

International Journal of Gastroenterology Research



E-ISSN: 2664-6447

P-ISSN: 2664-6439

www.gastroenterologyjournal.in

Gastro 2025; 7(1): 06-11

Received: 07-11-2024

Accepted: 13-12-2024

**Dr. Mohammed Shafiqul Islam
Bhuiyan**

Associate Professor,
Department of
Gastroenterology, Us-Bangla
Medical College Hospital,
Dhaka, Bangladesh

Dr. Mohammad Abu Faisal

Assistant Professor,
Department of
Gastroenterology, Cox's Bazar
Medical College, Cox's Bazar,
Bangladesh

Dr. Md. Shahidur Rahman

Associate Professor,
Department of
Gastroenterology, Manikganj
Medical College, Dhaka,
Bangladesh

Dr. Md. Rafiqul Islam

Associate Professor,
Department of
Gastroenterology, Patuakhali
Medical College Hospital,
Patuakhali, Bangladesh

Corresponding Author:

**Dr. Mohammed Shafiqul Islam
Bhuiyan**

Associate Professor,
Department of
Gastroenterology, Us-Bangla
Medical College Hospital,
Dhaka, Bangladesh
E-mail:

Shafiqparvez37@gmail.com

Sociodemographic and endoscopic profile of symptomatic gastroesophageal reflux disease patients in a tertiary care hospital in Bangladesh

**Mohammed Shafiqul Islam Bhuiyan, Mohammad Abu Faisal, Md.
Shahidur Rahman and Md. Rafiqul Islam**

DOI: <https://doi.org/10.33545/26646439.2025.v7.i1.a.7>

Abstract

Background: Gastroesophageal reflux disease (GERD) is a prevalent condition that often leads to significant morbidity if left untreated. Endoscopy plays a critical role in diagnosing GERD, helping to identify complications like esophagitis, Barrett's esophagus, and strictures. This study aimed to analyze the sociodemographic characteristics and endoscopic findings of symptomatic GERD patients in a tertiary care hospital in Bangladesh.

Methods: This observational, cross-sectional study was conducted at the Department of Gastroenterology & Department of Pathology of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from November 2010 to April 2012. A total of 126 patients with symptomatic gastroesophageal reflux disease were enrolled purposively. Need-based endoscopy, biopsy, and histological examination were performed for the participants. Data were analyzed by using MS Office tools.

Results: The study involved 126 participants (56.3% female, 43.7% male, mean age 33.52 ± 10.55 years). Most patients were from rural areas (53.2%) and lower-middle-class families (75.4%). Forty-five percent used NSAIDs and 70% of participants who were female used oral contraceptives. The majority had a normal BMI (68.3%). Endoscopic findings showed 47.6% with suspected Barrett's esophagus, with 75% having short-segment Barrett's, 16.67% long-segment, and 8.33% ectopic mucosal islands. Of 126, 21 (16.7%) were histologically confirmed with Barrett's esophagus: 71.4% short-segment, 14.3% long-segment, and 14.3% ectopic islands.

Conclusion: Most participants were from rural, lower-middle-class families. Many used NSAIDs and oral contraceptives. Endoscopy showed a significant presence of suspected Barrett's esophagus in short segments. Early detection and regular screening for high-risk groups are recommended.

Keywords: Barrett's, ectopic mucosal islands, endoscopy, gastroesophageal reflux disease, GRD, sociodemographic status

Introduction

Gastroesophageal reflux disease (GERD) is a chronic condition characterized by the reflux of gastric contents into the esophagus, leading to symptoms such as heartburn, regurgitation, and chest pain. It is a major health concern worldwide, with increasing prevalence and a significant impact on quality of life [1]. GERD is not only associated with esophageal symptoms but also has extraesophageal manifestations such as cough, laryngitis, and asthma [2]. In severe cases, GERD can lead to complications such as esophagitis, peptic stricture, Barrett's esophagus, and even esophageal cancer [3]. Therefore, understanding the sociodemographic and clinical profiles of patients with GERD is essential for early diagnosis, appropriate management, and preventing long-term complications. The prevalence of GERD varies across different regions and populations. In developed countries, the incidence has been rising, potentially due to lifestyle factors such as obesity, high-fat diets, and sedentary behavior [4]. In contrast, studies from low- and middle-income countries, including Bangladesh, have reported relatively lower prevalence rates, although the disease burden is rising as urbanization and lifestyle changes progress [5]. In Bangladesh, GERD is often underdiagnosed due to a lack of awareness and resources for advanced diagnostic tools such as endoscopy. Endoscopy, however, remains the gold standard for diagnosing and assessing the severity of GERD, particularly in patients with alarm symptoms, such as

dysphagia, weight loss, or bleeding [6]. Sociodemographic factors, including age, gender, occupation, and socioeconomic status, have been shown to influence the prevalence and severity of GERD. Several studies have reported a higher prevalence of GERD in middle-aged adults [7]. Additionally, GERD is more common in individuals with certain lifestyle factors, such as smoking, alcohol consumption, and poor dietary habits [8]. Gender differences also exist, with some studies indicating a higher prevalence of GERD among women, especially during pregnancy [9]. The endoscopic profile of GERD patients can provide important insights into the severity of the disease. Endoscopy can reveal mucosal changes such as esophagitis, erosions, and ulcers, which are indicative of advanced disease. In some cases, Barrett's esophagus, a premalignant condition, can be detected, highlighting the importance of early intervention in high-risk patients [10]. However, the relationship between clinical symptoms and endoscopic findings is often weak, as many patients with symptomatic GERD may not show significant endoscopic abnormalities [11]. This disconnect underscores the need for further research to better correlate symptoms with endoscopic outcomes and to identify patient subgroups at higher risk for severe disease. This study aimed to assess the sociodemographic and endoscopic profiles of symptomatic GERD patients in a tertiary care hospital in Bangladesh. By examining factors such as age, gender, lifestyle, and clinical presentation, alongside endoscopic findings, this research seeks to improve understanding of the disease burden in Bangladesh and identify key factors that may influence the management and prevention of GERD-related complications.

Methodology

This was an observational, cross-sectional study conducted at the Department of Gastroenterology and the Department of Pathology of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, from November 2010 to April 2012. A total of patients with symptomatic gastroesophageal reflux disease (GERD) were enrolled purposively. Endoscopy, biopsy, and histological examination were conducted based on the needs of the patients. The inclusion criteria for this study included patients aged 18-60 years with GERD symptoms, ambulatory patients of both sexes and those willing to undergo upper GI endoscopy and biopsy. The study was approved by the ethical committee of the mentioned

hospital. As per the inclusion criteria, patients aged 18-60 years with GERD symptoms, ambulatory patients of both sexes and those willing to undergo upper GI endoscopy and biopsy were included. The exclusion criteria included patients who failed to provide informed consent, were under 18 years of age, had contraindications for performing upper GI endoscopy and oesophageal biopsy, had a history of oesophageal carcinoma, or had pulmonary or musculoskeletal disorders of the chest. Data were analyzed using MS Office tools.

Results

In this study, the mean age of participants was 33.52 ± 10.55 years. The majority of subjects (34.9%) belonged to the 25-35 year's age group, while the smallest proportion (15.1%) was from the above-45 year's age group. Out of 126 subjects, 71 (56.3%) were female and 55 (43.7%) were male; the male-female ratio was 0.77: 1. We observed that most of the patients, (53.2%) came from rural areas and 46.8% came from urban areas. In analyzing the occupational status of the participants, we observed that half of the participants (50.0%) were housewives and 15.9% were students. More than three-fourths of our participants (75.4%) were from lower middle-class families. Among the respondents 15.1% were smokers and 14.3% were betel leaf with tobacco chewer. Among the respondents, 45.2% reported using NSAIDs, while 70% of the participants who were female used oral contraceptive pills (OCP). The majority of patients took anti-ulcer medications, including 91.3% on proton pump inhibitors (PPI) and 17.5% on H2 receptor antagonists. Most of the study population (68.3%) had a normal BMI (18–25 kg/m²), while 23% were overweight (26–30 kg/m²), 0.8% were obese (>30 kg/m²), and 7.9% were underweight (<18 kg/m²). Among the 126 participants, 60 (47.6%) were identified as having endoscopically suspected Barrett's esophagus (ESBE), while the remaining 66 (52.4%) were categorized as non-Barrett's. Of the 60 ESBE cases, 75% presented with short-segment Barrett's esophagus, 16.67% with long-segment Barrett's, and 8.33% exhibited ectopic mucosal islands. Out of the 126 individuals included in the study, 21 (16.7%) were histologically confirmed to have Barrett's esophagus (BE), while the remaining 105 (83.3%) were categorized as non-Barrett's. Among the 21 BE cases, 71.4% were diagnosed with short-segment BE, 14.3% with long-segment BE, and 14.3% presented with ectopic mucosal islands.

Table 1: Age distribution of patients (N=126)

Age (Years)	n	%
≤25 Yrs.	33	26.2%
25-35 Yrs.	44	34.9%
35-45 Yrs.	30	23.8%
>45 Yrs.	19	15.1%

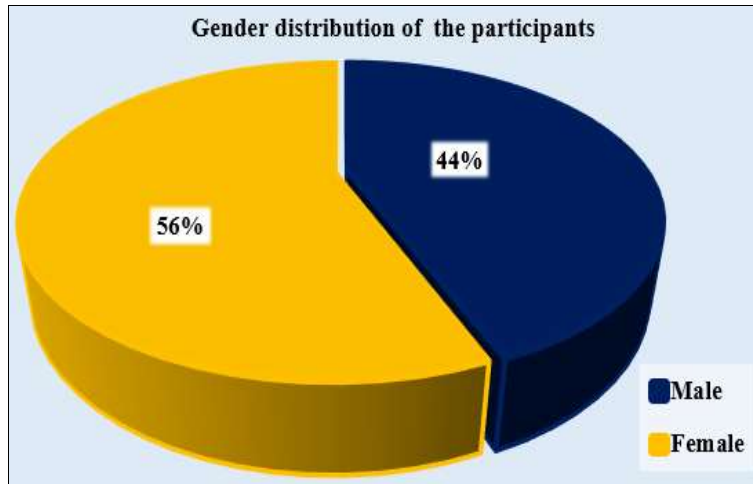


Fig 1: Pie chart showed gender wise patients distribution (N=126)

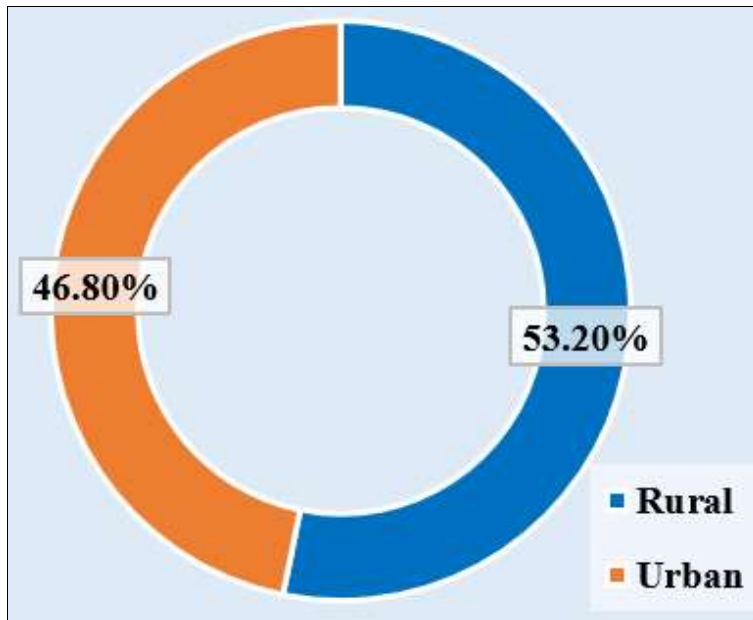


Fig 2: Ring chart showed residency wise patients distribution (N=126)

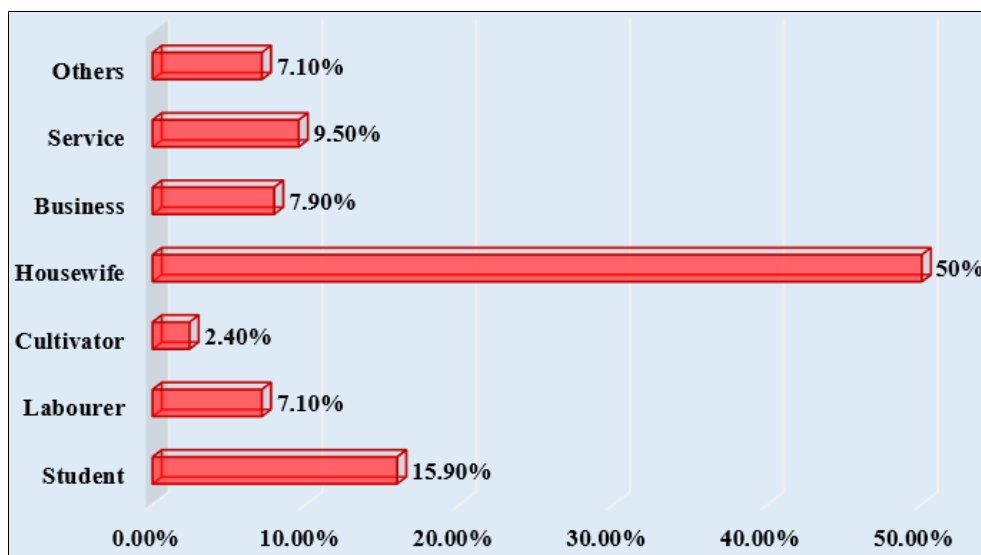


Fig 3: Bar chart showed occupational status of the patients (N=126)

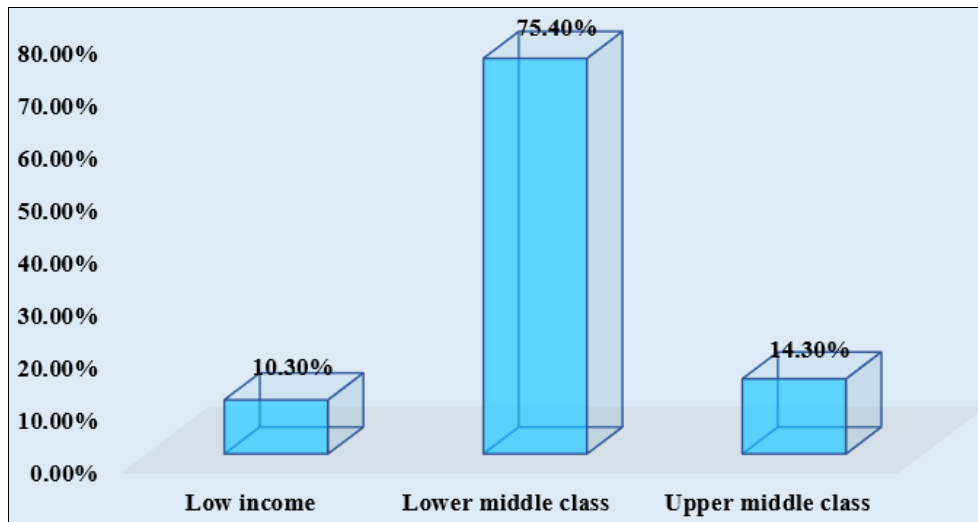


Fig 4: Column chart showed family income status of the patients (N=126)

Table 2: Distribution of personal habits (N=126)

Habit	n	%
Cigarettes smoking	19	15.1%
Betel leaf and tobacco	18	14.3%

Table 3: Distribution of drug-history (N=126)

Drugs-history	n	%
NSAIDS	57	45.2%
H2 antagonist	22	17.5%
PPI	115	91.3%
OCP	50	70.4%

Table 4: Body weights as per BMI (N=126)

Status	n	%
Underweight	10	7.9%
Normal	86	68.3%
Overweight	29	23.0%
Obese	1	0.8%

Table 5: Distribution of endoscopic findings (N=126)

Endoscopy findings		n	%
Barrett's	Long Segment	10	16.67
	Short Segment	45	75
	EMI	5	8.33
Non-Barrett's		66	52.4
Total		126	100

Table 6: Distribution of histopathology findings

Histopathology findings	Frequency	Percent
Barrett's	21	16.7
Long Segment	3	14.3
Sort Segment	15	71.4
Ectopic mucosal Islands	3	14.3
Non-Barrett's	105	83.3
Total	126	100

Discussion

In this study, the mean age of participants with symptomatic gastroesophageal reflux disease (GERD) was 33.52±10.55 years, with the majority (34.9%) in the 25–35 year’s age group and the smallest proportion (15.1%) in the above-45 year’s age group. A similar finding was reported in a study examining the changing epidemiology of GERD, where a significant increase in the proportion of younger patients,

particularly those aged 30–39 years, was observed [12]. However, a contrasting finding was noted in a study on GERD prevalence among diabetic patients, which reported that GERD was more common in individuals over 65 years old, with a mean age of 55.27 years [13]. These variations highlight differences in age distribution among GERD patients across diverse populations and settings. In our study of 126 subjects with symptomatic gastroesophageal reflux disease (GERD), the majority were female, resulting in a male-to-female ratio of 0.77:1. This finding aligns with previous research [14] indicating a higher prevalence of symptomatic GERD among women. We observed that most of our patients came from rural areas, while 46.8% were from urban areas. This contrasts with findings from other studies [5, 15] in Bangladesh, which have reported a higher prevalence of GERD in urban populations. In our study, we observed that half of the participants were housewives. This finding aligns with previous research [16] conducted in Bangladesh, which reported a significant association between gastroesophageal reflux disease (GERD) and housewives. More than three-fourths of our participants were from lower middle-class families. A community-based study in a rural Bangladeshi population found that lower family income [17] was a significant risk factor for esophageal symptoms, including GERD. In our study, the majority of patients with gastroesophageal reflux disease (GERD) were on anti-ulcer medications, with 91.3% using proton pump inhibitors (PPIs) and 17.5% using H₂ receptor antagonists (H₂RAs). A meta-analysis [18] comparing these treatments found that standard-dose PPIs were significantly more effective than H₂RAs in healing erosive esophagitis across all grades. In our study, the majority of participants (68.3%) had a normal body mass index (BMI) ranging from 18 to 25 kg/m², while 23% were overweight (26–30 kg/m²), 0.8% were obese (>30 kg/m²), and 7.9% were underweight (<18 kg/m²). This distribution is consistent with findings from a community-based study [19], which reported that 37.4% of participants had a normal BMI, 31% were overweight, 29.8% were obese, and 1.8% were underweight. In our study of 126 participants with gastroesophageal reflux disease (GERD), 60 individuals (47.6%) were identified as having endoscopically suspected Barrett’s esophagus (ESBE), while the remaining 66 (52.4%) were categorized as non-Barrett’s. Among the 60 ESBE cases, 75% presented with short-segment Barrett’s esophagus

(SSBE), 16.67% with long-segment Barrett's esophagus (LSBE), and 8.33% exhibited ectopic mucosal islands. The predominance of SSBE in our cohort aligns with existing literature, which indicates that SSBE is more common than LSBE among patients with Barrett's esophagus. For instance, a study reported that the prevalence of SSBE was greater than that of LSBE in both GERD and non-GERD cohorts [20]. Barrett's esophagus is a known complication of chronic GERD and is considered a precursor to esophageal adenocarcinoma. The identification of Barrett's esophagus, particularly SSBE, underscores the importance of vigilant surveillance and management strategies in patients with GERD to mitigate the risk of progression to malignancy. The presence of ectopic mucosal islands in a subset of our patients further highlights the spectrum of esophageal mucosal changes associated with GERD. These findings emphasize the need for comprehensive endoscopic evaluation in symptomatic patients to detect and appropriately manage such abnormalities. In our study, finally, out of 126 individuals, 21 (16.7%) had histologically confirmed Barrett's esophagus (BE), with 71.4% short-segment BE, 14.3% long-segment BE, and 14.3% ectopic mucosal islands, while 105 (83.3%) were non-Barrett's. Comparatively, a study [21] published in Clinical Gastroenterology and Hepatology reported a BE prevalence of 7% among individuals with GERD symptoms which indicated a lower prevalence than our findings.

Limitation of the study

The study had limitations. A small sample size (126 patients) and short duration restricted its scope. Conducted in a tertiary hospital, the findings may not represent the Bangladeshi population; a community-based study is needed. Dietary habits, which influence Barrett's esophagus progression among GERD patients, were not fully evaluated. Additionally, while four biopsies (One per quadrant) were taken, the standard protocol recommends eight biopsies (Two per quadrant), potentially impacting diagnostic accuracy.

Conclusion & Recommendation

The study highlights the sociodemographic characteristics and endoscopic findings of symptomatic gastroesophageal reflux disease patients in Bangladesh. The majority of participants were from rural areas and lower-middle-class families. A significant proportion used NSAIDs and oral contraceptives. Endoscopic results indicated a notable presence of suspected Barrett's esophagus, primarily in short segments. These findings suggest the importance of early detection and management of gastroesophageal reflux disease. It is recommended to implement regular screening for Barrett's esophagus, especially in high-risk groups.

Conflict of Interest

No conflict of interest

Financial Support

None declared

References

1. Boulton KHA, Dettmar PW. A narrative review of the prevalence of gastroesophageal reflux disease (GERD). *Ann Esophagus*. 2022, 5.
2. Yuksel ES, Vaezi M. Extraesophageal manifestations of

- gastroesophageal reflux disease: cough, asthma, laryngitis, chest pain. *Swiss Med Wkly*. 2012;142(1112):w13544-w13544.
3. Souza RF, Spechler SJ. Mechanisms and pathophysiology of Barrett's esophagus. *Nat Rev Gastroenterol Hepatol*. 2022;19(9):605-620.
4. Khan IA, Malik HI. Role of comprehensive lifestyle interventions in managing gastroesophageal reflux disease complicating COPD-OSA overlap syndrome. *J Gastroenterol Pancreatol Hepatobil Disord*. 2021, 5(1).
5. Shaha M, *et al*. Prevalence and risk factors for gastroesophageal reflux disease in the North-Eastern part of Bangladesh. *Bangladesh Med Res Counc Bull*. 2012;38(3):108-113.
6. And D, *et al*. Diagnosis of gastroesophageal reflux: an update on current and emerging modalities. *Ann NY Acad Sci*. 2020;1481(1):154-169.
7. Okimoto E, *et al*. Prevalence of gastroesophageal reflux disease in children, adults, and elderly in the same community. *J Gastroenterol Hepatol*. 2015;30(7):1140-1146.
8. Zhang M, *et al*. Dietary and lifestyle factors related to gastroesophageal reflux disease: A systematic review. *Ther Clin Risk Manag*. 2021; 17:305-323.
9. Malfertheiner SF, *et al*. Impact of gastroesophageal reflux disease symptoms on the quality of life in pregnant women: a prospective study. *Eur J Gastroenterol Hepatol*. 2017;29(8):892-896.
10. Qu HT, *et al*. Esophageal cancer screening, early detection and treatment: Current insights and future directions. *World J Gastrointest Oncol*. 2024;16(4):1180.
11. Kumar NAVSK, Gandhi MVV, Sri Harsha G. GERD correlation between clinical symptoms and endoscopic findings: a study of 200 patients. *J Evol Med Dent Sci*. 2016;5(81):6038-6042.
12. Yamasaki T, *et al*. The changing epidemiology of gastroesophageal reflux disease: Are patients getting younger? *J Neurogastroenterol Motil*. 2018;24(4):559-569. DOI:10.5056/jnm18140.
13. Altassan FM, *et al*. Prevalence of gastro-esophageal reflux in diabetic patients at a tertiary hospital in Central Saudi Arabia. *Saudi Med J*. 2020;41(2):151-156. DOI:10.15537/smj.2020.2.24844.
14. Kim SY, *et al*. Gender specific differences in prevalence and risk factors for gastro-esophageal reflux disease. *J Korean Med Sci*. 2019;34(21): e158. DOI:10.3346/jkms.2019.34.e158.
15. Rahman KM, *et al*. Community-based descriptive cross-sectional study on prevalence, clinical manifestation, beliefs, and management approach of gastroesophageal reflux disease (GERD) among young Bangladeshi population. *Bangladesh Pharm J*. 2024;27(1):19-36.
16. Rokonzaman SM, *et al*. Epidemiological study of gastroesophageal reflux disease in rural population. *Mymensingh Med J*. 2011;20(3):463-471.
17. Rahman MM, *et al*. Prevalence, risk factors, and healthcare-seeking among subjects with esophageal symptoms: A community-based study in a rural Bangladeshi population. *JGH Open*. 2020;4(6):1167-1175. DOI:10.1002/jgh3.12417.
18. Wang WH, *et al*. Head-to-head comparison of H2-receptor antagonists and proton pump inhibitors in the

- treatment of erosive esophagitis: a meta-analysis. *World J Gastroenterol.* 2005;11(26):4067-4077. DOI:10.3748/wjg.v11.i26.4067.
19. Ghosh DK, *et al.* Gastroesophageal reflux disease: prevalence and its risk factors in rural Bangladesh. *Bangladesh Med Res Counc Bull.* 2018;44(1):45-51.
 20. Saha B, *et al.* Prevalence of Barrett's esophagus and esophageal adenocarcinoma with and without gastroesophageal reflux: A systematic review and meta-analysis. *Clin Gastroenterol Hepatol.* 2024;22(7):1381-1394.e7. DOI: 10.1016/j.cgh.2023.10.006.
 21. Saha B, *et al.* Prevalence of Barrett's esophagus and esophageal adenocarcinoma with and without gastroesophageal reflux: a systematic review and meta-analysis. *Clin Gastroenterol Hepatol.* 2024;22(7):1381-1394.

How to Cite This Article

Bhuiyan MSI, Faisal MA, Rahman MS, Islam MR. Sociodemographic and endoscopic profile of symptomatic gastroesophageal reflux disease patients in a tertiary care hospital in Bangladesh. *International Journal of Gastroenterology Research.* 2025; 7(1): 06-11.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.