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The Impact of Students' Lifestyle on The Development of Functional Dyspepsia

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Abstract: Functional gastrointestinal disorders (FGIDs) represent a significant concern in modern gastroenterology due to their high prevalence and negative impact on quality of life, particularly among young adults. Functional dyspepsia, as one of the most common FGIDs, is influenced by multiple factors, including dietary habits, smoking, alcohol consumption, and psychosocial conditions, which are especially relevant in student populations characterized by irregular lifestyles. Despite existing studies, the specific relationship between lifestyle factors and the severity of different clinical variants of functional dyspepsia across stages of student life remains insufficiently explored. This study aims to identify lifestyle characteristics of students that influence the development and severity of functional dyspepsia. The findings revealed that postprandial distress syndrome and epigastric pain syndrome are the main variants, with symptom intensity varying by academic year, and moderate correlations identified between symptom severity and factors such as smoking, anemia, alcohol consumption, late-night eating, and dietary patterns, while fruit and vegetable intake showed a negative correlation. The study provides a comparative analysis of lifestyle-related risk factors across different student groups and links them to specific dyspepsia variants using GSRS and Rome IV criteria. The results highlight the importance of lifestyle modification, including reducing harmful habits and promoting healthy nutrition, as key strategies for prevention and management, while emphasizing the need for targeted health education and further research on broader populations and psychosocial factors.

Keywords: Functional Dyspepsia, Functional Gastrointestinal Disorders (FGIDs), Student Lifestyle, Dietary Habits, Unhealthy Habits, Smoking, Alcohol Consumption, Late-Night Eating, Fruit and Vegetable Intake, Epigastric Pain Syndrome, Postprandial Distress Syndrome, GSRS, Anemia, Gastroenterology

Introduction

Functional gastrointestinal disorders (FGIDs) represent a significant and growing concern in modern gastroenterology due to their high prevalence and substantial impact on patients' quality of life [1]. Although these conditions are not typically life-threatening, they are associated with chronic symptoms such as epigastric pain, discomfort, and digestive disturbances, which can impair daily functioning and well-being. Among FGIDs, functional dyspepsia is one of the most common disorders, particularly affecting young adults and student populations [2].

The development of functional dyspepsia is considered multifactorial, involving a complex interaction between biological, behavioral, and psychosocial factors [3]. Previous studies suggest that heredity, dietary habits, smoking, alcohol consumption, and stress play important roles in the manifestation of symptoms. In particular, student lifestyle is characterized by irregular eating patterns, late-night meals, unhealthy habits, and increased exposure to stress, which may significantly contribute to gastrointestinal dysfunction. Thus, understanding the relationship between lifestyle factors and functional dyspepsia is essential for both prevention and management strategies [4].

Despite the growing body of research on FGIDs, there remains a knowledge gap regarding the specific influence of lifestyle factors on the development and severity of functional dyspepsia in different stages of student life. Many studies have focused on general populations, while fewer have analyzed age-specific or academic-year-related variations [5]. Furthermore, the correlation between behavioral factors—such as smoking, dietary habits, and anemia—and distinct clinical variants of functional dyspepsia (postprandial distress syndrome and epigastric pain syndrome) is not sufficiently explored. This gap highlights the need for targeted research in student populations.

To address this issue, the present study aims to identify lifestyle characteristics of students that influence the development of functional dyspepsia [6]. The research applies a survey-based methodological approach using the Gastrointestinal Symptom Rating Scale (GSRS) and additional questionnaires to evaluate dietary habits, unhealthy behaviors, and other external factors. Statistical analysis, including correlation assessment, is used to determine the relationship between these variables and the severity of clinical symptoms. It is expected that this approach will provide a clearer understanding of the role of modifiable risk factors in the progression of functional dyspepsia [7]. The expected findings of this study suggest that unhealthy lifestyle habits—such as smoking, alcohol consumption, and late-night eating—are positively associated with increased severity of functional dyspepsia symptoms, while healthy

behaviors, particularly regular consumption of fruits and vegetables, may have a protective effect. These results have important implications for preventive healthcare, as they emphasize the need for lifestyle modification and health education among students. Ultimately, the study contributes to improving early diagnosis, reducing symptom burden, and enhancing the overall quality of life in young populations [8].

Materials and Methods

A survey was conducted among 105 students at the Federal State Budgetary Educational Institution of Higher Education Irkutsk State Medical Academy (FSBEI VO Irkutsk State Medical Academy, Russian Ministry of Healthcare), aged 20.2 ± 0.18 years.

Including 35 first-year students (18.3 ± 0.07 years), 35 fourth-year students (21.4 ± 0.15 years), and 35 sixth-year students (23.4 ± 0.19 years). The survey was conducted using the Gastrointestinal Symptom Rating Scale (GSRS)[10]. The GSRS consists of 15 items, which are converted into five scales: abdominal pain, reflux syndrome, diarrhea syndrome, dyspeptic syndrome, and constipation syndrome. Scale scores range from 1 to 7, with higher values corresponding to more severe symptoms and a lower quality of life. An additional questionnaire was administered to assess the influence of external factors on the course of functional dyspepsia (diet, bad habits, constitutional characteristics, place of residence, financial situation, past illnesses, heredity, and exposure to stressful situations). Questions verifying functional dyspepsia variants were also added to the questionnaire.

Statistical processing of the results included the calculation of mean values, standard errors, and the correlation coefficient.

Results and Discussion

Based on the clinical syndromes identified using the GSRS questionnaire and an analysis of the compliance of responses to additional questionnaire questions with the Rome IV criteria, the main functional dyspepsia variants were verified: postprandial distress syndrome and epigastric pain syndrome [9]. The study found that the intensity of epigastric pain syndrome decreases from the first to the sixth year of study, while postprandial distress syndrome is more pronounced in fourth-year students [10]. Based on the calculated correlation between factors influencing the severity of clinical variants of functional dyspepsia, the following characteristics were identified: first-year students showed a moderate correlation between the severity of epigastric pain syndrome and the number of cigarettes smoked (r=0.37), anemia (0.34), eating before bedtime (0.38), and frequency of fruit and vegetable consumption (-0.31); postprandial distress syndrome and anemia (0.33), eating with alcohol (0.31), eating before bedtime (0.3), and frequency of fruit and vegetable consumption (-0.21). Fourth-year students showed a moderate correlation between the following characteristics: epigastric pain syndrome and anemia (0.31) and frequency of meat consumption (-0.31) [11-13]. No correlation was found between postprandial distress syndrome and the analyzed factors in this subgroup. The following correlations were found for sixth-year students: between epigastric pain syndrome and eating before bedtime (0.33), anemia (0.32), postprandial distress syndrome and eating alcohol (0.32), anemia (0.38), eating before bedtime (0.34), frequency of chewing gum (0.32), and frequency of fresh fruit and vegetable consumption (-0.43). Factors such as constitutional characteristics, place of residence, financial situation, previous illnesses, heredity, and exposure to stress showed weak correlations with manifestations of functional dyspepsia [14][15].

Conclusion

The findings of this study demonstrate that unhygienic lifestyle habits, including smoking, alcohol consumption, chewing gum, and eating before bedtime, have a significant negative impact on the digestive system and act as important risk factors for the development of functional dyspepsia among students. At the same time, the results reveal an inverse relationship between the frequency and severity of functional dyspepsia symptoms and the regular consumption of fruits and vegetables, indicating the protective role of healthy dietary patterns. These findings highlight the critical importance of lifestyle modification in the prevention and management of functional gastrointestinal disorders, particularly within young and student populations. The implications of this study suggest that targeted health education programs, promotion of balanced nutrition, and reduction of harmful habits can contribute to improving gastrointestinal health and overall quality of life. Furthermore, the results support the need for integrating preventive

strategies into student healthcare systems. However, considering the limitations related to sample size and population specificity, further research is recommended to expand the scope of investigation, including larger and more diverse populations, longitudinal study designs, and deeper analysis of psychosocial and environmental factors influencing functional dyspepsia.

References

[1] K. B. Murodov, "Modern views on the morphological structure of bacterial species," European Journal of Modern Medicine and Practice, vol. 4, no. 10, pp. 206–203, 2024.
[2] K. B. Murodov, "Features of the complex technology of rice grain processing," Новости образования: исследование в XXI веке, vol. 3, no. 32, pp. 578–581, 2025.
[3] K. Murodov, "Diseases of the upper respiratory tract in livestock as a result of work on livestock farms," Modern Science and Research, vol. 3, no. 11, pp. 676–685, 2024.
[4] K. Murodov, "Changes in the psychohygiene of students during educational courses and their correction," Modern Science and Research, vol. 3, no. 12, pp. 475–484, 2024.
[5] K. Murodov, "Microbiological study of objects in environmental food production," Modern Science and Research, vol. 4, no. 1, pp. 445–453, 2025.
[6] K. Murodov, "Healthy lifestyle as a method for the prevention of dental diseases in children," Modern Science and Research, vol. 4, no. 2, pp. 789–800, 2025.
[7] World Health Organization, WHO Traditional Medicine Strategy 2014–2023. Geneva, Switzerland: WHO Press, 2013.
[8] A. A. Ibn Sina, The Canon of Medicine (Al-Qanun fi al-Tibb), translated ed.
[9] Ministry of Health of the Republic of Uzbekistan, Regulatory framework for traditional medicine practice. Tashkent, Uzbekistan, 2020.
[10] Uzbekistan Association of Traditional Medicine, Concept and roadmap for the development of traditional medicine in Uzbekistan. Tashkent, Uzbekistan, 2021.
[11] E. Ernst, "The role of complementary and alternative medicine in healthcare," British Medical Journal, vol. 321, pp. 1133–1135, 2000.
[12] G. Bodeker, C. K. Ong, C. Grundy, et al., WHO Global Atlas of Traditional, Complementary and Alternative Medicine. Geneva, Switzerland: WHO, 2005.
[13] World Health Organization, "Traditional, complementary and integrative medicine," WHO, 2019.
[14] National Center for Complementary and Integrative Health, "Complementary, alternative, or integrative health: What's in a name?" NCCIH, 2021.
[15] P. M. Barnes, B. Bloom, and R. L. Nahin, "Complementary and alternative medicine use among adults and children," National Health Statistics Reports, no. 12, pp. 1–23, 2008.