

Research Article

Level of Knowledge on *Helicobacter Pylori* Infection among Patients in the Gastroenterology Department of a Hospital in Ate, 2023

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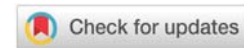
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Abstract

Introduction: *Helicobacter pylori* (*H. pylori*) is a bacterium responsible for inflammation of the gastric mucosa. This bacterium causes chronic gastritis in more than 50% of the world's population and, in about 10 to 15% of cases, can lead to gastric adenocarcinoma, gastroduodenal ulcers, and MALT lymphoma. Notably, *H. pylori* infection is more prevalent in less developed countries due to poor hygiene, lack of information, and overcrowding.

Objective: This study aimed to evaluate the level of knowledge about *Helicobacter pylori* infection in patients of the Gastroenterology Service from a hospital in Ate in 2023.

Materials and Methods: An observational, descriptive, cross-sectional, prospective study was conducted at the hospital in Ate in Lima, involving 352 adult patients who attended the gastroenterology outpatient clinic between October and December 2023. A validated survey consisting of 20 questions covering sociodemographic data and knowledge about *H. pylori* infection was used. Statistical analysis was performed using SPSS v.25, using descriptive measures, including frequencies and percentages.

Results: The study consisted of 352 patients aged 35 to 60 years, predominantly women. It was identified that 42.6% had a low level of knowledge about *H. pylori*. Most had low knowledge about conceptual definitions (63.4%) and modes of infection (52.0%). Regarding complications, 44.88% were aware of the relationship with gastric cancer.

Conclusion: This study highlights the need to implement educational and awareness strategies to improve knowledge about *H. pylori* infection among patients. More research is warranted to understand the barriers to greater knowledge and develop effective interventions to overcome them.

Introduction

Helicobacter pylori (*H. pylori*) is a bacterium responsible for inflammation in the gastric mucosa due to its membrane structure, which grants it resistance to stomach acid, allowing it to penetrate the mucosal layer and enter gastric epithelial cells [1-3]. This bacterium is known to cause chronic gastritis in over

50% of the global population, and in about 10-15% of cases, it can lead to gastric adenocarcinoma, gastroduodenal ulcers, and MALT lymphoma [4,5]. The infection incidence varies based on age, gender, geographic location, socioeconomic status, and other environmental and host factors [6]. A correlation between infection prevalence and socioeconomic level has been observed, with higher rates in less developed countries due to

poor hygiene, lack of information, and overcrowding [7-9].

In Latin America, the prevalence of *H. pylori* infection is 69.2% in adults and 48.3% in children and adolescents. In Brazil, the infection is more common in children under five who live in precarious conditions with limited access to medical care. Conversely, individuals with higher education, families of higher socioeconomic status, and those in environments with better sanitary conditions show lower infection rates [10]. In underdeveloped countries like Peru, Chile, Colombia, and Venezuela, contaminated water intake is one of the main factors triggering the disease [11,12].

In Peru, the infection incidence is uniform across the coast, highlands, and jungle regions but is 80% higher among low-income populations [13]. Additionally, a study conducted in two healthcare centers from different socioeconomic strata found that *H. pylori* prevalence was higher in the National Hospital Cayetano Heredia (54.1%) compared to the private Anglo-American Clinic in San Isidro (29.5%), demonstrating a strong link between low socioeconomic status and *H. pylori* infection and its complications [14].

The prevalence of *H. pylori* infection in individuals with gastrointestinal issues increased by more than 70% in the last two decades. This infection can lead to chronic gastritis, gastric cancer, and duodenal ulcers, with gastric cancer, caused by mucosal atrophy due to chronic active gastritis, being one of the leading mortality factors in Peru due to its high prevalence [13-15].

When assessing patients' perception of the health impacts caused by *H. pylori* among at-risk populations, there is a significant gap between what is believed and what should be known about *H. pylori* in terms of information, attitudes, and preventive measures. Experts recommend that education, especially for the most vulnerable populations, is essential for implementing effective prevention strategies [16,17].

An analysis of patients' sociodemographic characteristics and knowledge about preventive measures against stomach cancer, primarily caused by *H. pylori*, revealed that patients with primary education or lower levels had a lower level of knowledge on the subject. Furthermore, patients from the Peruvian highlands had a lower understanding of stomach cancer prevention than the general population [11,18,19].

Due to the scarcity of literature on *H. pylori* familiarity, this study aims to address this gap through a qualitative metric within the context of a gastroenterology service. This research intends to enhance the understanding of the disease itself and the complex issues it causes. The objective of this investigation was to assess the level of knowledge possessed by gastroenterology department patients at a hospital in Ate regarding *Helicobacter pylori* infection in 2023.

Materials and methods

Study design and population

A descriptive, cross-sectional, prospective observational

study was conducted at a hospital in Ate in Lima in 2023. The study population consisted of adult patients attending the gastroenterology department's outpatient clinic between October and December 2023. Inclusion criteria included patients aged 18 to 55 years, of both sexes, attending the outpatient gastroenterology clinic, oriented in time, space, and person at the time of the survey, and who voluntarily decided to participate in the study and signed informed consent. Patients under 18, patients attending other services, hospital employees, patients with intellectual disabilities, and those who provided incomplete information in the data collection form and/or incomplete responses were excluded.

The sample size was determined using Openepi statistical software, based on a population of 4,235 patients attending the outpatient gastroenterology clinic in 2022. A projected frequency of 50%, a design effect of 1, and a 95% confidence level were applied. With these parameters, a sample size of 352 patients was determined.

Survey design

A survey validated by expert judgment (Appendix 1) was designed to measure the level of knowledge regarding *H. pylori* infection among patients in the gastroenterology department at a hospital in Ate in 2023. The survey consisted of 25 questions divided into four sections: Sociodemographic Data (5 questions), Knowledge of the Entity (6 questions), Knowledge of Transmission (5 questions), and Knowledge of Complications (8 questions). The maximum possible score is 20 points, while the minimum score is 0. Scores are divided into three levels: low (0-8 points), medium (9-12 points), and high (13-20 points).

Data collection

First, permissions were obtained from the director of a hospital in Ate for implementation. The gastroenterology department was then approached, where patients were asked to participate in the study. Detailed information on the study's purpose was provided, and surveys were administered after patients voluntarily consented. Each patient was fully briefed on the study's scope and objectives, and their written informed consent was obtained as evidence of their willingness to participate.

Statistical analysis

After data collection, the data were organized in a Microsoft Excel 365 database and later exported to SPSS v.25 for processing and analysis. Descriptive measures, including frequencies and percentages, were generated and presented in tables and graphs.

Ethical considerations

Patients participated voluntarily, with informed written consent provided to ensure conscious and voluntary involvement. Measures were adopted to protect the confidentiality of collected data, which will only be used for research purposes, ensuring anonymity.



Additionally, ethical approval was obtained from the Ethics Committee of San Juan Bautista Private University under reference number N°273-2023 -CIEI-UPSJB (Appendix 2).

Results

Epidemiological profile of patients

The study included 352 adult patients who attended the gastroenterology department at a Hospital in Ate. The most common age group was 35 to 60 years, representing 49.7% of the total. Among participants, 61.4% (n = 216) were female, and 38.6% (n = 136) were male, with single individuals being the most frequent marital status at 46.9% (n = 165). Regarding education level, 30.7% (n = 108) of patients had secondary education, and 56.5% (n = 199) currently resided in urban areas (Table 1).

Knowledge level of *Helicobacter pylori* infection

Knowledge level assessment showed a predominance of low knowledge at 42.6% (n = 150), followed by 29.5% (n = 104) at a medium knowledge level (Table 2).

Knowledge of *Helicobacter pylori* conceptual definitions

Patients' knowledge of *Helicobacter pylori* conceptual definitions revealed that 63.4% (n = 233) had low knowledge, followed by a high level at 24.1% (n = 85), while only 12.5% (n = 44) exhibited medium knowledge (Table 3).

According to the findings, 58.52% (n = 206) of surveyed patients claimed to know about *H. pylori*, while 31.53% (n = 111) reported having no information about this pathogen. Furthermore, 59.12% (n = 149) of participants were unaware of *H. pylori*'s presence in over 50% of the Peruvian population. Similarly, 44.60% (n = 157) did not know that 80% of those infected with *H. pylori* belong to low-income groups (Table 4).

Table 1: Sociodemographic variables of the patients who visited the gastroenterology service of the Hospital in Ate.

Variable	Feature	Frequency	Percentage (%)
Age	19 a 34 years	131	37,2 %
	35 a 60 years	175	49,7 %
	>60 years	46	13,1 %
Sex	Female	136	38,6 %
	Male	216	61,4 %
Marital status	Single	104	29,5 %
	Married	69	19,6 %
	Divorced	3	0,9 %
	Widowed	165	46,9 %
	Cohabiting	11	3,1 %
Degree of Education	Primary education (and below)	90	25,6 %
	Secondary education	108	30,7 %
	Technical/Vocational	59	16,8 %
	University	95	27,0 %
Origin	Human settlement	119	33,8 %
	Province	34	9,7 %
	Urban	199	56,5 %

Source: Authors. Data collection sheet.

Table 2: Level of knowledge about *Helicobacter Pylori* infection in patients in the gastroenterology service of a Hospital in Ate., 2023.

Level of knowledge	Frequency	Percentage (%)
Low	150	42,6 %
Middle	104	29,5 %
High	98	27,8 %
Total	352	100 %

Source: Authors. Data collection sheet.

Table 3: Level of knowledge about conceptual definitions for *Helicobacter Pylori* in adult patients in the gastroenterology service of a hospital in Ate, 2023.

Variable	Bajo	Medio	Alto
Level of knowledge about conceptual definitions	223 (63,4 %)	44 (12,5 %)	85 (24,1 %)
Level of knowledge about the mode of infection	115 (32,7 %)	183 (52,0 %)	54 (15,3 %)
Level of knowledge of the most frequent complications	115 (32,7 %)	183 (52,0 %)	54 (15,3 %)

Source: Authors. Data collection sheet.

Knowledge of *Helicobacter pylori* Mode of Infection

Knowledge of *H. pylori*, infection modes among patients showed that 52.0% (n = 183) had a medium knowledge level, followed by low knowledge at 32.7% (n = 115), and high knowledge at 15.3% (Table 3). Regarding infection modes, 59.65% (n = 210) of patients stated that the most common route is through contaminated or improperly washed food; additionally, 48.01% (n = 169) considered contaminated water as a source of infection (Table 4).

Knowledge of common *Helicobacter pylori* complications

Knowledge of common *H. pylori* complications indicated a predominance of medium knowledge at 52.0% (n = 183), followed by low knowledge at 32.7% (n = 115) and high knowledge at 15.3% (n = 54) (Table 3).

Furthermore, 80.68% of participants would not advise family members to undergo treatment to eliminate the infection. Additionally, 72.44% (n = 255) believe washing food before consumption could help prevent *H. pylori* infection. Concerning complications, 44.88% (n = 158) consider that the infection could cause gastric cancer, 44.31% (n = 156) are aware it could cause gastritis, and 37.21% (n = 131) think reducing *H. pylori* infections could lead to fewer gastric cancer cases (Table 4).

Discussion

This study aimed to assess the level of knowledge regarding *Helicobacter pylori* infection among gastroenterology patients at a hospital in Ate. A total of 352 patients who visited the gastroenterology department in 2023 were surveyed using validated tools, and findings from this research will be analyzed and discussed below.

Data analysis revealed a predominance of the 35–60 age group, with a significant female presence. Participants'



Table 4: Data collection.

	Awareness of the Entity:	Yes n (%)	Don't know n (%)	No n (%)
1	Have you ever heard of <i>Helicobacter pylori</i> (<i>H. pylori</i>)?	206 (58,52%)	35 (9,94%)	111 (31,53%)
2	Did you know that <i>Helicobacter pylori</i> (<i>H. pylori</i>) can penetrate the layers of your stomach, causing inflammation?	140 (39,77%)	74 (21,02%)	138 (39,20%)
3	Did you know that <i>H. pylori</i> is resilient and can survive the acid in your stomach?	133 (37,78%)	97 (27,57%)	122 (34,65%)
4	Did you know that <i>H. pylori</i> , due to its components, can cause inflammation in the walls of your stomach?	144 (40,90%)	99 (28,12%)	109 (30,96%)
5	Did you know that over 50% of Peruvian adults are infected with <i>Helicobacter pylori</i> ?	117 (33,23%)	86 (34,12%)	149 (59,12%)
6	Did you know that 80% of people with low resources suffer from <i>H. pylori</i> infection?	80 (22,72%)	115 (32,67%)	157 (44,60%)
Knowledge of H. Pylori Transmission:				
7	Do you believe that the bacteria is mainly transmitted through saliva among family members, such as by sharing utensils?	81 (23,01%)	135 (38,35%)	136 (38,63%)
8	In your opinion, can <i>Helicobacter pylori</i> be acquired through bodily fluids from an infected person?	80 (22,72%)	150 (42,61%)	122 (34,65%)
9	Do you consider that <i>Helicobacter pylori</i> is transmitted by consuming contaminated or improperly washed food?	210 (59,65%)	91 (25,85%)	51 (14,48%)
10	Do you believe that <i>Helicobacter pylori</i> can be transmitted by flies or pets (dogs, cats, etc.)?	109 (30,96%)	129 (36,64%)	114 (32,38%)
11	Do you know if <i>Helicobacter pylori</i> transmission occurs through the consumption of contaminated water (unboiled water, stagnant water, etc.)?	169 (48,01%)	97 (27,55%)	86 (24,43%)
Knowledge of the complications of Helicobacter Pylori infection				
12	Did you know that <i>H. pylori</i> can cause gastritis?	156 (44,31%)	113 (32,10%)	83 (23,57%)
13	Did you know that <i>H. pylori</i> can lead to stomach cancer?	158 (44,88%)	103 (29,26%)	91 (25,85%)
14	Do you consider that reducing <i>H. pylori</i> infections could result in a decrease in gastric cancer cases?	131 (37,21%)	128 (36,36%)	93 (26,42%)
15	Do you believe that adopting a more hygienic lifestyle can reduce the risk of contracting stomach cancer due to <i>H. pylori</i> infection?	112 (44,44%)	101 (40,07%)	39 (15,47%)
16	Did you know that <i>H. pylori</i> can cause gastric ulcers?	75 (29,76%)	111 (44,04%)	66 (26,19%)
17	Do you believe that stress can cause gastric ulcers?	76 (30,15%)	111 (44,04%)	65 (25,79%)
18	In your opinion, could <i>H. pylori</i> cause stomach heaviness (dyspepsia)?	64 (25,39%)	126 (50%)	62 (24,60%)
19	If you do not have an <i>H. pylori</i> infection, but a family member does, would you advise them to undergo treatment to eliminate it?	14 (4,26%)	53 (15,05%)	284 (80,68%)
20	Do you think cooking food before consuming it can help eliminate <i>H. pylori</i> present in the food?	255 (72,44%)	63 (17,89%)	34 (9,65%)

Source: Authors. Data collection sheet.

education levels showed that 30.7% had secondary education, with low knowledge about *H. pylori* infection at 42.6%. These results are supported by a study by Wang in China, which found that male participants with lower education levels had lower knowledge, while women, assuming caregiver roles and participating in nursing services, were more likely to acquire information about *H. pylori*. Moreover, individuals with higher education levels demonstrated greater knowledge, highlighting the close relationship between *H. pylori* infection rates and socioeconomic status. Thus, healthcare education interventions should particularly target socially disadvantaged individuals [19]. Similarly, Castro demonstrated that low knowledge levels about this infection in populations with low education favor infection [20]. It is essential to emphasize the significant impact of a lack of information about *H. pylori*'s existence. Since more than half of Peru's population carries this bacterium, there is an urgent need for educational programs to raise public awareness of this infection [21].

Regarding knowledge of conceptual definitions of *H. pylori* infection, 63.4% of patients had low knowledge, a finding consistent with previous studies showing that knowledge of *H. pylori* is generally low among the general population. A study by Driscoll found that most patients had low knowledge

levels [22]. The survey results indicate that 58.52% of surveyed patients reported knowledge of *H. pylori*, with Baylei's study demonstrating that slightly over half (52.3%) had prior knowledge of *H. pylori* [6], though their knowledge was low, and they did not complete treatment. Raising awareness about this infection and addressing treatment compliance challenges could potentially reduce gastric cancer rates or other complications.

In terms of knowledge about *Helicobacter pylori* infection modes, 52.0% of patients had medium knowledge. Most participants stated that contaminated or improperly washed food is the most common transmission route, while 48.01% consider contaminated water a transmission source. These findings align with prior research, such as Discoll's, which indicated that only 26.0% of participants mentioned water as a transmission route for *H. pylori* [22]. Another study by Shin et al. found that only 23.8% of respondents mentioned that *H. pylori* could be transmitted through poorly hygienic food and water sources [23].

Regarding complication awareness, medium knowledge was observed in 52.2% of patients, with 44.88% aware that this pathogen can cause stomach cancer. A South Korean



study produced similar findings, with researchers attempting to assess public awareness of potential complications from *H. pylori* infection, with 58.3% aware of its potential to cause gastric cancer in infected individuals [24]. On the other hand, Malek showed that 61% of participants were unaware of the *H. pylori*–gastric cancer link [25]. The lack of knowledge about severe consequences, such as ulcers and gastric cancers induced by *H. pylori*, underscores the need for educational and awareness strategies.

Regarding common *H. pylori* complications, most patients were unaware of this infection's severe consequences, including gastric cancer development. This finding underscores the need for education and awareness strategies on *H. pylori* infection [26]. Additionally, the lack of treatment recommendations among most participants (80.68%) highlights the importance of educational interventions to encourage seeking medical care and proper infection management. Results from a study by Vargas, et al. align with our findings, indicating a correlation between poor treatment adherence and factors such as adverse reactions, younger age, and lower education levels. The data suggests these factors may contribute to poor treatment adherence [27]. Another study by Canchanya supports this concept, showing that patients were more likely to adhere to their pharmacological treatment when they understood the vital importance of eradicating this bacterium [28].

Our study is robust and makes a significant contribution to gastroenterology due to a well-represented sample, validated instruments, and an extensive examination of results. However, certain limitations exist in the current research. Data were collected through surveys, subject to individual perception, interpretation, and experience, thus reflecting these factors.

Conclusion

In summary, this research demonstrates that patients in the gastroenterology department at the hospital in Ate have limited knowledge of *H. pylori* infection. This study highlights the need for educational and awareness measures to improve understanding of this infection and its possible complications. Further research is also needed to identify the barriers to greater awareness of *H. pylori* and develop effective strategies to overcome them.

(Annexes)

References

1. Chahuán J, Pizarro M, Díaz LA, Villalón A, Riquelme A. Diagnostic methods for the detection of *Helicobacter pylori* infection. *Gastroenterol Latinoam* [Internet]. 2020 [cited 2023 Apr 20];31(2):98-106. Available from: <https://gastrolat.org/DOI/PDF/10.46613/gastrolat202002-08.pdf>
2. Bailey KS, Brown HE, Lekic V, Pradeep K, Merchant JL, Harris RB. *Helicobacter pylori* treatment knowledge, access, and barriers: A cross-sectional study. *Helicobacter* [Internet]. 2023 Apr 7;28(2). Available from: <https://onlinelibrary.wiley.com/doi/10.1111/hel.12954>
3. Jiménez TF, Bayona TC. Molecular pathophysiology in *Helicobacter pylori* infection. *Salud Uninorte*. 2016;32(2):500-12. Available from: <http://dx.doi.org/10.14482/sun.32.2.9749>

4. Martínez Leyva L, Montero González TJ, Piñol Jiménez FN, Palomino Besada A, González-Carbajal PM. *Helicobacter pylori* and gastric cancer. *Rev Chil Cir*. 2020;49(4):412-415.
5. Inoue M. Changing epidemiology of *Helicobacter pylori* in Japan. *Gastric Cancer*. 2017 Mar 18;20(S1):3-7. Available from: <https://doi.org/10.1007/s10120-016-0658-5>
6. Bayona Roja MA, Gutiérrez Escobar AJ. Overview of *Helicobacter pylori*: Transmission routes. *Rev Med* [Internet]. 2017 [cited 2023 Apr 21];39(3):210–2020. Available from: <https://revistamedicina.net/index.php/Medicina/article/view/118-4/1482>
7. Cervantes-García E. *Helicobacter pylori*: Mechanisms of pathogenicity. *Rev Latinoam Patol Clin Med Lab* [Internet]. 2016 [cited 2023 Apr 21];63(2):100–9.
8. Cervantes García E. Diagnosis and treatment of *Helicobacter pylori* infections. *Rev Latinoam Patol Clin Med Lab* [Internet]. 2016 [cited 2023 Apr 12];63(4):179–89.
9. Leja M, Grinberga-Derica I, Bilgiler C, Steininger C. Review: Epidemiology of *Helicobacter pylori* infection. *Helicobacter*. 2019 Sep 1;24(S1). Available from: <https://doi.org/10.1111/hel.12635>
10. Coelho LGV, Marinho JR, Genta R, Ribero LT, Passos MCF, Zaterka S, et al. IV Brazilian Consensus Conference on *Helicobacter pylori* Infection. *Arg Gastroenterol*. 2018 Apr 16;55(2):97–121. Available from: <https://doi.org/10.1590/s0004-2803.201800000-20>
11. Chávez Barriga J. Prevalence of *Helicobacter pylori* infection among patients at the Ocaña Health Center, Ayacucho. *Rev Med Herediana*. 2020 Apr 29;31(1):23-29. Available from: http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1018-130X2020000100023
12. Cuellar-Macias E, Álvarez-Corrales N. Antigenic determination of *Helicobacter pylori* in schoolchildren from a community educational center in Honduras. *Bionatura*. 2022 Sep 15;7(3):1–7. Available from: <http://dx.doi.org/10.21931/RB/2022.07.03.6>
13. Guevara-Tirado A, Sanchez-Gavidia JJ. Prevalence of *Helicobacter pylori* infection in patients with gastrointestinal symptoms in an urban area of Lima, Peru, 2021. *Rev Peru Investig Salud*. 2022 Jan 28;6(1):23–7.
14. Aliaga J, Cedrón H, Pinto J. Comparison of *Helicobacter pylori* infection prevalence in patients with dyspepsia from two institutions of different socioeconomic strata during 2017-2018. *Gastroenterol Peru*. 2018 Jun;39(3):211-214.
15. Mezmale L, Coelho LG, Bordin D, Leja M. Review: Epidemiology of *Helicobacter pylori*. *Helicobacter* [Internet]. 2020 Sep 1 [cited 2023 Apr 12];25(S1). Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/hel.12734>
16. Emerenini F, Nwolisa E, Iregbu F, Eke C, Ikefuna A. Prevalence and risk factors for *Helicobacter pylori* infection among children in Owerri, Nigeria. *Niger J Clin Pract*. 2021 Aug 1;24(8):1188-1193. Available from: https://doi.org/10.4103/njcp.njcp_687_20
17. Flores J, Ortiz K. Sociodemographic characteristics and knowledge on gastric cancer prevention in patients at a health center in Peru. *CASUS: Rev Investig Casos Salud* [Internet]. 2020 [cited 2023 May 5];5(1):1-7. Available from: <https://dialnet.unirioja.es/servlet/articulo?codigo=7770642&info=resumen&idioma=ENG>
18. Chávez Barriga J. Prevalence of *Helicobacter pylori* infection among patients at the Ocaña Health Center, Ayacucho. *Rev Med Herediana*. 2020 Apr 29;31(1):23-29. http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1018-130X2020000100023
19. Wang Y, Zou J, Hu L, Liu Q, Huang R, Tang T, et al. General awareness and attitudes towards *Helicobacter pylori* screening and associated health behaviors in China: A cross-sectional study. *BMJ Open* [Internet]. 2022 Jan;12(1). Available from: <https://bmjopen.bmj.com/content/12/1/e057929>



20. Castro-Jalca J, Macías-Puertas M, Mendoza-Sancan F. Risk factors and demographic variables in *Helicobacter pylori* infection among individuals aged 25 to 55 in the Joa community of Jipijapa. *Pol Con*. 2021;6(7):19–35.
21. Aliaga Ramos J, Cedrón Cheng H, Pinto Valdivia J. Comparison of *Helicobacter pylori* infection prevalence in patients with dyspepsia from institutions of different socioeconomic strata during 2017-2018. *Soc Gastroenterol Peru*. 2019;39(3):211-214. Available from: <https://pubmed.ncbi.nlm.nih.gov/31688843/>
22. Driscoll LJ, Brown HE, Harris RB, Oren E. Knowledge, attitude, and practice regarding *Helicobacter pylori* transmission and outcomes: A literature review. *Front Public Health*. 2017;5. Available from: <https://doi.org/10.3389/fpubh.2017.00144>
23. Shin DW, Cho J, Kim SH, Kim YJ, Choi HC, Son KY, et al. Preferences for a “screen and treat” strategy for *Helicobacter pylori* to prevent gastric cancer in healthy Korean populations. *Helicobacter*. 2013 Aug 6;18(4):2629. Available from: https://bktimes.net/data/board_notice/1364353017-84.pdf
24. Baca Mauricio CF. Knowledge levels and quality of life in patients with *Helicobacter pylori* and/or dyspepsia attended in the outpatient gastroenterology clinic at Lanfranco La Hoz Hospital during 2020. [Lima]: USMP; 2022.
25. Malek AI, Abdelbagi M, Odeh L, Alotaibi AT, Alfardan MH, Barqawi HJ. Knowledge, attitudes, and practices of adults in the United Arab Emirates regarding *Helicobacter pylori*-induced gastric ulcers and cancers. *Asian Pac J Cancer Prev*. 2021 May 1;22(5):1645–52. Available from: <https://doi.org/10.31557/apjcp.2021.22.5.1645>
26. Guevara B, Cogdill AG. *Helicobacter pylori*: A review of current diagnostic and management strategies. *Dig Dis Sci [Internet]*. 2020 Jul 13;65(7):1917–31. Available from: <https://link.springer.com/article/10.1007/s10620-020-06193-7>
27. Vargas Cárdenas G, Balvin Yanes L, Chaiña Meza J. Adherence to eradication treatment for *Helicobacter pylori* and associated factors in a public hospital in Peru. *Llanos Tejada, Felix*. 2020;40(3). Available from: <https://pubmed.ncbi.nlm.nih.gov/33181808/>
28. Canchanya Ochoa E. Adherence to pharmacological treatment of *Helicobacter pylori* in patients served at the pharmacy of Clínica Tovar. [Huancayo]: Universidad Peruana Los Andes; 2022.

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