



Assessment of the quality of life in patient with peptic ulcer before and after the treatment using psychological general well-being index

Pavithra.S¹, Pavithra.R¹, Priscilla.A¹, Pallavi Singh*, Dr Muddala Varapasanna Rao

Department of Pharmacy Practice, School of Pharmaceutical Sciences, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai-6000117, India.

Department of Pharmacy Practice, School of Pharmaceutical Sciences, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai – 600117, India.

Corresponding author: Mrs Pallavi Singh*

pallavisingh090@gmail.com

ABSTRACT:

Gastrointestinal tract (GIT) is considered one of the key aspects for the overall health of the human beings. Along with its primary function which is the chemical and physical digestion and absorption of nutrients, GIT has its own vital defensive immunological role through the mucosal immune system. The protection and management of infectious and non infectious diseases affecting GIT is required, especially those affecting the GI mucosa in order to preserve its normal function. One of the common GI illnesses is the peptic ulcer disease (PUD), sometimes called stomach ulcer or gastric ulcer. The research aimed of the study is to assess the quality of life in patient with peptic ulcer before and after the treatment using psychological general well-being index. To improve the quality of life in peptic ulcer patient and also to assess the accuracy of psychological general well-being index the study was designed in patients with endoscopic ally verified duodenal ulcer. QOL was assessed with questionnaires. The Psychological General Well-Being (PGWB) index will be used for QOL assessments. Each dimension comprises three to five items using a six graded scale, with higher scores indicating greater well-being. The questionnaires were given to the patient 15 days before the endoscopy and then after 14 days of treatment. Based on the findings of our research, We conclude that the QOL can be evaluated using Psychological General Well-Being (PGWB) questionnaires for further evaluation in patients with peptic ulcer before the treatment starts and after the treatment is stopped which will give the positive results

KEYWORDS: Psychological General Well-Being, Gastrointestinal tract, peptic ulcer disease, quality of life, Helicobacter pylori

INTRODUCTION

Gastrointestinal tract (GIT) is considered one of the key aspects for the overall health of the human beings. Along with its primary function which is the chemical and physical digestion and absorption of nutrients, GIT has its own vital defensive immunological role through the mucosal immune system. The protection and management of infectious and noninfectious diseases affecting GIT is required, especially those affecting the GI mucosa in order to preserve its normal function. One of the common GI illnesses is the peptic ulcer disease (PUD), sometimes called stomach ulcer or gastric ulcer. [1] PUD is a distinctive breach (lesion) in the mucosa of GI tract, typically in the stomach (gastric ulcer) or duodenum (duodenal ulcer) as a result of the corrosive effect of both digestive acid and pepsin. *Helicobacter pylori* (*H. pylori*) is considered one of the most common causes of PUD. Other risk factors include long term use of some medications, especially non-steroidal anti-inflammatory drugs, in addition to the increased intake of some gastric irritants like: caffeine and cigarette smoke. PUD represents a serious chronic medical condition. If left untreated it could lead to life threatening complications like bleeding, perforation, obstruction and cancer[2]. The lifetime risk estimation for developing peptic ulcer condition is about 10%[3]. Peptic ulcer disease occurs with greatest frequency in people between (40–60) years of age. Men are affected three times as often as women, duodenal ulcers are ten times more common than gastric ulcers in young patients, but in the older age groups the frequency is about equal[4].

3 Quality of life is "the individual's perception of his/her position in life in the context of the culture and value system in which he/she lives and in relation to his/her goals, expectations, standards and concerns"[5]. Peptic ulcer invariably affects the QoL of the effected individuals through changing in daily routine and results in an inability to maintain an active and productive employment QoL relates to internal phenomena that determine health matters or external phenomena such as social conditions and environmental influences on human life. A high quality of life is evident when community members have the prerequisites for good health and happiness in their daily lives. Peptic Ulcer (PU) is one of the common gastrointestinal disorders which have wide range of presentation[6]. It is necessary to document exactly how illness affects vocational, social, and personal activities, as well as the general activities of daily living, provides an important basis for interventions designed to improve Quality of life. Measurement of quality of life is very important in order to be able to compare different population, different groups of people under certain condition with healthy[7]

METHODOLOGY

MATERIALS AND METHODS: 1) STUDY INSTRUMENT: Psychological general well-being index (PGWBI) 2) STUDY SITE: To study the entitled "Quality of life assessment in patients with peptic ulcer during treatment" in St. Isabel's Hospital, Chennai. 3) STUDY DESIGN: Prospective study 4) STUDY DURATION: The entire study was planned to be carried out for

a period of four months 5) **SAMPLE SIZE:** Sample size was found to be 55 which was calculated using Raosoft online sample size calculator using the following formula.

STUDY INSTRUMENTS

The study will be designed in patients with endoscopically verified duodenal ulcer. QOL will be assessed with questionnaires. The Psychological General Well-Being (PGWB) index will be used for QOL assessments. This protocol includes 22 items divided into six dimensions: anxiety (nervousness, tension, anxiety, relaxness, stress) depressed mood (depressed, downhearted, sad), positive well-being (general spirits, happy, interested in daily life, cheerful), self-control (firm control, afraid of losing control, emotionally stable), general health (bothered by illness, healthy enough to do things, concerned about health), vitality (energy, wakes feeling rested, vigorous, tiredness). Each dimension comprises three to five items using a sixgraded Likert scale, with higher scores indicating greater well-being. The questionnaires were given to the patient 15 days before the endoscopy and then after 14 days of treatment

INCLUSION CRITERIA

Subjects who give consent for the study , Subjects including both gender, Subjects above the age of 18

EXCLUSION CRITERIA

Subjects who are not willing to participate in the study , Subjects below the age of 18

DATA ANALYSIS

The obtained data is represented as bar graphs and pictorial graphical presentations.

STATISTICAL ANALYSIS

The data is collected and entered in Microsoft Excel (2021). And the data is analysed using Statistical Package for The Social Sciences (SPSS) in the version 29.0. The categorical data is represented in frequencies and percentage.

RESULTS

The Psychological General Well-Being (PGWB) given to the patient before and after the therapy and for the question number 1 which is how have you been feeling in general ? (DURING THE PAST MONTH) we found the following results given in the table Table 1:

S.no	Response	Before (%)	After(%)
1	(5) In excellent spirits	1.8	50.9
2	(4) In very good spirits	14.5	34.5
3	(3) In good spirits mostly	1.8	14.5
4	(2) I have been up and down in spirits a lot	10.9	0
5	(1) In low spirits mostly	60	0
6	(0) In very low spirits	10.9	0

For the question number 2 which is how often were you bothered by any illness, bodily disorder, aches or pain we found the following results given in the table2.

TABLE2

S.no	Response	Before(%)	After (%)
1	(0)Every day	29.1	1.8
2	(1)Almost every day	34.5	0
3	(2)About half of the day	18.2	0
4	(3)Now and then, but less than half the time	0	18.2
5	(4)Rarly	3.6	36.4
6	(5)None of the above	14.5	43.6

For the question number 3 which did you feel depressed ?(DURING THE PAST MONTH) we found the following results given in the table3

TABLE 3

S.no	Response	Before(%)	After(%)
1	(0)Yes-to the point that I felt like talking my life	20	0

2	(1)Yes- to the point that I did not care about anything	25.5	0
3	(2)Yes-very depressed almost every day	36.4	1.8
4	(3)Yes-quite depressed several time	9.1	10.9
5	(4)Yes-a little depressed now and then	7.3	58.3
6	(5)Yes-never felt depressed at all	1.8	29.1

BEFORE TREATMENT:

20% of the patients stated that they felt depressed to the point that they felt talking their life(0), 25.5% of the patients felt depressed to the point that they did not care about anything(1), 36.4% of the patients felt very depressed almost everyday(2), 9.1% of the patients felt quite depressed several time (3), 7.3% of the patients felt a little depressed now and then(4) and 1.8% of the patients never felt depressed at all (5) before the treatment.

AFTER TREATMENT:

None of the participants stated that they felt depressed to the point that they felt talking their life (0) and to the point that they did not care about anything (1),1.8%of the participants stated they felt very depressed almost every day (2),10.9%of the participants stated felt quite depressed several time(3),58.2%of the participants felt little depressed now and then (4),29.1%of the participants felt never felt depressed at all(5) after the treatment.

For the question number 4 which have you been in firm control of your behavior, thoughts, emotions, or feeling (DURING THE PAST MONTH)we found the following results given in the table4

TABLE 4

S.no	Response	Before(%)	After(%)
1	(5)Yes, definitely so	1.8	36.4
2	(4)Yes, for the most part	9.1	45.5
3	(3)Generally so	10.9	18.2
4	(2)Not too well	20	0
5	(1)No, and I am somewhat disturbed	32.4	0
6	(0)No, and I am very disturbed	25.5	0

BEFORE TREATMENT:

25.5% of the patients stated that they definitely had been in firm control of their behaviour, thoughts, emotions or feeling and felt disturbed (0), 32.7% of the patients had been somewhat disturbed (1), 20% of the patients had not been too well(2), 10.9% of the patients had been generally so (3), 9.1% of the patients had been so for the most part (4) and 1.8% of the patients definitely had been so (5)before the treatment.

AFTER TREATMENT:

None of the participants stated that definitely they had been in firm control of their behaviour, thoughts, emotions,or feeling (5), none of the participants had been in firm control of their behaviour , thoughts, emotions, feeling for the most part(4),18.2%of the participants felt generally so(3),none of the participants were too well in firm control of their behaviour (2), none of the participants stated that they had been somewhat disturbed(1) and very disturbed (0) after the treatment.

For the question number 5 which have you been bothered by nervousness or your "nerves" (DURING THE PAST MONTH)we found the following results given in the table5

TABLE5

S.no	Response	Before(%)	After(%)
1	(0)Extremely so-to the point where I could not work or take care of things	23.6	0
2	(1)Very much so	32.7	0
3	(2)Quite a bit	23.6	0

4	(3)some-enough to bother me	0	10.9
5	(4)A little	7.3	40
6	(5)Not at all	12.7	49.1

BEFORE TREATMENT:

23.6% of the participants had been bothered by nervousness extremely to the point where they could not work or take care of things (0), 37.2% of the participants had been bothered Very much so (1), 23.6% of the participants bothered quite a bit (2), 0% of the participants had been bothered some enough (3), 7.3% of the participants had been bothered a little (4), 12.7% of the participants not at all bothered by nervousness (5) before the treatment.

AFTER TREATMENT:

None of the participants stated that they extremely bothered by nervousness to the point where they couldn't work or take care of things (0), none of the participants bothered very much so(1) and quite a bit(2),10.9%of the participants stated that some-enough to botheredthem(3),40%of the participants bothered a little (4),49.1%of the participants not at all bothered (5) after the treatment.

For the question number 6 which how much energy, pop, or vitality did you have or feel (DURING THE PAST MONTH)we found the following results given in the table6

TABLE6

S.no	Response	Before(%)	After(%)
1	(5)Very full of energy-lots of pep	3.6	38.2
2	(4)Fairy energetic most of the time	3.6	50.9
3	(3)My energy level varied quite a bit	10.9	10.9
4	(2)Generally low in energy or pep	16.4	0

5	(1)Very low in energy or pep most of the time	34.5	0
6	(0)No energy or pep at all I felt drained, sapped	30.9	0

BEFORE TREATMENT:

30.9% of the participants stated that they had no energy or pep at all and they felt drained, sapped (0), 34.5% of the participants felt very low in energy or pep most of the time(1), 16.4% of the participants felt generally low in energy or pep (2), 10.9% of the participants felt that their energy level varied quite a bit (3), 3.6% of the participants felt fairly energetic most of the time (4), 3.6% of the participants had very full of energy- lots of pep(5) before the treatment.

AFTER TREATMENT:

38.2%of the participants stated that they felt very full of energy-lots of pep(5),50.9%of the participants felt fairly energetic most of the time(4),10.9%of the participants stated that their energy level varied quite a bit (3),None of the participants felt very low in energy or pep

most of the time(1),none of the participants felt no energy or pep at all they felt drained,sapped(0) after the treatment.

For the question number 7 which I felt downhearted and blue (DURING THE PAST MONTH)we found the following results given in the table7

TABLE7

S.no	Response	Before(%)	After(%)
1	(5)None of the time	3.6	45.5
2	(4)A little of the time	7.3	43.6
3	(3)Some of the time	9.1	10.9
4	(2)A good bit of the time	32.7	0
5	(1)Most of the time	27.3	0
6	(0)All of the time	20	0

For the question number 8 which were you generally tense or did you feel any tension (DURING THE PAST MONTH)we found the following results given in the table8

TABLE8

S.no	Response	Before(%)	After(%)
1	(0)Yes-extremely tense, most or all of the time	30.9	0
2	(1)Yes-very tense most of the time	23.6	0
3	(2)Not generally tense, but did feel fairly tense several times	25.5	0
4	(3)I felt a little tense a few times	3.6	10.9
5	(4)My general tension level was quite low	7.3	25.5

6	(5)I never felt tense or any tension at all	9.1	63.6
---	---	-----	------

For the question number 9 which how happy, satisfied, or pleased have you been with your personal life (DURING THE PAST MONTH)we found the following results given in the table9

TABLE9

S.no	Response	Before(%)	After(%)
1	(5)Extremely happy-could not have been more satisfied or pleased	5.5	50.9
2	(4)Very happy most of the time	1.8	43.9
3	(3)Generally satisfied-pleased	14.5	5.5
4	(2)Sometimes fairly happy, sometimes fairly unhappy	25.5	0
5	(1)Generally dissatisfied, unhappy	27.3	0
6	(0)Very dissatisfied or unhappy most or all the time	25.5	0

For the question number 10 which did you feel healthy enough to carry out the things you like to do or had to do (DURING THE PAST MONTH)we found the following results given in the table10

TABLE10

S.no	Response	Before(%)	After(%)
1	(5)Yes-definitely so	1.8	41.8
2	(4)For the most part	10.9	47.3
3	(3)Health problems limited me in some important ways	9.1	10.9

4	(2)I was only healthy enough to take care of myself	16.4	0
5	(1)I needed some help in taking care of myself	47.3	0
6	(0)I needed someone to help me with most or all of the things I had to do	14.5	0

For the question number 11 which have you felt so sad ,discouraged , hopeless or had so many problems that you wondered if anything was worth while (DURING THE PAST MONTH) we found the following results given in the table 11

TABLE 11

S.no	Response	Before(%)	After(%)
1	(0)Extremely so-to the point that i have just about given up	23.6	1.8
2	(1)very much so	32.6	0
3	(2)quite a bit	21.8	0
4	(3)some-enough to bother me	3.6	5.5
5	(4)a little bit	7.3	29.1
6	(5)not at all	10.9	63.6

DISCUSSION:

In this study, the Quality of Life(QOL) assessment in patients with peptic ulcer during treatment is evaluated. Most of the patients affected with peptic ulcer disease were between the age 27-54 years. According to a study conducted by Glise.H , patients with acute ulcer had a low QOL compared to the general population, lower even than patients with heart failure due to coronary bypass operation. With effective peptic ulcer treatment the scores increased rapidly to normal values. The score during follow-up approached the normal level

for the population. The study indicates that Quality of Life may be evaluated in future trials of peptic ulcer disease.

In our study investigation was done using a questionnaire. Psychological General Well-Being (PGWB) was used as a QOL base. The general QOL score for PGWB, which was initially low, increased significantly during the treatment to a maximum two weeks post treatment. Thus it is concluded that QOL assessment seem useful in the evaluation of medical regimens for peptic ulcer disease.

In the result we found that in table 1 participants were in low spirits mostly(60%) before the treatment and after the treatment they were in excellent spirits (50.9%).In table 2 we found that participants were bothered by any illnesses almost every day(34.5%) before the treatment and none of the illness (43.6%) after the treatment. In table 3 found that participants were very depressed almost every day(36.4%) before the treatment and a little depressed now and then (58.3%)after the treatment. In table 4 we found that the participants **was no and somewhat disturbed(32.4%) about their behavior and thoughts before treatment and for most of the time (45.4) after the treatment** .In table 5 we found that participants were very so much(32.7%) bothered by nervousness before the treatment and not at all(49.1%) after the treatment. In table 6 we found that participants were very low in energy or pep most of the time(34.5%) before the treatment and very full of energy-lots of pep(50.9%) after the treatment.In table 7 we found that participants felt downhearted and blue a good bit of the time(32.7%) before the treatment and none of the time(45.5%) after treatment. In table 8 we found that participants were extremely tense, most or all of the time (30.9%) before the treatment and never felt tense or any tension at all (63.6%) after the treatment.In table 9 we found that participants were generally dissatisfied, unhappy(27.3%) before the treatment and extremely happy-could not have been more satisfied or pleased(50.9%) after the treatment.In table 10 we found that participants needed some help in talking care of themselves(47.3%) before the treatment and they felt healthy for most of the part(47.3%) after the treatment .In table 11 we found that participants felt so sad and discouraged very much so(32.6%) before the treatment and not at all(63.6%) after the treatment.In table 12 we found that participants woke up feeling fresh some of the time(34.5%) before the treatment and all of the time(58.2%) after the treatment. In table 13 we found that participants were concerned, worried about their health for quite a bit(43.6%) of time before the treatment and not at

all(52.7%) worried about their health after the treatment. In table 14 we found that participants were some and quite concerned(30.9%) before the treatment and only a little

(49.1%) concerned if they were losing their mind or losing control over the way they act after the treatment. In table 15 we found that participants daily life were full of interesting things some of the time(32.7%) before the treatment and all of the time (58.2%) after the treatment. In table 16 we found that participants felt mostly dull, sluggish-never, really active, vigorous (30.9%) before the treatment and mostly active, vigorous-never dull, sluggish (47.3%) after the treatment. In table 17 We found that participants had been anxious, worried or upset quite a bit (86.4%) before the treatment and not at all worried (72.7%) after the treatment. In the table 18 we found that participants were emotionally stable and sure of themselves some of the time (34.5%) before the treatment and most of the time (47.3%) after the treatment. In the table 19 we found that participants felt High strung, tight, or keyed up most of the time (38.2%) before the treatment and felt relaxed and at ease the whole month (50.9%) after the treatment. In the table 20 we found that participants felt cheerful, lighthearted none of the time (32.7%) before the treatment and all of the time (65.5%) after the treatment. In the table 21 we found that participants felt tired, worn out, used up or exhausted most of the time(38.2%) before the treatment and none of the time (58.2%)after the treatment. In the table 22 we found that participants felt a quiet bit of pressure (29.1%) before the treatment and felt no pressure at all (43.6%) after the treatment.

Conclusion :

From the present study we have conclude that the QOL can be evaluated using Psychological General Well-Being (PGWB) questionnaires for further evaluation in patients with peptic ulcer before the treatment starts and after the treatment is stopped which will give the positive

1. Malfertheiner P, Chan FK, McColl KE. Peptic ulcer disease. *Lancet*. 2009; 374:1449–1461.
2. Lanas A, Chan FKL. Peptic ulcer disease. *Lancet*. 2017;390(10094):613-24.
3. Kaur A, Singh R, Sharma R, Kumar S, Peptic Ulcer: A review on Ethiology and Pathogenesis, *International Research Journal of Pharmacy*. 2012; 2230- 8407
4. Meucci G, Di Battista R, Abbiati C, et al. Prevalence and risk factors of Helicobacter pylori-negative peptic ulcer: a multicenter study. *J Clin Gastroenterol*. 2000; 31:42–47.
5. Fitzpatrick R, Fletcher A, Gore S, et al. Quality of Life measures in health care. I:

Applications and issues in assessment. *Br Med J* 1992;305:1074-7.

6. Yuan Y, Padol IT, Hunt RH. Peptic ulcer disease today. *Nature Clinical Practice Gastroenterology and Hepatology*. 2006; 3(2): 80–9
7. Dimenas E. Methodological aspects on evaluation of Quality of Life in upper gastrointestinal diseases. *Scand J Gastroenterol* 1993; 28 Suppl 199; 18-21
8. Søreide K, Thorsen K, Harrison EM, Bingener J, Møller MH, Ohene-Yeboah M, Søreide JA. Perforated peptic ulcer. *The Lancet*. 2015 Sep 26;386(10000):1288-98.
9. Marshall BJ, Warren JR. Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. *Lancet*. 1984; 1:1311–1315.
10. Narayanan, M.; Reddy, K.M.; Marsicano, E. Peptic ulcer disease and *Helicobacter pylori* infection. *Mo. Med*. 2018, 115, 219–224.
11. Kuipers EJ, Thijs JC, Festen HP. The prevalence of *Helicobacter pylori* in peptic ulcer disease. *Aliment Pharmacol Ther*. 1995; 9(suppl 2):59–69
12. Dunn BE, Cohen H, Blaser MJ: *Helicobacter pylori*. *Clin Microbiol Rev*. 2006, 19(3):449-90.
13. Huang JQ, Sridhar S, Hunt RH. Role of *Helicobacter pylori* infection and non-steroidal anti-inflammatory drugs in peptic-ulcer disease: a metaanalysis. *Lancet*. 2002; 359:14–22.

65

14. Hawkey CJ. Nonsteroidal anti-inflammatory drug gastropathy. *Gastroenterology*. 2000; 119:521–535.
15. Levenstein, S.; Rosenstock, S.; Jacobsen, R.K.; Jorgensen, T. Psychological stress increases risk for peptic ulcer, regardless of *Helicobacter pylori* infection or use of nonsteroidal anti-inflammatory drugs. *Clin. Gastroenterol. Hepatol*. 2015, 13, 498–506.e1.
16. Coleman S, Gorecki C, Nelson E.A, Patient risk factors for pressure ulcer development: Systematic review, *International Journal of Nursing Studies*. 2013; 974-1003.
17. Rosenstock S, Jørgensen T, Bonnevie O, et al. Risk factors for peptic ulcer disease: a population based prospective cohort study comprising 2416 Danish Adults. *Gut*. 2003; 52(2): 186–93.
18. Lanas A, Garcia-Rodriguez LA, Polo-Tomas M, Ponce M, Quintero E, Perez-Aisa MA, *Eur. Chem. Bull*. 2023, 12(Special Issue 8),3663-3681

Gisbert JP, Bujanda L, Castro M, Munoz M, Del-Pino MD, Garcia S, Calvet X. The changing face of hospitalisation due to gastrointestinal bleeding and perforation. *Aliment Pharmacol Ther.* 2011;33:585–91.

19. Bertleff MJ, Lange JF. Perforated peptic ulcer disease: a review of history and treatment. *Dig Surg.* 2010;27:161–9.

20. Cave DR. Transmission and epidemiology of *Helicobacter pylori*. *Am J Med.* 1996 May 20;100(5A):12S-17S; discussion 17S-18S.

21. Lanas A, García-Rodríguez LA, Arroyo MT, Gomollón F, Feu F, González-Pérez A, Zapata E, Bástida G, Rodrigo L, Santolaria S, Güell M. Risk of upper gastrointestinal ulcer bleeding associated with selective cyclo-oxygenase-2 inhibitors, traditional non-aspirin non-steroidal anti-inflammatory drugs, aspirin and combinations. *Gut.* 2006 Dec 1;55(12):1731-8

22. Datta De D, Roychoudhury S. To be or not to be: The host genetic factor and beyond in *Helicobacter pylori* mediated gastro-duodenal diseases. *World J Gastroenterol.* 2015;21(10):2883-95.

23. Shiotani A, Graham DY. Pathogenesis and therapy of gastric and duodenal ulcer disease. *The Medical clinics of North America.* 2002;86(6):1447-66, viii.

24. Yamaoka Y, Graham DY. *Helicobacter pylori* virulence and cancer pathogenesis. *Future Oncol.* 2014;10(8):1487-500.

66

25. Guo T, Qian JM, Zhao YQ, Li XB, Zhang JZ. Effects of IL-1 β on the proliferation and apoptosis of gastric epithelial cells and acid secretion from isolated rabbit parietal cells. *Molecular medicine reports.* 2013;7(1):299-305.

26. Zhang B-B, Liu X-Z, Sun J, Yin Y-W, Sun Q-Q. Association between TNF α gene *Eur. Chem. Bull.* 2023, 12(Special Issue 8),3663-3681

polymorphisms and the risk of duodenal ulcer: a meta-analysis. *PLoS One*.

2013;8(2):e57167-e.

27. Chey WD, Leontiadis GI, Howden CW, Moss SF. ACG Clinical Guideline: Treatment of

Helicobacter pylori Infection. *The American journal of gastroenterology*. 2017;112(2):212-39

28. Collier DS, Pain JA. Non-steroidal anti-inflammatory drugs and peptic ulcer perforation. *Gut*. 1985;26:359-63.

29. Kavitt RT, Lipowska AM, Anyane-Yeboah A, Gralnek IM. Diagnosis and Treatment of Peptic Ulcer Disease. *The American Journal of MEDicine*. 2019;132(4):447-56.

30. Thorsen K, Glomsaker TB, von Meer A, Søreide K, Søreide JA (2011). "Trends in diagnosis and surgical management of patients with perforated peptic ulcer". *J. Gastrointest. Surg.* 15 (8): 1329–35.

31. Goodman CC, Snyder TK. *Differential Diagnosis for Physical Therapists: Screening for Referral*. 4th ed. St. Louis, Missouri: Saunders Elsevier; 2007. P366-408.

32. Cromwell DM, Pasricha PJ. Endoscopy or empirical treatment for peptic ulcer disease: Decisions, decisions. *Gastroenterology* 1996;110:1314–6.32. Cromwell DM, Pasricha PJ.

Endoscopy or empirical treatment for peptic ulcer disease: Decisions, decisions. *Gastroenterology* 1996;110:1314–6.

33. Banerjee S, Cash BD, Dominitz JA, Baron TH, Anderson MA, Ben-Menachem T, Fisher

L, Fukami N, Harrison ME, Ikenberry SO, Khan K. The role of endoscopy in the management of patients with peptic ulcer disease. *Gastrointestinal Endoscopy*. 2010 Apr 1;71(4):663-8

34. Milosavljevic T, Kostić-Milosavljević M, Jovanović I, et al. Complications of peptic ulcer disease. *Digestive Diseases*. 2011; 29(5): 491–3.

67

35. Behrman SW. Management of complicated peptic ulcer disease. *Arch Surg*. 2005;140:201-8.

36. Malfertheiner P, Megraud F, O'morain CA, Gisbert JP, Kuipers EJ, Axon AT, Bazzoli F, Gasbarrini A, Atherton J, Graham DY, Hunt R. Management of *Helicobacter pylori* infection—the Maastricht V/Florence consensus report. *Gut*. 2017 Jan 1;66(1):6-30.
37. Fallone CA, Chiba N, van Zanten SV, Fischbach L, Gisbert JP, Hunt RH, Jones NL, Render C, Leontiadis GI, Moayyedi P, Marshall JK. The Toronto consensus for the treatment of *Helicobacter pylori* infection in adults. *Gastroenterology*. 2016 Jul 1;151(1):51-69.
38. Shiota S, Reddy R, Alsarraj A, El-Serag HB, Graham DY. Antibiotic Resistance of *Helicobacter pylori* Among Male United States Veterans. *Clinical gastroenterology and hepatology: the official clinical practice journal of the American Gastroenterological Association*. 2015;13(9):1616-24.
39. Chen PY, Wu MS, Chen CY, Bair MJ, Chou CK, Lin JT, Liou JM, Taiwan Gastrointestinal Disease and *Helicobacter* Consortium. Systematic review with meta-analysis: the efficacy of levofloxacin triple therapy as the first-or second-line treatments of *Helicobacter pylori* infection. *Alimentary pharmacology & therapeutics*. 2016 Sep;44(5):427-37.
40. Gurusamy KS, Pallari E. Medical versus surgical treatment for refractory or recurrent peptic ulcer. *The Cochrane database of systematic reviews*. 2016;3(3): Cd011523.
41. Shanshal, Sadeel & Noori, Ali & Ghazi, Jaafar & Dahham, Abdullah & Samer, Abdulrahman & Al-Qazaz, H.. (2022). Impact of peptic ulcer disease on the quality of life: A Cross Sectional Study. *Research Journal of Pharmacy and Technology*. 10.52711/0974-360X.2022.00548..

Assessment of the quality of life in patient with peptic ulcer before and after the treatment using psychological general well-being index