.3%). Statistical tests demonstrate that there is no significant relationship between lifestyle and the recurrence of dyspepsia at the Dalu X Public Health Center. This is supported by previous research stating that there is no significant association between smoking lifestyle and the incidence of dyspepsia syndrome.10

This finding is consistent with a 2018 study by L. Talledo-Ulfe et al., which revealed no correlation between smoking and the prevalence of dyspepsia syndrome (p-value=0.495). Furthermore, the findings of a 2018 study by Basha Ayele and Eshetu Molla showed no clear link between smoking and dyspepsia prevalence. Similar findings were reported in a 2019 study by Talakad Shesha Iyengar Chaluvaraj, Lokesh KC, and Pradeep Tarikere Satyanarayana, which found no association between smoking and dyspepsia syndrome (p-value=0.12).11

Statistically, smoking and the development of dyspepsia syndrome are not directly related in this context. This may occur because, although smoking is linked to various health issues including dyspepsia, these effects might only manifest 10 to 20 years after cessation.12 Smoking has several negative effects on the digestive system, including weakening the pylorus (the distal part of the stomach that stores food, acid, and liquid) and the esophageal valve (food pipe), increasing reflux (a condition where stomach acid flows back into the esophagus), and accelerating gastric emptying. In response to the release of gastrin and acetylcholine, there is an increase in gastric acid secretion. Furthermore, smoking impairs the effectiveness of gastric acid inhibitors such as cimetidine, which can ultimately lead to the development of ulcers. Cigarettes can disrupt the stomach's defensive factors by decreasing bicarbonate secretion and mucosal blood flow, and are associated with additional complications due to *H. pylori* infection.13

CONCLUSION

Based on the research conducted, it can be concluded that there is a significant relationship between dietary patterns and stress levels concerning the recurrence of dyspepsia. Conversely, there is no significant relationship between lifestyle and the recurrence of dyspepsia at Dalu X Public Health Center, Tanjung Morawa. Dietary patterns were identified as the most dominant variable contributing to the recurrence of dyspepsia at the Dalu X Public Health Center, Tanjung Morawa.

ACKNOWLEDGMENTS

The researcher expresses their sincere gratitude to all parties who provided support during the writing of this journal, titled 'The Relationship Between Dietary Patterns, Lifestyle, and Stress Levels Toward Dyspepsia Recurrence at Dalu X Public Health Center, Tanjung Morawa.' It is hoped that the findings of this study will provide meaningful benefits for healthcare services and the community, as well as serve as a valuable reference for future research.

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