

Chapter 15

Prevalence of Gastrointestinal Ulcer among Undergraduates in Ondo City

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ABSTRACT

This study investigated the prevalence of gastrointestinal ulcer among undergraduates in Ondo City of Ondo State, Nigeria. Three research questions guided the study. The total population for this study was 12,832 students in the three degree-awarding institutions in the city. Proportionate sampling technique was used to select 210 respondents for the study – 150 from Adeyemi Federal University of Education (AFUED) Ondo, 25 from University of Medical Sciences (UNIMED) Ondo, and 35 from Wesley University of Science and Technology (WESLEY), Ondo. A 4-point Likert scale structured questionnaire was used to solicit information from the respondents, and the data collected were analysed using mean. Findings showed that gastrointestinal ulcer was prevalent among individuals who take excessive alcohol, and it was untrue that cases were unreported. The causes of gastrointestinal ulcer among undergraduates were found to be high acidic content in the stomach caused by *H. pylori* bacteria, accumulated and psychological stress, smoking and self-medication. The respondents agreed that the avoidance of pain killer drugs, consumption of vegetables and fruits, adoption of right dietary pattern, and use of gastrointestinal ulcer endoscopy and therapy can help prevent gastrointestinal ulcer. It was therefore recommended that undergraduates avoid the pain killer drugs as much as possible, and

consume more of vegetables and fruits to prevent gastrointestinal ulcer among others.

Keywords: Dietary pattern, Gastrointestinal, Therapy, Ulcer, Undergraduates.

INTRODUCTION

Gastrointestinal ulcers refer to lesions that manifest within the stomach or the small intestine lining. These ulcers emerge when the protective mucosal layer of the stomach diminishes in its efficacy. The stomach plays a pivotal role in food digestion and warding off microbial threats by generating potent acids. To safeguard the body's tissues from the corrosive potential of these acids, the stomach concurrently secretes a robust mucosal barrier. If this mucosal layer becomes eroded and loses its functionality, it paves the way for acid-induced damage to the stomach tissue, ultimately resulting in the formation of ulcers (David, 2019).

The principal reasons for the development of gastrointestinal ulcers in the stomach and small intestine encompass *Helicobacter pylori* (*H. pylori*) bacteria and a class of analgesics known as nonsteroidal anti-inflammatory drugs (NSAIDs). Less frequently, stomach ulcers can be attributed to factors such as excessive gastric acidity, termed hyperacidity, and a medical condition known as Zollinger-Ellison syndrome. Hyperacidity may arise from various causes, including genetic predisposition, smoking, stress, and dietary habits. On the other hand, Zollinger-Ellison syndrome represents a rare disorder characterized by an overproduction of stomach acid. Gastrointestinal distress, characterized by pain or discomfort in the abdominal region, is a common manifestation. This symptom is sometimes confused with heartburn, which may co-occur. Symptoms tend to alleviate rapidly with appropriate treatment. However, medical practitioners often maintain treatment regimens, particularly if the ulcer is attributed to *Helicobacter pylori* (*H. pylori*) infection (Lamont, 2023).

For decades, Nigeria was categorized among nations grappling with a high prevalence of gastrointestinal ulcers. In a recent ranking, the World Life Expectancy (2020) ranked Nigeria 31st among those with the highest

prevalence of peptic ulcer disease. This high prevalence may cut across different demographical groups, including undergraduate students.

The incidence of gastrointestinal ulcers within Nigerian tertiary institutions has reached an alarming level and is increasingly becoming a matter of significant concern. For instance, in Kano, located in Northern Nigeria, Bashir and Ali (2021) documented an 81% prevalence of gastrointestinal ulcers among undergraduates. Similarly, Malu et al. (2020) reported an 87% prevalence in Jos, while Aboderin et al. (2017) found a prevalence rate of 73% in the South-Western region of Nigeria. Nevertheless, to facilitate clinical and epidemiological decision-making, it is imperative to directly ascertain the prevalence of confirmed gastrointestinal ulcers within at-risk populations.

Notably, Eniojukan (2021) recorded prevalence rates of 40% and 60% for gastrointestinal ulcers in a university community within Delta State, Nigeria. However, to the best of the researchers' knowledge, no study has yet explored the prevalence patterns and associated modifiable risk factors for gastrointestinal ulcers exclusively within a student population. Factors such as stress, fasting, smoking, alcohol consumption, coffee consumption, and the use of non-steroidal anti-inflammatory drugs (NSAIDs) are commonly linked with students and thus could have a significant impact on the prevalence of gastrointestinal ulcers.

Therefore, it is imperative to conduct an investigation into the evolving prevalence patterns and modifiable risk factors of gastrointestinal ulcers, particularly within the student demographic. Such data could serve as a valuable guide for decision-making processes and the formulation of preventive strategies. In both Nigeria and many other developing countries, facilities for the treatment of gastrointestinal ulcers are scarce. Consequently, the diagnosis of gastrointestinal ulcer conditions often relies solely on clinical parameters. The efficacy of treatment for these diagnosed cases is inherently tied to the accuracy of clinical diagnoses (Mayo Clinic Staff, 2023).

University students encounter numerous challenges in making appropriate dietary choices that align with their health and nutritional needs. According to Sprake et al. (2018), a significant proportion of university students fail to meet the recommended dietary requirements of micronutrients. Notably, the prevalence of underweight is more

pronounced among female students compared to their male counterparts (Chen *et al.*, 2020).

The primary contributors to gastrointestinal ulcers among undergraduates can be attributed to suboptimal dietary patterns and unhealthy eating practices. These include excessive consumption of carbonated beverages and fast-food meals, insufficient intake of fruits and fish, excessive salt consumption, meal skipping, and heightened stress levels, among other factors. Anetor *et al.* (2012) highlighted that undergraduates often exhibit unfavorable eating habits, such as junking, and infrequent consumption of vegetables and fruits. On a global scale, there has been a surge in the consumption of energy-dense foods that are rich in fat, salt, and sugars but lacking in essential vitamins, minerals, and other micronutrients (World Health Organization, WHO, 2020).

The prevalence of gastrointestinal ulcers within tertiary institutions is frequently influenced by various factors among undergraduates, including their sleep patterns, dietary choices, smoking habits, exposure to environmental pollutants, feelings of lethargy, and diminished vitality. Additionally, attention must be given to general complaints and health-related nutritional histories, as well as family histories related to conditions like obesity, leanness, colitis, and symptoms indicative of liver and kidney issues, along with a history of gastrointestinal tract ailments. Moreover, it is often essential to assess undergraduates' dietary habits, including their consumption of fast food and the cooking methods employed, such as boiling, grilling, and frying.

Undergraduates frequently engage in meal skipping and display a tendency to consume excessive quantities of carbonated beverages and high-fat, oily meals. These practices not only heighten the risk of gastrointestinal ulcers but also contribute to the burden of chronic and preventable health conditions, including obesity, cardiovascular complications, and damage to the kidneys and liver. Hence, this study investigated the prevalence of gastrointestinal ulcers among undergraduates in Ondo City.

Statement of the Problem

Purpose of the Study

The main purpose of the study was to investigate the prevalence of gastrointestinal ulcer among undergraduates in Ondo City. Specifically, the study determined:

- i. the level of awareness of gastrointestinal ulcer among undergraduates in Ondo City?
- ii. the main causes of gastrointestinal ulcer among undergraduates in Ondo City
- iii. the possible solutions to the problem of gastrointestinal ulcer among undergraduates in Ondo City

Research Questions

The following research questions guided this study.

- i. What is the level of awareness of gastrointestinal ulcer among undergraduates in Ondo City?
- ii. What are the main causes of gastrointestinal ulcer among undergraduates in Ondo City?
- iii. What are the possible solutions to the problem of gastrointestinal ulcer among undergraduates in Ondo City?

METHODOLOGY

Research Design

The study employed descriptive survey design. Descriptive survey design was used in the compilation of variables and with the interpretation of existing relationship, attitudes, practices, processes and compare variables. This design elicited information by asking respondents questions on the causes, prevalence and possible solutions to gastrointestinal ulcer among undergraduates in Ondo City.

Population of the Study

The population of the study consisted of all undergraduates from the three tertiary institutions in Ondo State. The population of all the undergraduates in WESLEY as at 2023 was six hundred and forty six (646), Adeyemi Federal University of Education (AFUED) was eleven thousand, six hundred and seventy four (11,674) and University of Medical Sciences (UNIMED) had five hundred and twelve (512) undergraduates.

The total population for this study was twelve thousand, eight hundred and thirty-two (12,832).

Sample and Sampling Techniques

Proportionate sampling technique was used to select one hundred and fifty (150) undergraduates from AFUED, twenty-five (25) from UNIMED and thirty-five (35) from Wesley, Ondo.

Instrument for Data Collection

A 4- Point Likert Scale structured questionnaire consisting of items which solicited responses from the respondents was used for the study. Four Likert Scale options denoting SA (4 points), A (3 points), D (2 points), SD (1 point). A (1 point) was used as the rating scale. The questionnaire was titled "Prevalence of gastrointestinal ulcer among undergraduates in Ondo City". The research instrument contained two sections: sections A and B. Section A consisted of questions on the demographic information of the respondents such as (educational institution, gender, level and age bracket) while Section B consisted of question items in line with the specific objectives of the study.

Validation of the Instrument

The research instrument was validated by three experts in Food and Nutrition in the Department of Home Economics, Adeyemi Federal University of Education, Ondo.

Analysis of Data

Mean (\bar{x}) was used to analyze the research questions. The decision rule on the findings was guided using mean score of 2.50 as cut off point. Items with mean of 2.50 and above were accepted as agreed while those that fall below were regarded as disagreed.

RESULTS

Research Question 1: What is the level of awareness of gastrointestinal ulcer among undergraduates in Ondo City?

Table 15.1: Mean responses on the level of awareness of gastrointestinal ulcer among undergraduates in Ondo City

S/N	ITEMS	\bar{x}	REMARK
1.	Undergraduates feel reluctant to give details of health status, hence, they hardly report gastrointestinal ulcer	3.36	Agreed
2.	Self-medication which complicates the incidences and occurrences of gastrointestinal ulcer	3.74	Agreed
3.	There are no reported cases of gastrointestinal ulcer among undergraduates	1.35	Disagreed
4.	Most undergraduates suffering from gastrointestinal ulcer are not aware of it	1.67	Disagreed
5.	It is hard to give exact figure of undergraduates suffering from gastrointestinal ulcer in tertiary institutions	3.65	Agreed
6.	Gastrointestinal ulcer is often mistaken for other illness among undergraduates	1.61	Disagreed
7.	Gastrointestinal ulcer is very rare among undergraduates	1.38	Disagreed

Key: \bar{x} = Mean, Number of respondents = 210, Cut-off Point = 2.50

The data presented in Table 15.1 reveals the level of awareness of gastrointestinal ulcer among undergraduates in Ondo City. Respondents agreed with items 1, 2 and 5 with mean values of 3.36, 3.74 and 3.65. However, items 3, 4, 6 and 7 have mean values of 1.35, 1.67, 1.61 and 1.38 which are all below the cut-off point. This implies that the respondents disagreed with the statements which means that there are reported cases of gastrointestinal ulcer among undergraduates and most undergraduates

suffering from gastrointestinal ulcer are aware of it. Also, respondents disagreed that gastrointestinal ulcer is often mistaken for other illness among undergraduates and that gastrointestinal ulcer is very rare among undergraduates.

Research Question 2: What are the main causes of gastrointestinal ulcer among undergraduates in Ondo City?

Table 15.2: Mean responses on the main causes of gastrointestinal ulcer among undergraduates in Ondo City.

S/N	ITEMS	\bar{x}	REMARK
1.	Excessive alcohol intake can cause gastrointestinal ulcer	3.36	Agreed
2.	Wrong dietary pattern can lead to gastrointestinal ulcer	3.53	Agreed
3.	Excessive intake of pain killers and anti-inflammatory drugs such as Ibuprofen, Meloxicam, Naproxen, Gabapentin among others	3.45	Agreed
4.	Smoking can result into gastrointestinal ulcer	3.49	Agreed
5.	Accumulated and psychological stress can result into stress can result into gastrointestinal ulcer	3.67	Agreed
6.	High acidic content in the stomach caused by <i>H. pylori</i> bacteria can cause gastrointestinal ulcer	3.80	Agreed
7.	Peritonitis and blockage caused by inflammation and infection of the abdominal cavity can cause gastrointestinal ulcer	3.46	Agreed

Key: \bar{x} = Mean, Number of respondents = 210, Cut-off Point = 2.50

The data presented in Table 15.2 above reveals the main causes of gastrointestinal ulcer among undergraduates in Ondo City. Respondents agreed with items 1, 2, 3, 4, 5, 6 and 7 with mean values of 3.36, 3.53, 3.45, 3.49, 3.67, 3.80 and 3.46 respectively which are all above the cut-off point and mean value of 2.50 as the decision point. This implies that excessive alcohol intake can cause gastrointestinal ulcer, wrong dietary pattern can lead to gastrointestinal ulcer, excessive intake of pain killers and anti-inflammatory drugs such as ibuprofen, meloxicam, naproxen, gabapentin among others, smoking can result into gastrointestinal ulcer, accumulated and psychological stress can result into gastrointestinal ulcer, high acidic content in the stomach caused by h. pylori bacteria can cause gastrointestinal ulcer and peritonitis and blockage caused by inflammation and infection of the abdominal cavity can cause gastrointestinal ulcer.

Research question 3: What are the possible solutions to the problem of gastrointestinal ulcer among undergraduates in Ondo City?

Table 15.3: Mean responses on the possible solutions to the problem of gastrointestinal ulcer among undergraduates in Ondo City

S/N	ITEMS	\bar{x}	REMARK
1.	Avoidance of pain killer drugs can reduce the risk of gastrointestinal ulcer	3.46	Agreed
2.	Consumption of vegetables, fruits and right dietary pattern can help prevent gastrointestinal ulcer	3.59	Agreed
3.	Regular exercise can reduce the risks of gastrointestinal ulcer	1.80	Disagreed
4.	Avoidance of smoke can prevent gastrointestinal ulcer	3.39	Agreed
5.	Early detection of gastrointestinal ulcer can help in its treatment	3.48	Agreed
6.	The use of gastrointestinal ulcer endoscopy and therapy can help in its treatment	3.46	Agreed

Key: \bar{x} = Mean, Number of respondents = 210, Cut-off Point = 2.50

The data presented in table 15.3 above reveals the possible solutions to the problem of gastrointestinal ulcer among undergraduates in Ondo City. Respondents agreed with items 1, 2, 4, 5 and 6 with mean values of 3.46, 3.59, 3.39, 3.48 and 3.49 which are all above the cut-off point and mean value of 2.50 as the decision point. However, item 3 have mean value of 1.80 which is lower than the cutoff point. This implies that the respondents disagreed with the statement. Hence, regular exercise cannot reduce the risks of gastrointestinal ulcer.

DISCUSSION OF FINDINGS

Findings on the level of awareness of gastrointestinal ulcers among undergraduates in Ondo City reveals that the respondents disagreed that gastrointestinal ulcers are frequently misdiagnosed as other illnesses among undergraduates or that these ulcers are exceedingly rare among this population. They also disagreed with the statement that there are no reported cases of gastrointestinal ulcers among undergraduates and that most undergraduates suffering from gastrointestinal ulcers are unaware of their condition. These findings align with the research of Malu et al. (2020), who reported an 87% prevalence in Jos, and Aboderin et al. (2017), who reported 73% prevalence in the South-Western region of Nigeria.

Respondents concurred that the causes of gastrointestinal ulcers encompass excessive alcohol consumption, inappropriate dietary patterns, the overuse of painkillers and anti-inflammatory drugs (such as ibuprofen, meloxicam, naproxen, and gabapentin), as well as the accumulation of psychological stress. Additionally, they acknowledged that factors like high stomach acidity (induced by *H. pylori* bacteria), peritonitis, and blockages due to inflammation and abdominal cavity infections contribute to ulcer development. Ndububa (2019) indicated that genetic factors play a role in ulcer pathogenesis, with a lifetime prevalence of ulcer disease being approximately three times higher among first-degree relatives of ulcer patients compared to the general population. Furthermore, about 20–50% of duodenal ulcer patients report a positive family history, and gastric ulcer patients also report familial

clusters of affected individuals. Ajao (2020) also observed that cigarette smoking may increase susceptibility, weaken gastric mucosal defense mechanisms, or create a favorable environment for *Helicobacter pylori* (*H. pylori*) infection.

Respondents in this study reached a consensus on several preventive measures for gastrointestinal ulcers, including avoiding excessive use of painkiller drugs, adopting a diet rich in vegetables and fruits, making appropriate dietary choices, abstaining from smoking, early detection for timely treatment, and the utilization of gastrointestinal ulcer endoscopy and therapy. However, they disagreed with the idea that regular exercise can significantly reduce the risk of gastrointestinal ulcers. Badoe (2010) highlighted that gastrointestinal endoscopy is a precise and secure diagnostic tool for diseases of the esophagus, stomach, and duodenum. It enables visual examination, photography, ultrasonography, and biopsies of suspicious lesions. Additionally, Abu (2017) recommended the use of alternative medications for individuals with specific allergies or medication intolerances.

CONCLUSION

Drawing upon the outcomes of this investigation, it can be concluded that gastrointestinal ulcers are prevalent among individuals who engage in excessive alcohol consumption, misuse painkiller medications, skip meals, smoke, suffer from abdominal cavity infections, and experience psychological stress. Building upon the research findings, the most effective strategies for addressing the issue of gastrointestinal ulcers include refraining from the excessive use of painkiller drugs, embracing a diet rich in vegetables, engaging in regular physical activity, and promptly detecting gastrointestinal ulcers.

RECOMMENDATIONS

On the basis of the findings from this study, the following recommendations were made:

- i. Pain killer drugs should be avoided by undergraduates as much as

- possible to reduce the risk of gastrointestinal ulcer
- ii. Undergraduates should consume more vegetables and fruits, and imbibe right dietary pattern to help prevent gastrointestinal ulcer.
 - iii. Undergraduates should be engaged often in regular exercise and avoid smoking to reduce the risks of gastrointestinal ulcer
 - iv. The health centres of tertiary institutions should work towards early detection of gastrointestinal ulcer.

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