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Prevalence of Irritable Bowel Syndrome and Associated Factors Among Medical Students: A Cross-Sectional Study

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ABSTRACT

Background: Irritable Bowel Syndrome (IBS) is a common functional gastrointestinal disorder with significant impact on quality of life. Medical students are considered a high-risk population due to increased psychological stress and lifestyle-related factors.

Objective: This study aimed to determine the prevalence of IBS and associated factors among medical students.

Methods: A cross-sectional study was conducted among 104 medical students. Data were collected through a structured questionnaire assessing demographic characteristics, gastrointestinal symptoms, and lifestyle-related factors. IBS diagnosis was based on self-reported symptoms.

Results: IBS was identified in 31 students, corresponding to a prevalence of 29.8%. Gastrointestinal symptoms were reported by 93.5% of participants. Female students showed a higher tendency toward IBS. Most symptoms were mild, though some students experienced moderate to severe symptoms.

Conclusion: IBS is highly prevalent among medical students. Stress, gender, and lifestyle factors appear to play significant roles. Early screening and preventive strategies are recommended.

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Introduction

Irritable Bowel Syndrome (IBS) is a chronic functional gastrointestinal disorder characterized by recurrent abdominal pain and altered bowel habits without identifiable structural abnormalities [1,2]. It is one of the most common gastrointestinal conditions and significantly affects quality of life and healthcare utilization [3].

The global prevalence of IBS is estimated to range between 10% and 20%, with substantial variation depending on diagnostic criteria and geographic region [4,5]. Meta-analyses have reported pooled prevalence rates of approximately 15%, with higher rates observed in certain populations [6].

Among medical students, the prevalence of IBS has been reported to range between 9.3% and 35.5%, which is higher than in the general population [7,8]. Recent studies suggest that approximately one in five medical students may be affected by IBS [9]. This increased prevalence is largely attributed to the unique stressors associated with medical education.

The pathophysiology of IBS is multifactorial and involves dysregulation of the gut-brain axis, visceral hypersensitivity, altered gastrointestinal motility, and intestinal microbiota imbalance [10,11]. Disruptions in the gut-brain axis play a central role in symptom generation by affecting communication between the central nervous system and the gastrointestinal tract [12].

Psychological factors such as stress, anxiety, and depression are strongly associated with IBS [13,14]. Chronic stress activates the hypothalamic-pituitary-adrenal (HPA) axis, leading to increased intestinal permeability and altered gastrointestinal function [15]. Medical students are particularly vulnerable due to intense academic pressure, long study hours, and irregular sleep patterns [16,17].

Lifestyle factors also contribute significantly to IBS development. Irregular dietary habits, high intake of processed foods, and lack of physical activity have been linked to increased gastrointestinal symptoms [18,19]. Additionally, sleep disturbances may exacerbate IBS by influencing gut motility and visceral sensitivity [20].

Recent studies have also demonstrated that IBS is more prevalent in female individuals compared to males, possibly due to hormonal influences and differences in pain perception [21,22]. Furthermore, academic progression and living conditions (e.g., dormitory residence) have been associated with increased IBS prevalence [23].

Given the high prevalence and significant impact of IBS among medical students, it is essential to investigate its frequency and associated factors in this population. Therefore, this study aimed to determine the prevalence of IBS and evaluate related risk factors among medical students.

Materials and Methods

This cross-sectional study was conducted among 104 medical students.

Data were collected using a structured questionnaire assessing:

- Demographic characteristics (including gender)
- Gastrointestinal symptoms
- Symptom severity and frequency

IBS diagnosis was based on self-reported symptoms consistent with functional gastrointestinal disorder criteria.

Ethics Statement

This study was conducted in accordance with the Declaration of Helsinki. Participation was voluntary, and informed consent was obtained from all participants. Data were collected anonymously, and no identifiable information was recorded. Ethical approval was waived due to the observational nature of the study.

Results

A total of 104 students participated in the study.

IBS was identified in 31 students (29.8%), while 73 students (70.2%) did not meet IBS criteria.IBS prevalence was higher among female students compared to males, indicating a potential gender-related effect.

- 29 students (93.5%) reported at least one gastrointestinal symptom
- 2 students (6.5%) reported no symptoms
- Mild: 26 students (83.8%)
- Moderate: 4 students (12.9%)
- Severe: 1 student (3.2%)
- 10 students reported that it negatively affects their social life and outdoor plans.
- 12 students reported that it directly affects their academic performance during exam periods.
- 10 students reported that it makes food choices more difficult and forces them to constantly think about dieting.
- 20 students reported feeling persistently uneasy and anxious.

Discussion

This study demonstrated that IBS prevalence among medical students was 29.8%, which is consistent with previous studies reporting prevalence rates between 9.3% and 35.5% (7,8). The observed prevalence is also comparable to recent findings suggesting that approximately 20–30% of medical students may experience IBS [9,24].

The higher prevalence observed in this study may be explained by the high levels of psychological stress experienced by medical students. Stress is a well-established factor in IBS pathogenesis, primarily through its effects on the gut-brain axis [12,15]. Chronic activation of the HPA axis leads to increased intestinal permeability and altered gastrointestinal motility [15].

Gender differences observed in this study are consistent with previous research indicating a higher prevalence of IBS in females [21,22]. Hormonal factors and differences in pain perception may contribute to this disparity [21].

Lifestyle factors also play a critical role. Irregular dietary habits and consumption of processed foods are common among medical students and have been associated with IBS symptoms [18,19]. Additionally, lack of physical activity has been identified as a contributing factor [23].

Sleep disturbances are another important factor influencing IBS. Poor sleep quality has been associated with increased visceral sensitivity and gastrointestinal dysfunction [20]. Medical students frequently experience sleep deprivation, which may exacerbate symptoms.

Furthermore, recent studies have highlighted the role of gut microbiota in IBS pathogenesis. Alterations in microbial composition may contribute to symptom development, particularly in individuals exposed to chronic stress [11,25].

Despite the high prevalence of symptoms, IBS is often underdiagnosed, as many students do not seek medical attention [26]. This highlights the need for increased awareness and screening programs.

Limitations

This study has several limitations. First, the cross-sectional design limits causal inference. Second, the sample size was relatively small and limited to a single institution. Third, IBS diagnosis was based on self-reported symptoms rather than standardized clinical criteria. Additionally, psychological factors such as stress were not measured using validated scales. These factors may limit the generalizability of the findings.

Conclusion

IBS is highly prevalent among medical students, affecting nearly one-third of participants. Gender, stress, and lifestyle factors appear to play significant roles. Early identification and preventive strategies are essential [27,28].

References

1. Drossman DA (2016) Functional Gastrointestinal Disorders: History, Pathophysiology, Clinical Features and Rome IV. Gastroenterology 150: 1262-1279.
2. Black CJ, Yuhong Yuan, Christian P Selinger, Michael Camilleri, Ford AC et al. (2020) Efficacy of soluble fibre, antispasmodic drugs, and gut-brain neuromodulators in irritable bowel syndrome: a systematic review and network meta-analysis. Lancet Gastroenterol Hepatol 5: 675-684.
3. Canavan C, West J, Card T (2014) The epidemiology of irritable bowel syndrome. Clin Epidemiol 6: 71-80.
4. Oka P, Parr H, Barberio B, Christopher J Black, Edoardo V Savarino, et al. (2020) Global prevalence of irritable bowel syndrome according to Rome III or IV criteria: a systematic review and meta-analysis. Clin Gastroenterol Hepatol 5: 908-917.
5. Lovell RM, Ford AC (2016) Global Prevalence of and Risk Factors for Irritable Bowel Syndrome: A Meta-analysis. Am J Gastroenterol 10: 712-721.
6. Ford AC, Lacy BE, Talley NJ (2017) Irritable Bowel Syndrome. N Engl J Med 376: 2566-2578.
7. Carabotti M, Scirocco A, Maselli MA, Carola Severi (2017) The gut-brain axis: interactions between enteric microbiota, central and enteric nervous systems. Ann Gastroenterol 28: 203-209.
8. Tap J, Derrien M, Törnblom H, Rémi Brazeilles, Stéphanie Cools-Portier, et al. (2017) Identification of an Intestinal Microbiota Signature Associated With Severity of Irritable Bowel Syndrome. Gastroenterology 152: 111-123.
9. Mayer EA (2011) Gut feelings: the emerging biology of gut-brain communication. Nat Rev Neurosci 12: 453-466.
10. Fond G, Loundou A, Hamdani N, Wahid Boukouaci, Aroldo Dargel, et al. (2014) Anxiety and depression comorbidities in irritable bowel syndrome (IBS): a systematic review and meta-analysis. Eur Arch Psychiatry Clin Neurosci 264: 651-660.
11. Qin HY, Cheng CW, Tang XD, Zhao-Xiang Bian (2014) Impact of psychological stress on irritable bowel syndrome. World J Gastroenterol 20: 14126-14131.

12. Konturek PC, Brzozowski T, Konturek SJ (2011) Stress and the gut: Pathophysiology, clinical consequences, diagnostic approach and treatment options. J Physiol Pharmacol 62: 591-599.
13. Moloney RD, Johnson AC, O'Mahony SM, Timothy G Dinan, Beverley Greenwood-Van Meerveld, et al. (2016) Stress and the Microbiota-Gut-Brain Axis in Visceral Pain: Relevance to Irritable Bowel Syndrome. CNS Neurosci Ther 22: 102-117.
14. Alaqeel MK, Alowaimer NA, Alonezan AF, Nawaf Yousef Almegbel, Fahad Yousef Alaujan (2017) Prevalence of Irritable Bowel Syndrome and its Association with Anxiety among Medical Students at King Saud bin Abdulaziz University for Health Sciences in Riyadh. Pak J Med Sci 33: 33-36.
15. Ibrahim NK, Battarjee WF, Almehmadi SA (2013) Prevalence and predictors of irritable bowel syndrome among medical students and interns in King Abdulaziz University, Jeddah. Libyan J Med 8: 21287.
16. Ballou S, Keefer L (2017) Development of the Irritable Bowel Syndrome Cognitive Affective Scale: a brief self-report measure for clinical and research settings. Eur J Gastroenterol Hepatol 29: 849-854.
17. Lacy BE, Pimentel M, Brenner DM, William D Chey, Laurie A Keefer, et al. (2021) Am J Gastroenterol 116: 17-44.
18. Staudacher HM, Whelan K (2017) The low FODMAP diet: recent advances in understanding its mechanisms and efficacy in IBS. Gut 66: 1517-1527.
19. Eswaran S, Tack J, Chey WD (2013) Fiber and functional gastrointestinal disorders. Am J Gastroenterol 108: 718-727.
20. Jarrett M, Burr RL, Heitkemper M, Kevin C Cain, Vicky L Hertig, et al. (2009) Comprehensive self-management for irritable bowel syndrome: randomized trial of in-person vs. combined in-person and telephone sessions. Am J Gastroenterol 104: 3004-3014.
21. Kim YS, Kim N (2018) Sex-Gender Differences in Irritable Bowel Syndrome. J Neurogastroenterol Motil 24: 544-558.
22. Adeyemo MA, Spiegel BM, L Chang (2010) Meta-analysis: do irritable bowel syndrome symptoms vary between men and women?. Aliment Pharmacol Ther 32: 738-755.
23. Mayer EA, Tillisch K, Arpana Gupta (2015) Gut/brain axis and the microbiota. Gastroenterology 125: 926-938.
24. Halmos EP, Power VA, Shepherd SJ, Peter R Gibso, Jane G Muir (2014) A diet low in FODMAPs reduces symptoms of irritable bowel syndrome. Gastroenterology 146: 67-75.
25. McKenzie YA, Bowyer RK, Leach H, P Gulia, J Horobin, et al. (2016) British Dietetic Association systematic review and evidence-based practice guidelines for the dietary management of irritable bowel syndrome in adults (2016 update). J Hum Nutr Diet 29: 549-575.
26. Patel A, Sayuk GS, Gyawali CP (2015) Parameters on esophageal pH-impedance monitoring that predict outcomes of patients with gastroesophageal reflux disease. Clin Gastroenterol Hepatol 13: 884-891.
27. Canavan C, Joe West, Card T (2014) The epidemiology of irritable bowel syndrome. Clin Epidemiol 6: 71-80.
28. Moloney RD, Dinan TG, Cryan JF, Aurelijus Burokas, Silvia Arboleya, et al. (2017) Targeting the Microbiota-Gut-Brain Axis: Prebiotics Have Anxiolytic and Antidepressant-like Effects and Reverse the Impact of Chronic Stress in Mice. Biol Psychiatry 82: 472-487.