ISSN 0973-2063 (online) 0973-8894 (print)

Bioinformation 22(10): 7021-7024 (2026)

©Biomedical Informatics (2026)

BIOINFORMATION
Discovery at the interface of physical and biological sciences

BIOMEDICAL INFORMATICS

www.bioinformation.net

Volume 22(10)

Research Article

Received October 1, 2026; Revised October 31, 2026; Accepted October 31, 2026, Published October 31, 2026

DOI: 10.6026/973206300227021

SJIF 2026 (Scientific Journal Impact Factor for 2026) = 8.478
2022 Impact Factor (2023 Clarivate Inc. release) is 1.9

Declaration on Publication Ethics:
The author's state that they adhere with COPE guidelines on publishing ethics as described elsewhere at https://publicationethics.org/. The authors also undertake that they are not associated with any other third party (governmental or non-governmental agencies) linking with any form of unethical issues connecting to this publication. The authors also declare that they are not withholding any information that is misleading to the publisher in regard to this article.

Declaration on official E-mail:
The corresponding author declares that lifetime official e-mail from their institution is not available for all authors

License statement:
This is an Open Access article which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly credited. This is distributed under the terms of the Creative Commons Attribution License

Comments from readers:
Articles published in BIOINFORMATION are open for relevant post publication comments and criticisms, which will be published immediately linking to the original article without open access charges. Comments should be concise, coherent and critical in less than 1000 words.

Disclaimer:
Bioinformation provides a platform for scholarly communication of data and information to create knowledge in the Biological/ Biomedical domain after adequate peer/editorial reviews and editing entertaining revisions where required. The views and opinions expressed are those of the author(s) and do not reflect the views or opinions of Bioinformation and (or) its publisher Biomedical Informatics. Biomedical Informatics remains neutral and allows authors to specify their address and affiliation details including territory where required.

Edited by Ruby Singh
E-mail: bioinformationruby@gmail.com
Citation: Kaur *et al*. Bioinformation 22(10): 7021-7024 (2026)

A cross sectional study on symptoms associated with eating habits and food preferences in gastritis patients

Amandeep Kaur[1], Mohit Madhukar[2,*], Preeti Singh Dhoat[1], Rohit Raina[1], Jagmeet Singh[1], Rajandeep Kaur[1] & Sharanjot Kaur[1]

[1]Department of General Medicine, All India Institute of Medical Sciences, Bathinda, Punjab, India; [2]Department of Pathology, AIIMS Bathinda, Punjab, India; *Corresponding author

Affiliation URL:
https://aiimsbathinda.edu.in/Dept-General-Medicine-24
https://aiimsbathinda.edu.in/Dept-Pathology-9

ISSN 0973-2063 (online) 0973-8894 (print)
Bioinformation 22(10): 7021-7024 (2026)
©Biomedical Informatics (2026)

Author contact:
Amandeep Kaur - E-mail: dramandeepsandhu@gmail.com
Mohit Madhukar - E-mail: drmmgoyal2005@gmail.com
Preeti Singh Dhoat - E-mail: drpreetidhoat@gmail.com
Rohit Raina - E-mail: rohitraina103@yahoo.com
Jagmeet Singh - E-mail: jagmeet.sam57@gmail.com
Rajandeep kaur - E-mail: rajandeep.kaur07@yahoo.com
Sharanjot Kaur - E-mail: sharanjot.88@gmail.com

Abstract:
Gastritis is a common gastrointestinal disorder that poses a significant public health concern worldwide. The global prevalence of gastritis is estimated at 50.8%, compared with 34.7% in developed countries. This study included 282 patients to investigate gastritis and its associated factors. Despite its high prevalence, effective management remains challenging, highlighting the need for comprehensive treatment strategies. Thus, dietary management and patient self-management practices may play an important role in improving symptom control and overall health outcomes.

Keywords: Gastritis, lifestyle, dietary habits, hypertension, alcohol consumption

Background:
Gastritis is one of the most common gastrointestinal disorders and a significant public health concern, adversely affecting the health and quality of life of millions of individuals worldwide. The global prevalence of gastritis is estimated at 50.8%, with a comparatively lower prevalence of 34.7% in developed countries **[1, 2].** In India, the disease imposes a substantial burden, with an estimated incidence of approximately 12.25 lakh cases. Regional variations are evident, with chronic gastritis prevalence reported as 81.54% in Southern India, 46.5% in Maharashtra and 20.37% in North India, highlighting important geographical differences in disease occurrence **[3].** The American College of Gastroenterology defines gastroesophageal reflux disease (GERD) as symptoms or mucosal injury resulting from the reflux of gastric contents into the oesophagus. Gastritis may present as acute, developing rapidly and lasting less than one month, or chronic, progressing gradually and persisting for months or years **[4].** Common clinical manifestations include heartburn, regurgitation, chest pain, epigastric discomfort, nausea and dyspepsia, all of which significantly impair daily functioning and quality of life. Recent evidence suggests that, beyond biological and environmental determinants, lifestyle and dietary habits play a pivotal role in the development and progression of gastritis. Although unhealthy eating patterns, food preferences and irregular meal habits have been implicated, the association between specific dietary factors and individual gastritis symptoms remains inadequately explored. Furthermore, few studies have comprehensively evaluated lifestyle modification and dietary management as preventive and therapeutic strategies **[5, 6].** Therefore, it is of interest to evaluate the relative contribution of socio-cultural, behavioural and dietary factors associated with acute and chronic gastritis to support targeted preventive and management strategies.

Materials and Methods:
This hospital-based cross-sectional study included patients presenting with gastrointestinal symptoms to the Medicine Outpatient Department (OPD). A total of 282 participants were enrolled in the study. Patients aged 18 years and above with symptoms suggestive of gastritis were eligible for inclusion. Patients with other digestive system diseases, including pancreatitis, hepatitis, or cirrhosis, those with cardiac, brain, liver, kidney, or hematopoietic system dysfunction, individuals with severe mental illness and pregnant or breastfeeding women were excluded from the study. Clinically, diagnosed gastritis were analysed by signs and symptoms, such as nausea, vomiting, dull pain, heartburn, abdominal discomfort and loss of appetite in line with the gastrointestinal tract. Previous studies pointed out that nausea, vomiting, dull pain, heart burn; abdominal discomfort and loss of appetite were the signs and symptoms of gastritis **[7, 8]**. The standardized questionnaire was composed of three sections: socio-demographic characteristics; current gastrointestinal symptoms and dietary factors (including eating habits and food preferences). Socio-demographic factors included place of residence, highest level of education, occupation, total family income, alcohol intake and tobacco use. Dietary factors included type of diet, habitual practices and food preferences. Chronic gastritis symptoms were included along with food preferences. For analysing food preferences, all subjects were asked to indicate how much they liked or disliked each food item by using the standard hedonic preference scale. The scale, developed in 1957, is a fully anchored 9-point category scale. +e scale ranges from 1 (dislike extremely) to 9 (like extremely), with a neutral point at 5 (neither like nor dislike). The interviewers judged the food preference of the patients in a unified manner. Scores less than or equal to 5 points were judged as "Yes," and those greater than or equal to 6 points were judged as "No**" [9, 10]**. History of medication especially use of NSAIDs was recorded. Ethical approval was taken from the AIIMS Bathinda ethical committee.

Results:
Out of the 282 cases of gastritis, 59% were males with 41% of the patients being females **(Table 1).** This reveals a higher prevalence of gastritis in males as compared to females and can be attributed to lifestyle and dietary habits. In symptomatology,

most common symptom present in patients was heartburn (89%) followed by nausea (76%), vomiting (64%) and dull pain (59%) **(Table 2).** About 23% of the patients complained of loss of appetite followed by hiccups and abdominal distension (2%). In sociodemographic data, 76% of the patients belonged to the rural areas as compared to 24% of the patients in urban areas. Thid difference as compared to other studies could be due to greater number of rural patients visiting our tertiary care centre as compared to urban population. In associated diseases, hypertension was most common comorbidity associated followed by history of CVS, CVA and Connective tissue diseases. Although gastritis is commonly associated with hypertension, our study had only 12% of the total patients being hypertensives revealing no direct evidence of hypertension and gastritis. Association of gastritis with dietary habits and food preferences has been strongly associated with several studies. Around 56% of the patients had a mixed diet followed by 44% of the patients having a pure vegetarian diet. In dietary habits most, common habit associated with gastritis was irregular mealtimes along (48%) with irregular meal sizes (29%). Eating too fast and eating out in restaurants contributed only in 13% and 10% of the cases **(Table 3)**. Our study reveals a strong association between intakes of caffeinated drinks more, so tea as compared to coffee and spicy and fried foods with gastritis in evidence with several other studies. Alcohol consumption has a strong association with gastritis as alcohol consumption leads to gastric mucosal damage. In our study 63% of the patients consumed alcohol. Out of the total population none of the females provided with a history of alcohol intake whereas 84% of the male population were alcoholics. Increased intake of alcohol is known to attribute to increased incidence of gastritis in males as compared to females in our study. Smoking is associated with an increased incidence of gastritis. But our study had only 19% of the smokers. This can also be attributed to decreased overall smoking rate in our population.

Table 1: Sex distribution of patients

Sex	%age
Males	59%
Females	41%

Table 2: Distribution of symptoms in patients

S. No	Symptom	%age
1	Heartburn	89%
2	Nausea	76%
3	Vomiting	64%
4	Dull pain	59%
5	Loss of appetite	23%

Table 3: Dietary distribution in patients

Sr. No	Characteristics	Variable	Percentage
1.	Diet	Mixed diet	44
		Pure vegetarian diet	56
2.	Dietary habits	Irregular mealtimes	48
		Irregular meal sizes	29
		Eating too fast	13
		Eating out in restaurants	10

Discussion:

The present hospital-based cross-sectional study evaluated symptoms associated with eating habits and food preferences among 282 patients with gastritis. The findings showed that gastritis was more common among males (59%) than females (41%), with heartburn (89%), nausea (76%), vomiting (64%) and dull abdominal pain (59%) being the predominant presenting symptoms. Furthermore, irregular meal timing (48%), irregular meal size (29%), alcohol consumption (63%) and preference for spicy, fried and caffeinated foods were frequently observed among affected individuals. These findings reinforce the important contribution of dietary and lifestyle factors in the occurrence and severity of gastritis. The higher proportion of male patients observed in the present study is consistent with the findings of Feyisa and Woldeamanuel (2021) **[11],** who reported a greater prevalence of gastritis among males in Ethiopia, largely attributed to higher exposure to alcohol consumption, smoking and unhealthy dietary habits. Similarly, the predominance of alcohol intake among male participants in the current study may explain the observed gender difference. Alcohol is known to disrupt the gastric mucosal barrier, increase acid secretion and promote inflammatory changes within the gastric lining, thereby increasing susceptibility to gastritis. Heartburn and nausea were identified as the most common symptoms among study participants. These findings are in agreement with the cross-sectional study by Li *et al.* (2020) **[12],** who evaluated eating habits and food preferences among chronic gastritis patients and reported that epigastria discomfort, heartburn, nausea, abdominal pain and dyspeptic symptoms were strongly associated with irregular dietary practices and unhealthy food preferences. The authors concluded that dietary behaviour significantly influences symptom severity and quality of life among gastritis patients, supporting the observations made in the present study. The present study also identified spicy and fried food consumption together with caffeinated beverages as common dietary preferences among patients with gastritis. Comparable findings were reported by Nehlig (2022) **[13],** who found that frequent intake of spicy foods, high-fat diets, processed foods and caffeinated beverages was significantly associated with worsening dyspeptic symptoms and recurrent gastritis episodes. Their study suggested that these foods increase gastric acid secretion and mucosal irritation, thereby aggravating clinical manifestations. These findings closely parallel the dietary profile observed in the present investigation. Alcohol consumption was reported by nearly two-thirds of the study population and was almost exclusively observed among male participants. Similar findings were described by Liu *et al.* (2024) **[14],** who showed that chronic alcohol consumption independently increased the risk of gastritis through direct mucosal injury, oxidative stress and chronic inflammatory responses. Their multicentre study also reported that individuals consuming alcohol regularly experienced significantly greater symptom severity than non-drinkers, supporting the present observations. Although smoking has traditionally been considered an important risk factor for gastritis, only 19% of patients in the present study reported smoking. This relatively lower prevalence differs from

several previous reports and may reflect regional differences in tobacco consumption patterns. Nevertheless, Chiciudean *et al.* (2025) **[15]** reported that even moderate smoking impairs gastric mucosal blood flow, delays healing and increases susceptibility to chronic gastritis, particularly when combined with unhealthy dietary practices and alcohol intake. Their findings suggest that smoking may exert synergistic effects with other lifestyle factors rather than acting independently.

Conclusion:

Gastritis management requires a comprehensive approach that combines appropriate medical treatment with dietary and lifestyle modifications. Identifying individual food triggers and maintaining a food diary may help patients develop personalized dietary plans and improve symptom control. Patient education and self-management strategies can support better long-term management of gastritis.

References:

[1] Rugge M *et al. Dig Liver Dis* 2020 **18:**488. [PMID: 33785282]
[2] Petrovna LZ *et al. International Journal of Research in Medical Sciences*. 2024 **12**:687. [DOI: 10.18203/2320-6012.ijrms20240507]
[3] https://www.intechopen.com/chapters/19874
[4] Katz PO *et al. Am J Gastroenterol.* 2022 **117**:27. [PMID: 34807007]
[5] Serra K & Servet G. *Turk J Gastroenterol.* 2014 **25:**233. [PMID: 25141310]
[6] Elseweidy M. *Altern Integr Med.* 2017 **6**:1. [DOI: 10.4172/2327-5162.1000231]
[7] Feyisa ZT *et al. PLoS One.* 2021 **16**:e0246619. [PMID: 33561152]
[8] Piessevaux H *et al. Neurogastroenterol Motil.* 2009 **21:**378. [PMID: 19222761]
[9] Feinle-Bisset C & Azpiroz F. *Nat Rev Gastroenterol Hepatol*. 2013 **10:**150. [PMID: 23296252]
[10] Zhao L *et al. Front Med (Lausanne).* 2023 **10**:1178897. [PMID: 37601801]
[11] Feyisa ZT & Woldeamanuel BE. *PLoS One.* 2021 **16:**e0246619. [PMID: 33561152]
[12] Li Y *et al. Evid Based Complement Alternat Med.* 2020 **2020**:5197201**.** [PMID: 32695209]
[13] Nehlig A. *Nutrients.* 2022 **14:**399. [PMID: 35057580]
[14] Kuang W *et al. Front Cell Dev Biol.* 2024 **12:**1513426. [PMID: 39720008]
[15] Chiciudean PL *et al. Life (Basel).* 2025 **15:**1474. [PMID: 41010416]

Caveat Emptor is applicable among the literate community where required and possible. The publisher, its journal, editors and the internal/external reviewers take adequate steps to check, evaluate, correct, edit, revise and improve content where possible and required.