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Research Article

Descriptive Statistical Study of The Number of Cases of Gastrointestinal Ulcers in Dhi Qar Governorate for The Year 2024

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Abstract:

Back ground: The importance of Peptic Ulcer Disease (PUD) on a worldwide scale, highlighting its detrimental impacts on health and connections to elements like Helicobacter pylori infection and lifestyle choices. the necessity of preventative actions and all-encompassing management. This study is crucial to informing healthcare policy and activities in Dhi Qar since, despite international studies, there is still a dearth of understanding of PUD in the area. In order to provide information for clinical practices and public health initiatives, the study is to examine PUD prevalence, related factors, healthcare-seeking behavior, and awareness levels in the Dhi Qar population.

Methodology: Peptic ulcer disease (PUD) prevalence and related factors in Dhi Qar were examined in this cross-sectional study using a validated questionnaire that addressed the demographic criteria listed below. The sociodemographic attributes of age, gender, and place of residence. Clinical characteristics according to the location of the ulcer and infection with *H. pylori*. Behavioral factors or patients' habits of smoking cigarettes and drinking alcohol.A cross-sectional study was conducted at Al-Hasani Teaching Hospital in Dhi Qar in the Endoscopy Department during the period from 2/1/202**4** to 12/1/2024.Descriptive statistical study of the number of cases of gastrointestinal ulcers in Dhi Qar Governorate where the number of patients admitted to the endoscopy. Adults 18 years of age or older who complained of dyspepsia and had an endoscopic evaluation in the endoscopy unit were included in the study. The flat was 1772, and both men and women were involved.

Results: The number of patients admitted to the department was 1772, the number of patients with peptic ulcers according to medical history, tests and endoscopy results was 620 patients with peptic ulcers during this study. The prevalence of peptic ulcers was no statistically significant differences were observed in the rates of digestive system diseases based on Age (P=0.31), Residential area (P=0.6), f Sex (P=0.3). While tatistically significant differences were observed in the rates of digestive system diseases based on Reason for referral (P=0.01), Level of education(P=0.01).

According to studies, smoking is one of the most important risk factors for the occurrence of ulcers, and because the number of smokers is less in society, the same applies to alcohol. Statistically significant differences were observed in the rates of digestive system diseases based on Status of Smoking, Source of drinking water, Hand washing habit before eating and Teeth decay (P=0.01). While no statistically significant differences were observed in the rates of digestive system diseases based on Fast Food, Chips and cakes (P=0.3). gastritis more prevalent infection 28%, Duodenitis recorded that 26% and Gastric ulcer 22%, while the lowest Duodenal ulcer rate recorded that 21%.

Key words: *H. pylori*, gastrointestinal, Endoscopy, Peptic ulcer disease's, Gastritis, duodenitis

Introduction

The main causes of persistent gastritis and peptic ulcer disease are diseases linked to Helicobacter pylori. H. pylori is a major pathogen in the development of gastric mucosa associated lymphoid tissue (MALT) lymphoma and distal gastric adenocarcinoma (1). Any upper abdomen pain that does not manifest as actual clinical symptoms or radiological abnormalities, such as nausea or dyspepsia, is referred to as gastroitis (2). It can be diagnosed by histology, endoscopy, or symptoms. Thus, the term "gastritis" is used to refer to a broad range of conditions, most of which are classified as functional dyspepsia and include gastritis caused by Helicobacter pylori infection, medicines, and stress (3).

Up to 10% of people globally suffer with Peptic Ulcer Disease (PUD), a chronic illness. The collapse of mucosal defenses and the presence of pepsin or stomach acid release are the causes of peptic ulcers. The two main causes of the loss of mucosal resistance to injury are Helicobacter pylori infections and aspirin, in addition to non-steroidal anti-inflammatory medicines (NSAIDs). The stomach epithelium's Muscularis propria layer is affected. The stomach and proximal duodenum are where it typically happens (4).

Helicobacter pylori is a Gram-negative bacterium that harms the stomach epithelium of its human host. By colonizing the gastric epithelium, this dangerous bacteria cause gastritis, an inflammation of the stomach. Gastric MALT lymphoma, gastric adenocarcinoma, and gastric ulcer disease are further adverse outcomes. The emergence of these adverse effects requires the formation of a sustained inflammatory response (5).

Gastroenteritis is a prevalent condition that affects people all over the world. The term "gastritis" has several definitions, such

as a cluster of symptoms, microscopic gastrointestinal inflammation, generally of the mucosa, and an aberrant endoscopic appearance of the stomach. Many patients with gastritis actually show no symptoms at all (6). Gastritis can have a variety of etiologies, each of which is linked to distinct pathological characteristics and clinical manifestations. It has been determined that *H. pylori* play a significant role in the pathophysiology of both gastric atrophy and chronic gastritis (7).

Prior studies have shown that as people age, the prevalence of H. pylori infection rises noticeably. Rather than a later infection acquisition, the main cause of this increase is a birth cohort effect. Early childhood can be the time of an H. pylori infection, and adults may carry the same strain of the bacteria for decades at a time. Significant differences in the prevalence of H. pylori infection between and within nations have been found in a number of investigations (8). Geographical and ethnic distinctions between various groups can be blamed for these discrepancies. Furthermore, a related study connected H. pylori infection to low socioeconomic status, low educational attainment, poor drinking water quality, cramped or subpar living arrangements, and poor hygiene habits. In order to successfully implement health measures to avoid H. pylori-related disorders in the public, seroepidemiological investigations and the identification of potential risk factors associated with H. pylori infection among adults are essential. Additional information regarding the mode of transmission may offer crucial guidance for the successful prevention of H. pylori infection in this specific population (9). In light of the aforementioned concerns, the current study sought to determine the number of gastrointestinal ulcer patients in the Dhi Qar Governorate in 2024 using descriptive statistics. The study's goal is to present an update on PUD as observed in a recently opened endoscopy facility that has been offering continuous, uninterrupted upper gastrointestinal endoscopy (UGIE) services for over 18 years and serves a sizable, multicultural community in the Dhi Qar Governorate. It is hoped that this would help us better understand how the disease's pattern and prevalence change over time.

Materials and Methods

Design of study

A cross-sectional study was conducted at Al-Hasani Teaching Hospital in Dhi Qar in the Endoscopy Department during the period from 2/1/2024 to 12/1/2024.Descriptive statistical study of the number of cases of gastrointestinal ulcers in Dhi Qar Governorate where the number of patients admitted to the endoscopy de adults who were 18 years of age or older and complaining of dyspepsia who were evaluated endoscopically at the endoscopy unit were included in the study. Males and females were included.partment was 1772. Patients who visited the consulting department were excluded from this study, as there were no statistics available for the study in the consulting department, as well as patients who were infected and did not enter the hospital and were diagnosed through private outpatient clinics in Dhi Qar.

Tools and process

Peroral examination After the patients fasted overnight, the same endoscopist used a Huger 2600 gastroscope (Hunger Medical Instruments, Shanghai, China) to conduct UGIE. While tiny intravenous doses of midazolam were occasionally used for sedation, 10% lignocaine spray was typically used to anesthetize the throat. All patients who were sent to the unit underwent endoscopy in the conventional manner following preprocedure evaluation. When necessary, mucosal biopsies were obtained. Written informed consent was provided by each patient. Data processing and retrieval Age, gender, referral facility, endoscopic indications, preprocedure assessment forms, endoscopy registers, and archived copies of printed reports were all retrieved, along with the endoscopy request and completed preprocedure assessment forms, provisional diagnoses, and findings. Histology reports of the biopsies performed during the surgery were also sent to us. We used IBM SPSS version 22 to analyze our data and generate descriptive statistics. For continuous variables, independent sample t-tests were employed, whilst chi-squared tests were performed to evaluate the significance of connections between categorical variables. The threshold for statistical significance was set at $P < 0.05$.

Sample collection

Samples were collected from Al-Hassani Teaching Hospital in the Endoscopy Department based on the records in the department. We also conducted a questionnaire that included the above-mentioned criteria. We interviewed patients admitted to the Endoscopy Department before they underwent endoscopy during the study period. The work took approximately a month . The study's criteria for peptic ulcer patients included sociodemographic details such age, gender, and place of residence. Clinical features according to the ulcer's location and H. pylori infection. behavioral aspects, such as the patients' alcohol and cigarette smoking behaviors.

Definition of terms

Indigestion (dyspepsia): A term for a condition that causes disturbance, pain, discomfort, or discomfort in the stomach or upper abdomen. It is a common condition that can occur at any age.

Peptic ulcer: a disorder where the duodenum, the first segment of the small intestine, the inner lining of the stomach, or occasionally the lower esophagus develops an ulcer or crack.

***H. pylori* bacteria:** Targeting the inside of the stomach, this Gram-negative bacterium settles in the stomach lining's epithelial cells. The stomach lining's cells may become inflamed and destroyed as a result of this infection.

Alarming or dangerous digestive signs and symptoms (Features)

A family history of cancer of the digestive system, frequent vomiting, increasing difficulty swallowing, anemia, weight loss, or bleeding in the stomach (hematemesis or melena) are some of these.

Endoscopy: A method of employing an endoscope to view into

the body for medical purposes. Endoscopes are introduced directly into the organ to be viewed, in contrast to the majority of medical imaging instruments. In situations where using the naked eye is ineffective and a vision-improving equipment is necessary, endoscopes can also be utilized.

Results

After conducting a cross-sectional study in the endoscopy department at Al-Hasani Teaching Hospital for the period from 2/1/202**4** to 12/1/2024, where the number of patients admitted to the department was 1772, the number of patients with peptic ulcers according to medical history, tests and endoscopy results was 620 patients with peptic ulcers during this study, which constitutes 35% of the cases admitted to the endoscopy department for those complaining of indigestion and the worrying or dangerous digestive signs and symptoms mentioned Figure 1

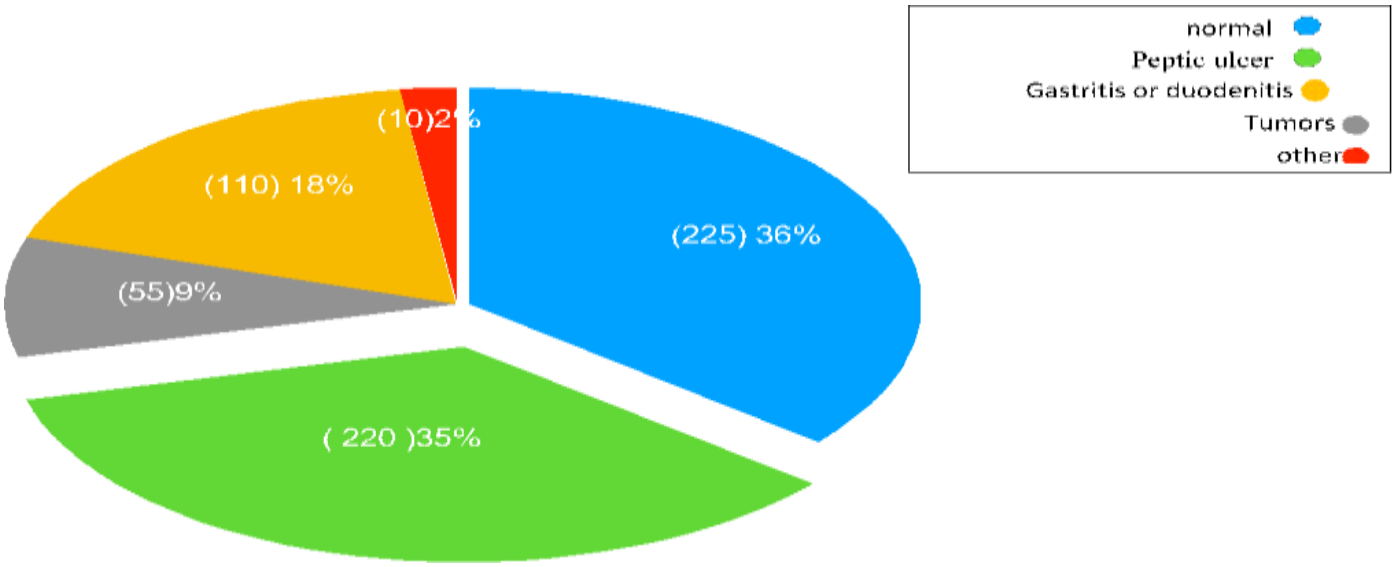

Figure 1 show the results during the study period, where 36% had normal results, 35% had peptic ulcers, and the remaining percentages.

Basic Properties or criteria of 620 patients with digestive system diseases

Table 1: Basic Properties or criteria of 620 patients with digestive system diseases

Properties or criteria	Category	digestive system diseases	Percentage	Chi-Square test	P value
Age	18_28 years	168	27.1%	2.12	0.31
	29-40 years	159	25.7%		
	41-55 years	145	23.4%		
	>55	148	23.8%		
Residential area	Rural	261	42.2%	48.0	0.6
	urban	359	57.8%		
Sex	Female	260	42%	41.8	0.3
	male	360	58%		
Reason for referral	Dysphagia	140	23%	4.2	0.01
	Dyspepsia	105	16%		
	Reflux	85	14%		
	Persistent vomiting	100	16%		
	Hematemesis/melena	75	12%		
	Suspicion of cancer	10	2%		
	Generalized abdominal pain	75	12%		
	Others	10	2%		
	Not specified	20	3%		
Level of education	Illiterate	220	35.5%	2.11	0.01
	Primary School	175	27.5%		
	Secondary School	105	17.5%		
	High School	70	11.5%		
	University	50	8%		

The Chi-Square test (X2) was utilized to calculate the P values. P values less than 0.05 were considered statistically significant

The results for ulcer patients according to the following criteria (age, gender, and residential area) are shown in Table (1).

The peak prevalence of upper gastrointestinal diseases Peptic ulcer was 27.1%in the age group 28_18years, followed by the age group 40-29years (25.7%) and 55-41years (23.4%) and 55> years (23.8%) as shown in(Table 1).

Peptic ulcers were the most common upper gastrointestinal ailment in urban residential areas, with a high incidence of 359 cases (57.8%).Males recorded 360 (58%) more than females, who recoded 260 (42%).Dyspepsia accounted for nearly 23% of patient referrals for endoscopy, while persistent vomiting and dyspepsia accounted for more than a second (6%) of referrals. Merely 2% of patients received referrals due to suspicions of other gastrointestinal conditions.In terms of educational attainment, patients with illiteracy had a high rating of 35.5%, whilst those with university education had a lower rating of 8%. The rates of digestive system disorders by age (P=0.31), residential area (P=0.6), and sex (P=0.3) did not, however, differ statistically significantly. However, statistically significant variations in the prevalence of digestive system disorders were noted according to the reason for referral (P=0.01) and educational attainment (P=0.01).

Patients with digestive system diseases and eating habits

The results were according to the patients' smoking and alcohol habits; Table (2) shows the effect and percentage of smoking and alcohol on the occurrence of ulcers out of the total number of cases 620. According to studies, smoking is one of the most important risk factors for the occurrence of ulcers, and because the number of smokers is less in society, the same applies to alcohol. The percentages were as shown in the table 2. Statistically significant differences were observed in the rates of digestive system diseases based on Status of Smoking, Source of drinking water, Hand washing habit before eating and Teeth decay (*P*=0.01). While no statistically significant differences were observed in the rates of digestive system diseases based on Fast Food, Chips and cakes (*P*=0.3).

Table (2) Patients with digestive system diseases and eating habits

Properties or criteria	Category	digestive system diseases	Percentage	Chi-Square test	P value
Status of Smoking	smokers	508	82%	2.11	0.01
	Non-snokers	112	18%		
Alcohol	drinkers	56	9%		
	non drinkers	564	91%		
Source of drinking water	Tape water	420	68	48.0	0.01
	Mineral water	200	32		
Fast Food	Daily	169	27.5	21.2	0.3
	Weekly	158	25.5		
	Monthly	148	24		
	Occasionally	145	23		
Chips and cakes	Daily	170	27	41.8	0.3
	Weekly	161	26		
	Monthly	153	25		
	Occasionally	136	22		
Hand washing habit before eating	Yes	400	65	2.12	0.01
	No	220	35		
Teeth decay	Yes	410	66	2.8	0.01
	No	210	34		

The Chi-Square test (X2) was utilized to calculate the P values. P values less than 0.05 were considered statistically significant.

Patient distribution based on the type of stomach H. pylori infection

The study reported according to questioner that gastritis more prevalent infection 28%, Duodenitis recorded that 26% and Gastric ulcer 22%, while the lowest Duodenal ulcer rate recorded that 21% as showed in table 3.

Table (3): Patient distribution based on infection kind using the questioner form

Cases	*H. pylori* gastric infection				Total No.
	Gastritis	Duodenitis	Gastric ulcer	Duodenal ulcer	
No.	171	160	159	130	620
%	28	26	25	21	100
X^2: 2.961 P. value < 0.01					

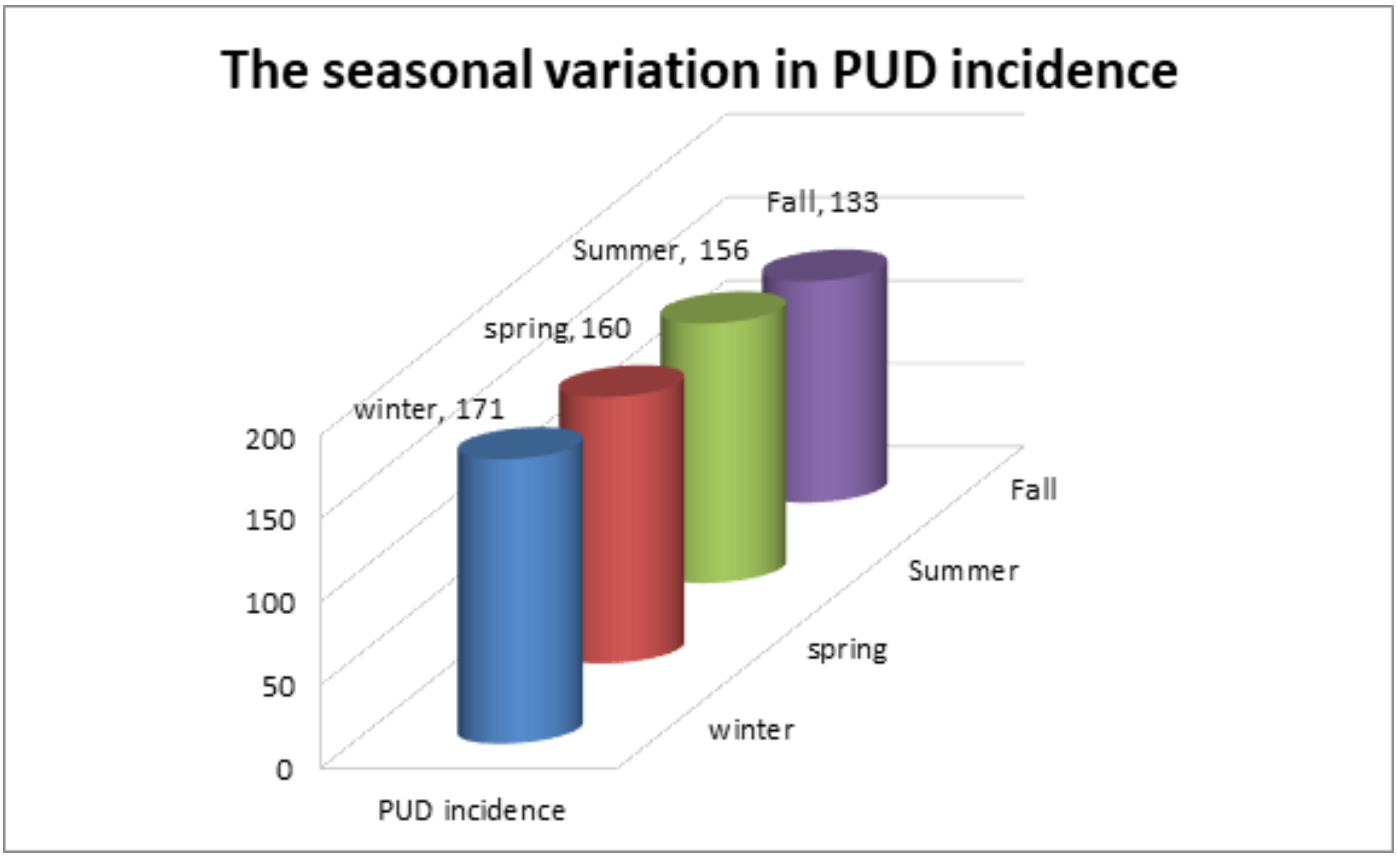

Figure 2 The seasonal variation in PUD incidence. PUD, peptic ulcer disease.

According to the current findings, which are displayed in Figure 2, the prevalence and incidence of peptic ulcer disease were highest in the winter (28%) and spring (26%), followed by summer (25%), and fall (21%).

Discussion

Of the 1772 patients with indigestion and the worrying or dangerous digestive signs or symptoms that we mentioned earlier who were admitted to Al-Hasani Teaching Hospital in Thi Qar, Al-Nazour Department, the quantity of peptic ulcer sufferers was 620 patients, equivalent to 35%, , the remaining causes were either gastritis, tumors, or other diseases, and a large percentage of their results were normal. The number of cases and the percentage of infection with peptic ulcers due to *H. pylori* bacteria, known as the stomach germ, were documented during this study, and the percentage was 52.6%. The most frequent cause of peptic ulcers is thought to be H. pylori, which can be The variation in living conditions, personal cleanliness, the environment, and social and economic standing accounts for the global variation in the incidence of H. pylori infection. H. pylori infection has been associated with duodenal ulcers, peptic ulcers, duodenitis, and gastritis (10). In line with results from another study, the prevalence of gastritis was higher among the upper GID illnesses found in the study (43.8%). According to Ali and Muhammad (2018) (11) gastritis was frequent in 33.96% of cases, while duodenal ulcers accounted for 28.3% of cases. Al-baiaty (2016) (12) also discovered that gastritis (52%) and stomach ulcers (38%) were the most prevalent conditions.

These differences between studies could be due to two factors: the host's immunological reaction to the infection and the H. pylori strains' pathogenicity. Populations of H. pylori have markedly changed genomes. Both the clinical outcome of the infection and its capacity to adapt to the host stomach may be significantly impacted by this. Furthermore, mixed infections are frequent and cause many H. pylori strains to share DNA fragments within a single host (13). Given that the gastric antrum, which contains the stomach's body and occasionally the antrum, is the primary site of H. pylori infection, Hansen and Hold (2019) (14) suggested that gastritis could develop even if the H. pylori bacteria colonizes the body. Furthermore, H pylori live in a unique niche with an extremely acidic environment. The stomach lumen produces more ammonia as a result of H. pylori's urease activity. In addition, H. pylori generates substances that can chemoattract and activate neutrophils and

monocytes, causing inflammation. Mucin depletion, cellular exfoliation, epithelial desquamation, and compensatory regenerative alterations are the epithelium's reactions to H. pylori infection (10). According to Maurotto, Meartina et al. (2024), duodenitis is frequently linked to H. pylori. When H. pylori spreads to the duodenal mucosa, it is linked to cytotoxicity on mucosal cells, and the resulting inflammatory damage may encourage the formation of further duodenal gastric metaplasia (15).

Previous investigations described similar outcomes (12). Of the cases, 50.54% were male and 45.95% were female, 71.43% were male and 54.29% were female, and 64% were male and 36% were female. However, some investigations found no significance between H. pylori infection and gender (16). In contrast, a different earlier study (17) found that Women were more likely than men to have an H. pylori infection (49.2% vs. 47.9%). The current study's findings were consistent with those of a prior investigation conducted by Hong et al. (2019) (17). The prevalence of H. pylori infection increased with age and peaked around age 30 (18) according to Kamada et al. (2015). According to Chen et al. (2013) (19), the prevalence of H. pylori infection rose with age and declined in those under twenty. Additionally, According to their findings, the prevalence rate steadily increased in children aged 1 to 5 until leveling off at 55% around the age of 50. In contrast to our findings, Kalach et al. (2017) (20) reported that children have a greater rate of H. pylori infection. Humans usually acquire these germs as children, but symptoms do not appear until long periods of dormancy have passed (Nagay and Molloy-Bland, 2016). We note that the incidence rate in males is higher than in females, as habits such as smoking, alcohol, are more susceptible to ulcers as shown in and others are more in males than in women, so they are more Table No. 1 Smoking and alcohol have a direct effect on The occurrence of ulcers, as most of them are infected with ulcers, and in the statistics it is clear that non-smokers are more infected, this is because their number is greater, but those who are more threatened with ulcers are smokers, despite their small number in society. Also, the incidence of ulcers is more in the duodenum than in other areas, as shown in Table No. 4, because the lining of the duodenum is thinner compared to the lining of the stomach, and its exposure to acidity makes it easier to ulcerate, and as it was found, the duodenum is considered a suitable medium for the growth of *H. pylori bacteria*.

Smoking has been strongly linked to the occurrence and outcomes of peptic ulcers. Cigarette smoking has been shown to weaken the stomach mucosa, decrease bicarbonate output, and disrupt mucosal blood flow, all of which raise the chance of developing ulcers. Additionally, smoking might slow the healing process and exacerbate pre-existing ulcers. Therefore, stopping smoking is crucial for reducing the chance of getting peptic ulcers, preventing ulcer recurrence, and improving treatment outcomes. Strong alcohol consumption is also associated with a higher risk of developing peptic ulcer disease. Because alcohol can directly irritate the stomach mucosa, stimulate the production of gastric acid, and weaken the mucosal defenses, people who drink it are more likely to develop ulcers. In addition to harming the liver, chronic alcohol abuse increases the risk of gastrointestinal bleeding, a serious side effect of peptic ulcers. Therefore, alcohol use needs to be controlled to prevent the development and worsening of peptic ulcers (22).

The present study's results were consistent with a community-based investigation that found an infection rate of 32.3% in Iraq's Sulaimani area (23). Our study's seropositivity rate was slightly higher than another study conducted in Iraq's Duhok area, which reported a seropositivity rate of 28% among the enrolled patients (24). The sample size, age groups, and diagnostic techniques used in different research can all affect the rates of H. pylori infection. Conversely, our study's infection prevalence was far lower than that seen in multiple Iranian investigations, where rates of H. pylori infection varied between 47% and 64% (19) and 72.8%, respectively (25).

The current investigation found a number of risk variables linked to adult H. pylori infection. According to our research, there is a substantial correlation between H. pylori seropositivity and sociodemographic factors such as educational attainment, gastrointestinal disease history, smoking status, and family size. Compared to not going to school, this study found that going to school was a substantial risk factor for H. pylori infection. This implies that unsanitary environments in educational institutions may raise the risk of contracting H. pylori. Furthermore, the high population density in schools can make it easier for the germs to spread from person to person (26).

It should be noted that if an infected person lives in a household for a few months, people-to-people transmission may also take place within that household (27)

The current study found no significant association between H. pylori infection and family income, age groups, place of residence, drinking water source, fast food and chip intake, frequent hand washing before meals, or dental decay. Within a single nation, the prevalence of H. pylori can differ between urban and rural populations, according to a study. The prevalence of infection was also significantly lower in families with greater socioeconomic position, according to a follow-up study ($P<0.005$). In contrast to those who used piped tap water, another study showed that the seroprevalence of H. pylori was higher in people who used unprotected surface water (28). According to a study, there was a significant difference ($P=0.021$) in the seroprevalence of H. pylori infection between people who did and did not regularly wash their hands. Consequently, our results did not agree with those of other investigations (28).

The majority of research on the seasonal variation in PUD incidence has been done in nations with different seasons in Western and Northern Asia. Though their findings are conflicting, numerous research have proposed that the incidence peaks in the winter. In the Dhi Qar Governorate, our work is the first to use a comprehensive, real-world database to examine the seasonal fluctuation of PUD incidence. In order to help plan the proper allocation of medical resources to address their availability during peak seasons, this study offers clinically significant reference data. According to the current research, the highest prevalence and incidence of DU, GU, and

other forms of PUD were seen in the winter, followed by the spring, with DU showing the most noticeable seasonal change. Similarly, a cross-sectional study by Lai, Yi-Chen, et al. in Taiwan revealed that the colder months of November through March had a greater frequency of symptomatic DU (29).After controlling for weather, Li LF et al. discovered a negative relationship between Taiwan's hospitalization rates for DU and temperature (30). Temperature may not be the only influencing factor, though, as the current study found that seasonal differences in DU incidence across northern and southern Taiwan were comparable. Furthermore, smoking might be a factor in the wintertime seasonal incidence of DUs. Smoking has long been thought to be a major contributing factor to PUD.

Conclusions

Peptic ulcer is a common disease in Thi Qar and in general societies. In this study, we focused on statistics of risk factors that cause peptic ulcer, including factors explained according to the results above, which are age, gender, and habits such as smoking, alcohol, infection with *H. pylori*, and others, and the extent of their impact on the occurrence of ulcers. We also explained that the most common type is duodenal ulcer, and the results of the study were consistent with statistics and published global studies.

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