JHER Vol. 32 (2) December 2025, pp. 240 - 250

Issues in Dietary Practices and Peptic Ulcer Disease Management among Registered Adults Patients in Hospitals in Nsukka Local Government Area, Enugu State

[1]Attah, Blessing I; [1]Ugwu, Eunice I; [2]Nwafor, Eucharia C; [3]Emeka Ebele C; [1]Eze, Ngozi M

[1] Department of Home Ecconomics and Hospitality Management Education, UNN; [2] Anambra State Polytechnic, Mgbakwu; [3] Nwafor Oriuzu College of Education, Nsugbe

Corresponding Author: ugwu.eunice@unn.edu.ng

Abstract

This study focused on dietary practices and peptic ulcer disease management among registered adult patients in hospitals in Nsukka Local Government area (LGA), Enugu state. Specifically, it determined dietary practices needed to be adopted by patients in management of peptic ulcer; dietary practices presently adopted by patients; and perceived ways dietary practices of patients influence peptic ulcer disease management. Descriptive survey design was adopted. Population comprised of 520 diagnosed ulcer patients and 62 health workers from two hospitals in Nsukka LGA. Data were collected using structured questionnaire. Mean, standard deviation and t-test at 0.05 level of significance were used for data analyses. Findings reveals 15 practices patients need to adopt, including ensuring adequate intake of vitamins C and E ($\overline{X}$= 3.22), eating regular small meals ($\overline{X}$= 3.14), avoiding spicy foods ($\overline{X}$ = 2.89) among others. Patients' adoption of the 15 practices was generally low with grand mean score of $\overline{X}_g$ = 2.14. Only two practices obtained means of ≥ 250. Further findings reveal 12 perceived ways dietary practices influence peptic ulcer management. These include, among others, eating small portions, frequent meals ($\overline{X}$ = 2.96) and taking vitamins C and E ($\overline{X}$ = 2.89). There were no significant differences betqween the mean responses of patients and medical personnel at 0.05 level of significance. Four recommendations were made.

Keywords: Adult, Dietary, Practices, Disease, Management, Nutrition, Peptic, Ulcer

Introduction

Peptic ulcer disease remains a significant global health concern, affecting millions of people across different populations, including those in Nigeria. Peptic ulcer disease (PUD) is characterized by open sores or lesions that develop in the mucosal lining of the stomach (gastric ulcer) or the upper part of the small intestine (duodenal ulcer), often leading to symptoms such as burning stomach pain, bloating, nausea, vomiting, and in severe cases, gastrointestinal bleeding (Chijioke & Nneka, 2019). These peptic ulcers can result from various factors, including infection with Helicobacter pylori, chronic use of non-steroidal anti-inflammatory drugs (NSAIDs), excessive acid production, and lifestyle factors such as smoking and alcohol consumption

(Graham & Tansel, 2018; Tursi & Brandimarte, 2022). The global burden of ulcer disease is considerable, with complications including perforation, haemorrhage, and an increased risk of gastric cancer contributing to morbidity and mortality (Lanas & Chan, 2017).

In Nigeria, peptic ulcer disease remains a significant public health issue, with studies indicating a high prevalence rate among different demographic groups (Okafor & Nwokolo, 2017). The country's dietary habits, socio-economic conditions, healthcare access, and traditional healing practices influence ulcer prevalence and management (Sharma, et al 2023). Many Nigerians rely on self-medication, herbal remedies, and dietary modifications as part of their ulcer management strategies, often in the absence of professional medical guidance (Emeka & Leung, 2022). Thus, to create more effective public health interventions for ulcer management in Nigeria, it is important to understand dietary practices and therapy.

Dietary practices and therapy are important in management of peptic ulcer disease (PUD), influencing both symptom control and the healing process. Dietary practices are the everyday food choices, preparation methods, meal timing and frequency, and culturally driven habits that determine what people eat and how they eat it (Monterrosa, et al 2020). In the context of PUD dietary practices include consumption of irritating foods (spicy, acidic, alcoholic), use of traditional remedies, reliance on particular staples (yam, cassava, rice), meal patterns (skipping meals, prolonged fasting), and use of processed products. While Dietary therapy, also known as nutritional management refers to the deliberate use of dietary modification to reduce symptoms, aid mucosal healing, support pharmacologic treatment (e.g., H. pylori eradication and acid suppression), and lower risk of complications (Camilleri, & Boeckxstaens, 2017). Historically, bland diets were prescribed, modern understanding of PUD, particularly with the discovery of *Helicobacter pylori*, which has shifted the focus to a more nuanced, patient-specific approach. The prevailing view is that there's no single "ulcer diet"; rather, dietary therapy is about avoiding foods that individually trigger symptoms and incorporating those that support mucosal healing. Many people with PUD report that spicy foods, acidic items like citrus fruits and tomatoes, caffeine (from coffee, tea, and some sodas), and alcohol can exacerbate their symptoms of burning pain and discomfort (Srivastav, et al, 2023).

However, the effect is highly individual, and a food that aggravates one person's symptoms may not affect another's. Conversely, consuming smaller, more frequent meals can help neutralize stomach acid and reduce the burden on the digestive system (Wu, 2019). This is a practical strategy that patients can adopt to manage their symptoms, but it requires discipline and can be difficult to maintain, especially for people with demanding work schedules or socioeconomic constraints. Foods rich in antioxidants, such as vitamins C and E, flavonoids, and probiotics, are increasingly recognized for

their potential to promote ulcer healing. For example, flavonoids, found in foods like apples, celery, and onions, have been shown to inhibit *H. pylori* growth and reduce inflammation (Tursi & Brandimarte, 2022). Probiotics, found in fermented foods like yogurt and some local Nigerian equivalents, can help restore a healthy gut microbiome and may assist in eradicating *H. pylori* and reducing treatment side effects (Sasaki & Harayama, 2022). Additionally, cultural beliefs and misconceptions about certain foods can influence dietary choices, often in the absence of professional guidance (Eze & Eze, 2020). For example, a person might believe a specific herbal concoction is a cure, neglecting proven dietary and medical treatments.

Nutrition plays a fundamental role in peptic ulcer disease management, with specific dietary habits influencing both the progression and healing of peptic ulcers. A well-balanced diet comprising essential nutrients carbohydrates, proteins, fats, vitamins, minerals, and water is crucial for overall health and ulcer recovery (Obijiofor, et al, 2020). Certain foods, such as spicy and acidic foods, caffeine, and alcohol, have been associated with increased ulcer symptoms, while foods rich in antioxidants, vitamins C and E, flavonoids, and probiotics have shown potential in promoting ulcer healing (Wu, 2019). Additionally, meal timing and frequency play a critical role in symptom control, with irregular eating patterns and prolonged fasting exacerbating discomfort and delayed healing (Dashti, & Mogensen, 2017).

Despite the influence of diet on peptic ulcer disease among adults, traditional Nigerian diets, which include a variety of carbohydrate-rich foods such as yam, cassava, and rice, as well as protein sources like beans and fish, may have unique implications for peptic ulcer patients depending on their preparation methods and consumption patterns, with its diverse cultural food practices and socio-economic variations, presents an interesting case for studying the role of diet in peptic ulcer management. (Emeka & Leung, 2022). For instance, heavy spicing, excessive oil, and acidic accompaniments like pepper-based stews may irritate the gastric lining, worsening ulcer symptoms. On the other hand, simple preparations such as boiled yam or rice, alongside non-irritant protein sources like fish, may support better tolerance and healing. Thus, while the Nigerian diet offers nutrient-rich options, the challenge lies in modifying cooking styles and meal combinations to align with the dietary needs of peptic ulcer patients. Thus, dietary practices influence peptic ulcer symptoms, healing processes, and overall well-being can provide valuable insights into creating culturally appropriate dietary recommendations for ulcer patients.

Furthermore, the accessibility and affordability of ulcer-friendly foods are crucial factors influencing dietary choices in Nsukka LGA. Economic constraints often limit individuals' ability to maintain a healthy diet, making it essential to

explore how socio-economic status impacts dietary decisions among ulcer patients (Chijioke & Nneka, 2019). Additionally, cultural beliefs and misconceptions about ulcer disease and its dietary management may affect food choices, necessitating a deeper examination of public awareness and knowledge levels (Eze & Eze, 2020).

Farmers, traders, students, and government employees live in the Nsukka Local Government Area. The region is well-known for its thriving population and for having hospitals and medical facilities that treat a variety of illnesses, including gastrointestinal disorders like Peptic Ulcer Disease (PUD). The prevalence of peptic ulcer cases among adult patients with symptoms including upper abdomen discomfort, bloating, and indigestion has alarmingly increased, according to medical data and clinical observations from hospitals visited. Poor eating habits, self-medication, and irregular adherence to dietary and medical guidance have all been linked to these present symptoms. Instead of closely adhering to recommended medical and dietary instructions, these ulcer patients sometimes rely on over-the-counter medications and traditional cures. Inadequate nutritional education, food instability, and financial hardship all lead to poor recovery results, recurrent relapses, and higher patient hospitalization rates. These situations highlight the necessity for organized strategies to managing peptic ulcer disease through improved dietary practices. Evolving such improved practices in Nsukka local government area necessitate the study into present scenario of ulcer patient in the area, hence the study.

Purpose of the Study

The general purpose of the study was to investigate dietary practices issues in relation to peptic ulcer disease management among of adult patients in Nsukka Local Government Area, Enugu State. Specifically, the study determined:

1. dietary practices patients need to adopt in management of peptic ulcer disease in Nsukka LGA
2. dietary practices presently adopted by patients in management of their peptic ulcer disease.
3. perceived ways dietary practices of patients influence peptic ulcer disease management.

Hypotheses

HO: There is no significance difference in mean responses of health personnel and patients on ways dietary practices influence peptic ulcer disease management in Nsukka LGA, at 0.05 level of significance.

Methodology

***Design of the Study*:** The study adopted a survey research design.

Area of the Study: The study was carried out in Nsukka Local Government Area (LGA). Nsukka was chosen for the study because of the high prevalence of peptic ulcer cases reported in the locality. Nsukka Local Government Area, located in Enugu State, is made up of 36

autonomous communities. The meal of the people are rich in spicy foods, cassava products, legumes, and locally brewed alcohol.

Population for the Study: The population comprised of 582 individuals identified from hospital records. This included 520 registered peptic ulcer patients and 62 health workers from two major hospitals in Nsukka Bishop Shanahan Hospital and the University of Nigeria Medical Center. Specifically, Bishop Shanahan Hospital had 204 patients and 25 health workers, while the University Medical Center had 316 patients and 37 health workers. The patients, both male and female adults aged 25–65 years, represented diverse educational and occupational backgrounds, including farmers, traders, artisans, civil servants, students, and university staff. They were included because they had direct experience with ulcer management and could provide reliable information on dietary habits and treatment practices.

***Sample for the Study*:** A total of 143 respondents were purposively selected, consisting of 102 ulcer patients and 41 health workers. From Bishop Shanahan Hospital, 45 patients and 16 health workers were selected, while 57 patients and 27 health workers came from the University Medical Center. The hospitals were purposively chosen because they are the most established healthcare facilities in Nsukka, managing a large number of chronic ulcer cases and maintaining comprehensive records. Ulcer patients were included if they had been diagnosed for at least five years, ensuring adequate experience with dietary management. Health workers were selected based on a minimum of five years of professional practice, confirming sufficient expertise in ulcer care.

Instrument for Data Collection: The instrument for data collection was a structured questionnaire. The questionnaire was developed based on literature review and specific purposes of the study. It was made up of two sections: A and B. Section A focused on demographic characteristics of respondents while Section B had focused on the three specific purposes of the study. The instrument was made up of 27 items. The instrument was validated by five experts, (three university Home Economics lecturers and two medical doctors). The internal consistency of the instrument was determined using Cronbach Alpha reliability coefficient which yielded a coefficient index of 0.82. A 4-point response options of Highly Adopted (HA), Moderately Adopted (MA), Lowly Adopted (LA), and Not Adopted (NA) and options of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) represents of 4, 3, 2.

Data Collection Technique: A total of 143 copies (102 and 41 to patients and health workers respectively) of the questionnaire were administered to respondents by hand with the help of three trained research assistants. Total of 134 copies (96 and 38 from patients and health workers respectively) of questionnaire were retrieved and found usable for analysis, showing the response rate of 93.7 percent.

Data Analysis Technique: Date were analyzed using mean ($\bar{X}$), standard deviation (SD), and t-test at 0.05 level of significant. 2.50 and above was regarded as cut-off mean for decision making.

Results

Table 1: Mean Responses, and Standard Deviation of Medical Personnel and Patient on Dietary Practices Needed/Adopted by Peptic Ulcer Patients.

S/N	Dietary Practices	$\bar{X}_1$	SD_1	Re_1	$\bar{X}_2$	SD_2	Re_2
1	Modification of diets by avoiding the consumption of spicy foods that can exacerbate ulcer symptoms.	2.89	0.63	MA	2.34	0.62	LA
2	Adopting a low-fat diet to reduce risk of aggravating ulcers, as fatty foods can stimulate acid production.	2.76	0.70	MA	2.20	0.75	LA
3	Limiting intake of citrus fruits and juices due to their acidic nature, which can irritate ulcers.	2.68	0.59	MA	2.24	0.63	LA
4	Opting for non-irritating beverages such as water, herbal teas, and milk to soothe the digestive tract.	2.51	0.66	MA	1.40	0.64	NA
5	Eating regular, small meals throughout the day to prevent excessive stomach acid production.	3.14	0.72	MA	2.96	0.71	MA
6	Including fibre-rich foods like whole grains, fruits, and vegetables to promote digestive health and ease symptoms.	2.83	0.60	MA	2.49	0.63	LA
7	Incorporating probiotic-rich foods like yogurt to support gut microbiome and ulcer healing.	2.70	0.65	MA	2.04	0.69	LA
8	Ensuring adequate intake of vitamins C and E to support tissue repair and antioxidant activity.	3.22	0.79	MA	2.89	0.78	MA
9	Taking mineral supplements like zinc which aid in wound healing and tissue repair.	2.55	0.82	MA	1.84	0.99	LA
10	Consuming antioxidant-rich foods (berries, leafy greens) to protect the stomach lining.	2.61	0.74	MA	1.94	0.74	LA
11	Abstaining from alcohol which can irritate the stomach lining and increase acid production.	2.78	0.66	MA	2.08	0.61	LA
12	Seeking guidance from dietitians for personalized dietary recommendations.	2.45	0.64	MA	1.52	0.59	LA
13	Limiting or eliminating caffeine-containing beverages like coffee and certain teas.	2.67	0.81	MA	1.70	0.96	LA
14	Quitting smoking which delays ulcer healing and increases risk of complications.	2.59	0.73	MA	1.59	0.70	LA
15	Staying well-hydrated to maintain mucosal integrity and prevent dehydration.	2.64	0.68	MA	1.89	0.66	LA
	Grand Mean	2.74		MA	2.14		LA

Number of medical personnel (N_1) = 41; Number of patients (N_2) = 102; $\bar{X}_1$ = Mean score of medical personnel; SD_1 = Standard deviation of medical personnel; $\bar{X}_2$ = Mean score of patients; SD_2 = Standard deviation of patients; Re = Remarks; N = Needed; Ad = Adopted. MA = Moderately Adequate; LA = Low Adoption.

Table 1 shows that medical personnel rated all the 15 dietary practices for peptic ulcer management as moderately adequate, with a grand mean ($\bar{X}_g$) of 2.74.

The most emphasized needs were ensuring adequate intake of vitamins C and E $\overline{X}_g$ = 3.22 and eating small, regular meals $\overline{X}_g$ = 3.14, followed by avoiding spicy foods and including fibre-rich foods.

Table 1 also shows patient adoption of these practices was generally low, with a grand mean ($\overline{X}_g$) of 2.14. Only two practices eating small, frequent meals $\overline{X}_g$ = 2.96 and taking vitamins C and E $\overline{X}_g$ = 2.89 were moderately adopted.

Table 2: Mean Responses, Standard Deviation and of Responses of t-test Values of Medical Personnel and Patients on Ways Dietary Practices Influence Peptic Ulcer Management (PUM)

S/N	Ways Dietary practices influence PUM	$\overline{X}_1$	SD_1	$\overline{X}_2$	SD_2	$\overline{X}_g$	t	R
1	Adequate protein intake supports mucosal tissue regeneration and ulcer healing.	3.26	0.74	2.75	0.78	3.01	**3.33**	NS
2	Nutrients such as zinc possess antioxidant properties that protect against oxidative damage.	3.32	0.69	2.84	1.00	3.08	2.40	NS
3	Vitamin C enhances collagen production aiding in ulcer healing.	3.45	0.71	3.14	0.75	3.29	1.90	NS
4	A balanced diet supports immune system function and promotes ulcer recovery.	3.51	0.64	3.29	0.67	3.40	2.03	NS
5	Omega-3 fatty acids reduce inflammation and promote gastrointestinal healing.	3.48	0.69	3.23	0.73	3.36	1.40	NS
6	Zinc contributes to the maintenance of a healthy mucosal barrier.	3.55	0.68	3.38	0.65	3.47	2.36	NS
7	Fibre and probiotics promote balanced gut microbiota reducing inflammation.	3.43	0.59	3.18	0.55	3.31	1.19	NS
8	Glutamine supports intestinal tissue repair and maintains gut barrier function.	3.72	0.61	3.59	0.64	3.66	3.03	NS
9	Avoiding irritating foods and alcohol prevents further damage and aids healing.	2.91	0.60	2.58	0.58	2.75	1.28	NS
10	Foods like bananas and oatmeal neutralize acid and ease ulcer symptoms.	3.41	0.66	3.26	0.62	3.34	2.11	NS
11	Proper hydration supports mucosal integrity and overall healing.	2.82	0.81	2.50	0.82	2.66	2.18	NS
12	A nutrient-rich balanced diet provides all essentials for optimal healing.	2.95	0.89	2.59	0.94	2.77	**3.33**	NS

Number of medical personnel (N_1) = 41; Number of patieREWnts (N_2) = 102; $\bar{X}_1$ = Mean score of medical personnel; SD_1 = Standard deviation of medical personnel; $\bar{X}_2$ = Mean score of patients; SD_2 = Standard deviation of patients; $\bar{X}_g$ grand mean; t = t-value; R = Remarks, t-value = degree of freedom (df)

Table 2 shows that mean values which ranged from 2.75 to 3.66. Medical personnel rated the influence of diet slightly higher ($\overline{X}_1$ = 3.26–3.72) than patients ($\overline{X}_2$ = 2.75–3.59), suggesting that health professionals possess a stronger understanding of the therapeutic role of nutrition in ulcer recovery. All calculated t-values were statistically non-significant ($p > 0.05$). This shows that there are no

significanct differences between the mean scores of the patients and medical personnels at 0.05 level of significance.

Discussion of the Findings

The findings of this study in Table 1 revealed a clear gap between the dietary practices required for effective management of peptic ulcer disease (PUD) and those actually practiced by adult patients in Nsukka Local Government Area. While medical personnel demonstrated strong awareness of appropriate dietary measures for ulcer management, patients showed low adoption of these practices. This disparity reflects persistent challenges such as inadequate nutritional knowledge, economic hardship, and deep-rooted cultural food preferences that make compliance with recommended diets difficult. These findings agree with Okeke & Iwu (2022) and Eze & Odo (2023), who observed that limited health education and poverty often constrain dietary adherence among individuals with chronic health conditions in southeastern Nigeria. Health workers strongly emphasized diet modification as a key part of ulcer management, particularly avoiding spicy and fatty foods, limiting citrus and caffeine, and abstaining from alcohol and smoking. However, most patients failed to consistently practice these recommendations, suggesting poor dietary counselling and low access to dietitians. This aligns with the observations of Srivastav et al. (2023), who found that many individuals with gastrointestinal disorders continue to consume irritant foods due to cultural attachment to traditional spicy and oily meals. Similarly, Adebayo & Obasi (2023) highlighted that inadequate engagement of nutrition professionals in Nigerian hospitals weakens patients' adherence to dietary therapies. These gaps have serious implications, as continued exposure to ulcer-triggering foods and poor lifestyle habits may delay healing and increase recurrence.

However, moderate adherence was observed in practices such as eating regular small meals and ensuring adequate intake of vitamins. This may be attributed to local eating habits that naturally involve multiple small meals and increased public awareness of fruit and vegetable benefits through health campaigns. Wu (2019) supported this by emphasizing that smaller, more frequent meals help stabilize gastric acid secretion and reduce mucosal irritation. However, while these practices are encouraging, they remain insufficient for holistic ulcer management, pointing to the need for structured community nutrition education that promotes culturally compatible and affordable dietary alternatives.

Table 2 reveals strong agreement among both health professionals and patients that dietary practices play a vital role in ulcer healing and prevention. Both groups recognized the benefits of nutrients such as proteins, zinc, vitamin C, omega-3 fatty acids, fibre, and probiotics in reducing inflammation, enhancing mucosal repair, and maintaining gastrointestinal integrity.

These findings align with Camilleri & Boeckxstaens (2021) and Sasaki & Harayama (2022), who stressed that nutrient-dense and balanced diets accelerate tissue regeneration and strengthen the gut barrier during ulcer recovery. The similarity in the views of both groups further supports the null hypothesis, indicating no significant difference in their mean responses regarding the influence of diet on PUD management. Despite this shared understanding, the results underscore that knowledge does not automatically lead to behavioural change. Monterrosa et al. (2020) noted that awareness of dietary recommendations often fails to alter food behaviour due to ingrained habits, taste preferences, and low motivation. In the same vein, Emeka & Leung (2022) reported that many Nigerians depend on herbal or self-prescribed remedies because they are perceived as cheaper and more accessible than professional dietetic services. This trend was evident in Nsukka, where few patients sought dietetic guidance, reflecting a wider pattern of self-managed care rather than structured nutritional counselling.

Conclusion

The study concludes that while both medical personnel and patients in Nsukka LGA recognize the vital role of diet in managing peptic ulcer disease, actual adherence to needed dietary practices remains low. A clear result were shown between recommended dietary practices and actual patient compliance, as patients struggle with poor dietary compliance due to inadequate nutrition education, limited access to dietitians, economic hardship, and strong cultural food preferences. Moderate adherence was only observed in practices like eating small frequent meals and vitamin intake. The null hypothesis was upheld, indicating no significant difference in the perceptions of health workers and patients regarding the influence of diet on ulcer management. Overall, the findings highlight the need for strengthened nutrition education, improved access to dietetic services, and supportive policies to promote effective dietary management of peptic ulcer disease in Nsukka and similar settings.

Recommendations

The following recommendations are made based on the findings:

1. Health institutions and local authorities should provide community nutrition education that, among other things, foucs on dietary issues of ulcer patients.
2. Government and hospital management should include dietitians and nutritionists in primary healthcare teams to deliver individualized dietary counselling and follow-up for ulcer patients.
3. Agricultural and food policies should enhance the local production and affordability of ulcer-friendly foods like vegetables, fruits, whole grains, and probiotic options.
4. Mass media and community groups should help dispel myths about ulcer care and promote accurate dietary

guidance, encouraging reliance on professional advice.

References

Adebayo, P. T., & Obasi, C. N. (2023). *Nutrition counseling and patient compliance in the management of chronic diseases in Nigerian hospitals.* Journal of Health and Nutrition Practice, 15(2), 45–57. https://doi.org/10.5897/JHNP2023.0152

Camilleri, M., & Boeckxstaens, G. (2021). Dietary and pharmacological treatment of functional gastrointestinal disorders. *Gastroenterology, 160*(6), 1784–1799. https://doi.org/10.1053/j.gastro.2020.12.018

Chijioke, U. F., & Nneka, I. (2019). Prevalence and clinical pattern of peptic ulcer disease in Enugu, Southeast Nigeria: A 10-year retrospective review. *Nigerian Journal of Clinical Practice, 22*(3), 302-307.

Dashti, H., & Mogensen, A. (2017). Role of dietary patterns and fruit intake in gastrointestinal health. *Nutrition Reviews, 75*(9), 713–726. https://doi.org/10.1093/nutrit/nux036

Emeka, O. N., & Leung, F. (2022). Use of herbal remedies and self-care practices in managing gastrointestinal disorders in Nigeria. *African Journal of Complementary and Alternative Medicine, 19*(1), 34–48. https://doi.org/10.2147/AJCAM.2022.10924

Eze, J. E., & Eze, E. (2020). Nutrition education and public health interventions for peptic ulcer disease: Lessons from global experiences. *Journal of Public Health Policy, 41*(3), 346-360.

Eze, S. M., & Odo, M. A. (2023). Health literacy and adherence to medical nutrition therapy among adults with chronic illnesses in southeastern Nigeria. *International Journal of Public Health and Nutrition, 9*(2), 118–129.

Graham, D. Y., & Tansel, A. (2018). Interactions among Helicobacter pylori, gastroesophageal reflux disease, and non-steroidal anti-inflammatory drugs in the era of Helicobacter pylori eradication. *The Lancet Gastroenterology & Hepatology, 3*(7), 477-484.

Hunt, R. H., Camilleri, M., & Boeckxstaens, G. (2017). The role of diet and lifestyle in gastrointestinal disease management. *World Journal of Gastroenterology, 23*(18), 3325–3338. https://doi.org/10.3748/wjg.v23.i18.3325

Lanas, A., & Chan, F. K. (2017). Peptic ulcer disease. *The Lancet, 39*(2), 1005-1017.

Monterrosa, E. C., Frongillo, E. A., Drewnowski, A., & Vandevijvere, S. (2020). Sociocultural influences on dietary behaviors: Challenges for nutrition interventions. *Public Health Nutrition, 23*(10), 1776–1785. https://doi.org/10.1017/S1368980019003456

Obijiofor, E.O., Okpala, O. P., Nnani, P.C. & Nwakile, T. C. (2020). The role of nutrition in the developmental processes of under-five kids in a South-Eastern Nigerian community: Improving nutrition of under-five kids through agriculture. *Asian Journal of Multidisciplinary Studies, 8*(6), 31 – 35. https://www.researchgate.net/publication/342097859

Okafor, P. N., & Nwokolo, C. U. (2017). Dietary factors and peptic ulcer disease: A review of studies from Nigeria. *Nigerian Journal of Gastroenterology & Hepatology, 9*(1), 21-27.

Okeke, E. C., & Iwu, C. P. (2022). Economic barriers and health education gaps in dietary management of chronic diseases in Nigeria. *Nigerian Journal of Nutrition and Dietetics, 26*(1), 72–84.

Sasaki, R., & Harayama, T. (2022). Dietary fiber, probiotics, and gut microbiota in gastrointestinal disease management. *Nutrients, 14*(11), 2231. https://doi.org/10.3390/nu14112231

Sharma, A., Sundaram, S., Malviya, R., Verma, S., Fuloria, N. K., Fuloria, S., & Meenakshi, D. U. (2023). Patient care and treatment strategies for skin diseases in sub-Saharan Africa: Role of traditional and western medicines. *Infectious Disorders-Drug TargetsDisorders), 23*(3), 69-85.

Shrivastava, P. K., Sharma, M., & Kumar, A. (2023). HCBiLSTM: A hybrid model for predicting heart disease using CNN and BiLSTM algorithms. *Measurement: Sensors*, *25*, 100657.

Srivastav, R., Gupta, D., & Nair, S. (2023). Cultural food practices and dietary compliance among patients with gastric disorders. *Global Journal of Clinical Nutrition, 11*(4), 250–262. https://doi.org/10.1016/j.gjcn.2023.04.006

Tursi, A., & Brandimarte, G. (2022). Nutrition and chronic gastritis. *Journal of Biological Regulators and Homeostatic Agents, 26*(3), 81-88

Wu, J. (2019). The role of meal frequency and timing in peptic ulcer disease recovery. *Clinical Nutrition Research, 8*(3), 195–203. https://doi.org/10.7762/cnr.2019.8.3.195