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Assay the knowledge, attitude and practice about the medication used for patients with Helicobacter pylori infection in Al- Najaf city

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ABSTRACT

Aim of this study is to assess the knowledge, attitude and practice of the drugs using in patients with *H.pylori* infection in Al-Najaf city. The Study Design: A descriptive cross-sectional study design was used in this study. It was conducted in Najaf in accordance with the declaration and take information from individuals by both sheet and online questionnaire. The questionnaire to collection of information about the belief of Najaf people regarding the *H.pylori* infection, the survey was conducted during the period from 21 October to 23 November 2023.Data Collection: In this study, total sample size are 202.The questionnaire used have four sections: sociodemographic characteristics such as age, gender, family history and previous history of H.pylori. Eleven questions in sheet questionnaire and sixteen questions in online questionnaire about the knowledge of the participants about *H.pylori* infection and its management ,seven questionnaires about Attitude questions finally five questions in sheet questionnaire and eight questions in online questionnaire about practice questions. The results show the %population who suffered from burning pain in upper abdomen was (87.6 % ,79.59%) in the online questionnaire and sheet questionnaire respectively.Examination of breath test identified as one of a diagnosis way of *H.Pylori* by 61.22% in sheet questionnaire and 64.7% in online questionnaire.The percent about the patient don't have any signs and symptoms in current study was 68% in online questionnaire and 48.97% in face to face questionnaire.High knowledge in the current study was recorded about they will not stop taking the medication if there is an improvement in symptoms before complete the course of therapy where the percent was (96.2%) of participants.

Keywords: Gastrointestinal infection, H.pylori , compliance with H.pylori therapy, improvement in its symptoms.

I. INTRODUCTION

The gastrointestinal system is important bodily system that closely related to dietary intake, playing a vital role in promoting optimal growth, development, and physiological functioning. The prevalence of gastric diseases is on the rise, and if left untreated, which can lead to long-lasting consequences. Timely and comprehensive treatment is imperative to mitigate these potential issues.[1]

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The global incidence of *Helicobacter pylori* infection is approximately 50%, with a significantly higher prevalence of 80%-90% in developing nations and a lower incidence of 35%-40% in the United States. *H.pylori* is regarded as one of the most prevalent bacterial pathogens in humans, with an estimated infection rate of 50% among the global population.[2]

H.pylori is a spiral-shaped bacterium that grows in the digestive tract. *H.pylori* infection has a very high prevalence.[3] Commonly transmitted through oral routes, the fecal-oral, oral-oral, and gastro-oral routes, the definite interpersonal mode of transmission is still unknown. The infection caused by *H.pylori* may either be asymptomatic and/or symptomatic. Epigastric pain, upper abdominal discomfort, indigestion, nausea, loss of appetite, reflux, and/or belching are among the most frequently occurring symptoms.[4,5] High income and higher educational levels are associated with a decrease in the prevalence of *H.pylori* gastritis.[6,7] Additionally, age, occupation, consumption of fruits, vegetables, or fried food are also independent risk factors for *H.pylori* infection.[8-10] Smoking and alcohol consumption were also found to be independently positively associated factors.[11] Many of these risk factors are preventable with adequate knowledge and appropriate practice. Knowledge about screening and prevention among risk groups, early diagnosis, and treatment may prompt people to seek measures to prevent the infection.[12,13]

Available Diagnostic tests for the detection of *H.pylori* include: Blood tests, Urea breathe tests, Stool antigen tests and Endoscopic biopsies.

Complications:

H.pylori infection is an important causal factor of gastric ulcer, duodenal ulcer and gastric cancer.[14]

Peptic ulcer disease (PUD): Lifetime prevalence of PUD in individuals with *H.pylori* infection is estimated at around 10%.[15-17] After 10 years, >11% of individuals with the infection develop PUD compared with 1% of individuals without the infection.[18] In a prospective study, the lifetime risk of developing duodenal ulcer and gastric ulcer was respectively increased by 18.4-fold and 2.9-fold in individuals with infection with cagA-positive *H. pylori* strains.[19] Since the 2000s, the global prevalence of PUD is declining in parallel with a decreasing prevalence of *H.pylori* infection for various reasons.[20-24] The epidemiological trend indicates an increasing role of NSAIDs, including acetylsalicylic acid, which independently increase the risk of gastroduodenal ulcer and ulcer bleeding.[25,26] Of note, the risk of PUD when using these drugs is further increased in the presence of *H.pylori* infection.[27,28]

Gastric cancer: Around 90% of gastric cancer cases can be attributed to *H.pylori* infection. In 2018, 812,000 gastric cancers, including non-Hodgkin lymphoma of gastric location, were recorded, accounting for ~37% of all cancers driven by a chronic infection, which makes *H.pylori* the most frequent carcinogenic pathogen.[28] The lifetime risk of gastric cancer is 1–5% in individuals with *H.pylori* infection, depending on ethnicity and environmental factors.[29-31] Some populations are at an increased risk of gastric cancer following *H.pylori* infection, probably due to genetic factors, housing situation and dietary habits. Socioeconomic, dietary and lifestyle factors, such as smoking and extent of salt intake, are contributing factors to gastric cancer development, but they are all subordinate to the presence of *H. pylori* infection.[32]

Extra-gastric diseases: Unexplained iron-deficiency anemia, vitamin B12 deficiency and some cases of idiopathic thrombocytopenic purpura can be related to *H.pylori* infection.[33,34] Antigen mimicry-induced autoimmunity related to *H.pylori* has been suggested in idiopathic thrombocytopenic purpura.[35,36]

Furthermore, other associations of *H.pylori* infection with diseases localized outside the stomach have been reported, including cardiovascular diseases, ischaemic heart disease, metabolic syndrome, diabetes mellitus, hepatobiliary diseases, non-alcohol fatty liver disease and neurodegenerative diseases, which have been attributed to persistent and low grade systemic inflammation. Most of these associations are based on limited and inconsistent data and remain inconclusive, and only a few, mostly observational, studies have documented a significant decrease in some of these manifestations when *H.pylori* is eradicated.[37-39]

Treatment:

The main difference from the previous 2012 guidelines[40], is a recommendation that every patient diagnosed with *H.pylori* infection, regardless of the clinical symptoms presence, should receive treatment. In out-of-date guidelines, antibiotics were recommended only for those patients, who had clinical signs of infection.[41,42] According to the current indications, the selection of an appropriate drugs set depends on the sensitivity and / or resistance of *H.pylori* strains found in a patient. The new guidelines support the conclusion, that it is necessary to

apply multi-drug therapy for complete cure. The first line therapy in areas with low resistance to clarithromycin (<15%) and in patients who have not taken macrolides in the past, is triple therapy consisting of a proton pump inhibitor (PPI) and 2 of 3 antibiotics - clarithromycin, amoxicillin or nitroimidazole derivative (metronidazole / tinidazole). The therapy should last 14 days. The triple therapy shouldn't be initiated without prior determination of *H.pylori*'s sensitivity to this antibiotics. For patients who are allergic to penicillin or have previously taken macrolide antibiotics, alternative therapy is a quadruple therapy containing: bismuth, PPI, tetracycline and metronidazole. In this configuration, the treatment lasts for 10-14 days. In many countries a significant increase of strains that are resistant to clarithromycin or to clarithromycin and metronidazole simultaneously has been noticed. In such cases, it is recommended to use quadruple therapy with bismuth or non-bismuth quadruple therapy (PPI, amoxicillin, clarithromycin and nitroimidazole derivative) for 10-14 days. In areas with high, double resistance to clarithromycin and metronidazole, the recommended first line treatment is quadruple therapy with bismuth.[40,41]

The effectiveness of non-bismuth quadruple therapy can be increased by different drug delivery schedules. The existing therapy options are:

a) Concurrent - PPI, amoxicillin, clarithromycin and nitroimidazole derivative, for 10-14 days.

b) Sequential - for the first 5-7 days PPI and amoxicillin, for the next 5-7 days PPI, clarithromycin and a nitroimidazole derivative.

c) Hybrid - for the first 7 days of PPI and amoxicillin, additional clarithromycin and nitroimidazole derivative over subsequent days.

In case of treatment failure, salvage therapy, avoiding previously taken antibiotics, should be considered. The new guidelines suggest also, that the use of PPI at high doses, twice a day, may increase the effectiveness of the triple therapy.[41,42]

Moxifloxacin used with esomeprazole and tinidazole or moxifloxacin with esomeprazole and amoxicillin had eradication rates of about 88–90% in a study from 2005.[43,44] A study from India showed an eradication success of up to 77% for a 2-week dual therapy with proton pump inhibitors and norfloxacin.[45,46]

The levofloxacin triple therapy is used because of increasing resistance to clarithromycin. With fewer side-effects than the bismuth quadruple therapy. It is used as a second-line rescue therapy, after first-line eradication treatments fail. They are used as a second line therapy in countries where bismuth is not available or where the population has high rated of clarithromycin resistance.[47]

II. METHODS AND MATERIAL

Study Design:

A descriptive cross-sectional study design was used in this study. It was conducted in Najaf in accordance with the declaration and take information from individuals by both sheet and online questionnaire. The questionnaire to collection of information about the belief of Najaf people regarding the *H.pylori* infection, the survey was conducted during the period from 21 October to 23 November 2023.

Data Collection:

In this study, total sample size are 202. The study population were selected from a number of different areas in Najaf in order to increase the generalizability of the findings. Where data are collected from Najaf nationals from universities, families, relatives, friends and hospital. We talk to these individuals and given an explanation with regard to the purpose of the study. They were free to refuse participation in the study. They were assured for confidentiality and gave oral consent to participate in the study. Incentives weren't offered for completion of the questionnaire. The questionnaires used have four sections: sociodemographic characteristics such as age, gender, family history and previous history of *H.pylori*. Eleven questions in sheet questionnaire and sixteen questions in online questionnaire about the knowledge of the participants about *H.pylori* infection and its management, seven questionnaires about attitude questions finally five questions in sheet questionnaire and eight questions in online questionnaire about practice questions.

Statistics Analysis:

The data analysis was performed using Microsoft word 2019. Microsoft word was used for editing and sorting. Descriptive statistics, frequencies, and percentage were used to summarize the result and presented using tables.

III. RESULTS AND DISCUSSION

This descriptive cross-sectional study compared the knowledge, attitude and practice about the medication used for patients with *H.pylori* infection in Al-Najaf city of a wide range of age (20->50) and found that the

knowledge of *H.pylori* usually found in the stomach in online questionnaire and face to face questionnaire was 89.5% and 89.79% respectively when compared to Taghreed A. Hafiz article[48], there is slightly difference which the percent was 71% .The findings suggest that people know that *H. pylori* is a disease related to the gastrointestinal system.

TABLE I: SECIO-DEMOGRAFIC OF PATIENT WITH H.PYLORI (N*=153)

Details	% Percentage
age	
20-29	86.9%
30-39	3.3%
40-49	3.3%
>50	6.5%
Gender	
male	18.3%
female	81.7%
Education level	
No educated	0.7%
primary	2%
Secondary	6.5%
University	90.8%
Type of residence	
City	89.5%
Village	10.5%
Occupation	
Not working	60.8%
Employee	28.8%
Free working	10.5%
Marital status	
Single	71.9%
Married	25.5%
Previously married	2.6%
Family history of H.pylori	
Yes	76.5%
No	23.5%
Smoking status	
Never	90.2%
Smoker	9.8%
Do you drink coffee or tea?	
Yes	85.6%
No	14.4%
Sources of drinking water	
Tap water	0%
Sterile water	90.2%
Both	9.8%
History of H.pylori	
Yes	49.7%
No	50.3%
If yes, have you been treated?	
Yes	57.5%
No	42.5%

In this study the percent of population who suffered from burning pain in upper abdomen was (87.6 %, 79.59%) in the online questionnaire and paper questionnaire respectively. While in study published in 2021, the percent was 54.5%. The high percent in this study because the burning pain in upper abdomen is the most common symptom of *H.pylori* infection.

TABLE II: KNOWLEDGE THE PARTICIPANTS ABOUT H. PYLORI INFECTION AND ITS MANAGEMENT (N*=49)

Question	%Percentage
1- H. pylori usually found in the stomach	
yes	89.5%
No	10.5%
2- What are the sign and symptom of H. pylori infection?	
Burning pain in upper abdomen	87.6%
Nausea	65.4%
Weight loss	44.4%
Headache	29.4%
Diarrhea	34%
3- What are the risk factor for H. pylori infection?	
Low socio-economic status	22.2%
Eating plenty of chilly and pepper	57.5%
Stress	51.6%
Infected family members	22.9%
Drinking tab water	32.7%
4- How can H.pylori infection transmitted from one person to another?	
Oral route	70.6%
Close contact	34%
From contact with animal	19.6%
5- H.pylori is diagnosed by breath test	
Yes	64.7%
No	35.3%
6- Which of the following is consider as a route to prevent H.pylori infection?	
Washing hands	75.8%
Drink sterile water	79.1%
Get vaccine	13.7%
7- If you have H.pylori infection,You can treated with tablets	
Yes	92.2%
NO	7.8%
8- The period of treatment for H.pylori infection is	
one to two weeks	59.5%
One year	6.5%
Two to three months	29.4%

Three to four weeks	15%
9- To avoid the relapse of H.pylori infection, you must comply with the treatment plan	
Agree	95.4%
Disagree	4.6%
10-Some people with H.pylori infection don't have any signs and symptoms	
Yes	68%
No	32%
11- What complication does H.pylori infection cause?	
Gastric cancer	50.3%
Peptic ulcer	92.8%
Anemia	23.5%
Asthma	0%
12-There is an effective treatment for H.Pylori infection	
a)Yes	80.8%
b)No	19.2%
13-Yogurt is consider as effective treatment for H.Pylori infection	
a)Yes	38.5%
b)No	61.5%
14-If there is an improvement in symptoms you can stop the course of therapy without complete the duration of treatment that determined by the doctor	
a) Agree	3.8%
b) Disagree	96.2%
15-If the symptoms of infection return, you can take the same treatment without consulting a doctor	
a) Agree	11.5%
b) Disagree	88.5%
16-The regimen of treatment is used only for relieving symptoms of H.pylori infection	
a) Yes	23.1%
b) No	76.9%

A lower level of knowledge ranging from 23.8%-31.1% was recorded in Chinese and Korean communities regarding the route of *H. pylori* transmission.[49-51] There is a significant difference to the current study where the knowledge of the population about route of the transmission was 70.6% in online questionnaire and 79.59% in face-to-face questionnaire. The low level of education (high school level to high school graduate) in the Chinese and Korean population, in contrast to this study where most of participants in this study their education level is university, may explain the reason for the differences.

TABLE III: ATTITUDE QUESTIONS (N*=49)

Questions	**Agree**	**disagree**	**neutral**
Affected both gender.	93.87%	0%	6.12%
H.Pylori is associated with nutritional factors, food allergies, and food intolerance.	69.38%	16.32%	14.28%
H.Pylori gastrointestinal symptoms affect the quality of life.	89.79%	6.12%	4.08%
Managing the patients in emergency.	34.69%	46.93%	18.36%
Prescribing an anti-secretory and a gastric dresser while awaiting the results of the upper digestive endoscopy.	57.14%	20.40%	22.44%
After prescribing a treatment need schedule follow up visit.	91.83%	4.08%	4.08%
If the symptoms were presist, the patient was hepatogastroenterologist.	89.79%	8.16%	2.04%

Examination of breath test identified as one of a diagnosis way of *H.Pylori* by 61.22% in sheet questionnaire and 64.7% in online questionnaire. While the least mean 25% was observed on the article that published in International Journal of Environmental Research and Public Health.[48] This difference in the knowledge because of this test are not widely available in many countries. The reasons for this are complex and may include a lack of experience or resources to set up and operate breath analysis laboratories and the relatively high cost of commercial kit tests. Although Urea breathe tests (UBTs) are very useful and have higher diagnostic accuracy than other noninvasive tests for identifying *H.pylori* infection.[52]

TABLE IV: PRACTICE QUESTIONS (N*=49)

Question	**agree**	**disagree**	**neutral**
Drinking contaminated	95.91%	4.08%	0%

water may be a source of infection			
Washing hands after using the toilet and before eating protects from H.pylori infected	97.95%	0%	2.04%
Eating raw vegetables and fruits is related a Positive association with the transmission	59.18%	24.48%	16.32%
H. pylori infection management must be after conformation	87.75%	8.16%	4.08%
Endoscopy must be performed in patients with alarm symptoms	83.67%	10.20%	6.12%

As reported in Abdullah Imadeddin Malek article,[53] more participants (48.8%) were aware of the association between *H.pylori* infection and gastric ulcers than those who recognized the relationship between *H.pylori* infection and gastric cancer (39%), while in this study the percent was gastric cancer 30.61% and peptic ulcers 83.67% in paper questionnaire, gastric cancer 50.3% and peptic ulcer 92.8% in online questionnaire which shows a clear lack of knowledge of the attributable effects and the pathophysiology of this microorganism on the gastric mucosa that leading to gastric cancer and this may be caused by the incidence of gastric ulcer as complication of *H. Pylori* infection is higher than incidence of gastric cancer.

The percent about the patients don't have any signs and symptoms in current study was 68% in online questionnaire and 48.97% in face to face questionnaire while low knowledge are seen in article published in 2021where health science students recorded a significantly lower mean score (30.2%) this low knowledge in two study may be because the participants are thought that *H.Pylori* infection is aggressive infection and isn't possible to be without any signs or symptoms.

Most participants (93.87%, 95.4%) in direct questionnaire and online questionnaire respectively agreed that *H.pylori* can infect both males and females. This finding aligns with a recent study conducted in Saudi Arabia, which reported that 93.1% of participants knew that *H.pylori* infecting both men and women, equally.[54] This high knowledge may be because most of people in current study are university educated which the percent of them in sheet questionnaire was 85.7% and in online questionnaire was 90.8%.

General practice of the participants towards (Endoscopy must be performed in patients with alarm symptoms) in current study was 92.8% in online questionnaire and 83.67% in face-to-face questionnaire when compared with the study that published in 202, the percent was 76.2%. This high awareness about endoscopy as diagnostic procedure because it accurate and necessary when there is alarm signs and symptoms with *H.Pylori* infection to diagnosis or exclude gastric cancer and gastric ulcer.

In study that conducted in United Arab Emirate,[49] less than half of the participants recognised contaminated food and water as a means of transmission of the bacterium. This is significant difference with current study where participants had been asked about [Drinking contaminated water may be a source of infection the percent was 95.4% in online questionnaire and 95.91% in direct questionnaire. This high percent because high rise awareness about many infections that may be transmitted through contaminated water or may be because most people in Najaf city being rely on RO water.

As reported in Lisa J. Driscoll article,[55] most participants (34.3%) were aware that yogurt is not indicated as a treatment for *H.Pylori* infection , while in this study the percent was (61.5%) in online questionnaire. which shows that there is a good knowledge about the treatment of *H.pylori* in this study. High knowledge in the current study was recorded about they will not stop taking the medication if there is an improvement in symptoms before complete the course of therapy where the percent was (96.2%) of participants. This high awareness about completes the course of therapy will prevent the antibiotic resistance.

Majority of the participants had a good knowledge and positive attitude as well as adhered to appropriate practices regarding the *H.Pylori* infection. Though they had a good knowledge a few of them still lack knowledge

regarding this infection, its complications, risk factors and treatments. So, their knowledge must be enhanced by providing those pamphlets and conducting awareness programs and also presenting and explaining various cases, also provide journals related to *H.Pylori* infection.

IV. CONCLUSION

In conclusion, the study highlighted that most participants in Al- Najaf city have a good knowledge, attitude and practice of *H.Pylori* infection.

This high awareness of *H.pylori* infection may correlated with:

1. Having a higher education degree.
2. Working in the medical field.
3. History of *H.pylori.*
4. Family history of *H.pylori.*
5. Acquiring information from medical sources.

Yet there is still a considerable disparity in knowledge, attitude, and practice regarding *H.Pylori* infection particular knowledge gaps were identified are mostly related to the management of *H.pylori* infection and its transmission.

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