The Relationship Between Anxiety Level and Functional Dyspepsia Incidence in Medical Students at State University of Gorontalo

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Abstract. Dyspepsia is a collection of symptoms in the form of discomfort in the upper abdomen (epigastrium) accompanied by nausea, vomiting, bloating, early satiety, stomach feeling full, or meteorism, belching, and heartburn. There are several factors that are thought to be the cause of dyspepsia, one of which is anxiety. The purpose of this study was to determine the relationship between anxiety levels and the incidence of functional dyspepsia in medical students at Gorontalo State University. The research design in this study was cross-sectional. The population for this study was all medical students at Gorontalo State University from 2019 to 2021. The sampling technique used in this study was total sampling. The research instruments used were the Beck Anxiety Inventory (BAI) questionnaire and the Nepean Dyspepsia Index (NDI). The collected data were analyzed univariate and bivariate using the Spearman rank correlation statistical test. Obtained a sample of 143 students. The results showed that many students had a severe anxiety category of 52 students (36.4%), moderate anxiety of 52 students (36.4%), and mild anxiety of 26 students (18.2%). Most students who did not experience functional dyspepsia were 99 students (69.2%), mild functional dyspepsia was 35 students (24.5%), and moderate functional dyspepsia was 8 students (5.6%). There was a moderate and positive correlation between the level of anxiety and the incidence of functional dyspepsia in medical students at Gorontalo State University (R = 0.541, p value = 0.000). There is a relationship between the level of anxiety and the incidence of functional dyspepsia in medical students at Gorontalo State University.

Keywords: Anxiety Level; Functional Dyspepsi, Medical Students.

1 Introduction

Dyspepsia is a term that describes a complaint or a collection of symptoms consisting of discomfort that is mainly felt in the upper abdominal area (epigastrium) and is accompanied by nausea, vomiting, bloating, early satiety, a feeling of a full or full stomach, belching, and a burning feeling in the chest. Initially, this disorder was considered part of the anxiety disorders, hypochondria, and hysteria [1]. Based on data from the World Health Organization (WHO), cases of dyspepsia in the world reach 13–40% of the total population each year. Meanwhile, in Indonesia itself, there is

ISPsy 2023, July 18-19, Purwokerto, Indonesia

DOI 10.4108/eai.18-7-2023.2343402

currently no definitive latest epidemiological data [2]. However, it is estimated that the incidence of dyspepsia in Indonesia reaches 40–50% each year [3].

There are several factors that cause dyspepsia, including contractions in the smooth muscle of the stomach, which are influenced by the movement of hormones, such as the motilin hormone. In addition, acute stress and anxiety are also believed to be causes of dyspepsia [4]. Someone who experiences anxiety will experience an increase in gastric peristalsis and an increase in gastric acid secretion caused by an increase in acetylcholine production. This can affect the integrity of the gastric mucosa and cause heartburn in that person [5].

Anxiety is more likely to be experienced by medical students than students of other study programs [6]. Research on anxiety, especially in college students, is still rare compared to research on depression. Anxiety experienced by students is an important thing to pay attention to because it will affect academic performance and professionalism, especially for health students who will be dealing with patients later [7].

This research is considered necessary because there has been no previous research that discusses the relationship between anxiety levels and the incidence of functional dyspepsia in medical students at Gorontalo State University. In addition, this research can assist the institution in identifying anxiety and functional dyspepsia problems experienced by students. Several studies that are relevant to this research only link anxiety with functional dyspepsia, so the researchers compiled this study by examining the level of anxiety and the incidence of functional dyspepsia experienced by respondents, who are medical students at Gorontalo State University. Other studies have also focused on examining functional dyspepsia variables. Based on the description above, this research was conducted with the aim of knowing the relationship between anxiety levels and the incidence of functional dyspepsia in medical students at Gorontalo State University.

2 Literature Review

Dyspepsia comes from Greek, where "dys" means bad and pepsis" means digestion, which describes a complaint or collection of symptoms (a syndrome) consisting of pain or discomfort in the epigastrium, nausea, vomiting, bloating, feeling full quickly, feeling of a full stomach, or burp [8]. Another opinion is that dyspepsia is defined as a collection of symptoms that refer to the gastro-duodenal region of the upper gastrointestinal tract. Functional dyspepsia and relapsing and remitting disorders are the most common causes of this symptom [9]. The term dyspepsia is also defined as describing a complex group of symptoms that refer to the gastroduodenal area of the digestive tract, including symptoms of pain or a burning sensation in the epigastrium, a feeling of fullness after eating, or a feeling of fullness quickly [10].

Dyspepsia is classified into two types, namely organic (structural) and functional (non-organic). Organic dyspepsia occurs due to organic disorders [11]. The underlying causes of organic dyspepsia are peptic ulcer disease (PUD), GERD (Gastroesophageal Reflux Disease), cancer, and chronic use of alcohol or drugs. Meanwhile, non-organic (functional) dyspepsia is characterized by chronic or recurrent upper abdominal pain or discomfort without any abnormalities on physical examination or endoscopy [1]. According to the Rome IV criteria, functional dyspepsia is one or more of the following symptoms: bothersome epigastric pain or burning; bothersome fullness after eating; fullness at the start of a meal; and without evidence of structural disease (including upper abdominal endoscopy) [10]. Functional dyspepsia is classified into two, namely epigastric pain syndrome (epigastric pain or burning sensation) and postprandial distress syndrome (feeling full after eating and feeling full quickly) [11].

Based on data from the World Health Organization (WHO), dyspepsia cases in the world reach 13–40% of the total population every year. It is estimated that around 15–40% of the world's population has chronic or recurrent dyspepsia; one third has organic (structural) dyspepsia [1].

Multiple risk factors for dyspepsia are involved in its etiology, such as irregular eating habits, overeating, eating fatty foods, eating spicy foods, smoking habits, alcohol consumption, and the use of several drugs such as non-steroidal anti-inflammatory drugs and steroids [12]. Other factors that are thought to influence dyspepsia include eating irregularities, irritating foods or drinks, tension, daily activities, knowledge, work, and a history of diseases such as gastritis and peptic ulcers [13].

Until now, it has not been possible to determine with certainty the cause of functional dyspepsia syndrome. However, current data shows that infection and food play an important role in the pathophysiology of dyspepsia. It has also been reported that functional dyspepsia syndrome can be triggered by consuming foods high in fat, which can slow down the gastric emptying process. Fast food and irregular eating habits are also often associated with the incidence of dyspepsia syndrome [14]. Many hypotheses have been put forward to explain the pathophysiology of functional dyspepsia. Among the many hypotheses, there are some that are most often discussed, including the gastric acid and inflammation hypothesis, the motor disorders hypothesis, the visceral hypersensitivity hypothesis, and the hypothesis of a psychological or psychiatric disorder. Acute stress can affect gastrointestinal function and trigger complaints in healthy people. It has been reported that there is a decrease in gastric contractility that precedes complaints of nausea after a central stress stimulus. However, there is still much controversy regarding the relationship between psychological factors, life stress, autonomic function, and motility [8].

Anxiety is a warning signal that warns of impending danger and makes a person take action to deal with the threat [15]. Anxiety is a normal reaction to stress and can be beneficial in some situations. It can alert us to danger and help us prepare and pay attention. Anxiety disorders are different from normal feelings of nervousness or anxiety and involve excessive fear or anxiety. Anxiety disorders

are the most common mental disorders and affect nearly 30% of adults at some point in their lives [16]. Guidelines for Classification and Diagnosis of Mental Disorders - III (PPDGJ - III) groups anxiety disorders into blocks of neurotic disorders, somatic disorders and stress-related disorders (F40-F48) [17].

In 2017, anxiety sufferers worldwide reached around 284 million people, or around 3.8% of the total population. Where men show a prevalence of 2.8% and women 4.7% [6]. Meanwhile, the prevalence of anxiety cases in Southeast Asia is 23%, or 60.05 million, out of a population of 264 million [18] [19].

Anxiety symptoms can be divided into four domains. Anxiety symptoms can be divided into four domains. There are cognitive symptoms, physiological symptoms, behavioral symptoms, and affective symptoms [20]. The level of anxiety can be classified into four levels. Mild anxiety is anxiety related to tension that occurs in everyday life and causes a person to become alert. Moderate anxiety allows a person to focus on important problems and ignore others so that they experience selective attention but can do something directed. Severe anxiety is when someone with this condition tends to focus on something detailed and specific and cannot think about anything else. The highest level is panic. Panic is related to fear and terror due to a loss of control. A person who panics is unable to do something even if given instructions [20].

There are several neurotransmitters involved in the regulation of anxiety, including gamma aminobutyric acid, dopamine, and glutamate, and the most common are the serotonergic and noradrenergic systems. Serotonin is a type of neurotransmitter that has the function of reducing anxiety responses. In a state of anxiety, there will be less activation of the serotonergic system and excessive activation of the noradrenergic system. Another mechanism that may also occur is disruption of the gamma-aminobutyric acid (GABA) system, which is also an inhibitory neurotransmitter for the stress response. It is also suspected that the role of corticosteroids can increase or decrease certain neural pathways that can influence the behavior of an anxious individual by processing stimuli that trigger fear [21]. Several factors that can influence anxiety include environmental factors, biological factors, behavioral factors, cognitive factors, and emotional factors [22].

Psychological and emotional factors (such as anxiety and depression) can affect gastrointestinal function, result in changes in gastric acid secretion, affect the motility and vascularization of the gastric mucosa, and reduce the pain threshold. Dyspepsia patients generally suffer from anxiety, depression, and neuroticism more clearly than normal people. Psychological and emotional factors play an important role in both the emergence of the disorder and its influence on the course of the disease. Physiologically, psychological or emotional stimulation can affect the stomach in two ways. The first is the neurogenic pathway, namely the stimulation of emotional conflict in the cerebral cortex, which influences the work of the anterior hypothalamus, then the vagus nucleus, the vagus

nerve, and then the stomach. and the second is the hormonal pathway, namely stimulation of the cerebral cortex, which is transmitted to the anterior hypothalamus and then to the anterior pituitary, which releases corticotropin. This hormone stimulates the adrenal cortex and then produces the hormone adrenaline, which then stimulates the production of stomach acid [23]. Anxiety causes an increase in gastric peristalsis and increased gastric acid secretion due to increased production of acetylcholine. This can affect the integrity of the gastric mucosa and cause heartburn in a person [5].

3 Method

This research was carried out at the Faculty of Medicine, State University of Gorontalo, from September to October 2022. The research design was cross-sectional, or cross-sectional, which is observational-analytic. The population in this study were all students of the Faculty of Medicine, State University of Gorontalo, from 2019 to 2021, with a total of 150 students using total sampling. The criteria used as samples were medical students at Gorontalo State University from 2019 to 2021 who were willing to become respondents by signing informed consent, filled out the questionnaire completely, and had no history of certain psychiatric or psychiatric disorders or chronic diseases.

The variables of this study consisted of the dependent variable in the form of functional dyspepsia and the independent variable in the form of anxiety levels. The level of anxiety in this study was defined as an unpleasant feeling of worry accompanied by cognitive, physiological, affective, and behavioral symptoms experienced by medical students at Gorontalo State University during their study period, and functional dyspepsia is a feeling of discomfort in the upper digestive tract area accompanied by a feeling of nausea, vomiting, and flatulence experienced by medical students at Gorontalo State University due to emotional disturbances in the form of anxiety that affect aspects of tension, restrictions on daily activities, eating and drinking, knowledge and control, and work or study.

The data in this study is primary data taken through the Beck Anxiety Inventory (BAI) to measure the respondents (medical students of Gorontalo State University) level of anxiety and the Nepean Dyspepsia Index (NDI) to measure respondents (medical students of Gorontalo State University) functional dyspepsia. The data obtained in this study were analyzed using univariate and bivariate analyses. Univariate analysis, namely the frequency distribution of anxiety levels with the incidence of functional dyspepsia based on age, sex, and year of admission, Bivariate analysis carried out statistical tests using Spearman rank correlation using the SPSS 25.0 application for Windows with a significance level of 0.05 to achieve the purpose of this study, namely to determine the relationship between anxiety levels and the incidence of functional dyspepsia in medical students at Gorontalo State University.

4 Result

Respondents in this study amounted to 143 students who met the criteria. The results in Table 1 show that most respondents are 20 years old, namely 49 students (34.3%), followed by 19-year-old respondents with 37 students (25.9%), and 21-year-old respondents with 36 students (25.2%). In this study, the percentage of female respondents was 108 students (75.5%), and the percentage of male respondents was 35 students (24.5%). The majority in this study came from the year 2021, namely as many as 52 students (36.4%), followed by the year 2019 as many as 47 students (32.9%), and the year 2020 as many as 44 students (30.8%). The characteristics of the respondents in this study can be seen in the **Table 1**.

Table 1. Characteristics of Research Respondents

Variable	Category	Frequency (n)	Percentage (%)
Age	18	9	6.3
	19	37	25.9
	20	49	34.3
	21	36	25.2
	22	13	8.4
Gender	Man	35	24,5
	Woman	108	75,5
Entry Year	2019	47	32,9
	2020	44	30,8
	2021	52	36,4
Total		**143**	**100**

From the results in **Table 2**, it was found that most of the respondents experienced moderate and severe levels of anxiety, with the percentage for each of these two categories being 52 students (36.4%), the category of mild anxiety being 26 students (18.2%), and the category of normal (no anxiety) having as many as 13 students (9.1%). The distribution of anxiety levels among respondents can be seen in **Table 2.**

Table 2. Distribution of Anxiety Levels in Respondents

No.	Emergency Level	N	%
1.	Normal	13	9,1
2.	Mild Anxiety	26	18,2
3.	Medium	52	36,4
	Emergency		
4.	Heavy Emergency	52	36,4
Total		143	100

The results from **Table 3** show that most of the respondents did not experience functional dyspepsia, with a percentage of 99 students (69.2%), the mild functional dyspepsia category experienced by 35 students (24.5%), moderate functional dyspepsia by 8 students (5.6%), and severe functional dyspepsia by 1 student (0.7%). The distribution of functional dyspepsia among respondents can be seen in **Table 3**.

Table 3. Distribution of functional dyspepsia among respondents

No.	Functional Dyspepsia	N	%
1.	Not Functional Dyspepsia	99	69,2
2.	Mild Functional Dyspepsia	35	24,5
3.	Moderate Functional Dyspepsia	8	5,6
4.	Severe Functional Dyspepsia	1	0,7
5.	Very Severe Functional Dyspepsia	0	0
	Total	143	100

Based on the statistical test results in **Table 4**, *p* value of 0.000 was obtained with a medium positive correlation coefficient (r = 0.541), so it can be concluded that there is a relationship between the level of anxiety and the incidence of functional dyspepsia in medical students at Gorontalo State University with moderate correlation strength, and the higher the level of anxiety, the higher the incidence of functional dyspepsia. The result of the bivariate analysis of the relationship between anxiety level and functional dyspepsia in respondents can be seen in **Table 4**.

Table 4. Results of a Bivariate Analysis of the Relationship between Anxiety Level and Functional Dyspepsia in Students

Emergency Level	**Functional Dyspepsia**					***p value***	**R**
	There is not any	Light	Currently	Heavy	Very heavy		
	n (%)	n (%)	n (%)	n (%)	n (%)	0,000	0,541
Normal	13 (9,1)	0 (0)	0 (0)	0 (0)	0 (0)		
Light	24 (16,8)	2 (1,4)	0 (0)	0 (0)	0 (0)		
Currently	44 (30,8)	6 (4,2)	2 (1,4)	0 (0)	0 (0)		
Heavy	18 (12,6)	27 (18,9)	6 (4,2)	1 (0,7)	0 (0)		
Total	**99 (69,2)**	**35 (24,5)**	**8 (5,6)**	**1 (0,7)**	**0 (0)**		

5 Discussion

Based on the research results, the results were obtained from 143 respondents. For anxiety level data that is measured using the Beck Anxiety Inventory (BAI), only 13 respondents (9.1%) did not experience anxiety, 26 respondents (18.2%) experienced mild anxiety, and the majority experienced moderate anxiety and severe anxiety, each of 52 respondents (36.4%).

The majority of anxiety levels experienced by respondents in this study were moderate and severe anxiety, each of which was experienced by 52 respondents (36.4%). This is in line with Tamimi et al.[24], who found that almost all of the respondents, namely 64 people (72.7%), experienced moderate to high academic stress [24]. Research from Rizqiyah in 2019 stated that academic experience while studying medicine often makes students vulnerable to experiencing anxiety [25]. Another study by Chandratika and Purnawati [26] said that medical students experience a level of mental fatigue, which includes anxiety, that is higher than that of the general population because they have a busy class schedule, tutorial activities, practicum, skills lab, and demands for independent study outside of these hours, which cause more stress and burden on mental and physical conditions compared to other education, with the risk of mental health getting worse during the learning process [26].

Students may feel anxious about their academic pressures, such as grades, exams, assignments, deadlines, or expectations from their teachers and parents. They may also struggle with learning difficulties, lack of motivation, or poor study skills. Anxiety can affect their concentration, memory, and performance. Students may also feel anxious due to their own personal issues, such as their health, appearance, identity, or future. They may also deal with family problems, financial difficulties, trauma, or loss. Anxiety can cause them to worry excessively, have negative thoughts, or experience physical symptoms such as headaches, stomachaches, or insomnia. Some environmental factors, such as changes and challenges that come with college life. They may have to adjust to a new environment, culture, or lifestyle. They may also face academic competition, workload demands, or time management issues. Anxiety can make them feel overwhelmed, stressed, or homesick [27].

Based on the characteristics of the respondents and the results of the research that has been done, it was found that the age range of the respondents in this study was 18–22 years. The results of this study are in line with research conducted by Sari et al. [28], whose respondents were also medical students in the 18-22 year age group [28]. According to Sari [2], symptoms of anxiety can arise in various age groups, depending on the triggering factors of the symptoms of anxiety in an individual. Maturity or maturity of an individual affects the ability of coping mechanisms, so individuals who are more mature are more likely to experience anxiety because these individuals have better adaptability in dealing with anxiety than those who are not yet mature [29].

Another factor that is thought to play a role in the occurrence of anxiety is gender. Based on the results of this study, the majority of anxiety was experienced by female respondents. Of the 108 female respondents, 14 (9.8%) experienced mild anxiety, 42 (29.4%) experienced moderate anxiety,

and 45 (31.5%) experienced severe anxiety. This is in line with research from Redjeki and Tambunan [30], which relates to anxiety: women are more prone to experiencing anxiety than men because women are more sensitive, so women are more sensitive to anxiety responses that occur, while men are more active and explorative in responding to their anxiety [30]. Sadock [15] also stated that women experience anxiety more easily than men due to excessive autonomic nervous reactions with an increased sympathetic system, increased norepinephrine, increased release of catecholamines, and abnormal serotogenic regulation disorders [15].

Apart from age and gender, education level is also thought to be one of the factors associated with anxiety. In this study, the respondents were medical students who came from three different entry years, including the 2019–2020 and 2021 entry years. Based on the research results, it was found that the categories of mild and severe anxiety were most experienced by respondents entering 2021. This is in line with research conducted by Chandratika and Purnawati [26], who found that there was a significant difference between anxiety disorder scores in semester I and semester VII respondents, where the anxiety scores of semester I students were higher than the anxiety scores of semester VI respondents (medical students of Gorontalo State University). This is due to the demands of adapting to a new environment in the early years of college [26].

Meanwhile, the category of severe anxiety level in this study was experienced more by respondents entering 2019 and 2020 than respondents entering 2021. This is in line with research by Sari et al. [28], who found that the anxiety level of students in the 2016 and 2017 batches was higher than the level of anxiety among students in the class of 2018. Sari et al.[28], in their research, stated that upper-level medical students have to study a lot of lecture material and assignments compared to lower-level students. According to the previous researcher's statement, the researcher assumes that many Gorontalo State University medical students in the class of 2019 experience severe levels of anxiety because there is also more lecture material and assignments that must be carried out than students entering 2020 and 2021.

Then, for data regarding functional dyspepsia obtained from instrument measurements, the Nepean Dyspepsia Index (NDI), respondents in this study did not experience functional dyspepsia; as many as 99 respondents (69.2%), followed by 35 respondents (24.5%) who experienced mild functional dyspepsia, 8 respondents (5.6%) who experienced moderate functional dyspepsia, and only 1 respondent (0.7%) who had severe functional dyspepsia.

Based on the research results, it can be concluded that the majority of respondents in this study did not experience functional dyspepsia, namely 99 respondents (69.2%). This is in line with research conducted by Lenga et al. [31] on 160 respondents who were students of the Faculty of Medicine, University of Nusa Cendana. The results of this study showed that the majority of respondents did not experience dyspepsia [31]. Dyspepsia syndrome is a physical health problem that arises due to the effects of anxiety experienced by a person [25]. In addition to the anxiety factor, the variation in the distribution of dyspepsia events in this study is thought to be due to other factors such as irregular eating patterns, the habit of consuming risky foods, and consuming alcoholic beverages [31]. According to theory, several etiologies of dyspepsia include irregular eating habits, overeating, eating fatty foods, eating spicy foods, smoking habits, alcohol consumption, and the use of some

drugs such as non-steroidal anti-inflammatory drugs and steroids [12]. Another theory states that the incidence of dyspepsia is influenced by several factors, namely psychological factors, activity factors, food factors, and eating patterns [13]. Based on this theory, the researchers assumed that a small number of students who experienced mild, moderate, and severe dyspepsia in this study occurred not only because of a history of severe anxiety but also because of bad eating habits and not taking care of the food intake consumed.

Based on the results of the study, it was found that the age range of the respondents in this study was students aged 18–22, and most of them did not experience functional dyspepsia, namely 99 respondents (69.2%). This is in line with research from Wibawani et al. [32], which stated that older individuals are more at risk of suffering from dyspepsia than young people. According to theory, the age group with the highest incidence of dyspepsia is the elderly [32]. As we get older, the gastric mucosa becomes thinner, so it is easily infected by Helicobacter pylori or autoimmune disorders. Whereas in individuals who are still young, the incidence of dyspepsia is usually associated with an unhealthy lifestyle due to stress [32].

Based on the results of the study, it was found that the incidence of mild, moderate, and severe functional dyspepsia was mostly experienced by female respondents. This is in line with research from Nurjannah [33], which stated that women are more at risk of developing dyspepsia because women are afraid of getting fat, so they often apply strict dietary behaviors but irregular eating schedules. Women are also more emotional than men, so when faced with a problem, women tend to get lost in thinking about it, which will cause stomach acid production to increase. In addition, female hormonal factors are more reactive than men, thereby affecting the work of the gastrin hormone [33].

Based on the results of the study, the results of hypothesis testing were obtained using the Spearman rank correlation test.The value of the correlation coefficient between anxiety levels and the incidence of functional dyspepsia is 0.541, which means that the strength of the relationship between anxiety levels and the incidence of functional dyspepsia is moderate and positive, which means that the relationship between the two variables is unidirectional, where the greater the anxiety score, the greater the dyspepsia score. The results show a p value of 0.000 ($p < 0.05$), which means that there is a significant relationship between the level of anxiety and the incidence of functional dyspepsia in medical students at Gorontalo State University.

There have been many studies showing a relationship between the level of anxiety and the incidence of functional dyspepsia, one of which was a study conducted by Lenga et al. [31], which found that there was a significant relationship between the level of anxiety and the incidence of dyspepsia in students of the Medical Education Study Program, Faculty of Medicine, University of Nusa Cendana. The results of the statistical test obtained a significance value of $p = 0.000$ and a value of $r = 0.397$ [31]. In addition, in a study by Angelia and Sutanto [34], a significant relationship was found between anxiety and the severity of dyspepsia in students of the Faculty of Medicine, University of Tarumanegara, class of 2014, with statistical test results of $p = 0.018$ ($p <0.05$) and $r = 0.355$ [34].

Referring to the existing theory, it is stated that in someone who experiences anxiety, disturbances in the central nervous system can occur. The vagus nerve, which affects innervation in the production of acetylcholine by cholinergic fibers, gastrin, and histamine, causes complaints of dyspepsia syndrome. An increase in gastric acid secretion affects the integrity of gastric acid, which causes dyspepsia syndrome [4].

The limitation of this study is that it only examines one of the factors that cause functional dyspepsia, namely anxiety. Data collection in this study also only used questionnaires without further in-depth analysis or other examinations to make a definite diagnosis. This study also excluded only variables in the form of a history of psychiatric illness and chronic disease that the patient already knew based on a doctor's diagnosis.

6 Conclusion

Based on the results of the research and discussion, it can be concluded that there is a relationship between anxiety levels and the incidence of functional dyspepsia in medical students at Gorontalo State University. This research can be useful to add to the knowledge that anxiety is one of the factors that causes functional dyspepsia, so that from now on, students can avoid excessive anxiety so they don't have functional dyspepsia and interfere with their current study period. It is recommended that institutions be able to help their students carry out anxiety management effectively to prevent functional dyspepsia. Then, to complete this research, research can be carried out to include other factors that are thought to have an effect on functional dyspepsia syndrome. Future researchers can also research coping skills or coping strategies to overcome anxiety experienced by medical students so as to minimize the risk of functional dyspepsia syndrome. Researchers can also develop the types of skills to learn and practice that can help students reduce their anxiety and cope with stressful situations. Some of these skills include breathing exercises, meditation, mindfulness, positive affirmations, cognitive restructuring (challenging negative thoughts), problem-solving (finding solutions to challenges), and relaxation techniques (such as progressive muscle relaxation or guided imagery).

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