

# KNOWLEDGE ON THE PREVENTION OF RECURRENCE OF PEPTIC ULCER DISEASE IN OUTPATIENTS AT TRA VINH PROVINCIAL GENERAL HOSPITAL

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## ABSTRACT

**Abstract:** Peptic ulcer disease is a common condition worldwide and in Vietnam. In 2019, the global prevalence of peptic ulcer disease was approximately 8.09 million cases, an increase of 25.8% compared to 1990.

**Research objectives:** Determine the proportion of knowledge about preventing the recurrence of gastric and duodenal ulcers.

**Research methods:** A descriptive cross-sectional study was conducted on 96 patients. The study subjects were patients diagnosed with peptic ulcer disease who were receiving outpatient treatment at the Department of General Examination, Tra Vinh Provincial General Hospital. The study was carried out from May 6 to July 12, 2024. Location: Outpatient Clinic, Department of General Examination, Tra Vinh Provincial General Hospital.

**Results:** 53.1% of patients had correct knowledge about the role of prevention in the recurrence of peptic ulcer disease. **Conclusion:** Health workers should pay more attention to providing health education to patients on preventing the recurrence of peptic ulcer disease, thereby improving treatment effectiveness and ensuring patients' health.

**Keywords:** Prevention, Peptic ulcer disease, Knowledge.

## 1. INTRODUCTION

Peptic ulcer disease is a common condition worldwide and in Vietnam. In 2019, the global prevalence of peptic ulcer disease was approximately 8.09 million cases, an increase of 25.8% compared to 1990 [1]. The lifetime risk of developing the disease ranges from 5% to 10%, with an annual incidence of 0.1–0.3% in the general population of Western countries [1]. The lifetime prevalence of peptic ulcer disease (95% confidence interval) is 5.6% (4.9–6.4%) [2]. Peptic ulcer disease is considered a “disease of modern society”. It increasingly poses a threat, directly affecting patients' quality of life [3] and significantly impacting the economy and healthcare costs [1]. Numerous factors increase the likelihood of disease recurrence, such as working in stressful and high-pressure environments, irregular eating habits, skipping meals, not resting after eating, and emotional stress, including anxiety, sadness, anger, or fear. All these factors contribute to a higher risk of recurrence. Patients

themselves play a crucial role in preventing recurrence when they possess accurate and sufficient knowledge of preventive measures [4]. Based on this reality, we conducted a study titled “Knowledge on the Prevention of Recurrence of Peptic Ulcer Disease among Outpatients at Tra Vinh Provincial General Hospital” with the following objectives: to determine the level of knowledge about preventing recurrence of peptic ulcer disease.

## 2. RESEARCH METHODS

A descriptive cross-sectional study was conducted among outpatients diagnosed with peptic ulcer disease at the Outpatient Department of Tra Vinh Provincial General Hospital. The study was conducted from 6 May to 12 July 2024 at the Outpatient Clinic of Tra Vinh Provincial General Hospital.

**Sample size:** The sample size was calculated using

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the formula for a descriptive cross-sectional study to determine a proportion:

$$n = Z_{1-\alpha/2}^2 \frac{p(1-p)}{d^2}$$

+ n = minimum sample size for the study

+ α = statistical significance level; for α = 0.05, the

+  $Z_{1-\alpha/2}$  coefficient = 1.96.

+ p = 46.57% (0.4657) — based on the study by Hoang Thi Le, “Changes in Awareness Regarding the Prevention of Recurrence among Patients with Peptic Ulcer Disease at Ha Nam Provincial General Hospital in 2019 after Health Education” [3].

+ d: expected margin of error; chosen as d = 0.1.

Thus, the sample size for the study is 96 subjects.

A convenience sampling technique was applied. Outpatients diagnosed with peptic ulcer disease who were under treatment at the Outpatient Department of Tra Vinh Provincial General Hospital were consecutively recruited into the study until the required sample size was reached.

Data collection tool: The study employed the questionnaire developed by Hoang Thi Le in “Changes in Awareness Regarding the Prevention of Recurrence among Patients with Peptic Ulcer Disease at Ha Nam Provincial General Hospital in 2019 after Health Education” [3].

Data processing and analysis: After data collection, all data were cleaned to ensure completeness and accuracy. Data entry was performed using Microsoft Excel 2019, and analysis was conducted with SPSS version 22.0. Descriptive statistics were presented as frequencies and percentages (%) for qualitative variables, and as mean, standard deviation, minimum, and maximum values for quantitative variables. Analytical statistics were used to identify the relationship between knowledge on the prevention of recurrence of peptic ulcer disease and general characteristics of participants, using the Chi-square test, with odds ratio (OR) and 95% confidence interval (CI).

Ethical considerations: The study was approved by the Ethics Committee for Biomedical Research of Tra Vinh University under Decision No. 4022/QĐ-ĐHTV dated May 6, 2024. The study was conducted at Tra Vinh Provincial General Hospital after receiving support from the Outpatient Department and permission from the Hospital Board of Directors. The research protocol was reviewed and unanimously approved by both the Research Proposal Committee and the Ethics Committee of Tra Vinh University. All study participants were clearly and thoroughly informed about the study's objectives, content, and their voluntary participation.

### 3. RESEARCH RESULTS

#### 3.1. Characteristics of Study Participants

**Table 1. Characteristics of Participants Regarding Knowledge on the Prevention of Recurrence of Peptic Ulcer Disease**

Characteristics of Study Participants	Frequency	Percentage %
<b>Age</b>		
Under 40 years old	6	6.3
40 years and older	90	93.8
<b>Gender</b>		
Male	25	26.0
Female	71	74.0
<b>Place of residence</b>		
Urban	35	36.5
Rural	61	63.5
<b>Education level</b>		
Below College/Intermediate level	76	79.2
College/Intermediate level and above	20	20.8
<b>Occupation</b>		
Public servant / Officer	12	12.5
Worker	20	20.8
Farmer	13	13.5
Other	51	53.1
<b>Duration of illness</b>		
< 1 year	36	37.5
1–5 years	33	34.4
> 5 years	27	28.1
<b>Number of recurrences</b>		
0 times	22	22.9
1 time	26	27.1
≥ 2 times	48	50.0

The majority of participants were 40 years and older (93.8%), and most were female (74%). Patients living in rural areas accounted for the majority, with 61 individuals (63.5%). Those with education below college/intermediate level represented a relatively high proportion of 79.2%. Among occupations, the “Other” category had the highest proportion (53.1%), including retirees, homemakers, elderly no longer working, and garment workers. Regarding the duration of illness, patients with less than 1 year had the highest proportion (37.5%), followed by those with 1–5 years (34.4%), and the smallest proportion was patients with more than 5 years (28.1%). For the number of recurrences, ≥2

recurrences accounted for 50%; 1 recurrence was 27.1%; and patients with no recurrence were the lowest at 22.9%.

### 3.2. Current Status of Patients' Knowledge on the Prevention of Recurrence of Peptic Ulcer Disease

**Table 2. Knowledge of Causes, Risk Factors, Symptoms, and Complications of Peptic Ulcer Disease in the Prevention of Recurrence (n = 96)**

Content	Frequency	Percentage %
<b>Causes</b>		
<i>Helicobacter pylori</i> infection	41	42.7
Stress	10	10.4
Dietary habits	28	29.2
Genetic factors	17	17.7
<b>Risk factors</b>		
Stressful work	14	14.6
Excessive alcohol consumption	20	20.8
Spicy, sour, or hot foods	17	17.7
Other medical conditions	18	18.8
All four factors	27	28.1
<b>Symptoms</b>		
Weight loss	15	15.5
Epigastric pain	26	27.1
Nausea and vomiting	17	17.7
Belching and acid reflux	12	12.5
All four symptoms	26	27.1
<b>Common complications</b>		
Peptic ulcer perforation	9	9.4
Gastrointestinal bleeding	25	26.0
Malignant transformation	23	24.0
Pyloric stenosis	9	9.4
All four complications	30	31.3

The highest proportion of patients (42.7%) believed that *Helicobacter pylori* infection is the leading cause of peptic ulcer disease. Regarding risk factors, the highest proportion (28.1%) selected all four factors. For symptoms, 27.1% of patients identified epigastric pain as a symptom of peptic ulcer disease, while 12.5% considered belching and acid reflux as symptoms, the lowest proportion. Overall, 27.1% of participants had complete knowledge of the symptoms. Regarding complications, 26.0% of patients recognized gastrointestinal bleeding as a complication, whereas pyloric stenosis and peptic ulcer perforation were the least recognized at 9.4%. Overall, 31.3% of participants

had adequate knowledge of the complications.

Among the participants, 53.1% had correct knowledge about their role in preventing the recurrence of peptic ulcer disease. Of the remaining, 29.2% considered it necessary, 13.5% thought it less important, and the lowest proportion, 4.2%, thought it not important.

### 3.3. Knowledge on Diet for Preventing Recurrence of Peptic Ulcer Disease

**Table 3. Knowledge on the Use of Fiber, Vegetables, and Fruits in Preventing Recurrence of Peptic Ulcer Disease (n = 96)**

Content	Frequency	Percentage %
<b>Dietary fiber intake</b>		
High in fiber	51	53.1
Limited fiber	21	21.9
No fiber intake	5	5.2
Don't know	19	19.8
<b>Recommended vegetables</b>		
Dried bamboo shoots	13	13.5
Young vegetables	37	38.5
Mature vegetables	34	35.4
Do not eat vegetables	12	12.5
<b>Frequency of fruit consumption</b>		
Always	45	46.9
Sometimes	35	36.5
Rarely	13	13.5
Never	3	3.1

The proportion of patients with correct knowledge about a high-fiber diet accounted for 53.1%. The proportion of patients with correct knowledge about the types of vegetables to use, specifically young vegetables, accounted for 38.5%. Additionally, 46.9% of patients had correct knowledge regarding the frequency of fruit consumption, indicating that they should consume fruits regularly.

**Table 4. Knowledge about food use for preventing the recurrence of gastric and duodenal ulcers (n=96)**

Content	Frequency	Percentage %
<b>Protein intake</b>		
Do not use	6	6.3
Limit use	10	10.4
Use according to nutritional needs	42	43.8
Use frequently	38	39.6

Content	Frequency	Percentage %
<b>Recommended types of mea</b>		
Roasted, fried, grilled, or salted meat	15	15.6
Sausages, ham, and cured pork	6	6.3
Minced bones and cartilage	17	17.7
Steamed fish and lean meat	58	60.4
<b>Milk consumption</b>		
Use regularly	50	52.1
Limit use	12	12.5
Do not use	9	9.4
Don't know	25	26.0
<b>Avoid sticky rice and “banh chung.”</b>		
Correct	37	38.5
Incorrect	59	61.5

The results show that 43.8% of patients had correct knowledge about consuming protein-rich foods in accordance with nutritional needs. The proportion of patients with correct knowledge about the recommended types of meat—specifically steamed lean meat and fish—was 60.4%. Additionally, 52.1% of patients had correct knowledge regarding milk consumption, with the correct frequency being regular use. The proportion of patients with correct knowledge about consuming sticky rice and “banh chung” was 38.5%.

### 3.4. Knowledge about lifestyle for preventing recurrence of gastric and duodenal ulcers

**Table 5. Knowledge about lifestyle factors affecting the stomach in preventing recurrence of gastric and duodenal ulcers (n=96)**

Content			
Correct		Incorrect	
Frequency	Percentage %	Frequency	Percentage %
<b>Coffee does not harm the stomach</b>			
36	37.5	60	62.5
<b>It is okay to smoke</b>			
33	34.4	63	65.6
<b>Stress</b>			
58	60.4	38	39.6
<b>Mental activities can be performed within 30 minutes after eating</b>			
38	39.6	58	60.4

Content			
Correct		Incorrect	
Frequency	Percentage %	Frequency	Percentage %
<b>Strenuous physical activity can be performed within 30 minutes after eating</b>			
32	33.3	64	66.7
<b>Patients should eat before going to bed</b>			
37	38.5	59	61.5
<b>To prevent ulcer recurrence, patients should keep the abdominal area warm</b>			
59	61.5	37	38.5
<b>Maintaining food hygiene helps prevent ulcer recurrence</b>			
62	64.6	34	35.4

62.5% of patients had correct knowledge that coffee harms the stomach; 65.6% correctly knew that smoking should be avoided; 60.4% correctly knew that stress increases stomach acid, leading to ulcer recurrence. The proportions of patients who correctly understood that mental and strenuous physical activities within 30 minutes of eating are harmful were 60.4% and 66.7%, respectively. Correct knowledge about eating before bedtime accounted for only 61.5%, and 60.4% of patients correctly knew that keeping the abdominal area warm helps prevent ulcer recurrence. Meanwhile, 64.6% of patients had correct knowledge that maintaining food hygiene helps prevent ulcer recurrence.

### 3.5. Knowledge about medication use in preventing the recurrence of gastric and duodenal ulcers

**Table 6. Knowledge about medication use for preventing recurrence of gastric and duodenal ulcers (n=96)**

Content	Frequency	Percentage %
<b>Actions when symptoms have subsided</b>		
Stop taking medication	35	36.5
Continue taking medication as prescribed	36	37.5
Use a reduced dose	19	19.8
Don't know	6	6.3
<b>Actions when stomach pain recurs</b>		
Return for a follow-up	51	53.1
Adjust diet	20	20.8
Take medication according to the previous prescription	16	16.6
Take traditional Chinese medicine	9	9.4



Content	Frequency	Percentage %
<b>Inform healthcare staff</b>		
Very necessary	59	61.5
Necessary	25	26.0
Less necessary	8	8.3
Not necessary	4	4.2

The proportion of patients with correct knowledge about actions when symptoms have subsided—continuing to take medication as prescribed—was 37.5%. When stomach pain recurs, 53.1% of patients correctly knew that they should seek follow-up. The proportion of patients who considered it very necessary to inform healthcare staff about their gastric and duodenal ulcers was 61.5%.

#### 4. DISCUSSION

Patients with correct knowledge about the disease and its prevention are essential contributors to effective prevention and optimal treatment outcomes. The highest proportion of patients (28.1%) selected all four factors, while the lowest was for stressful work (14.6%). This result is similar to the study by Pham Truong Giang, in which the highest rate was also selecting all factors (29.6%), and the lowest was stressful work (12.8%). The similarity may be explained by the proximity of the research locations, leading to similar patient knowledge [5].

Patients selecting all four symptoms and epigastric pain were the highest at 27.1%, while belching and acid regurgitation were the lowest at 12.5%. This result differs from the study by Hoang Thi Le et al., in which the lowest proportion of patients selected all four symptoms (25.0%) [3]. Regarding knowledge of complications, the highest proportion (31.3%) of patients correctly identified all four complications, while 68.7% had incorrect knowledge. The complication selected least frequently was ulcer perforation (9.4%). According to Ngo Thi Mai, most study participants considered gastrointestinal bleeding the most common complication of gastric and duodenal ulcers (34.6%), whereas only 9.1% selected pyloric stenosis, which differs from our study [6].

Fiber is a natural gift for humans to enhance and protect health, yet many people still lack knowledge about its role or do not fully utilize it [3]. Medication is considered the first-line treatment for gastric and duodenal ulcers, while diet plays a supportive role. According to the World Health Organization, patients are recommended to consume 20–30 g of fiber per day, as it acts as a buffer, reduces bile acid concentration in the stomach, and shortens digestion time [7]. Smoking damages the protective mucosal layer of the stomach, leading to the progression of gastric diseases such as gastritis, peptic ulcers, and duodenal ulcers. Consequently, smokers have a significantly higher risk of developing various cancers compared to non-smokers [8].

In our study, 37.5% of participants believed that patients with gastric and duodenal ulcers could still smoke; 37.5% believed coffee does not harm the stomach; 39.6% thought mental activities could be performed within 30 minutes after a meal; 33.3% believed strenuous physical activity could be done within 30 minutes after a meal; 39.6% thought stress does not increase gastric acid production; 64.4% believed maintaining food hygiene helps prevent disease recurrence; 38.5% thought patients should eat before going to bed; and 38.5% thought keeping the abdominal area warm was unnecessary.

#### 5. CONCLUSION

53.1% of patients considered preventing the recurrence of gastric and duodenal ulcers to be very important. Among them: 53.1% chose a high-fiber diet; 38.5% selected young vegetables as the preferred type of vegetable; 46.9% always consumed fruits; 43.8% used protein according to nutritional needs; 60.4% selected lean meat and fish that are steamed as the preferred type of meat; 52.1% used milk regularly; 61.5% thought it was acceptable to eat sticky rice and “banh chung”; 46.9% of patients limited the use of spicy and hot seasonings; 66.7% avoided eating excessively full or hungry before sleeping. Regarding lifestyle and habits: 62.5% recognized that coffee harms the stomach; 34.4% considered smoking; 60.4% did not engage in mental activities after eating; 66.7% did not engage in strenuous physical activity after eating; 60.4% believed that stress can cause ulcer recurrence; 61.5% did not eat before going to bed; 61.5% paid attention to keeping the abdomen warm; 64.6% ensured food hygiene. Regarding medication, 37.5% continued taking medication as prescribed when symptoms subsided; 53.1% sought follow-up when stomach pain recurred.

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