- *Basic Research*

Knowledge and Health Beliefs Regarding Helicobacter Pylori Infection Prevention among Nursing Students at Damanhour University: A Cross-Sectional Study

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Abstract

Background: Helicobacter pylori (H. pylori) infection remains a global health concern, necessitating effective patient education and prevention. Nursing students, as future professionals, are pivotal in disseminating health information and promoting prevention measures regarding H. pylori, particularly within the evolving digital health literacy contexts. **Aim:** To evaluate knowledge and health beliefs regarding H. pylori infection prevention among nursing students at Damanhour University. **Design: A** Descriptive cross-sectional design**. Methods and setting:** A self- administered questionnaire was distributed to a convenience sample of 1110 participants via official student group channels at the Faculty of Nursing, Damanhour University, Egypt. **Tools:** Two tools assessed demographics, H. pylori infection knowledge and health beliefs regarding infection prevention, which were evaluated using the Health Belief Model constructs. **Results:** Of 1110 participants, the majority were females (77.4%), single (90.6%), and from rural areas (72.1%), with 70.7% aged 20-24 age group. Primary knowledge sources included lectures (38.1%) and Internet/social media (35.5%). The study found that 67.8% of nursing students demonstrated fair knowledge, while 62.6% exhibited strong belief levels regarding H. pylori infection prevention. Knowledge significantly correlates with academic progression, with the third and fourth-year students showing highest proficiency. A notable deficit in knowledge concerning symptoms and clinical presentation was observed, particularly among first-year students (mean score 1.18 ± 0.80), despite high knowledge in treatment, management, and complications. **Conclusion:** Damanhour University nursing students, especially those in advanced academic years, possess fair knowledge and strong health beliefs regarding H. pylori infection prevention. These findings emphasize the importance of integrating continuous, technology- enhanced educational interventions into nursing curricula to improve comprehensive knowledge and foster positive health behaviors related to H. pylori prevention, thereby enhancing their role in patient health education and digital health literacy.

Keywords: Helicobacter pylori infection, health beliefs, knowledge, prevention, nursing students.

Introduction

Helicobacter pylori (H. pylori) is a spiral-shaped, Gram-negative bacterium that infects the lining of the stomach, ranking among the most frequent chronic bacterial infections globally, with a greater incidence observed in developing countries (Hooi et al., 2017; Liou et al., 2020). Following its identification by Barry Marshall and Robin Warren in 1982, H. pylori has been recognized as a primary cause of chronic gastritis, peptic ulcer disease, and gastric adenocarcinoma. Although it may remain clinically silent throughout life, it causes gastroduodenal diseases, in addition to bleeding in patients taking nonsteroidal anti-inflammatory drugs and aspirin and reveals symptoms in a subset of patients with functional dyspepsia (Malfertheiner et al., 2023; Zheng et al., 2023; Katelaris et al., 2023).

Beyond its well-established role in gastrointestinal diseases, recent findings suggest a connection between H. pylori infection and several non-gastric conditions such as anemia and skin disease (Del Vecchio et al., 2022). The prevalence of H. pylori among adults was higher in low- and middle-income countries, including Africa and the Eastern Mediterranean; meanwhile, it is higher in rural developing areas than in urban developed regions. A worldwide decrease of H. pylori among adults was noted, dropping from a range of 50–55% to 43% between 2014 and 2020, largely because of better socioeconomic conditions and more widespread antibiotic use. (Hooi et al., 2017; Liou et al., 2020; Malfertheiner et al., 2023).

Transmission typically occurs during childhood via oral-oral or fecal-oral routes. Significant risk factors associated with H. pylori infection encompass low socioeconomic status, inadequate sanitation, crowded living conditions, and geographical location, with higher infection rates in regions with inadequate access to clean water and adequate sanitation. Lifestyle factors such as smoking and alcohol consumption, alongside family history and age, also contribute to the risk of infection (Rugge et al., 2024).

Around 80% of infected individuals are asymptomatic that makes effective prevention and early detection critical. Thus, a precise diagnosis is essential for successfully managing the condition and avoiding future complications. Diagnostic modalities range from non-invasive methods like serology, stool antigen detection, and urea breath analysis to invasive procedures like endoscopic biopsy with histological analysis (Jaroń et al., 2023). Standard treatments regimen typically involve triple or quadrable therapy, which pairs proton pump inhibitor with at least two other antibiotics. However, given the challenges of treatment and the asymptomatic nature of many infections, preventing transmission in the first place is crucial public health strategy (Elkhodary et al., 2020).

As future frontline healthcare practitioners, nursing students' health behaviors can significantly influence the H. pylori infection transmission and control in healthcare settings. Their involvement in research and quality improvement projects related to H. pylori infection is also essential, as it appears to be asymptomatic for many individuals. Understanding H. pylori's impact on the gastrointestinal system and its related illnesses is vital for nursing students, who are the cornerstone in patient education, preventive measures, and disease management (Soliman et al. 2025).

In an increasingly digitalized healthcare landscape, the role of technology and information dissemination in shaping health literacy, especially among nursing students is undeniable. Nursing students often leverage diverse information sources, including digital platforms, to acquire knowledge. Understanding their primary source of information and how these

influence their knowledge and beliefs is vital for developing targeted educational interventions that align with modern learning modalities and patient education (Kleib et al. 2024; Amin et al. 2025).

Knowledge and health beliefs can significantly influence an individual's health behaviors and choices. In Egypt's Suez Canal region, it was evident that the public had poor knowledge and suboptimal prevention habits, with negative attitudes rooted in asymptomatic beliefs and low perceived benefits regarding H. pylori infection and management (Soliman et al., 2025). In this regard, the Health Belief Model (HBM) serves as a valuable framework for explaining how individuals' beliefs impact their health choices. As per this model, individuals cognitively believe in its construct and are inclined to safeguard their health when they perceive risk, trust in the effectiveness of recommended behaviors, and have confidence in their capability to enact changes. (Janz & Becker, 1984; Jones et al., 2023).

Nursing students' awareness that H. pylori infection may be asymptomatic is a imperative determinant of their perceived susceptibility and personal vulnerability to acquiring the infection (El-maghawry et al., 2022). Their recognition of the seriousness of untreated complications, such as gastric ulcers and malignancies, together with their understanding of the benefits of treatment, can guide educational approaches to improve adherence to the often long and complex antibiotic regimens and follow-up care required for eradication (Zha et al., 2022). Furthermore, students' perception of the effectiveness of preventive practices, including food hygiene and infection control, is directly related to their motivation to adopt these behaviors, which is particularly important among those students living away from their families (Mahmoud, 2024).

In addition, their self-efficacy regarding health-seeking behaviors and treatment adherence can significantly influence infection rates in healthcare settings, as stronger confidence is associated with better engagement in infection control measures and peer-driven health messaging (Mahmoud, 2024). Finally, educational interventions have been shown to serve as powerful cues to action, with structured health literacy programs producing significant improvements in both knowledge and preventive practices among university students (Hafiz et al., 2021; El-maghawry et al., 2022).

Adequate knowledge and accurate health beliefs about H. pylori are essential for nursing students to effectively contribute to curative, preventive, and educational practices. However, existing studies have largely focused on general awareness (Alajmi et al., 2023; El-maghawry, 2022; Hafiz et al., 2021), without addressing students' underlying health beliefs. To date, no research has employed HBM to guide such investigations. This gap underscores the importance of assessing nursing students' knowledge and health beliefs to inform evidence-based educational and preventive strategies.

Significance of Study

At Shendi University, Sudan, a recent study has revealed a prevalence rate of 36.0% among medical students (Naser et al., 2025), indicating a moderate infection rate within a young and medically informed group. This observation implies that H. pylori infection continues to be a significant public health issue, even among groups assumed to have advanced health literacy and hygiene practices. In this context, the current research addresses a critical gap in assessing the knowledge and health beliefs of nursing students at Damanhour University regarding H. pylori infection prevention. The findings will provide valuable implications for nursing

education, clinical practice, and public health not only in Egypt but also in similar global contexts.

Aim of the Study: This study aimed to assess Damanhour University nursing students' knowledge and health beliefs regarding Helicobacter pylori infection prevention.

Research Question: To achieve the study objective, the following questions were formulated:

- Q1: What are the knowledge levels regarding Helicobacter pylori infection prevention among nursing students at Damanhour University?
- Q2: What are the health belief levels regarding Helicobacter pylori infection prevention among nursing students at Damanhour University?

Method and Design:

Research Design.

A descriptive cross-sectional approach was employed to evaluate the knowledge and health beliefs regarding Helicobacter pylori infection prevention among nursing students at the Faculty of Nursing, Damanhour University in Egypt. This design was chosen for its efficiency in assessing the prevalence of knowledge and health beliefs among different academic levels of nursing students at a single academic year within the same educational health science organization (faculty of nursing) . It is particularly appropriate for identifying association between variables (e.g., academic year, knowledge levels, and health beliefs) and for directing preventive interventions amongst future health care providers.

Setting

This study was carried out at the Faculty of Nursing, Damanhour University, Egypt. This specific setting was selected due to its accessibility to a large and diverse population of rural residence nursing students (where H pylori infection is very common), representing a significant cohort of future healthcare professionals in the region. Damanhour university is a prominent institution in Egypt, and its nursing faculty provides a large sample for understanding educational needs and health beliefs of nursing students in a typical Egyptian academic environment.

Subjects:

The researchers enrolled 1,110 undergraduate nursing students from the baccalaureate nursing program at different levels at the Faculty of Nursing, Damanhour University, using convenience sampling during the academic year 2024/2025. The sample comprised 250 first-year students, 300 second- year students, 270 third-year students, and 290 fourth-year students, including both males and females. **Inclusion criteria** for participation included being enrolled in Baccalaureate nursing program at Damanhour university during the previously mentioned academic year and providing informed consent. **Exclusion criteria** included students who were graduates of technical nursing institutes.

Sampling of the study

The sample size was calculated using the Epi Info-7 software (version 7), based on a 95% confidence level, an 80% power value, an estimated 50% prevalence, and a 5% error margin, which led to a necessary sample size of 1,110 students. The actual number of enrolled participants (1,110) was identical to the calculated sample size, ensuring adequate statistical power for the study's objectives. Convenience sampling was utilized due to its practicality and feasibility in accessing the target population within the academic setting. This nonprobability sampling technique involved selecting participants who were readily available and willing to participate, which is a common approach in educational research setting.

Tools of the Study:

The **researchers developed two tools based on a review of recent relevant literature** (Alajmi et al., 2023; Alhazmi et al., 2023; Hafiz et al., 2021; Hafiz et al., 2023; & Maqbul et al., 2024). Both tools were created by Microsoft Forms and transformed into self-administered online questionnaires. Therefore, students' informed consent with an explanation of the study aim preceded answering the questionnaires, where all questions were mandatory. The tools were as follows:

Tool I: Nursing Students' Knowledge Regarding Helicobacter Pylori Infection Prevention Questionnaire: This tool entails two parts:

- **Part (1): Demographic and Academic Data:** This section gathers information related to students' names, codes, ages, genders, marital statuses, academic years, places of residence, family income, and students' primary sources of information.
- **Part (2): Knowledge Regarding H. pylori Infection Prevention:** This part of the tool focused on evaluating students' understanding of H. pylori under the following headings: its microbiology characteristics and definition, transmission & risk factors, symptoms & clinical presentation, diagnosis, treatment & management, complications, lifestyle & dietary considerations, and prevention & control. This was measured through 24 multiple-choice questions with more than one correct answer for each.

Scoring system:

The scoring system for part 2 of the tool was designed to evaluate knowledge levels based on a maximum possible score of 33 points. Each question's responses were scored, with two points awarded for correct and complete answers, one point for correct, incomplete answers, and zero points for incorrect answers. All items' scores were then summed to produce a total score. These scores were converted into percentages using the formula Score % = (student's score / maximum score) x 100. Finally, these percentages were used to classify students into three knowledge levels: "Poor Knowledge" represents a score between 0 and 16, corresponding to a total score of less than 50%; "Fair Knowledge" represents 17 to 23, corresponding to 50% to less than 75% of the total score; and "Good Knowledge" represents 24 to 33, corresponding to a total score of 75% or higher.

Tool II: Nursing students' health beliefs regarding the Helicobacter pylori infection prevention questionnaire:

This study assessed students' health beliefs regarding the prevention of H. pylori infection using a questionnaire based on the HBM's constructs. Participants rated their agreement with 16 statements employing a five-point Likert scale, with '1' representing 'Strongly Disagree' and '5' representing 'Strongly Agree.' The purpose of these statements was to evaluate five core components of HBM as they pertain to preventing and managing H. pylori infection:

- **Perceived susceptibility:** Included three statements assessing beliefs about the risk of contracting the infection.
- **Perceived seriousness:** Included three statements regarding the perceived severity and potential complications of the infection.
- **Perceived benefits:** Included four statements concerning the positive outcomes of preventive measures, early diagnosis, and treatment.
- **Cues to Action:** Included three statements exploring factors that would trigger a "readiness" to take preventive action.
- **Self-efficacy:** Included three statements measuring confidence in one's ability to perform preventive actions and manage the infection.

Scoring System:

To measure the strength of health beliefs, a scoring system was implemented based on 16 statements, with each statement being scored on a scale from 1 to 5 points. This resulted in a total possible score falling between a minimum of 16 and a maximum of 80. Elevated scores signify more robust and positive health beliefs, whereas lower scores point to weaker or more negative beliefs. For analysis, these scores were categorized into two levels: scores representing less than 75% of the total (16<60 points) were classified as "Weak/Negative Health Beliefs," while scores from 75% to 100% (60–80 points) were categorized as "Strong/Positive Health Beliefs."

Validity and Reliability of Tools

Validation of Tools

To ensure content validity, the tools were reviewed for clarity, relevance, comprehensiveness and appropriateness of language by five experts in medical-surgical nursing. Their suggested feedback was incorporated to refine the items and improve the overall quality of the instruments.

Reliability of Tools

The internal consistency reliability of Tool II (health beliefs questionnaire) was assessed using Cronbach's alpha. A Cronbach's alpha value 0.959 was obtained, indicating strong internal consistency and reliability of the scale. This suggests that the items within the health beliefs questionnaire consistently measure the same underlying construct. For Tool I (knowledge questionnaire), reliability was established through a test-retest method, yielding a correlation coefficient of 0.927, indicating good stability over time.

Pilot Study

Prior to the main data collection, a pilot study was administered to 111 nursing students, representing 10% of the total sample, to evaluate the study instruments for clarity, practicality, and relevance. Adjustments were made to the tools based on the feedback received from the students.

Ethical Consideration

The study received ethical approval from the Ethics Committee (Institutional Research Board Approval) of the Faculty of Nursing, Damanhour University on December 15, 2022, with the approval code (68-c). Formal approval to conduct the study was obtained from the Dean of the Faculty of Nursing at Damanhour University. Informed consent was secured from all participants, who were assured about the confidentiality and anonymity of their responses, as it is voluntary participation and will not affect their grades.

Data Collection

Data were collected using an online, self-administered questionnaire developed with Microsoft Forms through sharing and distributing the links via official student group channels on Microsoft Teams, Telegram, and WhatsApp. Data collection spanned a two-month period from February to April 2025. Both questionnaires took approximately 15 to 30 minutes to complete.

Data Analysis and Processing:

The data were statistically analyzed using IBM SPSS software version 20.0 (Armonk, NY: IBM Corp., released 2011). For categorical data, summaries were presented in the form of frequencies and percentages. For continuous data, normality was assessed using the **Kolmogorov-Smirnov** test. Descriptive statistics for quantitative data included the range (minimum and maximum), mean, and standard deviation. A significant level of 5% was used to evaluate the results.

The tests used were:

1 - Chi-square test: To make comparisons between different groups for categorical variables.

2 - F-test (ANOVA): For normally distributed quantitative variables, to compare between more than two groups, and Post Hoc test (Tukey).

Results

The current study presents the following key findings, with detailed data provided in the accompanying tables.

Table 1: Distribution of the nursing students according to their demographic and academic data.

As indicated in Table 1, the highest percentage (70.7%) of nursing students was aged 20-24 years, with females comprising 77.4%. In terms of marital status, a vast majority of nursing students (90.6%) were single. Rural residents accounted for nearly three-quarters (72.1%) of them. As regards family income, the highest percentage (70.9%) of nursing students reported

enough family income. Regarding the year of study, the study sample included a representative distribution across academic years: 22.5% from the first year, 27.0% from the second year, 24.3% from the third year, and 26.1% from the fourth year. Lectures and the Internet/social media were the primary sources of knowledge for 38.1% and 35.5% of them, respectively, while healthcare providers were the source for only 1.4% of them.

Table 2: Distribution of nursing students by total knowledge means regarding Helicobacter pylori infection prevention.

As shown in Table 2, there was a statistically significant increase in total knowledge scores corresponding with each academic year ($p < 0.001$), which indicates a progressive and noteworthy acquisition of knowledge. Specifically, the treatment, management & complications domain consistently had the highest mean scores, with the third-year students having the highest mean (6.06 ± 1.70) in this domain. Conversely, symptoms & clinical presentation generally had the lowest mean scores, particularly among first-year students (1.18 ± 0.80). Overall, the total knowledge mean significantly increases with each academic year, with third-year students demonstrating the highest total knowledge mean (20.84 ± 4.48) and first-year students the lowest (14.28 ± 7.78). Also, there were statistically significant differences between first-year students and the rest of the three academic years ($p<0.001$).

Table 3: Percentages distribution of nursing students according to their knowledge levels regarding Helicobacter pylori infection prevention.

Table 3 presents nursing students' knowledge levels regarding H. pylori infection, categorized into poor, fair, and good knowledge across different years of study. The study revealed that 67.8% of nursing students demonstrated fair knowledge scores, while 6.1% had good knowledge, and 26.0% had poor knowledge regarding H. pylori infection prevention. Knowledge levels significantly correlated with academic progression ($F=79.853$, $p<0.001$), with third and fourth-year students showing the highest proficiency. Specifically, pairwise comparisons using Post Hoc Test (Tukey) indicated significant differences in overall knowledge between the first year and subsequent years ($p<0.001$ for all comparisons with first year). Notably, the percentage of students with high knowledge increases progressively with academic years, peaking at 41.2% in the fourth year. Conversely, poor knowledge was most prevalent in the first year (52.6%), and decreased significantly in subsequent years, with the lowest in the third year (12.1%). Consistently, fair knowledge was predominant across all years (67.8%), with the highest proportion found among second-year students (31.5%). Figure (1)

Table 4: Distribution of nursing students according to their means of health beliefs regarding Helicobacter pylori infection prevention.

This table displays the average scores for nursing students' health beliefs regarding H. pylori infection prevention, as measured by the constructs of HBM. The analysis is stratified by the year of study. The HBM construct were generally strong and showed significant associations with the year of study ($p < 0.001$). A steady and statistically significant increase in the average scores is observed across all HBM constructs as students advance from their first to their fourth year of study. Third and fourth-year students consistently reported higher mean scores across perceived susceptibility, perceived severity, perceived benefits, cues to action, and self-efficacy compared to first and second-year students. For instance, perceived susceptibility scores were significantly higher in third and fourth-year students compared to first-year students ($p<0.001$). Scores are all above the midpoint, suggesting that students, on average,

perceive themselves as susceptible to H. pylori, view it as a severe condition, believe in the benefits of preventive actions, are prompted by cues to take action, and feel confident in their ability to perform these actions.

Table 5: Percentages distribution of nursing students according to their health belief levels regarding Helicobacter pylori infection prevention.

Table 5 categorizes nursing students' health beliefs into weak health beliefs and strong health beliefs based on their overall health belief levels. Over three-fifths of nursing students (62.6%) exhibit strong health beliefs regarding H. pylori infection prevention. This percentage is consistently high across all years of study, with third-year students showing the highest proportion of strong health beliefs (74.1%). Figure (2)

Table 1: Distribution of the nursing students according to their demographic and academic data.

Demographic data	n = 1110	
	No.	%
Age (Years)		
▪ Under 20	317	28.6
▪ 20-24	785	70.7
▪ 25-29	8	0.7
Min. – Max. Mean ± SD.	18.0 – 28.0 20.44 ± 1.63	
Gender		
▪ Male	251	22.6
▪ Female	859	77.4
Marital Status		
▪ Single	1006	90.6
▪ Married	103	9.3
▪ Widow	1	0.1
Family income		
▪ Enough	787	70.9
▪ Not enough	323	29.1
Residence		
▪ Rural	800	72.1
▪ Urban	310	27.9
Year of study		
▪ First year	250	22.5
▪ Second Year	300	27.0
▪ Third Year	270	24.3
▪ Fourth Year	290	26.1
Information Source		
▪ Lectures	423	38.1
▪ Textbooks	68	6.1
▪ Internet/social media	394	35.5
▪ Peer Discussions	104	9.4
▪ Workshops/Seminars	65	5.9
▪ Personal experience	40	3.6
▪ Healthcare providers	16	1.4

SD: **Standard deviation**

Table 2: Distribution of nursing students by total knowledge means regarding Helicobacter pylori infection prevention.

Helicobacter Pylori knowledge subscales	Total (n = 1110)	First year (n = 250)	Second Year (n = 300)	Third Year (n = 270)	Fourth Year (n = 290)	F	p
▪ Microbiology Characteristics and definition.	2.21 ± 0.87	1.67 ± 0.97	2.33a ± 0.79	2.46a ± 0.71	2.32a ± 0.79	49.007	<0.001
▪ Transmission & Risk Factors.	2.11 ± 1.01	1.64 ± 1.15	2.21[a] ± 0.98	2.28[a] ± 0.93	2.23[a] ± 0.87	23.987	<0.001
▪ Symptoms & Clinical Presentation.	1.58 ± 0.64	1.18 ± 0.80	1.69[a] ± 0.53	1.72[a] ± 0.52	1.69[a] ± 0.54	47.414	<0.001
▪ Diagnosis.	1.80 ± 0.71	1.36 ± 0.85	1.90[a] ± 0.60	1.98[a] ± 0.58	1.92[a] ± 0.61	49.466	<0.001
▪ Treatment & Management, Complications.	5.48 ± 2.21	3.84 ± 2.62	5.87[a] ± 1.91	6.06[a] ± 1.70	5.93[a] ± 1.86	69.732	<0.001
▪ Lifestyle & Dietary Considerations.	4.10 ± 1.29	3.29 ± 1.71	4.33[a] ± 1.07	4.36[a] ± 0.96	4.33[a] ± 1.04	48.358	<0.001
▪ Prevention & control.	1.84 ± 0.94	1.30 ± 0.96	2.0[a] ± 0.84	1.99[a] ± 0.90	2.02[a] ± 0.89	40.360	<0.001
Overall, Knowledge	**19.13 ± 6.21**	**14.28 ± 7.78**	**20.34[a] ± 5.13**	**20.84[a] ± 4.48**	**20.44[a] ± 4.84**	**79.853**	**<0.001**
p_0			**<0.001**	**<0.001**	**<0.001**		
Sig. bet. years			**p_1=0.710, p_2=0.996, p_3=0.836**				

F: **F for the one-way ANOVA test**, pairwise comparison between. each group was done using **Post Hoc Test (Tukey)**
p: the value for the comparison across **different academic years.**
p_0: the value for the comparison of **the first year** and **each year of study**
p_1: the value for the comparison of **the second** and **third years.**
p_2: the value for comparison of **the second** and **fourth years.**
p_3: the value for comparison of **the third** and **fourth years.**
: Statistically significant at $p \leq 0.05$.
a: Significant with first year
b: Significant with Second Year

Table 3: Percentages distribution of nursing students according to their knowledge levels regarding Helicobacter pylori infection prevention.

Knowledge Levels	Total (n = 1110)		First year (n = 250)		Second Year (n = 300)		Third Year (n = 270)		Fourth Year (n = 290)		χ^2	p
	No.	%	No.	%	No.	%	No.	%	No.	%		
Poor (<50%)	289	26.0	152	52.6	53	18.3	35	12.1	49	17.0	220.408	<0.001
Fair (50 - <75%)	753	67.8	95	12.6	237	31.5	208	27.6	213	28.3		
Good (≥ 75%)	68	6.1	3	4.4	10	14.7	27	39.7	28	41.2		
p_0					<0.001		<0.001		<0.001			
Sig. bet. years					p1=0.003, p_2=0.007, p_3=0.428							

χ^2: **Chi-square test** p: p value for comparing **different years of study**

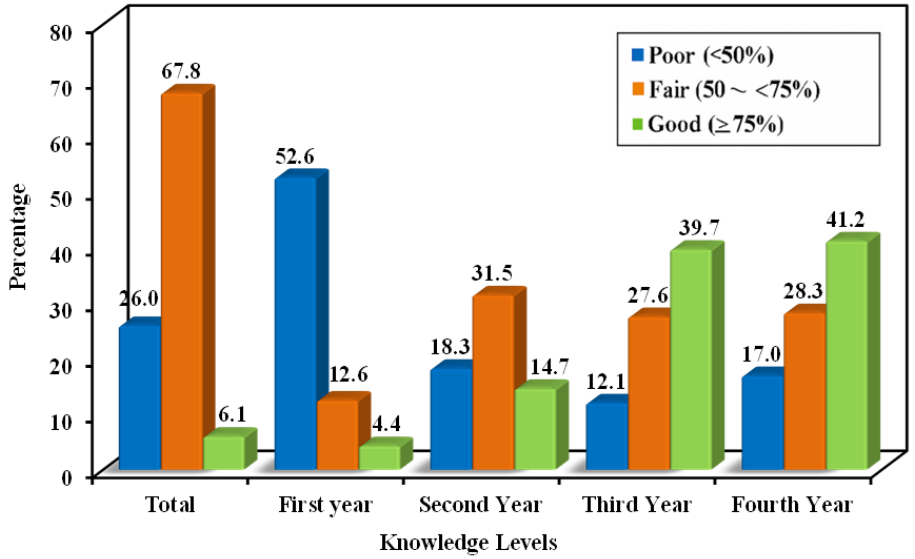

Figure 1: Nursing students' knowledge levels regarding Helicobacter pylori infection prevention

Table 4: Distribution of nursing students according to their means of health beliefs regarding Helicobacter pylori infection prevention.

HBM constructs	Total (n = 1110)	First year (n = 250)	Second Year (n = 300)	Third Year (n = 270)	Fourth Year (n = 290)	F	p
▪ Perceived Susceptibility	11.68 ± 2.20	10.99 ± 2.07	11.46 ± 2.15	12.22[ab] ± 2.32	12.01[ab] ± 2.05	17.647	<0.001
▪ Perceived Severity	12.16 ± 2.45	11.40 ± 2.60	12.33[a] ± 2.47	12.65[a] ± 2.31	12.20[a] ± 2.29	12.539	<0.001
▪ Perceived Benefits	15.90 ± 3.03	14.91 ± 3.07	15.55 ± 3.06	16.79[ab] ± 2.90	16.27[ab] ± 2.77	20.482	<0.001
▪ Cues to Action	11.74 ± 2.27	10.87 ± 2.15	11.61[a] ± 2.24	12.21[ab] ± 2.42	12.19[ab] ± 2.02	21.363	<0.001
▪ Self-Efficacy	11.85 ± 2.21	11.12 ± 2.27	11.75[a] ± 2.18	12.41[ab] ± 2.23	12.05[a] ± 1.99	16.447	<0.001
Overall	**63.33 ± 11.34**	**59.29 ± 11.55**	**62.70[a] ± 11.02**	**66.29[ab] ± 11.46**	**64.72[a] ±10.29**	**19.369**	**<0.001**
p_0			**0.002**	**<0.001**	**<0.001**		
Sig. bet. years			**p_1=0.001, p_2=0.118, p_3=0.341**				

F: **F for the one-way ANOVA test**, pairwise comparison between. each group was done using **Post Hoc Test (Tukey)**
p: the value for the comparison across **different academic years.**
p_0: the value for the comparison of **the first year** and **each year of study**
p_1: the value for the comparison of **the second** and **third years.**
p_2: the value for comparison of **the second** and **fourth years.**
p_3: the value for comparison of **the third** and **fourth years.**
: Statistically significant at $p \leq 0.05$.
a: Significant with first year **b: Significant with Second Year**

Table 5: Percentages distribution of nursing students according to their health belief levels regarding Helicobacter pylori infection prevention.

Health Belief Levels	Total (n = 1110)		First year (n = 250)		Second Year (n = 300)		Third Year (n = 270)		Fourth Year (n = 290)		χ^2	p
	No.	%	No.	%	No.	%	No.	%	No.	%		
▪ Weak Health beliefs	415	37.4	134	53.6	122	40.7	70	25.9	89	30.7	50.158	<0.001
▪ Strong Health beliefs	695	62.6	116	46.4	178	59.3	200	74.1	201	69.3		
p_0					0.002		<0.001		<0.001			
Sig. bet. years					p_1<0.001, p_2=0.011, p_3=0.212							

χ^2: **Chi-square test**

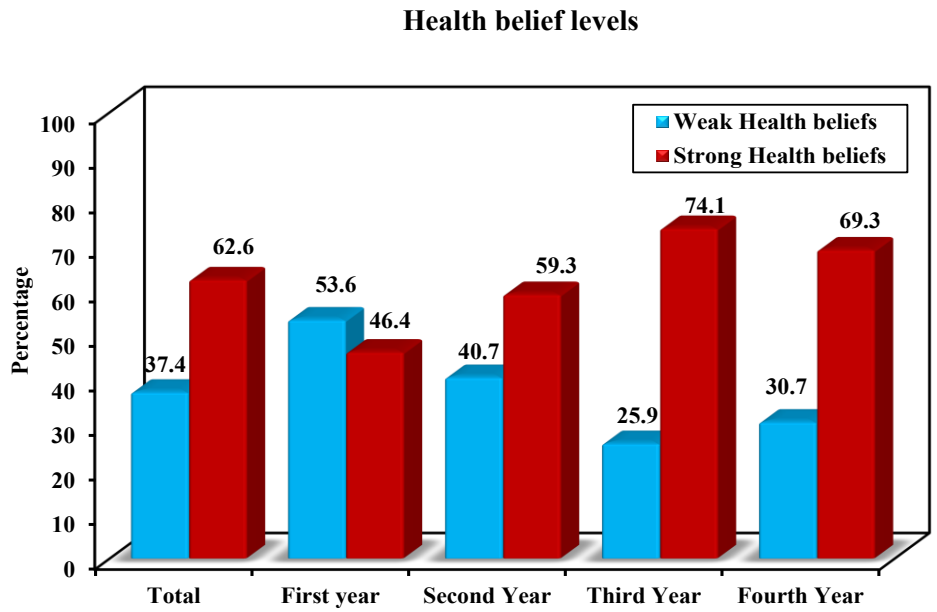

Figure 2: Levels of nursing students' health belief regarding Helicobacter pylori infection prevention

Discussion

This cross-sectional study on the knowledge and health beliefs of nursing students at Damanhour University regarding H. pylori infection prevention can ultimately contribute to better patient care and outcomes. The findings indicate that nursing students generally possess fair knowledge and strong health beliefs across the four years of study. This discussion will interpret these findings in the context of existing literature and explore their implications for nursing education, policy, and future research.

The nursing students' demographic profile

The demographic characteristics of the study participants primarily included individuals aged 20- 24 years who were female, single, and lived in rural areas. These characteristics are broadly consistent with the demographic trends observed in nursing education in Egypt, where the profession often attracts a higher proportion of young and female individuals from rural areas.

This outcome agrees with the results of El-Maghawry et al. (2022) and disagrees with Mahmoud et al. (2024) and Alhazmi et al. (2023), as their higher percentage of students were males. As for age group, a younger age group (18-19 years old) was reported by Shehab et al. (2023).

While the high proportion from rural areas aligns with Ali et al. (2023) in reporting a majority of from rural areas. Considering family income, the highest percentage of nursing students reported enough family income, which disagreed with the findings from Mahmoud et al. (2024), who reported that a high proportion of nursing institute students had less than enough monthly income.

In terms of primary sources of information, healthcare providers were cited least, by only a few of the students. This finding might be interpreted by the fact that only a few of them had personal experience with H. pylori and their good socioeconomic status, which is a well-established factor protecting against infection (Zamani et al., 2018). Additionally, Xue et al. (2019) showed that low income is one of the factors that is associated with H. pylori infection recurrence. On the other hand, the highest proportion of nursing students reported lectures and internet/social media as their primary knowledge sources. This partially aligns with El-Maghawry et al. (2022), who reported that over two-thirds sourced related information from social media. The heavy reliance on lectures and internet/social media, while indicative of modern learning trends, carries significant implications for misinformation risk and curriculum design. While digital platforms offer vast information, they also present challenges in discerning credible sources. This necessitates a critical discussion within nursing curricula on evaluating online health information and integrating digital literacy skills. Furthermore, educators must ensure that traditional lectures are engaging and comprehensive enough to compete with readily available online content, actively addressing potential misinformation encountered by students

Knowledge Levels among Nursing Students

The study indicated that knowledge about H. pylori infection prevention increases progressively as students move through their academic years, confirming the effectiveness of the nursing curriculum. The highest knowledge scores were in the domain of treatment & management and complications, suggesting a strong focus on these areas in the curriculum. However, there was a significant lack of knowledge in the symptoms & clinical presentation

domain. This is reflected in Table 2, where the symptoms & clinical presentation domain generally had the lowest mean scores, particularly among first-year students.

This finding underscores the need for targeted educational interventions to improve nursing students' ability to recognize manifestations of H. pylori infection, thereby enhancing patient care outcomes. Additionally, the current study findings show that the overall knowledge level of nursing students is fair for 67.8% of the students, with only 6.1% having good knowledge. These results align well with educational theories and the anticipated outcomes of a structured academic program. The gradual increase in good knowledge levels and the decrease in poor knowledge levels over the academic years highlight the cumulative learning process in nursing education.

As students advance, they are exposed to more complex concepts such as pathophysiology, pharmacology, and related specialized clinical rotations in gastroenterology, and opportunities for critical thinking, all of which contribute to a deeper and more comprehensive understanding of health- related topics like H. pylori infection prevention .

This aligns with the study by Al Omari et al. (2025); though they evaluated knowledge, attitudes, and practices regarding H. pylori in a Jordanian population, they found a fair level of knowledge but noted gaps in understanding transmission routes and complications. However, Hafiz et al. (2021) found that overall knowledge scores about H. pylori infection were low among both health science and non-health science students.

This supports the current study finding that some groups (e.g., first-year students) have lower knowledge levels and highlights the general need for improved education on H. pylori infection prevention and control. In the same context, Maqbul et al. (2024) found that their participants were aware of H. pylori but noted limited awareness of treatments and identification of factors like water and food. In contrast, Liu et al. (2025) found a lower mean knowledge score that further supports the relatively higher knowledge levels in our study. Additionally, Alaridah et al. (2023) assessed knowledge and the impact of information sources on H. pylori awareness in Jordan and pointed out that more than two-thirds had a low level of knowledge and that medical sources significantly improved knowledge. The differences in knowledge levels across various studies can be attributed to several factors, including variations in curriculum content, teaching methodologies, cultural contexts, and the specific populations studied. For instance, a curriculum with a stronger emphasis on clinical manifestations and early diagnosis might yield higher knowledge in symptom recognition. Similarly, differences in public health campaigns and general health literacy levels in different countries could influence baseline knowledge among students.

Belief Levels among Nursing Students

The current study findings also reveal that a significant majority of nursing students in this study held strong health beliefs regarding H. pylori infection prevention across all constructs of the HBM (susceptibility, severity, benefits, cues to action, and self-efficacy), which is shown by the fact that over three-fifths of nursing students exhibit stronger health beliefs across the four years.

This is a critical finding, as strong health beliefs are essential for promoting proactive health behaviors and adherence to preventive measures. The high prevalence of strong health beliefs among nursing students suggests a strong potential to act as health advocates in their clinical settings and communities, educating the public about H. pylori prevention and early detection.

The strong health beliefs observed in this study are consistent with literature linking such health beliefs to improved health outcomes (Smith & Johnson, 2019). Furthermore, this study demonstrates a clear connection between higher knowledge and stronger health beliefs. As students' progress academically and their knowledge base expands, their understanding of severity, susceptibility, benefits of prevention, and self-efficacy also strengthens. This suggests that comprehensive educational interventions that enhance knowledge directly contribute to the formation of robust health beliefs, which are crucial for future healthcare practitioners

The influence of academic progression on health beliefs is also in line with principles of educational psychology, which posit that learning and exposure to new information can lead to changes in attitudes and health beliefs (Navarro, García-Rubio, & Olivares, 2015). This is further supported by a systematic review by Alani et al (2024), which found a strong link between individuals' health beliefs and their adoption of preventive measures. Interestingly, a study by Liu et al. (2025) found that while residents had limited knowledge of H. pylori, they held positive health beliefs and engaged in good preventive practices, with social media being a significant source of information. This highlights the complex interplay between knowledge, health beliefs, and external factors such as digital media. The observed disconnect in some populations, where positive health beliefs exist despite limited knowledge, underscores the importance of understanding the various pathways through which beliefs are formed, including cultural norms, personal experiences, and social influences, beyond formal education.

In summary, this study highlights the evolving knowledge and strong health beliefs of nursing students regarding H. pylori infection, influenced by academic progression. Addressing identified knowledge gaps, particularly in symptom recognition, through targeted educational strategies and leveraging diverse information sources will be crucial for enhancing their future clinical practice and ultimately improving health outcomes.

Strengths and Limitations:

The study features a large sample size and a comprehensive assessment of both H pylori prevention knowledge and health beliefs. The findings provide predictability of nursing students' health behavior and preventive practices regarding H. pylori infection prevention and control. However, this study has some limitations, as the use of a convenience sample from a single university limits the generalizability of the findings to other nursing student populations. The cross-sectional design does not allow for the assessment of changes in knowledge and health beliefs over time. Furthermore, the reliance on self-reported data through online questionnaires may introduce the potential for response and reporting bias.

Conclusion

The results of the study showed that nursing students at Damanhour University have fair knowledge level and strong health beliefs regarding H. pylori infection prevention. Knowledge and health beliefs improve significantly with academic progression, highlighting the effectiveness of the nursing curriculum. However, specific knowledge gaps, particularly in symptom recognition, persist. These findings underscore the need for targeted educational strategies to address knowledge deficiencies to foster robust, evidence-based health beliefs among future nursing professionals.

Recommendations

Recommendations for Nursing Practice and Education:

The identified gaps, particularly in symptom recognition, should be addressed through curriculum and targeted educational programs. The strong influence of personal experience on health beliefs suggests that incorporating more case studies and patient interactions into the curriculum could be highly effective, in particular, for first-year nursing students. Its also important to:

- Identify high risk patients for H. pylori infection through proactive and risk assessment during routine care.
- Educate patients and their families on treatment adherence, prevention of transmission and the long-term health risks of untreated infection.
- Employ infection controls best practices, particularly hand hygiene and environmental sanitation, in all clinical settings.
- Integrate digital platforms and social media into formal health education to leverage their influence while ensuring the accuracy and reliability of information.

Recommendations for Health and Healthcare Policy.

- The study highlights the need for public health campaigns to improve H. pylori awareness among the general population, especially regarding prevention and control, as it is generally asymptomatic.
- Policy makers should consider standardizing health education that fosters stronger health beliefs, especially regarding perceived susceptibility to H. pylori infection among health care students (nursing students) across their study years, as their schedules and accommodations don’t permit proper food and water hygiene.

Recommendations for future research:

- Conduct interventional studies to test the effectiveness of specific educational strategies (e.g., problem-based learning, early clinical rotations) on improving H. pylori infection prevention and control practices.
- Explore the factors influencing belief formation through qualitative research, including in- depth interviews with students to understand how personal experiences and peer influence shape their health beliefs.
- Conduct comparative studies across different universities and countries to assess the generalizability of these findings in nursing education regarding H. pylori. prevention and control
- Explore the relationship between the nursing students’ H pylori preventive practices and their knowledge and health beliefs
- Explore the long-term impact of nursing students’ knowledge and health beliefs on real-world patient results and public health initiatives once they enter professional practice to improve healthcare delivery systems.
- Explore the impact of integrating digital platforms and social media into formal health education to leverage their influence while ensuring accuracy and reliability of information.

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Author Contributions

All authors were involved in conceptualizing and designing the study, collecting and analyzing data, and drafting and revising the manuscript. The final version of the manuscript has been reviewed and approved by all authors.

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References:

1. Alajmi, S. M., Alsulami, T. M., Mudayhish, M. A. B., Alhawas, M. A., Alangari, M. S., Alfarhan, A., & Omair, A. (2023). Knowledge and Attitude of Medical Students Towards Helicobacter Pylori Infection and Its Prevention and Management: A Study from Riyadh, Saudi Arabia. *Cureus*, 15(12). https://doi.org/10.7759/cureus.51174
2. Alaridah, N., Jarrar, F., Joudeh, R. M., Aljarawen, M., Nassr, H., AlHmoud, R., Allouzi, A., Wadi, E. M., & Abu-Humaidan, A. H. (2023). Knowledge and information sources towards Helicobacter pylori in Jordan. *PLOS ONE*, 18(3), e0278078. https://doi.org/10.1371/journal.pone.0278078
3. Alani, A., Hammouri, M., Sultan, H., Al-Huneidy, L., Mansour, A., & Al-Hussaini, M. (2024). Factors affecting cervical screening using the health belief model during the last decade: A systematic review and meta-analysis. *Psychooncology*, 33(1), e6275. https://doi.org/10.1002/pon.6275
4. Alhazmi, Abdulaziz H.; Haqawi, Nawaf F.; Alqarni, Ziyad K.; Alhazmi, Faris A.; Masmali, Muath Ibraheem; Hakami, Khalid M.; Dhamri, Yahya A.; Alharbi, Abdullah A.. Knowledge about Helicobacter pylori among Jazan University Students: A Cross-sectional Study from Saudi Arabia. *Hail Journal of Health Sciences* 5(2):p 53-58, Jul–Dec 2023. https://doi.org/10.4103/hjhs.hjhs_7_23
5. Ali Mohamed, E., Sobhy Abd El-Aziz, M., & Abdallah Abdel-Mordy, M. (2023). Health program for mothers regarding prevention of Helicobacter pylori infection for their adolescents under 20 years. *Journal of Nursing Science Benha University*, 4(1), 564-576. https://doi.org/10.21608/JNSBU.2023.278833
6. Al Omari, S. M., Khalifeh, A. H., Moman, R., & Sawan, H. M. (2025). Knowledge, Attitudes, and Practices Related to Helicobacter pylori and Gastric Disease in Jordan: Implications for Early Detection and Eradication. *Infection and Drug Resistance*, 1503-1514. https://doi.org/10.2147/IDR.S508330
7. Amin, S. M., El-Fattah Mahgoub, S. A., Tawfik, A. F., Khalil, D. E., El-Sayed, A. A. I., Atta, M. H. R., Albzia, A., & Morsy Mohamed, S. R. (2025). Nursing education in the digital era: the role of digital competence in enhancing academic motivation and lifelong learning among nursing students. *BMC Nursing*, *24*(1), 571. https://doi.org/10.1186/s12912-025-03199-2
8. Del Vecchio, L. E., Fiorani, M., Tohumcu, E., Porcari, S., Cammarota, G., & Ianiro, G. (2022). Helicobacter pylori and extragastric diseases. *Microbiota and Health*, 4, e719.
9. Elkhodary, N. M., Farrag, K. A., Elokaby, A. M., & El-Hay Omran, G. A. (2020). Efficacy and safety of 7 days versus 10 days triple therapy based on levofloxacin-dexlansoprazole for eradication of *Helicobacter pylori*: A pilot randomized trial. *Indian Journal Of Pharmacology*, *52*(5), 356–364. https://doi.org/10.4103/ijp.IJP_364_19
10. El-maghawry, A., Mohamed Metwaly, S., & Moustafa Abdallah Elpasiony, N. (2022). The Efficacy of Health Literacy sessions regarding Helicobacter Pylori Infection on University Students' Knowledge and Practices: Sustainability Health, Egypt 2030. *Egyptian Journal of Health Care*, *13*(3), 2022-2035. https://doi.org/10.21608/ejhc.2022.281021
11. Hafiz, T. A., D'Sa, J. L., Zamzam, S., Dionaldo, M. L. V., Mubaraki, M. A., & Tumala, R. B. (2021). Helicobacter pylori Infection: Comparison of Knowledge between Health Science and Non-Health Science University Students. *International Journal of Environmental Research and Public Health*, *18*(15), 8173. https://doi.org/10.3390/ijerph18158173
12. Hafiz, T. A., D'Sa, J. L., Zamzam, S., Visbal Dionaldo, M. L., Aldawood, E., Madkhali, N., & Mubaraki, M. A. (2023). The Effectiveness of an Educational Intervention on Helicobacter pylori for University Students: A Quasi-Experimental Study. *Journal Of Multidisciplinary Healthcare*, 16, 1979–1988. https://doi.org/10.2147/JMDH.S419630

13. Hooi, J. K. Y., Lai, W. Y., Ng, W. K., Suen, M. M. Y., Underwood, F. E., Tanyingoh, D., Malfertheiner, P., Graham, D. Y., Wong, V. W. S., Wu, J. C. Y., Chan, F. K. L., Sung, J. J. Y., Kaplan, G. G., & Ng, S. C. (2017). Global Prevalence of Helicobacter pylori Infection: Systematic Review and Meta-Analysis. *Gastroenterology*, *153*(2), 420–429. https://doi.org/10.1053/j.gastro.2017 .04.022
14. Janz, N. K., & Becker, M. H. (1984). The Health Belief Model: a decade later. *Health Education Quarterly*, *11*(1), 1–47. https://doi.org/10.1177/1090198 18401100101
15. Jaroń, K., Pietrzak, A., Daniluk, J., Adrych, K., Gąsiorowska, A., Skrzydło-Radomańska, B., Małecka-Wojciesko, E., Zwolińska-Wcisło, M., Waluga, M., Reguła, J., & Rydzewska,G. (2023). Diagnostic and therapeutic recommendations on Helicobacter pylori infection. Recommendations of the Working Group of the Polish Society of Gastroenterology. *Przeglad Gastroenterologiczny*, 18(3), 225–248. https://doi.org/10.5114/pg.2023.131998
16. Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J. (2023). The Health Belief Model of behavior change. In M. A. D. StatPearls (Eds.), StatPearls. StatPearls Publishing.
17. Katelaris, P., Hunt, R., Bazzoli, F., Cohen, H., Fock, K. M., Gemilyan, M., Malfertheiner, P., Mégraud, F., Piscoya, A., Quach, D., Vakil, N., Vaz Coelho, L. G., LeMair, A., & Melberg, J. (2023). Helicobacter pylori World Gastroenterology Organization Global Guideline. *Journal Of Clinical Gastroenterology*, *57*(2), 111–126. https://doi.org/10.1097/MCG.0000000000001719
18. Kleib, M., Al-Khamees, A., Al-Omar, R., Al-Mutairi, A., Al-Otaibi, M., Al-Harbi, A., & Al-Enazi, A. (2024). Digital health literacy among nursing students: A cross-sectional study. *Journal of Nursing Scholarship*, 56(1), 10-18.
19. Liou, J. M., Malfertheiner, P., Lee, Y. C., Sheu, B. S., Sugano, K., Cheng, H. C., Yeoh, K.G., Hsu, P. I., Goh, K. L., Mahachai, V., Gotoda, T., Chang, W. L., Chen, M. J., Chiang, T.H., Chen, C. C., Wu, C. Y., Leow, A. H., Wu, J. Y., Wu, D. C., Hong, T. C., Asian Pacific Alliance on Helicobacter and Microbiota (APAHAM). (2020). Screening and eradication of Helicobacter pylori for gastric cancer prevention: the Taipei global consensus. *Gut*, 69(12), 2093–2112. https://doi.org/10.1136/gutjnl-2020-322368
20. Liu, M., Wang, Y., Kong, Q., Wang, Z., Zhou, W., Tao, L., Xia, Y., Liu, Y., Yang, Z., Wang, B., Liu, M., & Du, B. (2025). Knowledge, attitude, and practice toward Helicobacter pylori among residents in Northeast *China*. *Scientific Reports*, *15*(1), 15288. https://doi.org/10.1038/s41598-025-00323-9
21. Maqbul, M. S., Alshehri, W. A. A., Beig, S. T. M., bin Brik, R. K., Alshehri, A. H., Alamri,M. S., ... & Al-Attas, A. A. O. (2024). Prevalence of knowledge and awareness about Helicobacter pylori infection among urban population of Kingdom of Saudi Arabia. *Gastroenterology & Endoscopy*, 2(4), 196-204. http://.doi.org/10.2139/ssrn.4718222
22. Malfertheiner, P., Camargo, M. C., El-Omar, E., Liou, J. M., Peek, R., Schulz, C., Smith, S. I., & Suerbaum, S. (2023). Helicobacter pylori infection. *Nature Reviews Disease Primers*, 9(1), 19. https://doi.org/10.1038/s41572-023-00431-8
23. Mahmoud, M. M. (2024). Assessment of El-Minya Nursing Institute Students Knowledge, Practices and Attitude Regarding Helicobacter Pylori Disease. *Helwan International Journal for Nursing Research and Practice*, 3(8), 61-74. http://.doi.org/10.21608/hijnrp.2025.316422.1213
24. Naser, N. K. A. A., Bashir, M. B. M., & Ali, A. S. M. A. (2025). Prevalence and associated risk factors of Helicobacter pylori infection among medical students at Shendi university, Sudan. *BMC Gastroenterology*, 25(1), 466. https://doi.org/10.1186/s12876-025-04074-9
25. Navarro, J. J., García-Rubio, J., & Olivares, P. R. (2015). The Relative Age Effect and Its Influence on Academic Performance. *Plos One*, 10(10), e0141895. https://doi.org/10.1371/journal.pone.0141895
26. Rugge, M., Genta, R. M., Malfertheiner, P., Dinis-Ribeiro, M., El-Serag, H., Graham, D. Y., Kuipers, E. J., Leung, W. K., Park, J. Y., Rokkas, T., Schulz, C., El-Omar, E. M., RE.GA.IN, & RE GA IN (2024). RE.GA.IN.: the Real-world Gastritis Initiative-updating the updates. *Gut*, 73(3), 407–441. https://doi.org/10.1136/gutjnl-2023-331164.
27. Shehab, M. S. ., Eldeeb , A. M. E.-M. ., Amasha , H. A. ., Zahran, W. E.- khanany ., Sultan, H. M. S. ., & Elpasiony , N. M. A. . (2023). Screening and prevention program for Helicobacter pylori infection among students at Damietta University, Egypt. *Journal of Wildlife and Biodiversity*, *7*(Special Issue), 830–839. https://doi.org/10.5281/zenodo .10514488.
28. Smith, J., & Johnson, A. (2019). The impact of health beliefs on health outcomes: A systematic review. Journal of Health Psychology, 24(5), 600-615.
29. Soliman, H., Tawfik, M., Omar, W., Elsherbiny, N., & Abdel-Fatah, Z. (2025). Evaluation of public knowledge, attitude and practices regarding *Helicobacter Pylori* infection and management in Suez Canal Region. *Microbes and Infectious Diseases*. https://doi.org/10.21608/mid.2025.377352.2723
30. Xue, Y., Zhou, L. Y., Lu, H. P., & Liu, J. Z. (2019). Recurrence of Helicobacter pylori infection: incidence and influential factors. *Chinese Medical Journal*, 132(7), 765–771. https://doi.org/10.1097/CM9.0000000000000146

31. Zamani, M., Ebrahimtabar, F., Zamani, V., Miller, W. H., Alizadeh-Navaei, R., Shokri-Shirvani, J., & Derakhshan, M. H. (2018). Systematic review with meta-analysis: the worldwide prevalence of Helicobacter pylori infection. *Alimentary Pharmacology & Therapeutics,* 47(7), 868–876. https://doi.org/10.1111/apt.14561
32. Zha, J., Li, Y. Y., Qu, J. Y., Yang, X. X., Han, Z. X., & Zuo, X. (2022). Effects of enhanced education for patients with the Helicobacter pylori infection: A systematic review and meta-analysis. *Helicobacter, 27*(2), e12880. https://doi.org/10.1111/hel.12880
33. Zheng, S. Y., Zhu, L., Wu, L. Y., Liu, H. R., Ma, X. P., Li, Q., Wu, M. D., Wang, W. J., Li, J., & Wu, H. G. (2023). Helicobacter pylori-positive chronic atrophic gastritis and cellular senescence. Helicobacter, 28(1), e12944. https://doi.org/10.1111/hel.12944 .

الملخص العربي

المعلومات والمعتقدات الصحية المتعلقة بالوقاية من عدوى بكتيريا الميكروب الحلزوني بين طلاب التمريض في جامعة دمنهور: دراسة مقطعية

مقدمه: لا تزال عدوى بكتيريا الميكروب الحلزوني(H. pylori) تشكل تحديًا صحيًا عالميًا كبيرًا، مما يستدعي تطوير استراتيجيات فعالة لتثقيف المرضى والوقاية من المرض. يلعب طلاب التمريض، بصفتهم كوادر صحية مستقبلية، دورًا حيويًا في نشر المعلومات الصحية وتدابير الوقاية من الأمراض. تتناول هذه الدراسة فجوة بحثية مهمة من خلال تقييم مستوى معلوماتهم ومعتقداتهم الصحية حول عدوي بكتيريا الميكروب الحلزوني، خاصة في سياق التطور المستمر لمحو الأمية الصحية الرقمية.

الهدف: هدفت هذه الدراسة إلى تقييم المعلومات والمعتقدات الصحية المتعلقة بالوقاية من عدوى بكتيريا الميكروب الحلزوني بين طلاب التمريض في جامعة دمنهور.

العينة وطرق البحث: شملت الدراسة عينة ملائمة من 1110 طالب تمريض جامعي من جميع المستويات الدراسية الأربعة في كلية التمريض بجامعة دمنهور، مصر. تم استخدام تصميم بحث مقطعي لهذه الدراسة.

الأدوات: استخدمت هذه الدراسة أداتان لتقييم البيانات الديموغرافية، ومعرفة الطلاب بالوقاية من عدوى بكتيريا الميكروب الحلزوني (طرق الانتقال، الأعراض، التشخيص، والعلاج)، بالإضافة إلى معتقداتهم الصحية المتعلقة بالوقاية من عدوى بكتيريا الميكروب الحلزوني والتي تم تقييمها باستخدام مفاهيم نموذج المعتقد الصحي (HBM).

النتائج :من بين 1110 مشاركًا، كانت الغالبية العظمى من الإناث (77.4%)، وغير متزوجين (90.6%)، ومن المناطق الريفية (72.1%)، وكانت الغالبية (70.7%) ضمن الفئة العمرية 20-24 عامًا. شملت المصادر الرئيسية للمعلومات المحاضرات (38.1%) والإنترنت/وسائل التواصل الاجتماعي (35.5%). كشفت الدراسة أن (67.8%) من طلاب التمريض بجامعة دمنهور أظهروا درجات معرفية متوسطة، بينما أظهر (62.6%) مستويات اعتقاد قوية فيما يتعلق بالوقاية من عدوى بكتيريا الميكروب الحلزوني. كما ارتبطت المعلومات بشكل كبير بالتقدم الأكاديمي، حيث أظهر طلاب السنتين الثالثة والرابعة أعلى مستويات من المعلومات. بينما لوحظ نقص ملحوظ في المعلومات المتعلقة بالأعراض السريرية، خاصة بين طلاب السنة الأولى (متوسط الدرجة 1.18 ± 0.80)، على الرغم من معرفتهم الجيدة بالعلاج والمضاعفات.

الخلاصة والتوصيات :أظهر طلاب التمريض بجامعة دمنهور، وخاصة في السنوات الأكاديمية المتقدمة، معلومات متوسطة ومعتقدات صحية قوية فيما يتعلق بالوقاية من عدوى بكتيريا الميكروب الحلزوني. تسلط هذه النتائج الضوء على أهمية دمج التدخلات التعليمية المستمرة والمعززة بالتكنولوجيا ضمن المناهج التمريضية لتحسين المعرفة الشاملة وتعزيز السلوكيات الصحية الإيجابية المتعلقة بالوقاية من عدوى بكتيريا الميكروب الحلزوني، وبالتالي تعزيز دورهم في تثقيف المرضى الصحي ومحو الأمية الصحية الرقمية.