# Quality of Life among Patients with Helicobacter Pylori Infection

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## Abstract

Background: Helicobacter pylori infection is one of the most prevalent bacterial disorders worldwide, contributing to around 50% of all infections. Aim of study: was to assess the quality of life among patients with helicobacter pylori infection.

Research Design: Descriptive research design was utilized in conducting this study. Setting: The Benha University Hospital in Benha City's Medical Outpatient Clinics served as the study's location. Sample: A simple random sample was employed. Which included 288 patients. Tools. Two tools were utilized. Tool I: A structured interviewing questionnaire: to assess patient's socio demographic characteristics, medical history, knowledge about helicobacter pylori infection and reported practices for preventing complications of helicobacter pylori infection. Tool II: A scale for determining the quality of Life of helicobacter pylori-infected patients. Results:39.2% of studied patients 'age ranged between 50 to less than 60 years old, 27.1 % suffered from chronic diseases, 92.4 % of them had diagnosed with H. pylori infection from less than one year, 45.8% had average knowledge level about helicobacter pylori infection, 55.6% exhibited unsatisfactory practices level for preventing complication of helicobacter pylori infection, 32.3 % of them had diminished quality of Life level. Conclusion: less than one fifth of the patients had good knowledge or understanding of helicobacter pylori, while over than half of them had satisfactory levels of practice about the infection. Furthermore, less than half of them had an average quality of Life. Strong positive relations were observed between the total knowledge score, total reported practices score, and overall quality of Life score of the patients under research. Recommendation: develop health educational programs for helicobacter pylori infection that help patients to improve and update the most current knowledge, practices, and quality of Life about helicobacter pylori infection.

**Keywords:** Keywords: Helicobacter Pylori Infection, Patients, Quality of life.

## Introduction

Helicobacter Pylori (H. pylori) infection is an issue for global public health that impacts both developed and developing nations, with developing countries bearing a greater burden of 50.8% compared to developed countries' 34.7 %. H. pylori is gram-negative bacteria that resemble a helical, curled rod and lives in the stomach. Bacteria have the ability to breach the gastric and intestinal mucosa, which serves as a protective lining, resulting in inflammation in the upper digestive tract, both in acute and chronic forms. It causes gastritis, peptic ulcer disease, gastro duodenal ulcer, atrophic gastritis, gastric cancers, and dyspeptic symptoms. Nevertheless, asymptomatic status characterizes about 80% of patients who have helicobacter pylori infection. Hydrogen pylori is an essential component of the natural stomach ecology (**Asiimwe et al., 2023**).

Helicobacter Pylori infection is prevalent globally, affecting an estimated 4.4 billion people, making it one of the most pervasive chronic infections on a global scale. The region in Africa had the highest reported frequency at 70.1 %, whereas Switzerland recorded the lowest prevalence at 18.9%. Geographic variation in the prevalence of helicobacter pylori infection is substantial, with infection rates exceeding 85% in certain developing regions compared to Europe and North America by around 30% to 40%. h. pylori infection is prevalent among over 80 % of the population, including young individuals, in certain developing nations (**Ali et al., 2023**).

Helicobacter pylori infection is caused by the infection of the stomach by helicobacter pylori infection. Typically, helicobacter pylori bacteria are transmitted between individuals via direct contact with excrement, vomit, or saliva. Helicobacter pylori infection associated with lifestyle and dietary habits, and spread through contaminated food or lace of sanitary water, poor sanitation and hygiene, in proper food handle, infected family members, low socioeconomic status and poor health care accessibility. The majority of individuals have been infected for years without being aware of it due to the absence of symptoms; the source is unknown to doctors (**Habbash et al., 2022**).

Helicobacter pylori infection is a Gram-negative organism that demonstrates broad-spectrum pathogenicity, extending outside the gastrointestinal tract despite its predominant presence in the human stomach.

Certain conditions, including migraine, coronary heart disease, cirrhosis, pancreatic cancer, and stroke, are linked to helicobacter pylori infection beyond the gastrointestinal tract. helicobacter pylori infection can be found all over the world, but especially in undeveloped and developing countries, where rates of infection are as high as 60 to 70% of the population. It is more commonly found in older adults. The bacteria can spread through the consumption of contaminated food and water **(Cam & Akcalı, 2022).**

The prevailing symptoms associated with helicobacter pylori infection include abdominal pain that persists for a period of time following meals, a dull pain that occurs two to three hours after meals, intermittent symptoms that last for days or weeks, episodes that occur during the middle of the night when the stomach is empty but subside with food or antacids (which reduce stomach acid), excessive flatulence, bloating, nausea, heartburn, fever, anorexia, unexplained weight loss, and heartburn. helicobacter pylori infection can be identified through invasive methods that necessitate endoscopy and biopsy, including histological examination, culture, and rapid urea's test. Alternatively, non-invasive approaches include stool antigen detection for helicobacter pylori infection, serology, the urea breath test, urine/blood analysis, and endoscopy. **(Jehanne et al., 2020).**

Helicobacter pylori infection is typically being administered a blend of at least two antibiotics simultaneously. This approach aims In order to mitigate the development of antibiotic resistance in bacteria, therapeutic approaches may also use acid-suppressing medications that aid in gastric lining mending. Examples of pharmaceuticals capable of inhibiting stomach acid production include: Proton Pump Inhibitors (PPIs) which inhibit gastric acid production, so shielding the ulcer from stomach acid by covering it **(Malfertheiner et al., 2023).**

helicobacter pylori infection is typically treated with a combination of 2–3 antibiotics and PPI, taken concomitantly or sequentially, for periods ranging from 10 to 14 days. In clinical settings, the first-line eradication therapy is commonly the most effective. The efficacy of this therapeutic approach is significantly impacted by the swift proliferation of H. pylori strains that are resistant to antibiotics **(Metwally et al., 2022).**

The idea of Quality of Life (QoL) is all-encompassing, encompassing physical health, psychological well-being, social relationships, personal convictions, and environment. Evaluation quality of Life is subjective and depends on the impact that activity restriction has on an individual's mental, emotional, and social capabilities **(Antczak et al., 2022).**

Community health nurses are integral to the provision of preventive healthcare. As a result, it is critical to educate family members about the importance of preventing helicobacter pylori infection and to establish the most effective preventative measures **(Hamdy et al., 2023)**. Community health nurses prioritize concerns that have adverse effects on health. They educate community people and family members about health practices that should be adopted as habits or abandoned, and ensure that they have access to the necessary tools to enhance their healthy behavior **(Atef & Mohamed, 2021)**.

**Significance of the Study:**

Prevalence of H. pylori contamination among adults in Egypt reaches 90 %, rendering it a significant public health concern and a leading cause of illness **(Atef & Mohamed, 2021)**. In Egypt, the prevalence of H. pylori infection in children varies between 13 and 72 %, whereas in adults it ranges from 26 to 90 %. The incidence of H. pylori infection is significantly elevated in Egypt, with dyspeptic patients exhibiting a prevalence of up to 70 %. **(Metwally et al., 2022).** Consequently, in order to evaluate the knowledge, practices, and quality of Life of patients inflicted with H. pylori, the current research was undertaken.

**Aim of the study**

was to assess quality of Life of helicobacter pylori-infected patients.

**Research questions:**

1. What is patient's knowledge about helicobacter pylori infection?
2. What are patients reported practices for prevention helicobacter pylori infection?
3. What are qualities of life regarding patients with helicobacter pylori infection?
4. Is there a relationship between quality of Life, knowledge, and reported practices of patients with H. pylori infection and their sociodemographic characteristics?
5. Is there a relationship between patients' quality of Life and their stated practices, knowledge, regarding H. pylori infection?

**Subjects and Methods:**

**Research design:**

Descriptive research design was utilized in conducting the research.

**Setting:** This study was executed at Medical Outpatient Clinics affiliated to Benha University Hospital in Benha City.

**Sampling:** A simple random sample was utilized in this research. It included 288 patients, sample size was determined with the subsequent formula: (n= $\frac{N}{1+N(e)}$2), where (n) is sample size.

**Tools for Data Collection:**

**Study tools:** Two tools were employed in current study for data collection as following:-

**Tool I:** A structured interviewing questionnaire: The resesarcher formulated the method by a comprehensive examination of the existing and previous national and worldwide literature pertaining to helicobacter pylori infection. This involved academic journals, textbooks, it was written in simple Arabic language and was structured as follows in its fourth section:

▪ **The first part**: A sociodemographic characteristics of patients infected with H. pylori infection, included age, gender, occupation, place of residence, monthly income, and marital status, degree of education, occupation, and family structure were among the eight inquiries.

▪ **The second part:** Was concerned with medical history past and current history of patients with H. pylori infection.

▪ **The third part:** was concerned with knowledge of patients about H. Pylori infection that included 10 questions such as meaning, causes, manifestation,modeof transmission, risk factors, methods of prevention, diagnosis, methods of treatment, medication utilized and complication.

**Scoring system for knowledge:**

The scoring system for patients' knowledge was determined as follows: a score of (2) was assigned for a fully correct answer, (1) for a partially correct answer, and (0) for don't know or incorrect answer. Total knowledge scores, 20 points, were categorized as follows: good knowledge was ≥ 75% (≥ 15 points), average knowledge was 50% - < 75% or (10 - < 15 points), and poor knowledge was < 50% (< 10 points).

**The fourth part:** Was concerned with reported practices of the studied patients for prevention complication of H. pylori infection adopted from **Shah et al., (2019)** which comprised 28 items nutrition, rest and exercise, treatment, follow up and personal hygiene.

**Scoring system for practice scale:-**

The scoring system for patients' reported practices involved assigning a score of (1) for

actions performed and (0) for actions not performed. The scores for each item were added together and then assorted by the total number of items to obtain a mean score. These scores were then transformed into a percentage score. The total reported practices score, amounting to 28 points, was deemed satisfactory if the total reported practices score was equal to or exceeded 60% (≥ 16 points), while it was considered unsatisfactory if the score fell below 60% (< 16 points).

**Tool II:-** was concerned with scale in order to assess patients' quality of Life with H. pylori infection, which included (28) question adopted from **WHO, (1988).** The investigator translated it into Arabic and categorized it into three domains (physical status, psychological status, and social status).

**Scoring system:**

Quality of Life scale score was computed to be (2) score for always, (1) score for sometimes and (0) for never. By summing the scores of the elements and dividing the result by the number of things, the mean score was calculated. The results of this conversion were expressed as a percent. The total quality of Life score =56 points was considered good if the score ≥ 75% (≥ 42 points), while considered average 50% -< 75% (28< 42 points), and considered poor < 50% (less than 28 points).

**Content validity:**

Five of the faculty's staff nursing experts in community health nursing Benha university assessed the tools' content validity in the following ways: Clarity, application, relevance, and comprehensiveness. They also provided their opinion on the matter.

**Reliability of the tools:**

Reliability of the tools was applied by the researchers for testing the internal consistency of the tools, through the application of identical techniques to the identical subject. under comparable circumstances on multiple occasions. The assessment of the tools' dependability was conducted using Cornbrash's Alpha coefficient test. The results indicated that the two instruments comprised a substantial number of similar items, as supported by their moderate to high levels of dependability. Knowledge had an internal consistency of 0.752, practices 0.811, and quality of Life 0.761.

**Administrative approval:**

An official letter was acquired from Benha University's Dean of the Faculty of Nursing. Concerned with the title, objective, tools and the study technique to be illustrated to the administrators of the previously mentioned setting to

gain their cooperation which is needed to allow the investigator to meet patients. The informed consent was taken orally from patients who are involved in the study.

**Ethical consideration:-**

The Benha Faculty of Nursing Scientific Research Ethical Committee Accepted this Study. All ethical concerns have been addressed; prior to performing the interviews, oral agreement was sought from each patient and a concise explanation of the study's objectives was provided. Furthermore, they were informed that any data collected would be treated with strict confidentiality and utilized exclusively for the objectives of the research. The forms did not necessitate the inclusion of names in order to protect anonymity and confidentiality. Additionally, they were granted the right to discontinue participation in the research without explaining their decision at any time. Strict confidentiality and privacy were ensured. There was reverence for civilizations, beliefs, ethics, and values.

**Pilot study:-**

A pilot study was undertaken on 10 % of the patients under study (28 patients) to assess the content, applicability, and simplicity of the interviewing questionnaires. The surveys required approximately 20 to 25 minutes to complete. Two weeks before to the commencement of the study, a pilot study was conducted with no modifications made; hence, the pilot study sample was incorporated into the overall sample.

**Field work:**

The data collection period was six months, from December 2022 to May 2023. The researcher conducted the study in the Medical Outpatient Clinic at Benha University Hospital on behalf of the sample under the study. To collect data, the researcher visited the Benha University Hospital twice every week (Monday and Wednesday) from 9:00 am to 12:00 pm. The researcher obtained oral consent from each patient and explained the goal and significance of the research at the outset of the interview. Data collection was executed from each patient; the average number of patients interviewed per day was six, in accordance with their answers to the interviewer; and it took each patient between twenty-five minutes to complete the sheet, contingent on their comprehension and response. Each completed questionnaire was inspected by the investigator to verify its completion.

**Statistical analysis:**

All gathered information was systematically arranged, categorized, and assessed utilizing the Statistical Package for the Social Sciences (SPSS), version (25). After applying descriptive statistics (frequency, percentage, and mean ±SD), additional statistical tests were conducted, including Chi-square test (x2).

**Statistical significance is seen as:**
- Significantly so when the p-value is less than 0.001.
- A significance level is $p < 0.05$.
- Insignificant outcome when the p-value exceeds 0.05.

**Results**

**Table (1):** exhibits that; 39.2 % of patients under study were age ranged from 50 to < 60 years old with mean 47.35±9.56 years, 59.4 % of them were female, 76.4 % of them were married, 43.8 % of them had basic education, 62.2 % of them were students, 76.0 % of them were inhabited a rural region, 59.7 % of them had not enough monthly income and 79.2 % of them had live with extended family.

**Table (2):** Explains that; 92.4 % of patients under study had diagnosed with h. pylori infection from less than one year, 84.4 % of them didn't hospitalized due to helicobacter pylori infection, 81.3 % of them were suffered from nausea and vomiting and regarding predisposing factors of disease 69.4 % of them had the helicobacter pylori infection due to drank contaminated water.

**Figure (1)**: Demonstrates that the following percentages of patients surveyed possessed varying degrees of information regarding helicobacter pylori infection: 45.8 % possessed an average level of knowledge, 19.5 % possessed an good level of knowledge.

**Figure (2)**: It should be noted that of the patients analyzed, 55.6% reported unsatisfactory levels of practices concerning helicobacter pylori infection, whereas 44.4% reported satisfactory levels of practices addressing helicobacter pylori infection.

**Figure (3)**: Clarifies that; a total of 45.5 % of the patients under study reported an average quality of Life, 22.5 % reported a good quality of Life, and 32.3 % reported a poor quality of Life.

**Table (3):** Shows that, there was a highly statistically significant relation between studied patients' total knowledge level and their educational level (P= ≤ 0.001). And while there was not statistically overall knowledge, excluding factors

such as marital status, age, gender. occupation, place of residence and monthly income (P= < 0.05).

**Table (4):** indicates that there was a greatly significant and statistically significant relation between the total reported practices level of the patients under study and their educational level (P= ≤ 0.001). Additionally, a statistically significant relation was observed between the total reported practices level of the patients and their age, sex, and monthly income (P= ≤ 0.05). However, no significant relationship was found between the total reported practices level of the patients and their marital status, occupation, and

**Table (5):** indicates that there was a highly statistically significant relation (P=≤ 0.001) between the total quality of Life and educational level and monthly income of the patients under study. Additionally, a statistically significant relation (P=≤ 0.05) was observed between the total quality of Life and age of the patients (P=≤ 0.05). However, no significant relationship was found between the total quality of Life and age, sex, marital status, occupation, or marital status.

**Table (6):** indicates a strong positive correlation (P ≤ 0.001) between the total reported practices score and the total quality of Life score of the patients under study. Similarly, a statistically significant positive correlation (P ≤ 0.05) was observed between the total knowledge score, total reported practices score, and total quality of Life score of the patients under study.

**Table (1)** Frequency distribution of studied patients regarding their socio demographic characteristics (n=288).

| Socio-demographic characteristics | No. | % |
|---|---|---|
| **Age/years** | | |
| 20<30 | 7 | 2.4 |
| 30<40 | 54 | 18.8 |
| 40<50 | 85 | 29.5 |
| 50<60 | 113 | **39.2** |
| ≥ 60 | 29 | 10.1 |
| **Min –Max** | 25-67 | |
| **Mean ±SD** | **47.35±9.56** | |
| **Sex** | | |
| Male | 117 | 40.6 |
| Female | 171 | **59.4** |
| **Marital status** | | |
| Single | 45 | 15.6 |
| Married | 220 | **76.4** |
| Widow | 6 | 2.1 |
| Divorced | 17 | 5.9 |
| **Educational level** | | |
| Can't read or write | 6 | 2.1 |
| Basic education | 126 | **43.8** |
| Secondary education | 78 | 26.1 |
| University education or more | 78 | 27.1 |
| **Occupation** | | |
| Student | 7 | 2.4 |
| Work | 120 | 41.6 |
| Not work | 141 | **48.9** |
| On retirement | 20 | 6.9 |
| **Place of residence** | | |
| Urban | 69 | 24.0 |
| Rural | 219 | **76.0** |
| **Monthly income** | | |
| Enough and saved | 13 | 4.5 |
| Enough | 103 | 35.8 |
| Not enough | 172 | **59.7** |
| **Family type** | | |
| Living alone | 3 | 1.0 |
| Nuclear | 57 | 19.8 |
| Extended | 228 | **79.2** |

**Table (2)** Frequency distribution of studied patients regarding their current medical history (n=288).

| Current medical history | No. | % |
|---|---|---|
| **Onset of diagnosis** | | |
| <1 year | 266 | **92.4** |
| ≥ 1 year | 22 | 7.6 |
| **Hospitalization due to helicobacter pylori infection** | | |
| Yes | 45 | 15.6 |
| No | 243 | **84.4** |
| ***The current signs and symptoms** | | |
| Nausea/vomiting | 234 | **81.3** |
| Stomach ache | 143 | 49.7 |
| Anorexia | 137 | 47.6 |
| Unexplained weight loss | 84 | 29.2 |
| Indigestion | 42 | 14.6 |
| Black stools or red blood in the stool | 19 | 6.6 |
| Feeling very tired and exhausted | 3 | 1.0 |
| ***Predisposing  factors of disease** | | |
| Drinking contaminated water | 200 | **69.4** |
| Eating contaminated food | 141 | 49.0 |
| Presence in polluted places | 78 | 27.1 |
| Eating undercooked food | 61 | 21.2 |
| Drinking alcohol | 4 | 1.4 |
| Contacting with the saliva of a sick person | 25 | 8.7 |
| Using  tools of sick person | 6 | 2.1 |
| Lacking  personal hygiene such as washing hands | 15 | 5.2 |

**\*The results aren't mutually exclusive**
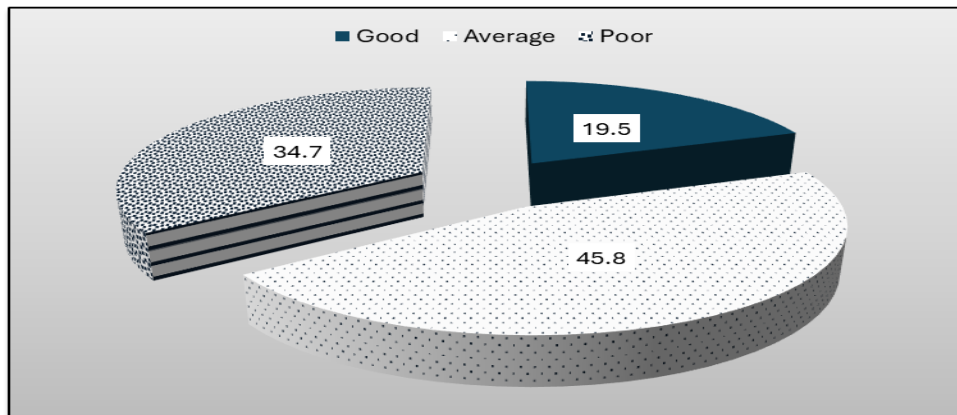


**Fig. (1)** Percentage distribution of studied patients total knowledge level about helicobacter pylori infection (n=288).
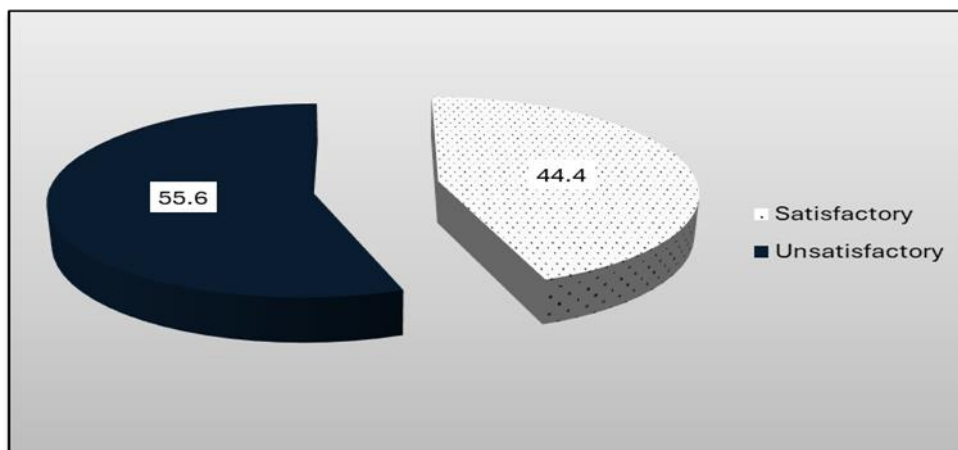


**Fig. (2)** Percentage distribution of studied patients total reported practices level about helicobacter pylori infection (n=288).
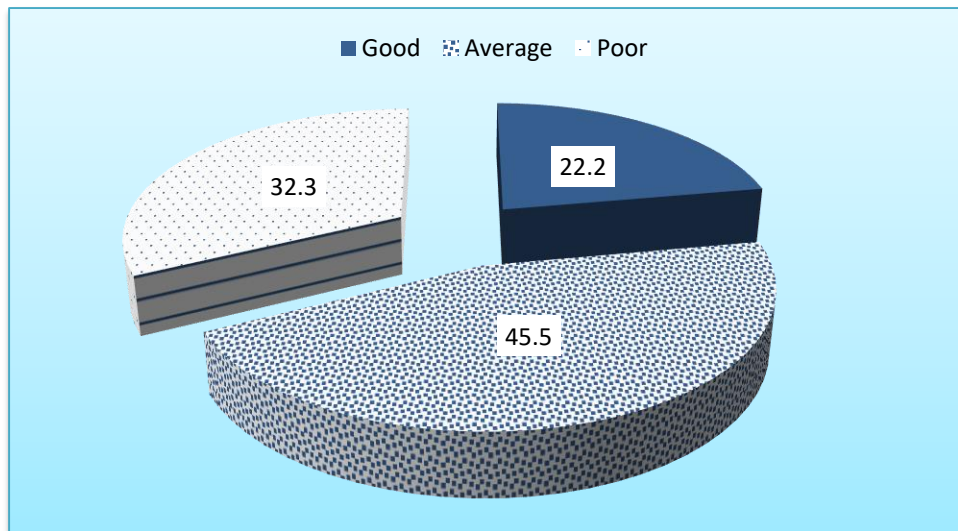
**Fig. (3)** Percentage distribution of studied patients total quality of life level (n=288).

**Table (3)** Statistically relation between socio-demographic characteristics and their total knowledge level (n=288).

| Socio-demographic characteristics | Poor (n=100) | | Average (n=132) | | Good (n=56) | | X² | p-value |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | | |
| **Age / years** | | | | | | | | |
| 20<30 | 1 | 1.0 | 5 | 3.8 | 1 | 1.8 | 6.656 | 0.574 |
| 30<40 | 15 | 15.0 | 26 | 19.7 | 13 | 23.2 | | |
| 40<50 | 32 | 32.0 | 40 | 30.3 | 13 | 23.2 | | |
| 50<60 | 44 | 44.0 | 48 | 36.4 | 21 | 37.5 | | |
| ≥ 60 | 8 | 8.0 | 13 | 9.8 | 8 | 14.3 | | |
| **Sex** | | | | | | | | |
| Male | 35 | 35.0 | 59 | 44.7 | 23 | 41.1 | 2.224 | 0.329 |
| Female | 65 | 65.0 | 73 | 55.3 | 33 | 58.9 | | |
| **Marital status** | | | | | | | | |
| Single | 19 | 19.0 | 19 | 14.4 | 7 | 12.5 | 9.176 | 0.164 |
| Married | 73 | 73.0 | 100 | 75.8 | 47 | 83.9 | | |
| Widow | 4 | 4.0 | 1 | 0.8 | 1 | 1.8 | | |
| Divorced | 4 | 4.0 | 12 | 9.1 | 1 | 1.8 | | |
| **Educational level** | | | | | | | | |
| Can't read or write | 3 | 3.0 | 3 | 2.3 | 0 | 0.0 | 55.9 | 0.000** |
| Basic education | 56 | 56.0 | 64 | 48.5 | 6 | 10.7 | | |
| Secondary education | 33 | 33.0 | 27 | 20.5 | 18 | 32.1 | | |
| University education or more | 8 | 8.0 | 38 | 28.8 | 32 | 57.1 | | |
| **Occupation** | | | | | | | | |
| Student | 61 | 61.0 | 88 | 66.7 | 30 | 53.6 | 12.009 | 0.062 |
| Work | 32 | 32.0 | 35 | 26.5 | 19 | 33.9 | | |
| Not work | 6 | 6.0 | 7 | 5.3 | 2 | 3.6 | | |
| On retirement | 1 | 1.0 | 2 | 1.5 | 5 | 8.9 | | |
| **Place of residence** | | | | | | | | |
| Urban | 23 | 23.0 | 36 | 27.3 | 10 | 17.9 | 1.991 | 0.37 |
| Rural | 77 | 77.0 | 96 | 72.7 | 46 | 82.1 | | |
| **Monthly income** | | | | | | | | |
| Enough and saved | 6 | 6.0 | 6 | 4.5 | 1 | 1.8 | 1.876 | 0.759 |
| Enough | 33 | 33.0 | 48 | 36.4 | 22 | 39.3 | | |
| Not enough | 61 | 61.0 | 78 | 59.1 | 33 | 58.9 | | |

**\*\*Highly statistically significant difference p≤ 0. 001 , P= < 0.05**

**Table (4)** Statistically relation between socio demographic characteristics of studied patients and their total reported practices level (n=288).

| Socio-demographic characteristics | Unsatisfactory (n=160) | | Satisfactory (n=128) | | X² | p-value |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | | |
| **Age / years** | | | | | | |
| 20<30 | 4 | 2.5 | 3 | 2.3 | 10.67 | 0.030* |
| 30<40 | 27 | 16.9 | 27 | 21.1 | | |
| 40<50 | 37 | 23.1 | 48 | 37.5 | | |
| 50<60 | 74 | 46.3 | 39 | 30.5 | | |
| ≥ 60 | 18 | 11.3 | 11 | 8.6 | | |
| **Sex** | | | | | | |
| Male | 55 | 34.4 | 62 | 48.4 | 5.83 | 0.016* |
| Female | 105 | 65.6 | 66 | 51.6 | | |
| **Marital status** | | | | | | |
| Single | 28 | 17.5 | 17 | 13.3 | 1.15 | 0.765 |
| Married | 119 | 74.4 | 101 | 78.9 | | |
| Widow | 3 | 1.9 | 3 | 2.3 | | |
| Divorced | 10 | 6.3 | 7 | 5.5 | | |
| **Educational level** | | | | | | |
| Can't read or write | 4 | 2.5 | 2 | 1.6 | 23.27 | 0.000** |
| Basic education | 85 | 53.1 | 41 | 32.0 | | |
| Secondary education | 45 | 28.1 | 33 | 25.8 | | |
| University education or more | 26 | 16.3 | 52 | 40.6 | | |
| **Occupation** | | | | | | |
| Student | 96 | 60.0 | 83 | 64.8 | 3.697 | 0.296 |
| Work | 48 | 30.0 | 38 | 29.7 | | |
| Not work | 9 | 5.6 | 6 | 4.7 | | |
| On retirement | 7 | 4.4 | 1 | 0.8 | | |
| **Place of residence** | | | | | | |
| Urban | 45 | 28.1 | 24 | 18.8 | 3.431 | 0.064 |
| Rural | 115 | 71.9 | 104 | 81.3 | | |
| **Monthly income** | | | | | | |
| Enough and saved | 4 | 2.5 | 9 | 7.0 | 5.986 | 0.050* |
| Enough | 52 | 32.5 | 51 | 39.8 | | |
| Not enough | 104 | 65.0 | 68 | 53.1 | | |

**\*\*Highly statistically significant  difference p≤ 0. 001 \*Statistically significant difference p≤ 0. 05**

**Table (5)** Statistically relation between socio demographic characteristics of studied patients and total quality of life level (n=288).

| Socio-demographic characteristics | Poor (n=93) | | Average (n=131) | | Good (n=64) | | X² | p-value |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | | |
| **Age / years** | | | | | | | | |
| 20<30 | 2 | 2.2 | 4 | 3.1 | 1 | 1.6 | 24.74 | 0.002* |
| 30<40 | 22 | 23.7 | 25 | 19.1 | 7 | 10.9 | | |
| 40<50 | 36 | 38.7 | 25 | 19.1 | 24 | 37.5 | | |
| 50<60 | 24 | 25.8 | 67 | 51.1 | 22 | 34.4 | | |
| ≥ 60 | 9 | 9.7 | 10 | 7.6 | 10 | 15.6 | | |
| **Sex** | | | | | | | | |
| Male | 41 | 44.1 | 54 | 41.2 | 22 | 34.4 | 1.518 | 0.468 |
| Female | 52 | 55.9 | 77 | 58.8 | 42 | 65.6 | | |
| **Marital status** | | | | | | | | |
| Single | 12 | 12.9 | 22 | 16.8 | 11 | 17.2 | 5.27 | 0.51 |
| Married | 73 | 78.5 | 99 | 75.6 | 48 | 75.0 | | |
| Widow | 4 | 4.3 | 2 | 1.5 | 0 | 0.0 | | |
| Divorced | 4 | 4.3 | 8 | 6.1 | 5 | 7.8 | | |
| **Educational level** | | | | | | | | |
| Can't read or write | 5 | 5.4 | 1 | 0.8 | 0 | 0.0 | 25.16 | 0.000** |
| Basic education | 40 | 43.0 | 67 | 51.1 | 19 | 29.7 | | |
| Secondary education | 22 | 23.7 | 40 | 30.5 | 16 | 25.0 | | |
| University education or more | 26 | 28.0 | 23 | 17.6 | 29 | 45.3 | | |
| **Occupation** | | | | | | | | |
| Student | 51 | 54.8 | 85 | 64.9 | 43 | 67.2 | 8.881 | 0.18 |
| Work | 34 | 36.6 | 39 | 29.8 | 13 | 20.3 | | |
| Not work | 4 | 4.3 | 5 | 3.8 | 6 | 9.4 | | |
| On retirement | 4 | 4.3 | 2 | 1.5 | 2 | 3.1 | | |
| **Place of residence** | | | | | | | | |
| Urban | 24 | 25.8 | 33 | 25.2 | 12 | 18.8 | 1.237 | 0.539 |
| Rural | 69 | 74.2 | 98 | 74.8 | 52 | 81.3 | | |
| **MonthlyIncome** | | | | | | | | |
| Enough and saved | 0 | 0.0 | 3 | 2.3 | 10 | 15.6 | 28.19 | 0.000** |
| Enough | 29 | 31.2 | 48 | 36.6 | 26 | 40.6 | | |
| Not enough | 64 | 68.8 | 80 | 61.1 | 28 | 43.8 | | |

**\*\*Highly statistically significant differences  p≤ 0. 001  \*Statistically significant differences p≤ 0. 05**

**Table (6)** Correlation between studied patient total knowledge score, total reported practice score and total quality of life score (n=288)

| Items | Total quality of life score | | Total knowledge score | |
|---|---|---|---|---|
| | r | p- value | r | p- value |
| **Total knowledge score** | 0.580 | 0.033* | - | - |
| **Total reported practices score** | 0.620 | 0.001** | 0.725 | 0.021* |

**\*\*Highly statistically significance p≤ 0. 001     \* Statistically significance p≤ 0. 05**

**Discussion**

Helicobacter pylori infection is a significant contributor to hypochlorhydria and gastritis, and it is also a critical factor in the development of gastric atrophy and ultimately gastric cancer. Infection with helicobacter pylori infection is extremely dangerous and has significant side effects that can negatively impact quality of Life of infected patients; therefore, adherence to preventive measures, such as maintaining healthy habits, is crucial. It is advisable to eradicate H. pylori in order to enhance quality of Life of patients with epigastric symptoms, particularly dyspepsia and reflux **Al-Dubai, Alharbi, & Tolah( 2022)**.

Regarding socio-demographic characteristics of patients under study, this research showed that; slightly lower than two fifth of patients under study were age ranged from 50 to less than 60 years old, more than half of them were female, and more than two fifth of them had basic education (table1). This findings agreed with **Atef & Mohamed, (2021)**, they studied "Health awareness package to avert helicobacter pylori infection among family members in Helwan General Hospital, in Egypt n=75 " and they reported that 53% of the studied sample were age more than 40 years, 70.7% of the studied sample were female, and 33% of of the studied sample had primary education. Also this findings were accordance with **Malek et al.( 2021),** they studied "Knowledge, attitudes and practices of adults in the United Arab Emirates regarding helicobacter pylori induced gastric ulcers and cancers, n= 500" and they reported that 40% of patients under study were age above 40 years old, 76% of the studied sample were female.

The present study showed that more than three quarters of studied patients were lived in rural area, and lived with extended family (table1). This findings were agreed with **Smith et al. (2018),** they studied "Clinical and socio-demographic risk factors for acquisition of H. pylori infection in Nigeria n=347 " and they reported that, 82% of the studied sample lived with extended family and lived in rural area.

Regarding the current medical history of patients under study, this research illustrated that, the greatest number of patients under study had diagnosed with helicobacter pylori infection from less than one year, the most of them did not hospitalize due to helicobacter pylori infection, and suffered from nausea and vomiting(table2). This findings were in the same line with **Eltayeb, (2022)** who studied (Milestones of knowledge attitude and practice among saudi population at risk towards helicobacter pylori infection), and they reported 76% of the studied sample had diagnosed from less than one year, and 88% of them not hospitalized due to helicobacter pylori infection and 75% of them was suffering from gastric upset.

Regarding the total knowledge level of studied patients about helicobacter pylori infection, the present study illustrated that, less than half of patients under study had poor knowledge level about helicobacter pylori infection(figure1). This results were in the identical line with **Dafalla et al. (2021),** they studied "Awareness of the general population in Jeddah about peptic ulcer disease and helicobacter Pylori infection the Saudi population in Jeddah, n=620, and they found that 63.5% of the studied sample had poor awareness regarding H. Pylori infection. On other hand this findings disagreed with **Hafiz et al. (2021),** they studied "Helicobacter pylori infection: Comparison of knowledge between health science and non-health science university students at king saud university, Saudi Arabia, n=334, and they revealed that 10% of the participants have a satisfactory degree of knowledge concerning H. pylori. Concerning the total reported practices level about helicobacter pylori infection, this study elucidated that over 50% of the patients under investigation exhibited an inadequate level of overall stated activities pertaining to helicobacter pylori infection(figure 2). This outcome was obtained along the identical line with **Mohammed et al. (2020),** they studied "Educational intervention for improving medication adherence, knowledge, and practice regarding interfamilial transmission among helicobacter pylori patients in Egypt they reported that with reference to Helicobacter pylori infection, fewer than 62% of the sample under study exhibited inadequate behaviors. On others hands this result was differed with **Abongwa et al. (2017),** they studied " Knowledge, practice and prevalence of helicobacter pylori infection in the north west region of Cameroon they stated that 74.1 % of the sample under investigation adhered to satisfactory practices with respect to helicobacter pylori infection. Furthermore, this result was contested **Rastogi et al. (2017),** They studied "Prevalence of helicobacter pylori infection in asymptomatic adult patients in a tertiary care hospital in India" they observed that 88% of the sample under study implemented effective measures to prevent helicobacter pylori infection.

With regard to the overall quality of Life of the patients under study, the present study revealed that slightly less than one-third of them exhibited poor quality of Life (Figure 3). This results contradicted **Alizadeh-naini et al., (2020),** they studied " The beneficial health effects of Nigella sativa on helicobacterpylori eradication, dyspepsia symptoms, and quality of Life in infected patients in Iran n=51," and 56.3 % of the group under study was determined to have a bad quality of Life. Moreover, this result was corroborated by **Mestrovic et al. (2021),** they studied "Impact of different helicobacter pylori eradication therapies on gastrointestinal symptoms in Croatia, n=140" and they stated that

helicobacter pylori infection impaired patients' quality of Life.

The current study demonstrated a strong and statistically significant relation between the educational level of the patients and their overall knowledge level (table 3). The obtained outcomes were aligned with **Alaridah et al. (2023),** who studied "Knowledge and information sources towards Helicobacter pylori infection in Jordan, n=933", and they found a statistically significant correlation between the educational attainment of patients under study and their overall knowledge level.

Concerning the relation between socio demographic characteristics of patients under study and their total reported practices level, The current study demonstrated a strong and statistically significant correlation between the educational level of the patients and the total reported practices (table 4). The obtained outcome was aligned with **Abongwa et al. (2017),** They discovered that there were statistically significant variations between the educational level of the practitioners and the total practices of the sample under study. This may be the result of how educational attainment influences practices.

In relation to the correlation between the socio-demographic characteristics of the patients and their overall quality of Life, the current study revealed a strong and statistically significant association between the monthly income and educational attainment of the patients and their total quality of Life (table 5). The obtained outcomes were aligned with **Shirazi et al. (2020),** A study was conducted to examine the correlation between helicobacter pylori infection, food insecurity, and quality of Life in Iran (n=200). The findings revealed statistically significant disparities in quality of Life based on the educational attainment and monthly income of the sample under study.

The findings of the current investigation demonstrated a statistically significant correlation between the age of the patients under study and their overall quality of Life (table 5). Such a result was validated by **Alizadeh-naini et al. (2020),** they reported that highly statistical significance differences between the patients quality of Life and their age.

Total reported practices, total knowledge, and total quality of Life scores of the patients exhibited a statistically significant positive link, according to the findings of the present study (table 6). This outcome garnered consensus **El-maghawry et al. (2022)**, Concerning the effectiveness of health literacy sessions pertaining to helicobacter pylori infection on the knowledge and behaviors of university students, the researchers observed a positive association between the total number of behaviors and the overall knowledge of the sample under study. This result may be attributable to the fact that patients' understanding of H. pylori infection management strategies improves and impacts their quality of Life.

**Conclusion**

The result of the present study was concluded as the following: less than one fifth of the studied patients had good knowledge, pertaining to helicobacter pylori infection, more than half of them had unsatisfactory practices concerning helicobacter pylori infection and slightly more than one fifth had good quality of life.A highly statistically significant relations were seen between the educational level of the patients and their total knowledge and their total reported practices. A highly statistically significant relations were seen between the monthly income and educational attainment of the patients and their total quality of life. Strong positive relations were observed between the total reported practices of studied patients score, total knowledge score, and total quality of life score.

**Recommendation**

**Based on the main study findings, the following recommendations are suggested:**

1. Develop health educational programs for H. Pylori Infection that helps patients to improve and update the most current knowledge, practices, and quality of Life about H. Pylori infection.
2. Further research studied about H. pylori infection needed to be carried out with different larger samples in different health care setting.

**References**

[1] Abongwa, L. E., Samje, M., Antoine, K., Alberic, S., Elvis, M., Benardette, L., and Roland, F. (2017). Knowledge, practice and prevalence of helicobacter pylori infection in the North West region of Cameroon. Clin Biotechnol Microbiol, 1, 135-143.

[2] Al-Dubai, S. A. R., Alharbi, O., & Tolah, H. (2022). Adequacy of practice regarding Helicobacter pylori eradication in Al-Madinah, Kingdom of Saudi Arabia: a cross-sectional study. Med Sci, 26, ms546e2623.

[3] Ali, E., Abd El- Aziz, M., & Abdel-Mordy, M. (2023). Health educational program for mothers regarding prevention of Helicobacter pylori infection for their children under five years. Journal of Nursing Science Benha University, 4(1), 564-576. https://doi.org/10.21608/jnsbu.2023.278833.

[4] Alizadeh-naini, M., Yousefnejad, H., & Hejazi, N. (2020). The beneficial health effects of Nigella sativa on Helicobacter pylori eradication, dyspepsia symptoms, and quality of life in infected patients: A pilot study. Phytotherapy Research, 34(6), 1367-1376.

[5] Alaridah, N., F. Jarrar, R. a., M. Joudeh, R., Aljarawen, M., Jum'ah, M., Nassr, H., . . . HA Abu-Humaidan, A. (2023). Knowledge and

information sources towards Helicobacter pylori in Jordan. *PloS one, 18*(3), e0278078.

[6]   Antczak, R., Grabowska, I., Zwierzchowski, J., & Panek, T. (2022). How to measure multidimensional quality of life of Persons with Disabilities in public policies - a case of Poland. https://doi.org/10.21203/rs.3.rs-1519385/v1.

[7]   Asiimwe, D., Bangi, I., Esanyu, J., Ojok, D., Okot, B., Olong, C., Wagubi, R., Kisembo, G., Sempijja, F., Muwanguzi, E., & Okongo, B. (2023). Association between Helicobacter pylori infection and anemia among adult dyspeptic patients attending Kiryandongo General Hospital, Uganda. Journal of Blood Medicine, 14, 57-66. https://doi.org/10.2147/jbm.s392146.

[8]   Atef Ibrahiem, D., & Mohamed Saad, A. (2021). Health Awareness Package to Avert Helicobacter Pylori Infection among Family Members. Egyptian Journal of Health Care, 12(1), 448-470.

[9]   Cam, M., & Akcalı, A. (2022). Relationship between fatigue and Helicobacter pylori infection in patients with multiple sclerosis. Journal of Multiple Sclerosis Research, 2(2), 36-40. https://doi.org/10.4274/jmsr.galenos.2022.2022-6-1.

[10]  D. Mohammed, M., Fathi Mohammed, R., & Mohamed Fahmy, H. (2020). Educational Intervention for Improving Medication Adherence, Knowledge, and Practice Regarding Intrafamilial Transmission among Helicobacter Pylori Patients. Egyptian Journal of Health Care, 11(3), 350-368.

[11]  Dafalla, S. E., Alghamdi, H. Y. A., Alsaedi, A. M., Alzain, M. A. I., Alsaedi, O. D. A., Khormi, M. A., Alsaedy, A. A. S. (2021). Awareness of the general population in Jeddah about peptic ulcer disease. International Journal of Medicine in Developing Countries, 5(2), 656-662.

[12]  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).

[13]  Eltayeb, L. B. (2022). Milestones of Knowledge Attitude and Practice among Saudi Population at Risk Towards Helicobacter pylori Infection. Biomedical and Pharmacology Journal, 15(1), 379-386.

[14]  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.

[15]  Habbash F, Alalwan TA, Perna S, Ahmed N, Sharif O, Al Sayyad A, Gasparri C, Ferraris C, Rondanelli M (2022). Association between Dietary Habits and Helicobacter pylori Infection among Bahraini Adults. Nutrients. Oct 10;14(19):4215.

[16]  Hamdy Taha Abd El- Gwad, M., Mohamed El- Sherbieny, E., & Awdian Ali, L. (2023). Mothers' knowledge, practice, and home-based management regarding prevention of Helicobacter pylori in Barout village at beni-suef Governorate. Egyptian Journal of Health Care, 14(3), 513-525. https://doi.org/10.21608/ejhc.2023.318442.

[17]  Jehanne, Q., Bénéjat, L., Mégraud, F., Bessède, E., and Lehours, P. (2020). Evaluation of the AllplexTM H pylori and ClariR PCR assay for Helicobacter pylori detection on gastric biopsies. Helicobacter. 25(4). p.127.

[18]  Malek, A. I., Abdelbagi, M., Odeh, L., Alotaibi, A. T., Alfardan, M. H., & Barqawi, H. J. (2021). Knowledge, attitudes and practices of adults in the United Arab Emirates regarding Helicobacter pylori induced gastric ulcers and cancers. Asian Pacific Journal of Cancer Prevention: APJCP, 22(5), 1645.

[19]  Malfertheiner, P., Camargo, M. C., El-Omar, E., Liou, J. M., Peek, R., Schulz, C., & Suerbaum, S. (2023). Helicobacter pylori infection. Nature reviews Disease primers, 9(1), 19.

[20]  Mestrovic, A., Bozic, J., Vukojevic, K., & Tonkic, A. (2021). Impact of different Helicobacter pylori eradication therapies on gastrointestinal symptoms. Medicina, 57(8), 803.

[21]  Metwally, M., Ragab, R., Abdel Hamid, H. S., Emara, N., & Elkholy, H. (2022). Helicobacter pylori antibiotic resistance in Egypt: A single-center study. Infection and Drug Resistance, 15, 5905-5913. https://doi.org/10.2147/idr.s386082.

[22]  Rastogi, M., Rastogi, D., Singh, S., Agarwal, A., Priyadarshi, B., & Middha, T. (2015). Prevalence of Helicobacter pylori in asymptomatic adult patients in a tertiary care hospital: A cross sectional study. Biomed Res, 26(1), 117.

[23]  Shahs, Iyer PG, Moss SF (2021). AGA clinical practice update on the management of refractory Helicobacter pylori infection: expert review. Gastroenterology. Apr. 160(5):1831-41.

[24]  Shirazi, S. T., Eftekhari, M. H., Ahmadi, A., Mazloom, Z., Fararouei, M., & Zahedani, M. R. (2020). The relationship of food insecurity and quality of life with Helicobacter pylori infection. *Journal of Nutrition and Food Security*.

[25]  Smith, S., Jolaiya, T., Fowora, M., Palamides, P., Ngoka, F., Bamidele, M., Agbo, I. (2018). Clinical and socio-demographic risk factors for acquisition of Helicobacter pylori infection in Nigeria. Asian Pacific Journal of Cancer Prevention: APJCP, 19(7), 1851.

[26]  World Health Organization (WHO), (1998): World Health Organization Quality of life program on mental health, Quality of life user manual, Division of Mental Health, Pp.8-65.