

LIFESTYLE HABITS AND GASTROINTESTINAL DISORDERS: CURRENT STATUS AND ASSOCIATION AMONG GENERAL MEDICAL STUDENTS AT VIETNAM UNIVERSITY OF TRADITIONAL MEDICINE IN 2025

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ABSTRACT

Objective: To assess the current status and analyze the association between lifestyle habits and gastrointestinal disorders among general medical students at the Vietnam University of Traditional Medicine in 2025.

Subjects and methods: A descriptive cross-sectional study was conducted among 468 general medical students from April to September 2025. Data were collected using self-administered questionnaires and analyzed using Microsoft Excel and SPSS version 22.0. Statistical significance was set at $p < 0.05$.

Result: Among the 468 students, females accounted for 63.2%, with a relatively even distribution across academic years. The prevalence of unhealthy dietary habits was high, including skipping breakfast (17.7–40.9%), insufficient fruit and vegetable intake (40.1–69.1%), and irregular meal timing (76.7–86.7%), although some improvement was observed in later cohorts. Gastrointestinal disorders were common, predominantly presenting as upper gastrointestinal symptoms such as epigastric pain (17.0–56.2%), belching and acid reflux (30.7–41.9%), and nausea (20.3–35.6%). Analysis showed that skipping breakfast, insufficient sleep, and particularly stress and anxiety were significantly associated with gastrointestinal symptoms ($p < 0.01$). In addition, analgesic use and consumption of carbonated beverages were also associated with increased prevalence of certain symptoms.

Conclusion: Gastrointestinal disorders are common among general medical students and are significantly associated with several unhealthy lifestyle habits, particularly stress and anxiety, as well as skipping breakfast, insufficient sleep, analgesic use, and consumption of carbonated beverages.

Keywords: Medical students, gastrointestinal disorders, lifestyle habits.

INTRODUCTION

In recent years, alongside socio-economic development, the nutritional status of the population has improved significantly [1]. However, non-malignant upper gastrointestinal diseases including gastritis, duodenitis, peptic ulcers, and gastroesophageal reflux are increasing in prevalence and pose a growing challenge to the global healthcare system.

A cross-sectional study by Tran Thao Tuyet Tam et al. (February 2022) conducted among newly enrolled general medical students in Ho Chi Minh City reported an overall prevalence of gastrointestinal dysfunction of 10.3%, including 6.5% functional gastrointestinal disorders, 5.5% irritable bowel syndrome, and 3.0% overlap between gastroesophageal reflux and other gastrointestinal conditions [2]. In practice, common gastrointestinal conditions among students include gastritis, duodenal ulcers, functional gastrointestinal disorders, irritable bowel syndrome, as well as constipation and diarrhea.

Gastrointestinal health plays a fundamental role in overall well-being, particularly among general medical students a population frequently exposed to high academic pressure and irregular daily routines. Unhealthy

lifestyle habits such as skipping meals, irregular eating patterns, consumption of processed foods and carbonated beverages, physical inactivity, sleep deprivation, and psychological stress and anxiety related to academic demands have been shown to adversely affect gastrointestinal function [3].

In this context, a systematic assessment of gastrointestinal disorders and their association with lifestyle habits among general medical students is warranted. However, at the Vietnam University of Traditional Medicine, there is currently no comprehensive study evaluating the prevalence of gastrointestinal disorders or analyzing their association with lifestyle factors in this population. This gap highlights the need for research to provide evidence on the current status of gastrointestinal health among general medical students in the context of modern medical training.

RESEARCH SUBJECTS AND METHODS

Research subjects

The study population consisted of general medical students enrolled at the Vietnam University of Traditional Medicine.

Research location and time

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The study was conducted at the Vietnam University of Traditional Medicine from April to September 2025.

Research methods

Research design: A descriptive cross-sectional study with analysis.

Sample size: An attempted census approach was used, in which all eligible students were invited to participate; 468 responses were obtained and included in the analysis.

Research tools

A pre-designed survey questionnaire was pilot-tested on 15 students outside the sample size. The questionnaire included 8 questions about the demographic characteristics of the study subjects, 9 questions about the lifestyle habits of medical students, 8 questions about information on digestive diseases, and 8 questions about related factors.

Research variables

- Demographic characteristics: Gender, academic year. BMI score.
- Medical history: History of gastrointestinal diseases.
- Lifestyle habits: Skipping breakfast, low fruit and vegetable intake, irregular meal timing, analgesic use, stress/anxiety, and physical inactivity.

- Habits requiring limitation: Snacking, fast food consumption, spicy food intake, consumption of pickled and fermented foods, carbonated beverages, alcohol use, insufficient sleep, and eating out.

- Gastrointestinal symptoms within the past 3 months: Epigastric pain, heartburn, hematemesis, sleep disturbance due to retrosternal burning, nausea, persistent cough, abdominal fullness, hiccups, and constipation.

- The association between lifestyle habits and gastrointestinal disorders.

Data processing methods

The collected data were entered and processed using biomedical statistical methods and algorithms in Excel and SPSS version 22.0 software. Using the Chi-square test, the relationship between lifestyle habits and gastrointestinal disorders was examined; statistically significant differences were found with $p < 0.05$.

Ethics

This research was conducted with the permission of the Ethics Committee of the Vietnam University of Traditional Medicine, ensuring compliance with fundamental ethical principles in research.

RESULT

Characteristics of the research subjects

Table 1. Characteristics of the research subjects

Characteristic	Content	Quantity (n)	Ratio (%)
Gender	Male	172	36.8
	Female	296	63.2
	Total	468	100
Course	Y1	88	18.8
	Y2	94	20.1
	Y3	90	19.3
	Y4	74	15.8
	Y5	62	13.2
	Y6	60	12.8
	Total	468	100
BMI	Underweight	90	19.2
	Normal	285	60.9
	Overweight	56	12.0
	Obesity	37	7.9
	Total	468	100

Among the 468 students included in the study, 36.8% were male and 63.2% were female. The distribution across academic years was relatively even, ranging from 12.8% to 20.1%, with Year 2 accounting for the highest proportion

(20.1%, $n = 94$) and Year 6 the lowest (12.8%, $n = 60$). Most students had a normal body weight (60.9%), while the proportions of underweight, overweight, and obese students ranged from 7.9% to 19.2%.

Characteristics of the history of gastrointestinal diseases

Table 2. History of gastrointestinal diseases

History of gastrointestinal diseases		Quantity (n)	Ratio (%)
No		242	50.4
Yes		226	49.6
In there	Gastroesophageal reflux	97	40.6
	Constipation	82	34.3
	Gastrointestinal bleeding	16	6.7
	Other	44	18.4

Approximately half of the students reported a history of gastrointestinal diseases (49.6%, n = 226), while 50.4% had no such history. Among those with a history of gastrointestinal diseases, gastroesophageal reflux

disease was the most commonly reported condition (40.6%, n = 97), followed by constipation (34.3%, n = 82), whereas gastrointestinal bleeding was the least common (6.7%, n = 16).

Characteristics of the study subjects' lifestyle habits

Table 3. Unhealthy eating and lifestyle habits by course*

Question	Skipping breakfast	Lack of vegetables/ fruits	Eating at the wrong time	Use painkillers	Anxiety/Stress	Lack of physical activity
Y1	40.9	67.0	77.3	22.5	36.4	44.3
Y2	38.3	69.1	76.7	24.1	38.9	38.3
Y3	33.3	58.2	80.0	24.4	40.2	40.0
Y4	36.5	55.4	79.7	20.3	57.3	44.6
Y5	17.7	48.3	85.5	20.6	58.1	56.5
Y6	17.7	40.1	86.7	20.0	66.7	65.0

(Only the percentage of 'Yes' responses is presented; the percentage of 'No' responses is obtained by subtracting the 'Yes' percentage from 100%)

Skipping breakfast was common, particularly among Year 1 students (40.9%), while in Years 2–6 it ranged from 17.7% to 38.3%. Insufficient fruit and vegetable intake was more prevalent in the earlier years, peaking in Year 2 (69.1%) and gradually decreasing to 40.1% in Year 6. In contrast, irregular meal timing was more common in later years, with the highest rate observed in Year 6 (86.7%). The

proportion of students using analgesics without prescription ranged from 20.0% to 24.4%, highest in Year 3 (24.4%) and lowest in Year 6 (20.0%). Stress and anxiety increased progressively across academic years, from 36.4% in Year 1 to 66.7% in Year 6. Similarly, low levels of physical activity were less common in Years 1–4 (38.3%–44.6%) but increased markedly in Year 5 (56.5%) and Year 6 (65.0%).

Table 4. Frequency of habits that should be limited

Habits	Never		Seldom		Sometimes		Frequent		Always	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Snacks	4	0.9	67	14.3	248	53.0	131	28.0	18	3.8
Eating fast food	7	1.5	88	18.8	255	54.5	102	21.8	16	3.4
Eating spicy food	20	4.3	110	23.5	205	43.8	117	25.0	16	3.4



Eat pickled and fermented foods	15	3.2	156	33.3	236	50.4	57	12.2	4	0.9
Consuming carbonated drinks	65	13.9	134	28.6	197	42.1	53	11.3	19	4.1
Consuming alcoholic beverages	221	47.2	165	35.3	56	11.9	22.0	4.7	4	0.9
Not getting enough sleep	10	2.1	69	14.7	212	45.3	143	30.6	34	7.3
Eating out	7	1.5	88	18.8	255	54.5	102	21.8	16	3.4

Unhealthy dietary and lifestyle habits were common among general medical students.

The consumption of snacks, fast food, spicy food, and pickled/fermented foods was predominantly occasional, reported by 53.0%, 54.5%, 43.8%, and 50.4% of students, respectively, while other frequency levels ranged from 0.9% to 33.3%. Carbonated beverage consumption was also prevalent, with 42.1% reporting

occasional use and 4.1% frequent use. In contrast, 47.2% of students reported no alcohol consumption, while other levels ranged from 0.9% to 35.3%. Insufficient sleep was reported by 45.3% of students, whereas only 2.1% indicated that they never experienced inadequate sleep. Eating out was also common, reported by 54.4% of students, while only 1.5% reported never eating out.

Table 5. Gastrointestinal symptoms in the last 3 months

Symptom	Percentage (%)	Y1	Y2	Y3	Y4	Y5	Y6
Epigastric pain		17.0	33.0	55.6	56.2	43.9	46.7
Belching, heartburn		30.7	30.9	41.1	39.2	41.9	35.8
Hematemesis		1.1	0	1.9	0	0	0
Difficulty sleeping due to burning sensation behind the sternum.		5.7	3.2	7.8	8.1	8.1	8.3
Nausea		25.0	25.5	35.6	20.3	27.4	33.3
Persistent cough		5.1	8.5	12.2	5.4	2.9	5.0
Ribs full of		5.7	8.5	12.2	5.4	9.7	5.0
Hiccups		44.3	31.9	28.9	25.7	29.0	35.0
Constipation (<2 bowel movements/week)		7.9	11.7	16.7	28.4	40.3	20.0

(Only the percentage of 'Yes' responses is presented; the percentage of 'No' responses is obtained by subtracting the 'Yes' percentage from 100%)

Over the past three months, gastrointestinal symptoms were reported with varying prevalence across academic years. Epigastric pain was most common in Year 4 (56.2%) and least common in Year 1 (17.0%). Belching and heartburn were also frequent, peaking in Year 5 (41.9%) and ranging from 30.7% to 41.1% in other cohorts. Hematemesis was rare (0%–1.9%), while sleep disturbances due to retrosternal burning ranged from

3.2% to 8.3%.

Nausea was most prevalent in Year 3 (35.6%), with other cohorts ranging from 20.3% to 33.3%. Other symptoms, including persistent cough (2.9%–12.2%), chest and rib fullness (5.0%–12.2%), hiccups (25.7%–44.3%), and constipation (<2 bowel movements/week; 7.9%–40.3%), were also observed with varying frequencies across academic years.

The relationship between lifestyle habits and gastrointestinal disorders

Table 6. Relationship between lifestyle habits and gastrointestinal disorders

Symptom / Risk factors	Epigastric pain		Belching heartburn		Nausea	
	n (%) (1)	p ₁ (*)	n (%) (2)	p ₂ (*)	n (%) (3)	p ₃ (*)
Skipping breakfast						
Yes (n=151)	75 (49.7%)	<0.05	65 (43%)	<0.05	44 (29.1%)	>0.05
No (n=317)	118 (37.2%)		104 (32.8%)		86 (27.1%)	
Not getting enough sleep						
Yes (n=177)	88 (49.7%)	<0.05	74 (41.8%)	<0.05	51 (28.8%)	>0.05
No (n=291)	105 (36.1%)		95 (32.6%)		79 (27.1%)	
Stress and anxiety						
Yes (n=223)	118 (52.9%)	<0.001	105 (47.1%)	<0.001	72 (32.3%)	<0.05
No (n=245)	75 (30.6%)		64 (26.1%)		58 (23.7%)	
Take painkillers						
Yes (n=105)	63 (60%)	<0.001	50 (47.6%)	<0.05	30 (28.6%)	> 0.05
No (n=363)	130 (35.8%)		119 (32.8%)		100 (27.5%)	
Drink carbonated water						
Yes (n=72)	32 (44.4%)	>0.05	40 (55.6%)	<0.05	20 (27.8%)	> 0.05
No (n=396)	161 (40.7%)		129 (32.6%)		110 (27.8%)	

(Chi – square)

Skipping breakfast and insufficient sleep were significantly associated with epigastric pain (49.7% vs. 37.2% and 49.7% vs. 36.1%) and belching/heartburn (43.0% vs. 32.8% and 41.8% vs. 32.6%; $p < 0.05$), but not with nausea ($p > 0.05$). Stress and anxiety were strongly linked to gastrointestinal symptoms, with higher rates of epigastric pain and belching/heartburn (52.9% and 47.1%) compared to the stress-free group (30.6% and 26.1%; $p < 0.01$). Painkiller use was associated with increased epigastric pain (60.0% vs. 35.8%; $p < 0.01$) and belching/heartburn (47.6% vs. 32.8%; $p < 0.05$), but not nausea ($p > 0.05$). Carbonated drink consumption was significantly associated with belching/heartburn (55.6% vs. 32.6%; $p < 0.05$), with no effect on epigastric pain or nausea ($p > 0.05$).

DISCUSSION

The study included 468 students, with a higher proportion of females than males (63.2% vs. 36.8%).

Students from Year 1 to Year 6 were relatively evenly distributed, ensuring the representativeness of the sample. Regarding nutritional status, the majority had a normal BMI (60.9%), while 19.2% were underweight and 19.9% were overweight or obese, often associated with behaviors such as snacking, consumption of processed foods, or insufficient physical activity. This anthropometric distribution may partly explain differences in gastrointestinal symptoms, as both underweight and overweight status can influence risk. The proportion of students with and without a history of gastrointestinal disease was nearly equal (49.6% vs. 50.4%). Among those with a disease history, gastroesophageal reflux disease (GERD) was the most common (40.6%), followed by constipation (34.3%), while other gastrointestinal disorders accounted for a smaller proportion.

Unhealthy eating and lifestyle habits were common across all academic years. The prevalence of irregular meal times was high, ranging from 76.7% in Year 2 to 86.7% in



Year 6, while insufficient intake of vegetables and fruits ranged from 40.1% to 69.1%, reflecting an overall unbalanced diet among medical students. Rates of anxiety and stress increased with each academic year, from 36.4% in Year 1 to 66.7% in Year 6, and physical inactivity also rose in higher years (38.3% in Year 2 to 65.0% in Year 6), suggesting that academic pressure and high study demands in the final years significantly impact student lifestyles. Breakfast skipping was observed in 17.7% to 40.9% of students, with the highest rate in Year 1, while painkiller use ranged from 20.0% to 24.4%. These findings align with the study by Adolphus et al. (2019), which reported a close association between frequent breakfast skipping and metabolic disorders, reduced concentration, and an increased risk of gastrointestinal symptoms due to prolonged fasting and elevated gastric acid secretion. Adolphus et al. also highlighted that medical students, in particular, had higher rates of breakfast skipping compared to the general population, likely due to long study hours and late sleeping patterns [4].

The results indicate that general medical students frequently consume food groups that should be limited, predominantly at the "occasionally" and "frequently" levels, particularly snacks, fast foods, spicy/hot foods, and pickled or fermented foods. These habits likely reflect busy study schedules and a preference for convenient options. Empirical evidence from nutritional guidelines in countries such as Canada suggests that frequent intake of processed and high-fat foods increases gastrointestinal burden and is associated with nonspecific gastrointestinal symptoms [5]. Although the proportion of students reporting "always" consuming these foods is low, repeated frequent consumption may negatively affect gastrointestinal function. Therefore, students should proactively adjust their diets by reducing the frequency of such foods and selecting healthier alternatives to support gastrointestinal health.

Bowel disorders and functional gastrointestinal symptoms are common among general medical students, predominantly at mild to moderate levels. This likely reflects the combined effects of academic pressure, irregular schedules, and unhealthy dietary habits. Early recognition and modification of these behaviors are particularly important for medical students, who are at higher risk than the general population, as reported by Baklola et al. (2023) [6]. These findings highlight the importance of lifestyle self-regulation in maintaining gastrointestinal health.

Stress and anxiety were identified as the most significant risk factors for gastrointestinal disorders. Students experiencing stress had a significantly higher incidence of epigastric pain, belching/heartburn, and nausea compared to non-stressed students ($p < 0.001$ and $p < 0.05$), consistent with Bhatia and Tandon (2005), who

reported that stress can disrupt bowel motility and increase visceral pain via the gut-brain axis [7]. Additionally, skipping breakfast and insufficient sleep were significantly associated with epigastric pain and belching/heartburn ($p < 0.05$), aligning with Cremonini et al. (2009), which demonstrated that sleep disturbances are related to both upper and lower gastrointestinal symptoms [8]. No significant associations were observed between these habits and nausea ($p > 0.05$), suggesting that this symptom may involve different neurological mechanisms beyond gastric secretion. Painkiller use was associated with a higher incidence of epigastric pain ($p < 0.001$) and belching ($p < 0.05$), reflecting known gastric mucosal side effects. Consumption of carbonated drinks was significantly associated only with belching ($p < 0.05$), consistent with their gas-producing effect, but showed no significant association with epigastric pain or nausea ($p > 0.05$). Overall, these findings underscore the importance of lifestyle modification in preventing and alleviating gastrointestinal disorders among medical students.

CONCLUSION

Based on a survey of 468 general medical students at the Vietnam University of Traditional Medicine, the study concluded the following:

- Unhealthy eating and lifestyle habits remain common. Breakfast skipping was reported by 17.7% to 40.9% of students, insufficient intake of fruits and vegetables ranged from 40.1% to 69.1%, and irregular meal times were frequent across cohorts. Foods that should be limited were still consumed regularly. Additionally, 83.2% of students reported inadequate sleep, and 38.3% to 65.0% were physically inactive.

- Gastrointestinal disorders were prevalent, with common symptoms including epigastric pain (17.0%–56.2%), belching and heartburn (30.7%–41.9%), nausea (20.3%–35.6%), and sleep disturbances due to heartburn behind the sternum (3.2%–8.3%).

- Association analyses revealed that breakfast skipping and insufficient sleep were significantly linked to epigastric pain (49.7% vs. 37.2% and 49.7% vs. 36.1%) and belching/heartburn (43.0% vs. 32.8% and 41.8% vs. 32.6%; $p < 0.05$), but not nausea ($p > 0.05$). Stress and anxiety were strongly associated with epigastric pain, belching/heartburn, and nausea (52.9%, 47.1%, and 32.3%, respectively), significantly higher than in the stress-free group (30.6%, 26.1%, and 23.7%; $p < 0.05$ – 0.001). Painkiller use was associated with increased epigastric pain ($p < 0.001$) and heartburn ($p < 0.05$), while consumption of carbonated drinks was only associated with belching/heartburn (55.6% vs. 32.6%; $p < 0.05$), with no significant effects on other symptoms ($p > 0.05$).

These findings emphasize the importance of healthy lifestyle practices, including regular meals, adequate sleep, stress management, and moderated intake of painkillers and carbonated drinks, in preventing and alleviating gastrointestinal disorders among medical students.

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