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Evaluation of Dietary Habit and Perceived Impact on Undergraduates with Peptic Ulcer Disease in Medical Laboratory Science Department, Osun State University

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ABSTRACT
Peptic ulcer disease (PUD) poses a significant health burden among young adults, with dietary habits contributing a significant role in its management. University students are particularly vulnerable due to academic stress and irregular eating patterns. This study evaluated dietary habits and perceived impact on students diagnosed with PUD in Medical Laboratory Science Department, Osun State University, Osogbo, Nigeria. A descriptive cross-sectional design was employed, with 241 students selected through convenience sampling. Data were collected using a structured questionnaire and analyzed using descriptive statistics of frequency and percentage while inferential statistics of chi-square tests was used to test the hypotheses at 0.05 level of significance. The results showed 17.0% prevalence of PUD among the respondents. Most diagnosed students reported poor dietary habits (82.1%), including frequent meal skipping (80.5%), regular consumption of spicy foods (70.8%) and fried foods (75.6%). While general awareness of ulcer-friendly diets was high (77.6%), access to formal nutrition counseling remained low (36.9%). Students perceived dietary impacts on ulcer management, with over 90% linking specific foods to symptom aggravation and more than half (53.6%) reporting negative effects on academic concentration and performance. Statistical analysis confirmed a significant relationship between poor dietary habits and prevalence of peptic ulcer ($\chi^2 = 7.923$; df = 1; p-value = 0.019). The study concludes that PUD represents a substantial health concern among students, exacerbated by poor dietary practices and inadequate professional nutritional guidance. Implementation of structured nutritional counseling and comprehensive health education programs is recommended to promote ulcer-friendly dietary practices and enhance student well-being.

Keywords: Dietary Habits, Peptic Ulcer Disease, Undergraduates, Awareness, Perceived

INTRODUCTION

Peptic ulcer disease (PUD) poses a significant health and academic challenge to students, especially in developing countries like Nigeria (Anaemene & Ochogu, 2022). Students living with PUD often experience discomfort, missed classes, reduced concentration, and diminished academic performance (Olagunju *et al.*, 2024). In recent years, the prevalence of PUD has increased among undergraduates due to poor dietary habits, self-medication with NSAIDs, stress, and irregular meal patterns (Fouladvand *et al.*, 2023; Olagunju *et al.*, 2024). Despite advancements in diagnosis and treatment, the burden of PUD remains, particularly in low-resource university environments where students lack adequate nutritional guidance and medical support (Salari *et al.*, 2021).

The prevalence of *Helicobacter pylori* (H. pylori) infection varies markedly between countries and is significantly higher in developing countries compared to develop ones (Go *et al.*, 2002). This infection might get transmitted through contact or via food or water intake (Kabir *et al.*, 2021). The most frequent causes of peptic ulcer disease include infection by Helicobacter pylori, the use of non-steroidal anti-inflammatory drugs (NSAIDs), and stress-related mucosal damage (SRMD), but lifestyle and dietary habits also play a significant role in PUD development and management (Kavitt, 2019). Approximately two-thirds of patients with peptic ulcer disease are asymptomatic. In symptomatic patients, the most common clinical manifestation of peptic ulcer disease is epigastric pain, which may be associated with dyspepsia, bloating, abdominal fullness and nausea, and can be complicated by bleeding and perforation (Kavitt *et al.*, 2019).

Peptic ulcer disease (PUD) is prevalent worldwide, with a lifetime occurrence in the general population ranging from 5% to 10% and an annual incidence of 0.1% to 0.3% (Srivastav *et al.*, 2024). A systematic review conducted by Salari *et al.* (2021), based on a meta-analysis of 21 studies involving 788,525 participants aged 17 to 82 years, reported a global prevalence of 8.4%. The review also revealed that the prevalence varies depending on sample size, study duration, and participant age. In Africa, the burden of PUD remains significant. A study conducted in Bo, Sierra Leone, reported a prevalence rate of 32% among patients, with higher rates among females (58%) and individuals aged 31–45 years (Sundufu & Zoker, 2022).

These reflect a growing concern in the region, where healthcare access, awareness, and dietary patterns may influence disease trends. Within Sub-Saharan Africa, *Helicobacter pylori*, the primary cause of PUD is widely prevalent, with estimates ranging from 73% to 97% across countries such as Ghana, Gambia, and Nigeria (Sundufu & Zoker, 2022). This high prevalence of *H. pylori* correlates

with the elevated occurrence of peptic ulcer disease in the sub region. In Nigeria, over three decades ago, the country was already listed among areas with high PUD prevalence (Bojuwoye *et al.,* 2021). The World Health Organization reported that peptic ulcer disease accounted for 5,846 deaths, representing 0.39% of all deaths in the country. The age-adjusted death rate stands at 7.03 per 100,000 population, placing Nigeria 31st globally in ulcer-related mortality (Umaru *et al.,* 2023).

Dietary behavior is an essential and ongoing activity in daily life, involving internal, external, and conscious aspects related to eating. (Li *et al.,* 2023). These habits are influenced by individual preferences, cultural norms, and various lifestyle factors (Li *et al.,* 2023). Positive dietary behaviors like eating regular meals, consuming fats and sugar moderately, eating adequate number of fruits and vegetables, paying attention to nutritional labels and calorie content, practicing good hygiene, and choosing foods based on principles of nutrition and health are all considered behaviors that promote physical well-being (Li *et al.,* 2023). Dietary factors such as poor nutrition, unhealthy diets, and excessive coffee intake are associated with the disease (Fouladvand *et al.,* 2023).

Continuous consumption of spicy foods, fried foods or meals with high protein content can worsen the symptoms of peptic ulcer (Kabir *et al.,* 2021). However, University students often adopt poor dietary habits due to academic pressure, time constraints, financial issues, and the lifestyle changes of independent living (Olagunju *et al.,* 2024). These habits can predispose them to peptic ulcer disease (PUD) and impact the severity of symptoms (Olagunju *et al.,* 2024). This study evaluates the dietary habits of students with PUD in the department of medical laboratory science, Osun State University, Osogbo, with the aim of informing effective dietary education and ulcer management strategies. It is hypothesized that a substantial proportion of students with PUD exhibit unhealthy dietary habits that may adversely affect the management of their condition.

MATERIALS AND METHODS

Study Area

This study was conducted in the Department of Medical Laboratory Science, Osun State University (UNIOSUN), Osogbo campus. Osun State University is a state-owned institution in Nigeria with multiple campuses, and the Osogbo campus houses the College of Health Sciences. The Department of Medical Laboratory Science is one of the academic Departments under this college. The Department offers both theoretical and practical training in areas such as medical microbiology, clinical chemistry, hematology, histopathology, and immunology. It is attended by students across different levels (100–500 level) and is structured to provide professional healthcare training.

Study Design and Population

A descriptive cross-sectional research design was used for the study The population for this study consisted of all undergraduate students in the Department of Medical laboratory science, Osun State University, Osogbo. Inclusion criteria include undergraduate students in the Department of Medical Laboratory Science, Osun State University and students who provide informed consent to participate in the study. The exclusion criteria also include students who are not in the Department of Medical Laboratory Science, postgraduate students and students who decline or withdraw consent. The total population of undergraduate medical laboratory students in Osun state university from 100 level to 500 level is 475 as presented in Table 1 below.

Table 1: Total Population

S/N	Level	Population	Percentage
1	100	107	22.5
2	200	127	26.7
3	300	88	18.5
4	400	89	18.7
5	500	64	13.5
	Total	475	100.0

Sample Size Determination

The sample size was determined using the Taro Yamane formula (1967) for calculating sample size from a known population. The formula is represented as:

$n=\frac{N}{1+N(e)^2}$

Where: n = desired sample size; N = total population; e = margin of error (0.05)

Therefore,

$n=\frac{475}{1+475(0.05)^2}=\frac{475}{2.19}\approx 217$

To account for possible non-response or incomplete questionnaires, an attrition rate of 10% was added to the calculated sample size. Using the formula:

$N_{adj}=\frac{n}{1-r}$

Where: N_{adj} = adjusted sample size; n = 217; r = 0.10

$N_{adj}=\frac{217}{1-0.10}=241.1\approx 241$

Thus, a total of 241 students was targeted for data collection

Sampling Methods

A stratified proportionate sampling technique was used to determine the number of participants from each level, and then a convenient sampling technique was used to collect data from available students as presented in Table 2.

Table 2: Proportionate Sample Size

S/N	Level	Population	Percentage	Proportionate sample size
1	100	107	22.5	54
2	200	127	26.7	65
3	300	88	18.5	45
4	400	89	18.7	45
5	500	64	13.5	32

S/N	Level	Population	Percentage	Proportionate sample size
	Total	475	100.0	241

Instrument for Data Collection

Data were collected using a self-developed, structured questionnaire comprising five sections (A–E). The instrument was designed to obtain information on the respondents' socio-demographic characteristics, awareness of peptic ulcer disease, awareness of ulcer-friendly dietary practices, dietary habits, and perceived impact of dietary habits on peptic ulcer disease. Section A: Socio-demographic Characteristics (7 items) obtained background information about the respondents, including variables such as age, sex, level of study, marital status, religion, ethnicity, and other relevant socio-demographic characteristics. Section B: Awareness of Peptic Ulcer Disease (6 items) assessed respondents' awareness of peptic ulcer disease. The items were multiple-choice questions with one correct response. Each correct answer was scored 1, while an incorrect answer was scored 0, with higher scores indicating greater awareness of peptic ulcer disease. The maximum possible score is 6 while the minimum possible score is 0, the score 0–3 points (<50%) was considered low level of awareness while the score of 4–6 points (≥50%) was considered high level of awareness. Section C: Awareness of Ulcer-Friendly Diet (4 items) assessed respondents' awareness of dietary practices. Each correct response attracted 1 mark, while each incorrect response attracted 0 marks. The score 0–2 points (<50%) was considered low level of awareness of PUD friendly diets while the score 3–4 points (≥50%) was considered high level of awareness. Section D: Dietary Habits (7 items) assessed the respondents' dietary practices that may influence the occurrence or progression of peptic ulcer disease. It included questions on meal frequency, meal skipping, and consumption of spicy foods, alcohol intake, caffeinated drinks, and other eating behaviors. Responses on healthy dietary practices were scored 1, while unhealthy practices were scored 0. Higher scores indicated healthier dietary habits. The score of 0–3 points (<50%) was considered poor dietary habit while the score of 4–7 points (≥50%) was considered good dietary habit 4–7 points (≥50%). Section E: Perceived Impact of Dietary Habits on Peptic Ulcer Disease (9 items), measured respondents' perceptions regarding the influence of dietary habits on the development, prevention, and management of peptic ulcer disease. The items were rated on a four-point Likert scale: Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The total obtainable score ranged from 1 to 36, with higher scores indicating a stronger perception of the impact of dietary habits on peptic ulcer disease. The score of 1-17 points (<50% of the maximum score) was considered poor perception while he score 18–36 points (≥50% of the maximum score) was considered good perception.

Data Analysis

The analysis was conducted using IBM's Statistical Package for the Social Sciences (SPSS) version 32. Descriptive statistics, including frequencies and percentages, was employed to summarize the data and presented the results in tables and figures. Inferential statistics, Chi-square, was utilized to test the study hypotheses at a significance level of 5% ($p < 0.05$).

Ethical Considerations

Approval to conduct the study was obtained from Osun State University Health Research and Ethic Committee with protocol number UNIOSUNHREC 2025/FUO/026B.

RESULTS AND DISCUSSION

Socio-demographic Characteristics of the Respondents

Table 1 presents the socio-demographic characteristics of the respondents. The majority of respondents 178 (73.9%) were aged between 20 and 24 years. Highest proportion were female 198 (82.2%) currently in 200-level 65 (27.0%), single 225 158 (93.4%), lived in on-campus hostels (65.6%), were of the Islamic faith 188 (78.0%), and were of Yoruba ethnicity 218 (90.5%). These findings indicate that the study population was predominantly composed of young, unmarried female Yoruba students residing in on-campus hostels.

Table 3: Socio-demographic Characteristics of the Respondents (N=241)

Variable	Frequency	Percentage
What is your age?		
Below 20	45	18.7
20–24	178	73.9
25–29	15	6.2
30 and above	3	1.2
What is your gender?		
Male	43	17.8
Female	198	82.2
What is your level of study?		
100	54	22.4
200	65	27.0
300	45	18.7
400	45	18.7
500	32	13.3
What is your marital status?		
Single	225	93.4
Married	15	6.2
Other	1	0.4
Where is your residence?		

On-campus hostel	158	65.6
Off-campus	83	34.4
What is your religion?		
Christianity	49	20.3
Islam	188	78.0
Traditional	2	0.8
Other	2	0.8
What is your tribe?		
Yoruba	218	90.5
Igbo	12	5.0
Hausa	7	2.9
Other	4	1.7

Awareness and Prevalence of Peptic Ulcer

Table 4 indicates that the vast majority of respondents 225 (93.4%) have heard of peptic ulcer disease, through the internet/social media 98 (40.7%). Most 212 (88.0%) believed that diet could affect PUD. The prevalence of medically diagnosed PUD among the respondents was 41 (17.0%). Among those diagnosed, the most common method of diagnosis was clinical assessment by a doctor 24 (58.5%), and Gastric ulcer was the most frequently reported type 19 (46.3%). Figure 1 shows the overall 41 (17.0%) prevalence of PUD among undergraduates. These findings suggest that although awareness of PUD is high among the respondents, the condition remains relatively prevalent, indicating the need for sustained health education on risk factors, early diagnosis, and appropriate preventive practices among undergraduates.

Table 4: Awareness and Prevalence of Peptic Ulcer

Variable	Frequency	Percentage
Have you heard of peptic ulcer disease (PUD)?		
Yes	225	93.4
No	16	6.6
Main source of information about PUD		
Internet/Social Media	98	40.7
School/Lectures	67	27.8
Health Worker	45	18.7
Family/Friends	24	10.0
Other	7	2.9
In your opinion, can diet affect PUD?		
Yes	212	88.0
No	19	7.9
Not Sure	10	4.1
Have you been medically diagnosed with PUD by a health professional?		
Yes	41	17.0
No	191	79.3
Not Sure	9	3.7
Among those diagnosed (n=41), how was your ulcer diagnosed?		
Clinical assessment by doctor	24	58.5
Laboratory test (H. pylori)	11	26.8
Endoscopy	4	9.8
Other/Not sure	2	4.9
Among those diagnosed (n=41), what type of ulcer were you diagnosed with?		
Gastric ulcer	19	46.3
Duodenal ulcer	12	29.3
Both	3	7.3
Not sure	7	17.1

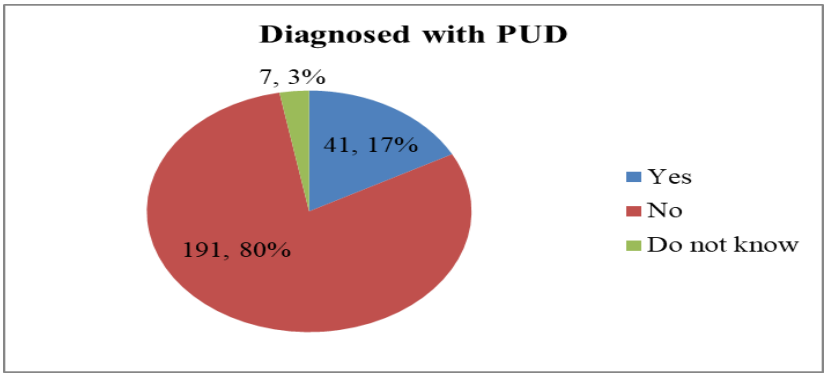

Figure 1: Prevalence of Peptic Ulcer Disease (PUD)

Table 5 presents the dietary habits of the respondents. The majority 147 (61.0%) reported eating two meals per day, and most 173 (71.8%) sometimes skipped meals. A large proportion 159 (66.0%) ate their last meal between 7 pm and 9 pm. Consumption of spicy and fatty foods was common, with 139 (57.7%) and 142 (58.9%) consuming them 'sometimes,' respectively. While 178 (73.9%) never consumed alcohol, caffeinated drinks were consumed 'sometimes' by 116 (48.1%) of respondents. These findings suggest that many respondents engage in dietary practices that may increase the risk of developing or exacerbating peptic ulcer disease, highlighting the need for nutrition education and interventions to promote healthier eating habits among undergraduates.

Table 5: Dietary Habits of Respondents (n = 241)

Variable	Frequency (n)	Percent (%)
How many meals do you usually eat per day?		
1	38	15.8
2	147	61.0
3	48	19.9
4 or more	8	3.3
Do you skip meals?		
Never	25	10.4
Sometimes	173	71.8
Often	43	17.8
What time do you usually eat your last meal of the day?		
Before 7pm	21	8.7
7–9pm	159	66.0
After 9pm	61	25.3
How often do you consume spicy foods?		
Never	15	6.2
Rarely	40	16.6
Sometimes	139	57.7
Often	47	19.5
How often do you consume fried/fatty foods?		
Never	12	5.0
Rarely	37	15.4
Sometimes	142	58.9
Often	50	20.7
How often do you consume caffeinated drinks?		
Never	45	18.7
Rarely	53	22.0
Sometimes	116	48.1
Often	27	11.2
How often do you take alcohol?		
Never	178	73.9
Rarely	45	18.7
Sometimes	16	6.6
Often	2	0.8

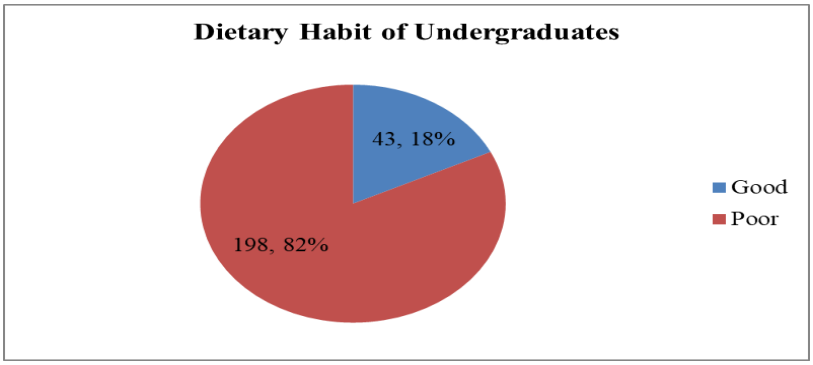

Figure 2: Dietary Habit of Undergraduates

Figure 2 shows that vast majority of undergraduates had poor 198 (92.0%) dietary habits.

Table 6 shows the awareness of ulcer-friendly diets. Most respondents 187 (77.6%) were aware of ulcer-friendly foods. The primary source of this information was the internet and social media 85 (45.5%). The most recognized ulcer-friendly foods were Fruits 205 (85.1%), Non-spicy meals 189 (78.4%), and Vegetables 198 (82.2%). However, only 89 (36.9%) had ever received formal nutrition counseling on peptic ulcer-friendly diets. The findings indicate that although awareness of ulcer-friendly diet was relatively high, however, the limited exposure to professional nutrition counseling may affect the accuracy and effective application of dietary recommendations, indicating the need for structured nutrition education by healthcare professionals among students.

Table 6: Awareness of Peptic Ulcer-Friendly Diet

Awareness of Peptic Ulcer-Friendly Diet	Frequency	Percentage
Are you aware of foods that are considered ulcer-friendly?		
Yes	187	77.6
No	54	22.4
If yes, where did you learn about them? (n=187)		
Internet/Social Media	85	45.5
School/Lectures	52	27.8
Health Worker	31	16.6
Family/Friends	19	10.2
Which of the following do you think are ulcer-friendly foods?		
Milk	142	58.9
Fruits	205	85.1
Vegetables	198	82.2
Whole grains	156	64.7
Non-spicy meals	189	78.4
Herbal teas	121	50.2
I don't know	23	9.5
Have you ever received nutrition counseling on ulcer-friendly diets?		
Yes	89	36.9
No	152	63.1

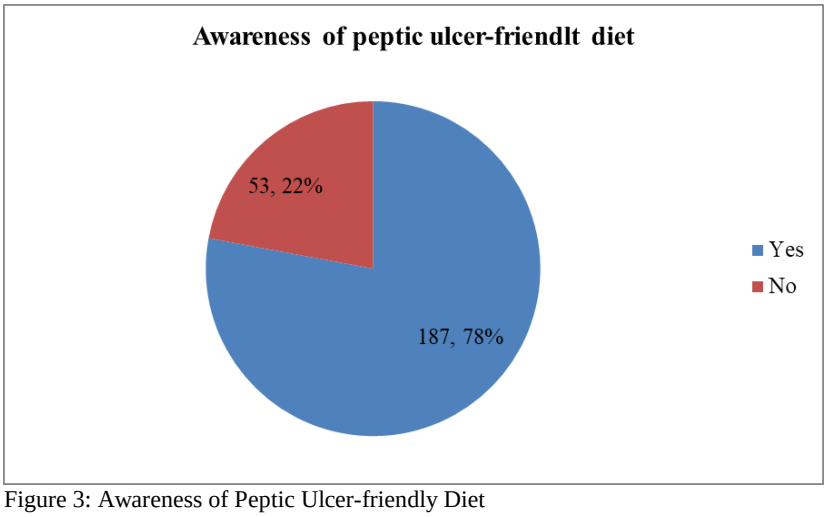

Figure 3: Awareness of Peptic Ulcer-friendly Diet

Figure 3 shows high level of awareness 187 (78.0%) of peptic ulcer-friendly diets among undergraduates

Table 7 presents the perceived impact of dietary habits on peptic ulcer among the 41 (17.0%) of students already diagnosed with PUD. The majority agreed that their eating patterns worsens stomach discomfort 18 (43.9%), eating late at night worsens the symptoms 19 (46.3%), drinking caffeinated drinks worsen the symptoms 16 (39.0%), and also indicated that dietary habits affect their concentration in class 15 (36.6%) and daily activities 17 (41.5%). The respondents also agreed that they understand foods that relieve their ulcer symptoms 20 (48.8%) and would like nutritional counseling on an ulcer-friendly diets 17 (41.5%). However, highest proportion also strongly agreed that skipping meals triggers stomach pain and burning sensation for them 17 (41.5%), and eating spicy foods worsen the symptoms 22 (53.7%), but majority disagreed that their dietary habits can affect their academic performance 15 (36.6%). The findings suggest that students with PUD recognize the influence of certain dietary practices on symptom severity and show interest in dietary guidance; therefore, nutrition counseling may help improve symptom management and promote healthier dietary behaviors among affected students.

Table 7: Impact of Dietary Habits on Peptic Ulcer Disease (n=41)

Perceived Impact of Dietary Habits	Strongly Agree F (%)	Agree F (%)	Disagree F(%)	Strongly Disagree F (%)
My eating pattern worsens my stomach discomfort.	13 (31.7)	18 (43.9)	7 (17.1)	3 (7.3)
Skipping meals triggers stomach pain or burning for me.	17 (41.5)	16 (39.0)	6 (14.6)	2 (4.9)
Eating late at night worsens my symptoms.	12 (29.3)	19 (46.3)	8 (19.5)	2 (4.9)
Spicy foods worsen my symptoms.	22 (53.7)	15 (36.6)	3 (7.3)	1 (2.4)
Caffeinated drinks worsen my symptoms.	14 (34.1)	16 (39.0)	9 (22.0)	2 (4.9)
My dietary habits affect my concentration in class.	10 (24.4)	15 (36.6)	12 (29.3)	4 (9.8)
My dietary habits affect my academic performance.	8 (19.5)	14 (34.1)	15 (36.6)	4 (9.8)
My dietary habits affect my daily activities.	11 (26.8)	17 (41.5)	10 (24.4)	3 (7.3)
I understand which foods relieve my ulcer symptoms.	9 (22.0)	20 (48.8)	9 (22.0)	3 (7.3)
I would like nutrition counseling on an ulcer-friendly diet.	20 (48.8)	17 (41.5)	3 (7.3)	1 (2.4)

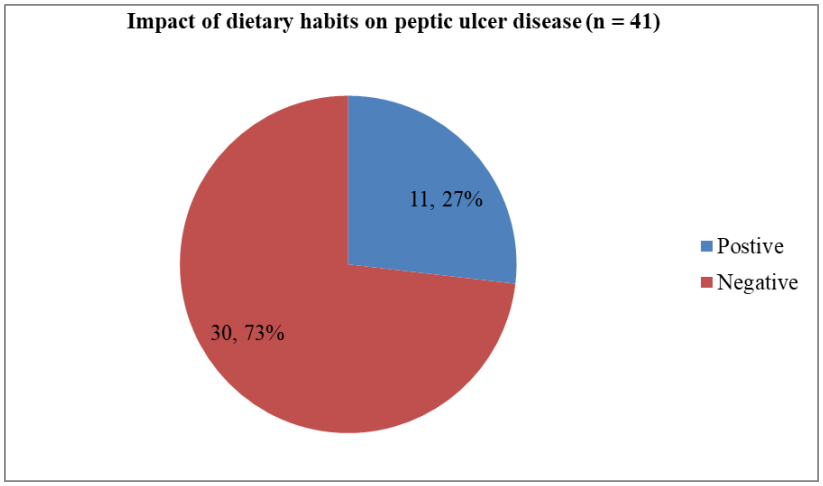

Figure 4: Impact of Dietary Habits on Peptic Ulcer Disease (n = 41)

Figure 4 shows that majority 30 (73.0%) of the respondent experienced negative impact of dietary habits on the symptoms of peptic ulcer.

A statistically significant association was observed between dietary habit and prevalence of ulcer ($\chi^2 = 7.923$; df = 1; p-value = 0.019) among undergraduates at 0.05 level of significance as presented in Table 8. This finding suggests that dietary habits may play an important role in the occurrence of peptic ulcer disease among undergraduates.

Table 8: Association between Dietary Habit and Prevalence of Peptic Ulcer Disease

Dietary Habit	Diagnosed with Peptic Ulcer Disease				Chi-square (χ^2)	Df	P-value
	Yes F (%)	No F (%)	Not sure F (%)	Total F (%)			
Good	11 (26.8)	28 (14.7)	4 (44.4)	43 (17.8)			
Poor	30 (73.2)	163 (85.3)	5 (55.6)	198 (82.2)	7.923	1	0.019
Total	41 (17.0)	191 (79.3)	9 (3.7)	241 (100)			

There was no statistically significant association between awareness of Ulcer-friendly diet and dietary habit ($\chi^2 = 1.927$; df = 1; p-value = 0.165) among undergraduates at 0.05 level of significance as shown in Table 9. This finding suggests that although students may possess awareness of ulcer-friendly dietary practices, such knowledge may not necessarily translate into healthier dietary behaviors.

Table 9: Association between Awareness of Ulcer-Friendly Diet and Dietary Habit

Dietary Habit	Awareness of Ulcer-Friendly Diet			Chi-square (χ^2)	Df	P-value
	Aware F (%)	Not Aware F (%)	Total F (%)			
Good	62 (25.7)	10 (4.1)	72 (29.9)	1.927	1	0.165
Poor	125 (51.9)	44 (18.3)	169 (70.1)			
Total	187 (77.6)	54 (22.4)	241 (100)			

Discussion

The study found a prevalence rate of 17.0% for medically diagnosed PUD among undergraduates. This finding is higher than the 7.9% medically diagnosed prevalence reported among undergraduates in another Nigerian university and also above 12.4% reported in a private university in Ibadan (Anaemene and Ochogu, 2022; Bounde *et al.,* 2025). This suggests a possibly higher burden among health science students who may be exposed to greater academic stress and irregular lifestyles. This finding also consistent with the wider African context, where pooled endoscopy-based evidences estimated PUD prevalence of 12.5% with west Africa at 19%, suggesting that this results falls within the upper range of what has been observed with the region (Abdu *et al.,* 2025). However, the findings further align with the broader context highlighted by Salari *et al.* (2021) that PUD remains a persistent global issue, with varying prevalence across different populations. The finding also resonates with the report by Sundufu and Zoker (2022) in Sierra Leone, which indicated significant ulcer prevalence among younger adults, reflecting a regional trend in West Africa. The high prevalence indicates PUD as a significant health concern that could contribute to academic challenges like absenteeism and reduced concentration, as previously noted by Anaemene and Ochogu (2022).

The common dietary habits identified were irregular meal patterns and high consumption of trigger foods. Most diagnosed students ate only 1-2 meals per day (68.3%), skipped meals frequently (80.5%), and regularly consumed spicy foods (70.8%) and fried/fatty foods (75.6%). This pattern is consistent with studies by Kabir *et al*. (2021) and Fouladvand *et al.* (2023), which link irregular eating and irritant foods to PUD development and symptom exacerbation. The findings reflect a lifestyle common among undergraduates, driven by academic schedules and limited food choices, as identified by Anaemene and Ochogu (2022) who reported that challenges like early morning lectures and poor meal variety directly influence students' eating patterns. Similarly, Sholeye *et al.* (2021) found that meal skipping was highly prevalent (92%) among Nigerian undergraduates, often due to tight schedules, which aligns with the findings from the current.

While general awareness was high (77.6%), detailed knowledge was inconsistent, and formal education on PUD-friendly diet was low (36.9%). This discrepancy corroborates the findings by Umeh *et al.* (2021), that awareness does not necessarily equate to accurate knowledge or practice. The reliance on informal sources like the internet (45.5%) for information, rather than health professionals, highlights a gap in access to reliable, professional nutritional guidance for students. This finding is further supported by Elsaigh *et al.* (2024) in a study among University students, that while general awareness of H. pylori (a primary cause of PUD) was high, deeper understanding and proactive health-seeking behavior were lacking. The low rate of formal counseling (36.9%) observed in this study is a critical concern, as it suggests students are making dietary decisions based on potentially inaccurate information.

The participants diagnosed with PUD experienced strong impact of dietary habits on symptoms of peptic ulcer , with over 90% linking symptoms to specific dietary triggers like spicy foods and meal skipping. Furthermore, a majority reported negative effects on concentration (61.0%), academic performance (53.6%), and daily activities (68.3%). This finding aligns with Anaemene and Ochogu (2022), that students living with PUD frequently complained of ulcer-related symptoms such as heartburn and nausea, which were triggered by poor dietary habits and led to academic challenges. Similarly, Ali and Kareem (2022) observed that students with PUD in Iraq often experienced abdominal pain, fatigue, and class absenteeism due to ulcer symptoms, which were closely linked to stress and poor eating habits. The strong desire for counseling (90.3%) indicates students' recognition of the problem and their need for support, a sentiment reinforced in studies where students felt frustrated by their inability to maintain dietary changes due to external constraints.

The significant association between dietary habit and ulcer prevalence observed in this study crucial as several undergraduate studies identified poor eating patterns as part of ulcer risk profile (Venkatesan *et al.*, 2017; Bounde *et al.,* 2025). However, among Nigerian university students, irregular meal timing has been specifically linked to ulcer-related risk, and deviations of more than two hours from regular meals markedly increase gastritis and Helicobacter Pylori risk (Bounde *et al.,* 2025). As reported by Almogbel *et al.* (2019), student populations also commonly report meal skipping, junk foods intake, and low fruit and vegetable consumption, making diet a significant predictor of peptic ulcer among undergraduates.

Furthermore, no significant association observed between awareness of an ulcer-friendly diet and dietary habits suggests a knowledge behavior gap rather than a lack of information. This finding is consistent with the studies of Sigel *et al.* (2025) and Farrukh *et al.* (2026), that improved nutritional knowledge does not necessarily translate into healthier dietary practices. Farrukh *et al.* (2026) found no significant relationship between nutritional knowledge and dietary habits among Pakistani undergraduates, despite medical students demonstrating better nutrition knowledge than non-medical students. Similarly, Sigel *et al.* (2025) observed that secondary school students possessed adequate nutrition knowledge but did not consistently practice healthy eating.

Additionally, Tufail *et al.* (2020) found that although most medical students had adequate nutritional knowledge, many still consumed junk food regularly and failed to maintain healthy eating patterns. Likewise, Almoraie *et al.* (2024) noted that university students frequently consumed fast foods and sugar-sweetened beverages while having low fruit and vegetable intake despite awareness of healthy dietary recommendations. Nam et al. (2025) further demonstrated that nutrition education interventions improved knowledge without producing significant behavioral change. The observed knowledge behavior gap may be explained by factors beyond awareness as Anaemene *et al.* (2022) identified barriers such as academic schedules, limited meal

variety, and delayed availability of healthy food options, while Almoraie *et al.* (2024) emphasized the influence of campus food environments, affordability, and accessibility. In addition, Farrukh *et al.* (2026) highlighted the roles of stress, peer influence, and personal food preferences in shaping students' eating behaviors. These findings suggest that improving ulcer prevention among undergraduates requires behavior- and environment-focused interventions in addition to nutrition education.

CONCLUSION

This study showed that peptic ulcer disease remains an important public health concern among undergraduate students, showing a considerable burden within the university population. The findings indicate that the condition continues to affect students despite increasing awareness of preventive health practices. The significant relationship observed between dietary habits and peptic ulcer disease highlights the critical role of healthy eating behaviors in reducing disease occurrence. Irregular meal patterns, unhealthy food choices, and lifestyle-related practices commonly associated with university life appear to contribute substantially to the risk of developing the condition. However, there was no significant association between awareness of an ulcer-friendly diet and dietary habits suggesting that knowledge alone is insufficient to promote healthy behavior. Factors such as academic workload, financial limitations, time constraints, and the campus food environment prevent students from translating nutritional knowledge into consistent practice. Therefore, there is a need for integrated campus-based strategies aimed at reducing modifiable risk factors, encouraging healthier lifestyles, and promoting early detection and appropriate management of peptic ulcer disease among undergraduate students.

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