The Relationship Between Diet, Lifestyle and Stress Levels on the Recurrence of Dyspepsia at the Dalu X Tanjung Morawa Community Health Center in 2024

Kristina Dameria Panggabean*[1], Ivonne Ruth Situmeang[2], and Mawar Gloria Tarigan[3]

[1] Student of Bachelor of Medical Education Program, Faculty of Medicine, Methodist University of Indonesia
[2] Department of Pubhe Health Sciences, Faculty of Medicine, Methodist University of Indonesia
[3] Department of Mental Medicine, Faculty of Medicine, Methodist University of Indonesia
kristinapanggabean960@gmail.com

Abstract. Dyspepsia can be caused by eating and drinking habits such as consuming spicy food, excessive acidity, alcoholic drinks, carbonated and caffeinated beverages like coffee, smoking, stress, *Helicobacter pylori* infection, use of certain drugs, and a history of diseases (gastritis and stomach ulcers), all of which act as risk factors for dyspepsia. This study aims to determine the relationship between diet, lifestyle, and stress levels on the recurrence of dyspepsia at the Dalu X Tanjung Morawa Community Health Center. This research employs an observational analytical method. The number of samples in this study was 68 respondents. The eating patterns of respondents at the Dalu X Tanjung Morawa Community Health Center were categorized as good (*54.3%*). The lifestyle of respondents was also in the good category (*84.3%*). The stress levels of respondents were categorized as moderate. The recurrence of dyspepsia at the Dalu X Tanjung Morawa Community Health Center was categorized as high (*52.9%*). The results showed a significant relationship between diet and recurrence of dyspepsia ($p = 0.000$). However, there was no relationship between lifestyle and dyspepsia recurrence ($p = 0.150$). Additionally, there was a significant relationship between stress levels and dyspepsia recurrence ($p = 0.000$).

Keywords: Diet, Lifestyle, Stress, Dyspepsia

1 Introduction

The collection of symptoms that can point to diseases or problems of the upper gastrointestinal tract are collectively referred to as dyspepsia. Among the symptoms include burping, regurgitation (food flowing back into the mouth), nausea, vomiting, bloating, fullness, and burning in the chest in addition to epigastric

E. Fachrial and S. Suhartomi (eds.), *Proceedings of the 1st International Conference on Lifestyle Diseases and Natural Medicine (ICOLIFEMED 2024)*, Advances in Health Sciences Research 84,
https://doi.org/10.2991/978-94-6463-664-2_10

pain or discomfort. The term dyspepsia comes from the Greek words "dys" and "pepsis," which refer to digestive problems.

There are two types of dyspepsia based on etiology: functional and organic. Organic dyspepsia is a type of dyspepsia where diagnostic techniques including endoscopy, radiography, and laboratory testing reveal structural abnormalities and biochemical pathology. Functional dyspepsia is a type of dyspepsia where the underlying cause is neither structural nor biochemical [1]. Dyspepsia cases account for 13-40% of the global population in each country. The prevalence of dyspepsia varies significantly between 5 and 43% in Europe and the US, according to research data. Not only overseas, but even in major Indonesian cities such as Jakarta, the prevalence of dyspepsia is very high. One of the causes of the high morbidity rate in the community is dyspeptic syndrome. The prevalence of dyspeptic syndrome varies from 23% to 41% in the US and Europe.

According to research, 43-79.5% of dyspeptic patients are found in Asian countries (China, Hong Kong, Indonesia, Korea, Malaysia, Singapore, Taiwan, Thailand, and Vietnam) [2]. In addition to eating and drinking habits that include spicy foods, excessive acidity of alcohol consumption, carbonated and caffeinated beverages such as coffee, smoking, stress, *Helicobacter pylori* infection, drug use, and a history of gastric and peptic ulcers, these factors can also cause dyspepsia. Studies have shown that irregular eating habits increase the likelihood of experiencing a number of symptoms, such as dyspepsia-related abdominal pain that radiates to the epigastrium, as well as nausea, vomiting, and belching. Digestive problems can be caused by irregular eating patterns, too much food, and long meal intervals [3].

Additional factors that can cause dyspepsia include age, gender, lifestyle, and stress levels. Women are the most affected gender as they tend to favor foods that are too spicy and sometimes acidic. Age is most common where the elderly experience physical decline as one's bodily functions get worse with age. High levels of stress can also trigger dyspepsia as it can cause the stomach to secrete too much acid, which can disrupt stomach function and possibly result in leakage [4].

2 Literature Review

Dyspepsia is a syndrome or collection of symptoms associated with discomfort or pain in the solar plexus, feeling full quickly after eating, abdominal bloating, vomiting, nausea, and a feeling of fullness. This results in digestive or metabolic imbalances that trigger biochemical reactions in the body, including those related to nutritional needs. Increased dyspeptic symptoms can lead to various health problems, including reduced quality of life and functional activities. Dyspepsia usually affects people in their productive years. The most common causes of dyspepsia are unhealthy diet and lifestyle [8].

Some risk factors that play a role in dyspepsia are dietary factors (e.g., fast food, fried foods, spicy foods, fatty foods, coffee, and tea) and lifestyle factors (e.g., alcohol, smoking, lack of exercise, NSAIDs/aspirin) which are thought to

contribute to dyspepsia. Cigarette smoking can reduce the protective effect on the stomach lining, while anti-inflammatory drugs and alcohol play a role in increasing acid production in the stomach.

There are two types of dyspepsia: organic (structural) dyspepsia and functional (non-organic) dyspepsia. In organic dyspepsia, symptoms are found in the form of an organic disorder that is the causative factor. Organic dyspepsia involves abnormalities in the body's organs, such as ulcers (peptic ulcers), gastritis, stomach cancer, gastro-oesophageal reflux disease (GERD), and hyperacidity. Functional or non-organic dyspepsia, where there are no abnormalities on physical examination or endoscopy, includes other symptoms such as chronic or recurrent pain or discomfort in the upper abdomen [10].

Worldwide, dyspepsia accounts for 13-40% of the total population in each country. The results of the study showed that in Europe, the United States, and Oceania, the prevalence of dyspepsia varies widely from 5-43%. In the SEARO (South East Asian Regional Office) region, mortality and morbidity from non-communicable diseases are estimated to increase to 50% and 42% respectively by 2020. The prevalence of dyspepsia in the world reaches about 13-40% of the total population each year. Not only overseas, dyspepsia cases in big cities in Indonesia are quite high [11].

3 Methods

This study is an observational analytic study to see the relationship between the independent variable and the variable. Observational dependent analytics is research that links between both independent and dependent variables, analytical observations, sometimes known as analytical surveys, investigate the mechanisms and causes of these health conditions after that, a dynamic study of the relationship between the phenomenon and the risk variables or effect factors should be conducted.

4 Results

The inclusion criteria in this study were respondents aged 17-50 years who visited the Puskesmas Dalu X Tanjung Morawa, patients willing to become respondents and experience dyspepsia, patients who came for outpatient treatment to the Puskesmas Dalu X Tanjung Morawa in July 2024. Exclusion criteria in this study were uncooperative patients such as unable to read and write at the time of the study and patients accompanied by complications such as heart disease.

4.1 Reporting Research Results

Based on the table shows that out of 38 people with a good diet and 33 people who did not experience dyspepsia, and experienced dyspepsia as many as 5 people. Of the 32 people with poor diet, all experienced dyspepsia. The results

Table 1. The relationship between diet and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa

	Dyspepsia Recurrence			
Diet	**Not Dyspepsia**	**Dyspepsia**	**Totally**	**P Value**
	n (%)	**n (%)**	**n (%)**	
Both	33 (100)	5 (13.5)	38 (54.3)	0.000
Bad	0 (0)	32 (86.5)	32 (45.7)	
Totally	33 (100)	37 (100)	70 (100)	

of statistical tests using the chi square test found a value of p = 0.000 (p ¡0.05), which means that there is a significant relationship between diet and dyspepsia recurrence at the Dalu X Tanjung Morawa Health Center.

Table 2. The relationship between lifestyle and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa

	Dyspepsia Recurrence			
Lifestyle	**Not Dyspepsia**	**Dyspepsia**	**Totally**	**P Value**
	n (%)	**n (%)**	**n (%)**	
Both	30 (90.9)	29 (78.4)	59 (84.3)	0.150
Bad	3 (9.1)	8 (21.6)	11 (15.7)	
Totally	33 (100)	37 (100)	70 (100)	

Table 2 shows that out of 59 people with a good lifestyle, 30 people did not have dyspepsia, and 29 people experienced dyspepsia. Of the 11 people with a bad lifestyle, 3 people did not have dyspepsia, and 8 people experienced dyspepsia. Based on the results of statistical tests, the value of p=0.150 (p¿0.05) was found, which means that there is no significant relationship between lifestyle and dyspepsia recurrence at the Dalu X Tanjung Morawa Health Center.

Based on table 3 shows that the most with moderate stress as many as 33 people, with 21 people not dyspepsia and 12 people dyspepsia. Table 4.11 shows that the results of the chi square test found a value of p = 0.000 (p ¡0.05), which means that there is a significant relationship between stress levels and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa

Table 3. Relationship between stress level and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa

	Dyspepsia Recurrence			
Lifestyle	**Not Dyspepsia**	**Dyspepsia**	**Totally**	**P Value**
	n (%)	**n (%)**	**n (%)**	
Both	30 (90.9)	29 (78.4)	59 (84.3)	0.150
Bad	3 (9.1)	8 (21.6)	11 (15.7)	
Totally	33 (100)	37 (100)	70 (100)	

5 Discussion

The results showed that the diet of respondents at Puskesmas Dalu X Tanjung Morawa was in the good category (54.3%). The statistical test results show that there is a relationship between diet and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa ($p = 0.000$). This is supported by Nuraini's research (2023) which states that there is a significant relationship between dietary regularity and dyspepsia syndrome [5]. Different research conducted by Sesrianty (2022) states that most of the eating patterns are irregular (60%), most of the irritative foods consumed are not irritative (87.5%), and the results of statistical tests of eating patterns with the incidence of dyspepsia syndrome (P-value = 0.497) and consuming irritative foods (P-value = 0.271) show no association of diet and irritative food with the incidence of dyspeptic syndrome.

Eating behaviors such as speed of eating, irregular eating patterns, the number and size of meals, the habit of eating before bedtime, and the time gap between meals are associated with an increased risk of functional dyspepsia. The exact mechanism is not yet known, but skipping meals and consuming large amounts of food are said to cause slowing of gastric emptying, impaired gastric accommodation, antrum hypomotility, and disturbances in gastric acid secretion and gastrointestinal hormones.

The results showed that the lifestyle of respondents at Puskesmas Dalu X Tanjung Morawa was in the good category (84.3%). The results of statistical tests showed that there was no relationship between lifestyle and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa. This is supported by previous research which states that there is no significant relationship between smoking lifestyle and the incidence of dyspepsia syndrome. In line with research conducted by L. Talledo-Ulfe *et al.*, (2018) where no relationship was found between smoking and the incidence of dyspepsia syndrome (p-value = 0.495). Furthermore, the results of research conducted by Basha Ayele and Eshetu Molla (2018) showed that there was no significant relationship between smoking and the incidence of dyspeptic syndrome. Research conducted by Talakad Shesha Iyengar Chaluvaraj, Lokesh KC, and Pradeep Tarikere Satyanarayana (2019) also showed similar results, namely no association between smoking and dyspeptic syndrome (p-value = 0.12).

The results showed that the stress level of respondents at Puskesmas Dalu X Tanjung Morawa was in the moderate category (47.1%). The statistical test results show that there is a relationship between stress levels and dyspepsia recurrence at Puskesmas Dalu X Tanjung Morawa. This is supported by previous research by Wibawani (2021), which states that stress is more common in patients with dyspepsia, 206 people (96.3%), compared to those without dyspepsia, 115 people (70.1%). Normal conditions were found more in patients who did not suffer from dyspepsia, 49 people (29.9%) compared to those who suffered from dyspepsia, 8 people (3.7%) [1].

6 Conclusion

Based on the research that has been done, the results show that there is a significant relationship between diet and stress levels on dyspepsia recurrence and there is no significant relationship between lifestyle and dyspepsia recurrence at puskesmas dalu x tanjung morawa. Diet is the most dominant variable causing recurrence of dyspepsiain puskesmas dalu x tanjung morawa.

7 Acknowledgement

"The researcher would like to thank all those who have supported the writing of this journal, entitled "The Relationship Between Diet, Lifestyle And Stress Levels To Dyspepsia Recurrence At Puskesmas Dalu X Tanjung Morawa" Hopefully the results of this study can be useful for health services and also in the community and as a reference for future studies."

References

1. Wibawani, E.A., Faturahman, Y., and Purwanto, A. (2021). Faktor-Faktor Yang Berhubungan Dengan Kejadian Dispepsia Pada Pasien Rawat Jalan Poli Penyakit Dalam Di RSUD Koja. *Jurnal Kesehat Komunitas Indones*, 17(1), 257–266.
2. Putri, A.N., Maria, I., and Mulyadi, D. (2018). Hubungan Karakterisitik Individu, Pola Makan, dan Stres dengan Kejadian Dispepsia paa Mahasiswa Program Studi Kedokteran Universitas Jambi Angkatan 2018. *Jurnal Med Stud*, 2(1), 36–37.
3. Miwa, H., Ghoshal, U.C., Gonlachanvit, S., Gwee, K.A., Ang, T.L., Chang, F.Y., et al. (2012). Asian Consensus Report on Functional Dyspepsia. *Journal of Neurogastroenterology and Motility*, 18(2), 150–168.
4. Thoriq, M.A., and Ariati, A. (2023). Hubungan Pola Makan Dengan Kejadian Dispepsia Fungsional Pada Mahasiswa Fakultas Kedokteran UISU Angkatan 2018. *Ibnu Sina J Kedokt dan Kesehat - Fak Kedokt Univ Islam Sumatera Utara*, 22(1), 38–42.
5. Nuraini, R. (2023). Hubungan Pola Makan Dengan Sindroma Dispepsia Pada Mahasiswa Preklinik Fakultas Kedokteran. *J Implementa Husada*, 4(3).
6. Kefi, C.G.B., Artawan, I.M., Dedy, M.A.E., and Lada, C.O. (2022). Hubungan Pola Makan Dengan Sindroma Dispepsia Pada Mahasiswa Pre Klinik Fakultas Kedokteran Universitas Nusa Cendana. *Cendana Med J*, 10(1), 147–156.

7. Anindia, F. (2024). Hubungan Pola Makan Dengan Kejadian Dispepsia Pada Pasien Dewasa di Ruang Rawat Inap Alamanda Rumah Sakit Bhakti Medicare Kabupaten Sukabumi. *J Heal Soc*, 13(1).
8. Wijaya, I., Nur, N.H., and Sari, H. (2020). Hubungan Gaya Hidup Dan Pola Makan Terhadap Kejadian Syndrom Dispepsia Di Rumah Sakit Bhayangkara Kota Makassar. *Jurnal Promotif Preventif*, 3(1), 58–68.
9. Putri, A.N., et al. (2022). Hubungan Antara Gaya Hidup dan Stres dengan Kejadian Sindrom Dispepsia pada Mahasiswa Ilmu Kesehatan Masyarakat Fakultas Kedokteran dan Ilmu Kesehatan Universitas Jambi. *J Ilmu dan Teknol Kesehat Terpadu*, 2(1), 8–18. doi:10.24929/fik.v8i2.648.
10. Shesha, T., Chaluvaraj, I., and Satyanarayana, P.T. (2019). A Study to Assess the Prevalence of Dyspepsia among Undergraduate Medical Students of a Rural Medical College- A Cross Sectional Study. *Natl J Res Community Med*, 8(2), 148–151.
11. Naisali, M.N. (2017). Hubungan Perilaku Merokok Dengan Kejadian Gastritis Pada Mahasiswa Teknik Sipil Universitas Tribhuwana Tunggadewi Malang. *Nurs News (Meriden)*, 2(1), 304–317.
12. Shahab, F., and Zahra, S. (2023). Hubungan Pola Makan dengan Sindroma Dispepsia pada Mahasiswa Pre-klinik Fakultas Kedokteran. *J Implementa Husada*, 4(3).