Factors Contributing to Peptic Ulcers severity: As Suggested Intervention Protocol

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Abstract

Background: Peptic ulcer disease is a global health issue that is frequently associated with a variety of complications and is a highly prevalent digestive tract disease that affects individuals of all ages worldwide. **Aim**: The study aimed to assess the factors contributing to peptic ulcer severity :as suggested intervention protocol. **Design**: A descriptive design was utilized in this study. **Subject**: A purposive sample of 60 adult patients from both genders at previous mentioned setting. **Setting**: This study was conducted at the outpatient clinics in El Qasr El Ainy University Hospital. **Data collection tools**: Tool (I): Patients' structured interview questionnaire: Part (1): Patients' socio-demographic characteristics, Part (2): Patients' medical data and Part (3): Patients' lifestyle. Tool (II): Knowledge Assessment Questionnaire & Tool (III): Factors affecting symptoms severity among patients with PU. **Results**: The present study illustrated that, majority of the studied patients (88.30%) had an unsatisfactory level of knowledge, while (11.70%) of them had a satisfactory level of knowledge regarding peptic ulcer. As well, majority of the studied patients (88.3%) have factors contributing severity of peptic ulcer with Mean±SD 28.30±3.08. **Conclusion**: There was a statistically significant relation between demographic characteristics (age, marital status, & level of education) and total knowledge level regarding peptic ulcer. **Recommendation**: Health educational program should be developed and implemented for patients with peptic ulcer to improve, and update them with the most current information about the disease, and quality of life.

Key words: *Peptic Ulcer; factors contributing; treatment*

Introduction

Peptic ulcers disease (PUD) are sores that develop in the lining of the stomach, lower esophagus, or small intestine (the duodenum), usually as a result of inflammation caused by the bacteria H. pylori, as well as related erosion from stomach acids, frequent use of aspirin, ibuprofen, and other anti-inflammatory drugs, smoking, drinking too much alcohol, radiation therapy, stomach cancer. [1] Globally, patients worldwide are living longer. By 2030, 1 in 6 people in the world will be aged 60 years or over. At this time the share of the elderly people aged 60 years and over will increase from 1 billion in 2020 to 1.4 billion. By 2050, the world's population of elderly peoples aged 60 years and older wills double (2.1 billion). The number of elderly people aged 80 years or older is expected to triple between 2020 and 2050 to reach 426 million. [2]

Patients with gastric ulcer may feel pain shortly after taking food, but in the case of duodenal ulcer, pain is generally felt 2–3 h after taking meal, or sometimes patients wake up at night with epigastric pain. Duodenal ulcer pain is generally relieved after taking antacids or food which has minimal effect on relieving gastric ulcer pain. Other symptoms include abdominal discomfort, weight loss, poor appetite, belching, nausea, and vomiting. Sometimes patients may feel gas and bloating sensation in the abdomen. Some may also experience blood in stool and vomit, and black stools that indicate gastrointestinal bleeding. [3]

The regular health education including notifications of drugs and possible adverse reactions was provided. Medicine was given according to doctors' advice and on schedule. Based on conventional nursing interventions, patients from the observation group underwent the following comprehensive nursing cares: Health guidance: At admission, patients in this hospital were informed of knowledge concerning peptic ulcer, cautions and therapeutic regimens. [4]

Nurses tried to relieve patients and their families of doubts and fears moods about peptic ulcer and tell them cases of successful therapy of peptic ulcer to help them correctly understand this disease. Nurses helped patients to complete examinations after admission, and abnormal indexes were monitored in real-time. Nurses also helped patients to watch videos and read manuals of health education. [5]

Significance of the Study

Peptic ulcer disease is a global problem; relevant data has shown that incidence of peptic ulcers has now reached 5%-10% of the worldwide population, increasing in recent years.[6] Peptic Ulcer Disease (PUD) is an important cause of morbidity and mortality throughout the world affecting the lives of millions of people in their everyday life. In the United States, approximately four million people have peptic ulcers (duodenal and gastric), and 350,000 and 350, 000 new cases are diagnosed each year. Around 180,000 patients are hospitalized yearly, and about 5000 people die each year as a result of peptic ulcer disease. The lifetime likelihood of developing peptic ulcer is about 10% for males and 4% for females. .[7] In Egypt, the incidence rate of PUD is approximately 1 million people annually and 1077 deaths per year. [8]

Aim of the study

The aim of this study is to Assess contributing factors affecting severity of peptic ulcer symptoms (as suggested intervention protocol).

Research Question:

Q 1 – What are the contributing factors affecting severity of peptic ulcer symptoms?

Subjects and Method

Research design: A descriptive research design was applied to achieve the aim of the current study.

Research setting:
This study was conducted at the outpatient clinics in El Qasr El Ainy University Hospital. Outpatients' clinic located in the extension "first floor" including two rooms one for patients' waiting and another room for patients' clinical examination

Subjects:

A purposive sample of (60) adult patients from both genders at previous mentioned setting.

Inclusion criteria:

Patients was diagnosed with peptic ulcer their age more than 18 years, recurrent exposed to peptic ulcer, willing to participate in the study.

Exclusion criteria:

Patients who had serious health problem as cancer and renal failure; and patients who had psychiatric disorders or cognitive impairment.

Tools of data collection

The data were collected through using the following tool:

Tool (I): Patients' structured interview questionnaire: To assess patients' knowledge about PU. It was adapted by the investigator based on the extensive review of relevant and recent literature. [10] & [11], and was written in simple Arabic language. It included the following parts:

Part (1): Patients' demographic characteristics: This part was assessed patients' characteristics it was contained six items as the following: age, gender, marital status, level of education, occupation, and place of residence.

Part (2): Patients' medical data: It was concerned with health-related data as onset of disease, other chronic diseases and past/current history family history. It was contained six questions.

Part (3): Patients' lifestyle: It was included habits as smoking, and caffeine. It was contained sixteen questions.

Tool (II): Patients' Knowledge Assessment Questionnaire: It was adapted by the investigator based on the extensive review of relevant and recent literature. [12] It was aim to knowledge regarding peptic ulcer disease. It consisted of 13 questions as MCQ covered the following items:

-Patients' knowledge about gastrointestinal tract function, it was contained six MCQ questions covered the following: Location of stomach pain, bowel elimination, vomiting, anorexia and bloating.

-Patients' knowledge about peptic ulcer, it was contained seven MCQ questions covered the following: Definition of peptic ulcer, causes peptic ulcer, symptoms of a peptic ulcer, diagnosis for a peptic ulcer, types of peptic ulcer treatment, prevent ulcer recurrence and complications that can occur due to peptic ulcers.

Scoring system of Patients' Knowledge Assessment Questionnaire Tool (II):

The total score for this questionnaire was 63 points: One point was given for the correct answer and zero point was given for incorrect answer. The total of scoring system was classified as followed:

- Satisfactory level of knowledge: If the total score was equal to or more than (75%).
- Unsatisfactory level of knowledge: If the total score was less than (75%).

Tool (III): Factors affecting symptoms severity among patients with PU: It was adapted by the investigator after reviewing of related literature. [13] It was aimed to assess factors affecting symptoms severity among patients with PU and was included the following: it included 5 main domains. It consisted of 69 statements as the following:

-**Medical factors:** It included nineteen statements; eleven of the answers had a yes or no option, while the remaining eight questions explained the reasons behind the choices. It was covered the following: medication regimens, follow up schedules, and diet …. etc.

-**Physical factors:** It included ten statements; three of which had yes/no answers. The remaining seven questions explained the reasoning behind the yes/no answers, it was covered daily activities.

-**Social factors:** It included twenty statements had yes/no answers, it was covered daily family support, and health care personnel support…. etc.

-**Psychological factors:** It included nine statements had yes/no answers, it was covered factors as anxiety…. etc.

-**Patient related factors:** It included eleven statements; six of which had yes/no answers, while the five questions describe patients related factor, it was covered the following: health beliefs, values and misconception…. etc.

Scoring system for factors contributing to the severity of peptic ulcer symptoms Tool (III):

The total score was 49 grades. One point was given for response yes and zero point was given for response no.

The results of scoring system are classified as follows:

- Presence of factors contributing to severity of peptic ulcer: If the total scores was equal to or more than (50%).
- Absence of factors contributing to severity of peptic ulcer: If the total scores was less than (50%).

Validity:

The tools of this study were tested for validity "face and content validity", it was revised by a jury of 5 experts' of medical surgical nursing from Faculty of Nursing, Helwan University, who reviewed the content of the tools for comprehensiveness, accuracy, clarity, relevance, and minor modifications were done.

Reliability

Cronbach's Alpha was used to determine the internal reliability of the tool. Cronbach's alpha reliability coefficient normally ranges between 0 and 1with higher value (more than 0.7) denotes acceptable reliability. Cronbach's alpha reliability coefficient for this tool was 0.82.

Ethical considerations:

An official permission to conduct the proposed study was obtained from the scientific research ethics committee of the Faculty of Nursing at Helwan University. Participation in the study was

voluntary and subjects were given full information about the study and their role before signing the informed consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, and confidentiality of the information where it couldn't be accessed by any other party without taking permission of the participants. Ethics, values, culture, and beliefs will be respected.

Pilot study:

The pilot study was done on 10% of the sample (6 patients) collected by the investigator to examine the clarity of questions and time needed to complete the study tools. No modifications were made after analysis of answered sheet from patients, so pilot study sample was included to the total sample.

Fieldwork

The investigator obtained written consent approval was from the subjects individually about data collection and an approval was obtained from the director of El Qasr El Ainy University Hospital. Data collection was started and completed with six months in the period from the beginning of February 2024 and completed by the end of July 2024. Data collection was done 2 days/week by the investigator in the morning shift. The investigator was gun to the study sitting two day per week in morning shift nearly 11:00 am to 1:00 pm, and met patients to simply explain the purpose of the study. Then distributing the tools and asks study subjects to fill it out. Every patient took about 30-45 minutes to complete questionnaire sheet. This time is approximately the same, the investigator calculated in pilot study, about (4 to 5) questionnaire sheet fills out /day. The presence of investigator all the time to clarify any ambiguities and answer any queries, then, the tools was collected and checked for completeness.

Statistical analysis:

All data were collected, tabulated and statistically analyzed using SPSS 25.0 for windows. Quantitative data were expressed as the mean ± SD & (range), and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). Percent of categorical variables were compared using Chi square test (χ2) or Fisher's exact test when appropriate. All tests were two sided. P-value < 0.05 was considered statistically significant (S), and p-value $\geq$ 0.05 was considered statistically insignificant (NS).

Results

Table 1 shows that 35% of the studied patients' ages between $50 < 60$ years old with a mean ± SD of 40.4±10.2. Regarding to gender, 76.7% of the studied patients were males. Concerning the marital status, it was cleared that 66.7% of the studied patients were married. In respect of patients' educational level, it was found that 43.3% of the studied patients had university education. In terms patients' occupations, it is clear that, 66.7% of the studied patients were work. According to place of residence 55.0% of the studied patients from urban area.

Table 2 shows that 58.3% of the studied patients reported the onset of the disease was diagnosed from one year to less than 5 years ago. Regarding the symptoms of diseases, 70% of the studied patients suffer from abdominal pain. In relation to presence of chronic disease, 56.7% of the studied patients not have chronic diseases (DM & HTN). In the context treatment regimen, 33.3% of

the studied patients follow a diet + treatment regimen. Finally, 81.7% of the studied patients not have a family history of stomach or digestive problems.

Table 3 demonstrates that the total patients' satisfactory knowledge regarding peptic ulcer disease with Mean ± SD= 10.89±4.44.

Fig. 1 clarifies that majority of the studied patients (88.30%) had an unsatisfactory level of knowledge, while (11.70%) of them had a satisfactory level of knowledge regarding peptic ulcer.

Table 4 shows that majority of the studied patients (88.3%) have factors contributing severity of peptic ulcer with Mean±SD 28.30±3.08.

Table 5 show that, there was a statistically significant relation between demographic characteristics (marital status) and total factor contributing severity of peptic ulcer at P value = (0.049*) respectively.

Table 6 show that, there was a statistically significant relation between demographic characteristics (age, marital status, & level of education) and total knowledge level regarding peptic ulcer at P value = (0.024*, 0.002* & 0.01*) respectively.

Table (1): Frequency and percentage distribution of the studied patients according to their demographic characteristics (N=60)

Demographic characteristics	Studied patients	
	N	%
Age (in years)		
- From 18 < 30 year	12	20.0
- From 30 < 40 year	14	23.3
- From 40 < 50 year	13	21.7
- From 50 ≥ 60 year	21	35.0
- Range	18.0-60.0	
- Mean±SD	40.4±10.2	
Gender		
- Male	46	76.7
- Female	14	23.3
Marital status		
- Married	40	66.7
- Single	13	21.7
- Divorced	3	5.0
- Widow	4	6.7
Level of education		
- Dose not read & write	12	20.0
- Read & write	12	20.0
- Secondary education	10	16.7
- University level	26	43.3
Occupation		
- Work	40	66.7
- Not work	20	33.3
Place of residence		
- Rural	27	45.0
- Urban	33	55.0

Table (2): Frequency and percentage distribution of the studied patients according to their health history (N=60)

Health history	Studied patients	
	N	%
Onset of the disease was diagnosed:		
- Started less than a year ago	16	26.7
- Started from one year to less than 5 years ago	35	58.3
- More than 5 years ago	9	15.0
Symptoms suffering from related to the disease		
- Abdominal pain	42	70
- Heart burn	10	16.7
- Dyspepsia	8	13.3
Presence of chronic disease		
- Hypertension	7	11.7
- Diabetes Mellitus	15	25.0
- Both	4	6.7
- None	34	56.7
What is the treatment regimen prescribed now?		
- A treatment regimen only	18	30.0
- A diet + treatment regimen	20	33.3
- Treatment regimen + diet + absence of disease risk factors	10	16.7
- Treatment regimen + diet + absence of disease risk factors + exercise	12	20.0
Family history of stomach or digestive problems		
- Yes	11	18.3
- No	49	81.7
Degree of relatives (n=35)		
- 1st degree	11	18.3
- 2nd degree	0	0.0

Table (3): Total patients' satisfactory knowledge regarding peptic ulcer disease (N = 60)

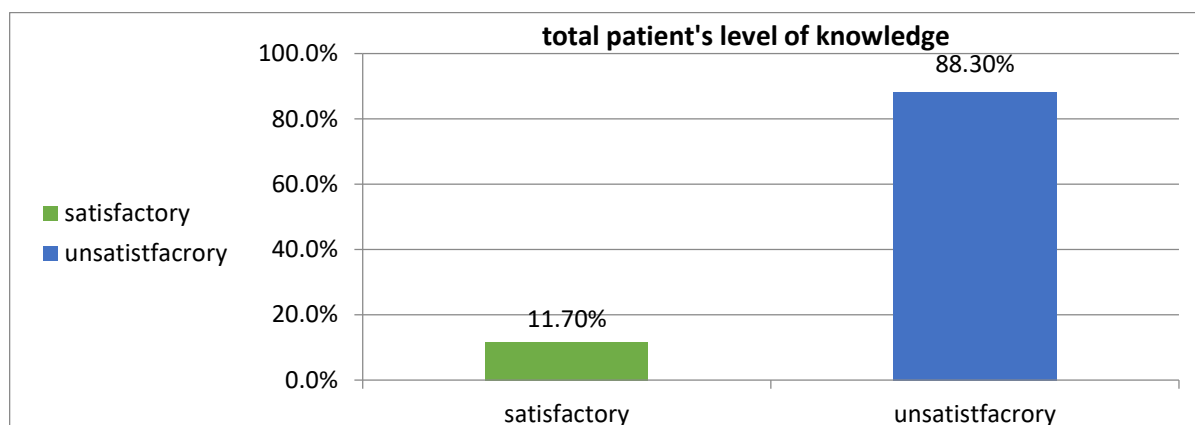| Items	No	%	Mean±SD
Total patients' knowledge:			
Unsatisfactory <75%	53	**88.3**	10.89±4.44
Satisfactory ≥75%	7	**11.7**	

Figure (1): Total patients' level of knowledge regarding peptic ulcer (N = 60)

Table (4): Frequency and percentage distribution of the studied patients in relation to factors contributing to the severity of peptic ulcer symptoms (N = 60)

Factors contributing to the severity of peptic ulcer symptoms	Yes		No		Mean±SD
	N	%	N	%	
Medical factors	48	80.0	12	20.0	6.86±1.71
Physical factors	50	83.3	10	16.7	1.68± 0.72
Psychological factors	36	60.0	24	40.0	5.0±1.53
Social factors	13	21.7	47	78.3	9.0±1.46
Factors related to the patient	59	98.3	1	1.7	5.7±1.14
Total factors contributing severity of peptic ulcer	53	88.3	7	11.7	28.30±3.08

Table (5): Relation between total factor contributing severity of peptic ulcer and demographic characteristics (N=60)

Demographic characteristics	Total factor contributing severity of peptic ulcer				χ^2	P
	Yes		No			
	N	%	N	%		
Age (in years)						
- From 18 < 30 year	12	20.0	0	0.0	7.32	0.062
- From 30 < 40 year	10	16.7	4	6.7		
- From 40 < 50 year	18	30.0	3	5.0		
- From 50 ≥ 60 year	13	21.7	0	0.0		
Gender						
- Male	42	70.0	4	6.7	2.022	0.155
- Female	11	18.3	3	5.0		
Marital status						
- Married	35	58.3	5	8.3		

- Single	13	21.7	0	0.0	7.844	0.049*
- Divorced	3	5.0	0	0.0		
- Widow	2	3.3	٢	2.3		
Level of education						
- Dose not read & write	12	20.0	0	0.0	7.47	0.058
- Read & write	8	13.3	4	6.7		
- Secondary education	9	15.0	1	1.7		
- University level	24	40.0	2	3.3		
Occupation						
- Work	37	61.7	3	5.0	2.022	0.155
- Not work	16	26.7	4	6.7		
Place of residence						
- Rural	23	38.3	4	6.7	0.472	0.492
- Urban	30	50.0	3	5.0		

*Significant at p $\leq$0.05 **Highly significant at p $\leq$ 0.001 Not significant at p>0.05

Table (6): Relation between total studied patients' level of knowledge regarding peptic ulcer and demographic characteristics (N=60)

Demographic characteristics	Total knowledge level				$\chi 2$	P
	Unsatisfactory 52		Satisfactory 8			
	N	%	N	%		
Age (in years)						
- From 18 < 30 year	12	20.0	0	0.0	9.40	0.024*
- From 30 < 40 year	13	21.6	1	1.6		
- From 40 < 50 year	15	25.0	6	10.0		
- From 50 $\geq$ 60 year	13	21.6	0	0.0		
Gender						
- Male	41	68.3	5	8.3	0.122	0.727
- Female	12	20.0	2	3.3		
Marital status						
- Married	39	65.0	1	1.7	19.18	0.002*
- Single	7	11.7	6	10.0		
- Divorced	3	5.0	0	0.0		
- Widow	4	6.7	0	0.0		
Level of education						
- Does not read & write	12	20.0	0	0.0	10.36	0.01*
- Read & write	12	20.0	0	0.0		
- Secondary education	10	16.7	0	0.0		
- University level	19	31.7	7	11.7		
Occupation						
- Work	34	56.7	6	10.0	1.29	0.255
- Not work	19	31.7	1	1.7		
Place of residence						
- Rural	25	41.7	2	3.3	0.864	0.353
- Urban	28	41.7	5	8.3		

*Significant at p $\leq$0.05 **Highly significant at p $\leq$ 0.001 Not significant at p>0.05

Discussion

Peptic ulcer disease is a group of disorders characterized by the presence of ulcers in any portion of GIT exposed to acid in sufficient concentration and duration, an ulcer is a crater like lesion in a membrane; ulcers that develop in areas of the GIT exposed to acidic gastric juice are called peptic ulcers, word 'peptic' derives from the Greek term 'peptikos,' meaning related to digestion. Peptic ulcer is due to exposure of stomach and duodenum to pepsin and gastric acid. Imbalance occurs between aggressive factors like acid, pepsin, H. pylori and defensive factors such as gastric mucus, bicarbonate ions, and prostaglandins along with innate resistance of mucosal cells.[14] Therefore, this study aimed to the current study was to assess contributing factors affecting severity of peptic ulcer symptoms (as suggested intervention protocol).

Regarding studied patients' demographic characteristics, the results of the study represented that more than one third of the studied patients' ages between 50 < 60 years old with a mean ± SD of 40.4±10.2. The researcher's point of view; this may be due to age-related changes in gastric mucosal defense causes irritation in wall of the stomach. These finding in the same line with **Alhamad & Hassan** [5] who studied that "Effectiveness of Instructional Program on Patients′ Nutritional Habits for Patients with Peptic Ulcer" and who reported that more than half of the study subjects their age were above 50 years. Also, the current study consistent with **Alrayah** [6] in study titled "Effect of Self-Care Life Style Modification Program on patients with Peptic Ulcer Disease in Elmek Nimir University Hospital Shendi City, Sudan," who found that the largest percentage of the study sample was over fifty years old. In contrary, this finding disagrees with **Onoh** [24], who studied that "The Role of Non-Modifiable Risk Factors for Peptic Ulcer Disease in Patients Attending a Tertiary Hospital in Enugu, South East Nigeria".

Regarding the gender of the participants, the present study results showed that more than three quarter of the studied patients were males. From the investigator's point of view, it could be due to varied precipitating factor for peptic ulcer disease. The study finding was supported by **Sayehmiri et al.** [26], who conducted a study entitled that " Prevalence of peptic ulcer in Iran: Systematic review and meta-analysis Methods". Also, this result agrees with previous study done by **Alzahrani, Alfageeh, & Thabet** [9], titled that " Assessment of health-related knowledge and practices among patients with peptic ulcer" and reported that, more than half of studied patients were males. On the other way, it was incompatible with **Ahmed, Mersal &Mohamed** [3], in study entitled " Quality of Life among Elderly People with Peptic Ulcer at Geriatric Home". Furthermore; **Hormati et al.** [16], held a study about in " Migraine and gastric disorders: Are they associated" in Shahid Beheshti Hospital, Qom, in Iran, found that more than half of the study sample was female.

Concerning the marital status, the current study results revealed that two third of the studied patients were married. This may be explained married individuals hold wide responsibilities and tasks which increase their stress. This result congruent with **Siddique** [31], who study conducted in Bangladesh which was entitled "Prevalence of Peptic Ulcer Disease among the Patient with Abdominal Pain Attending the Department of Medicine in Dhaka Medical College Hospital" and reported more than half of study group were married. Conversely, this result in disagrees with a study conducted by **Alshammari et al.** [8], who mentioned that more than one third of the study sample were widowed.

In the respect of patients' educational level, it was found that more than one third of the studied patients had university education. As well as, this agrees with **Hussein** [17], in study titled "Assessment

of Dietary Pattern for Patients with Peptic Ulcer", who reported that more than one third of patients were college graduates and nearly one third secondary educated. In addition, in the same line with the previous findings done by **Abd-Almageed et al.** [2], in study titled "Effect of Tele-nursing Instructions on Adherence to Therapeutic Regimen and Improving Symptoms for Patients with Peptic Ulcer" and who stated that highest percentages of patients had completed university education.

In terms patients' occupations, it is clear that, more than two thirds of patients of the studied patients were work. This result in disagreement with a study conducted by **Alrayah** [˄], and found that about one third of them were housewife.

In the context of the place of residence, the present study indicated that more than half of the studied patients from urban area. These results go in line with a study conducted by **Chandran et al.** [10], on "the effectiveness of mindfulness meditation in the relief of symptoms of depression and quality of life in patients with gastroesophageal reflux disease" in Indian and found that around half of the study sample was living in an urban area. This result is in contrast with **Abd Allah et al.** [1], who conducted their research at Egypt, and revealed that slightly more than two thirds of patients belonged to rural areas and they added that nearly three quarters were married.

According to the health history of the studied patients; the current study indicated that, the onset of the disease was diagnosed from one year to less than 5 years ago. This result was reinforced by the study conducted by **Alzahrani, Alfageeh, & Thabet** [9], and who mentioned that two-thirds of the study sample had peptic ulcers for more than one year. From the investigator's point of view, these findings could be the result of a delay in the disease's detection and the requirement for diagnostic endoscopy to determine the presence of stomach ulcers.

In concern to the symptoms of diseases, it was found that more than half of the studied patients suffer from abdominal pain. This result agrees with previous study done by **Alrayah**[6], who reported that all most studied participants had pain in epigastria region.

In relation to the presence of chronic disease, the current study clarified that one quarter of the studied patients suffered from diabetes and less than one quarter suffered from hypertension and more than half of them not have other chronic disease. This finding consists with the results done by **Alhamad & Hassan** [5], who reported that less than one third of the studied patients didn't have other chronic disease, and less than one third of them have hypertension.

Regarding family history, the current study found that less than one quarter of the studied patients have a family history of peptic ulcer disease and had first degree family history. From the investigator's point of view, this result may be due to family members share genes, behaviors, lifestyles, and environments that can influence their health and their risk for disease.

This finding in accordance with the results done by **Lim** [21] on "Genetic susceptibility of gastroduodenal disease in ethnic and regional diversity" and reported that twenty percent of the patients with peptic ulcer disease have a family history of duodenal ulcers.

In the context of the treatment regimen, the results of the current study verified that one third of the studied patients follow a diet plus treatment regimen. The result of study agreed with **Alrayah** [6], who illustrated that majority of study group used diet, herbal and medicine to manage their disease.

According to the total patient's knowledge about peptic ulcer, the study finding showed that the majority of the studied patients had unsatisfactory knowledge about peptic ulcer. From the investigator's point of view, this finding might be due to their had no experience from, and lack the information about their disease taken from the medical staff around their chronic duration of the illness as mentioned before in these results that most of them had peptic ulcer since one to less than 5 years. On the other hand, **Mohammed et al.** [23], and **Paudel** [25], on study title "Prevention and Management of Gastroesophageal Reflux Diseases and Peptic Ulcer Diseases among Bhutanese Refugees Utilizing Personalize Patient Education" at Amherst city, and they mentioned that the majority of their participants had bad knowledge about peptic ulcer.

Regarding medical factors, the results of the current study indicated that the more than three quarter of the studied patients know the medications that should take during follow-up visit. In addition, more than half of them committed to taking the prescribed medications and about twenty percent of them clarified the reason of non-adherence to medications was the high price. Also, the three quarter of the studied patients went to the treating doctor when some sudden symptoms occur without waiting for the periodic examination appointment, and more than one third of the studied patients not attend the follow-up appointment during the previous 6 months once only.

This study in a congruent with **Albaqawi et al.** [4], whose study title "Profile of peptic ulcer disease and its risk factors in Arar, Northern Saudi Arabia" and demonstrated that more than half of the studied participant reported lake of agreement with clinical guidance as a provider barrier; also, the majority of the studied patients reported cost medications as a therapy related barrier, more than half of them had lack of health insurance as barrier to access to care.

Regarding physical factors, the result of current study indicated that the majority of the studied patients had explanations from health team about the importance of exercise, were committed to do exercises regularly, practice walking exercise, practice sport daily, performed exercise less than 20 minutes performed exercise themselves, nurses described these exercises, concerning precautions that followed before exercises as choosing the right time, feeling tired after exercising and have no change in the nature of work after contracting the disease. This conclusion has been proven by **Shephard** [28], with study title "Peptic Ulcer and Exercise" and who reported that exercise may modify H. pylori infections, smoking and alcohol consumption, stress, and the use of NSAIDs.

Regarding psychological factors, the result of the current study verified that the majority of studied patients suffer from sleep disturbance, felt that they want to cry, not avoid friends and family during severity of symptoms, felt ashamed in front of people, felt that view of themselves not changed after the disease, concerned about their health, felt discouraged and they did not want to continue the treatment, no hopelessness and have a sense of failure in planning your future. These finding were corresponding with **Alrayah** [6], who discovered that less than half of the study patients were reported lack of motivation as a personal barrier, and more than two third of them were health believes as psychological barrier. Also, the result of the current study congruent with who **Zha et al** [35], found that sleep disorders may be among the factors contributing to severity of peptic ulcer, and shorter sleep duration (<6 h) and prolonged sleep time (>8 h) were associated with an increased severity of disease. Several studies have suggested that sleep disturbances are linked to functional gastrointestinal disorders particularly PU. [31]

Moreover, this result is in line with the studies done by **Maniragaba &Atukuuma** [22], which title "Factors Contributing to increased cases of Peptic Ulcer Disease among Patients aged 18-70 years attending Kisoro Hospital Kisoro District" and revealed that the majority of the respondents had suffered from stress in their lives while, the minority had never suffered from stress before.

Regarding social factors, the result of the current study discussed that the majority of the studied patients have someone reminding them to take the medications regularly, the disease not cause problems in their work, when getting sick cause problems at home, have someone to took to about what interests, encouraging them to practicing exercise, their family depend on them for more than they can handle, some one that encourages to stick to a healthy diet, suffer from a lot of debt, have not disputes within the family, reported the responsibilities of marriage not hinder academic progress, suffer from poor ability to establish healthy social relationships, have not disputes between the parents, there was no disagreements with brothers and sisters, had not any surgery, had not a personal divorce, parents not divorced, not suffer from the death of a family member, suffer from a lack of job opportunities, not suffer from work pressure and poor sexual status in dealing with the other party. From the investigator's point of view, this may be higher prevalence of PU among patients who live with their families may be due to shared family environmental exposure.

This result finding was consistent with a study done by **Choi et al.** [12], which entitle "Effect of work-related factors on the prevalence of peptic ulcer disease among Korean workers: a nationwide population-based study", and who stated that work type (white, pink, or blue collar) and working-environment factors (cleanliness, responsibility and power, respect and confidence, danger, uncomfortable gestures, loading of heavy items, time limitation, and masking of emotion increase severity of peptic ulcer of PUD.

Regarding factors related to the patient, the result of current study indicated that the majority of the studied patients though about the diet that should adhered to it helps them more than it harms, the high cost of the treatment should adhered, commitment to treatment make them feel restrictions on their lifestyle, hard to happen a change in lifestyle makes them adhered to treatment, trust the veracity and efficiency of the information provided by the attending physician, reported that an illness effect on mental state, physical health, have family help to adhered to treatment, presence of a problem with attendance for follow-up and reported decreased of symptoms during follow-up (periodic examination). This study in agreement with **Alrayah** [6], who reflected that the majority of studied patients' awareness of benefit to adapt life style and their adherence to life style modification, adherence to medication, adherence to body weight reduction program, adherence to exercise regimen.

Regarding the relation between the total factor contributing severity of peptic ulcer and their demographic characteristics, the present result concerning the factors affecting practices related to the PUD revealed that total factors scores were significantly affected by marital status. It seemed that subjects who married suffer from more factors contributing severity of peptic ulcer. This result agrees with previous study done in Northern Saudi Arabia by **Alshammari** [8], who reported that there were significant relations between severities of peptic ulcer with gender, marital status, and educational level.

Regarding the relation between the studied patients' total knowledge with peptic ulcer and their demographic characteristics, the current study demonstrated that there were statistically significant relations between total knowledge score of the patients and their age in which knowledge increase

with patient age range from (From 40 < 50) years old. This study in same line with the results of **Jaddoh** [18], on study title "Awareness of general population in Saudi Arabia about peptic ulcer disease" and who mentioned that good awareness about PUD was associated with 46 to 55 years age group.   This study in disagreement with the results of the Egyptian study done in Egypt by **AbdAllah, Badawy &Abdel-Aziz** [1], as they discovered that there were statistically significant relations between age and total knowledge of elderly patient as knowledge increase with age >70 years old.

Also, the current study demonstrated that there a statistically significant relations between total knowledge score of the patients and their level of education; with knowledge increase with patient educational (university) level of education, which was similar to the findings of study that conducted by **Alzahrani, Alfageeh, & Thabet** [9], who reported that the level of education was also found to be statistically significant university graduate patients had good knowledge compared to none of the illiterate patients and also, similar to study done in Egypt by **Elsayad et al.** [13], on study title "Quality of Life of Elderly People with Peptic Ulcer in Benha City", as they mentioned that there were statistically significant relations between the total knowledge score of the elderly people and their age and level of education. Moreover, the current study demonstrated that there a statistically significant relations between total knowledge score of the patients and their marital status with knowledge increase with single patient. This result contradicted with the results done by **Jaddoh** [18], good awareness about PUD was associated with widowed.

Conclusion

On the light of results of the current study and answers of the research questions, it could be concluded that; there was a statistically significant relation between demographic characteristics (marital status) and total factor contributing severity of peptic ulcer. There was a statistically significant relation between demographic characteristics (age, marital status, & level of education) and total knowledge level regarding peptic ulcer. The majority of the studied patients had an unsatisfactory level of knowledge, while minority of them had a satisfactory level of knowledge regarding peptic ulcer. Also, the majority of the studied patients have factors contributing severity of peptic ulcer with Mean±SD 28.30±3.08.

Recommendations
On the light of the current study findings the following recommendations are suggested:

1- Health educational program should be developed and implemented for patients with peptic ulcer to improve, and update them with the most current information about the disease, and quality of life.
2- Further studies need to be focusing on improving quality of life of patients with peptic ulcer.
3- Replication of the current study on a large representative sample to achieve generalization of the results.

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