Original Article

A study of psychiatric morbidity in patients of peptic ulcer diseases

Abstract

Aims and Objectives: To study the prevalence of psychiatric morbidity among patients of peptic ulcer disease and to study the patients of peptic ulcer disease with psychiatric morbidity in comparison to patients of peptic ulcer disease without psychiatric morbidity on following variables: sociodemographic variables and attributes/risk factors of peptic ulcer disease. **Materials and Methods:** Fifty cases of clinically proven acid peptic diseases and 30 cases of the control group were screened in department of General Medicine, outdoor as well as indoor patients. Instruments applied for the purpose of the study were Personal Bio-data Performa (Appendix-I), (SCL)-80 (Appendix-II), Hamilton rating scale for anxiety and depression, (P.S.L.E.); clinical diagnosis of psychiatric disorders was made as per ICD- 10 criteria. Data collected shall be subjected to statistical analysis. **Results and Findings:** The psychiatric morbidity was significantly (P<0.01) higher in study group patients with SCL-80 mean score of 66.36 compared to 37.53 in control group subjects. It was observed that on the basis of SCL-80 scores, significantly (P<0.001) higher psychiatric morbidity was present in 29 patients from the study group (58% of cases) while four subjects showed psychiatric morbidity in the control group (13.33% of cases). The symptoms of depression were seen significantly (P<0.01) higher in study group patients with a mean score of 11.52 compared to control group subjects with a mean score of 3.8. The anxiety symptoms were found significantly (P<0.01) higher in study group patients with a mean score of 6.22 compared to 2.76 in control group subjects. As per ICD-10 criteria, a significantly higher number of patients in the study group were diagnosed as depression (P<0.05), generalized anxiety disorder (P<0.02) and somatization (P<0.05) as the percentage was 24%, 26%, and 18% compared to 6.67%, 6.67%, and 3.33% in control group subjects. Further, 32% of patients in the study group were shown to have a significantly (P<0.05) stronger family history of acid peptic disease compared to 13.33% of subjects in the control group. A significantly higher number of patients with psychiatric morbidity, i.e. 34.48%, were diagnosed as a case of acid peptic disease in the late age of 41-50 years compared to 19.04% of patients without psychiatric morbidity. A significantly higher (P<0.001) number of patients (51.72%) with psychiatric morbidity had longer duration of acid peptic disease illness, i.e. >10 years, compared to 23.80% in patients without psychiatric morbidity. Lastly, 48.27% of patients with psychiatric morbidity had significantly (P<0.01) stronger family history of acid peptic disease compared to 9.52% in patients without psychiatric morbidity. **Conclusions:** There is a significant relationship between the peptic ulcer disease and the various psychiatric morbidity factors as illustrated from the findings of this study.

Key words:
Hamilton rating scales, ICD-10, peptic ulcer, PSLC, psychiatric morbidity, SCL-80, statistical analysis

Introduction

A stressful life event or situation–internal or external, acute or chronic–generates challenges to which the organism cannot adequately respond some times. Recent studies have found that the people who face general stresses

Access this article online	
Website: http://www.cysonline.org	Quick Response Code
DOI: 10.4103/2229-5186.94310	

Jagpal Singh Klair, B. S. Sidhu
Department of Psychiatry, Government Medical College and Rajindra Hospital, Patiala, Punjab, India

Address for correspondence:
Dr. Jagpal Klair
Government Medical College, Patiala-147 001, Punjab, India.
E-mail: klairjagpal@yahoo.com

pessimistically are apt to experience psychosomatic disorders. Psychological factors like stress are important in development of initiation, progression, aggravation, predisposition, or reaction to disease.

Peptic ulcer is an excellent example of the limitations of mono-causal thinking; like most diseases it has a multifactorial origin. For many years, the dominant etiologic model was exclusively psychosomatic. But after *helicobacter pylori* (*H. pylori*) proved to be a key and curable element in the ulcer diathesis, many concluded that the "real" cause had been found and had nothing to with psychology.

However, attempts to explain ulcer due to *H. pylori* and usage of nonsteroidal antiinflammatory drugs (NSAIDs) as sole etiological factors are likely to fail. The field is therefore open for other factors working in conjunction with *H. pylori* or causing ulcers through alternative pathways.

Given the widespread occurrence of infection with *H. pylori* in first and third world country populations, only a very small number of subjects actually develop duodenal ulcers. The epidemiological, clinical, and genetic evidence strongly suggest that host factors, especially the effect of stress, may be decisive in determining who develops a duodenal ulcer.[1]

Among potential mediators several known behavioral risk factors for ulcers-smoking, alcohol abuse, and lack of sleep–have clear associations with real life stress and are known to impair wound healing through their effects on immune function. Sleep loss can also elevate cortisol levels. Individuals under stress may also be likely to increase NSAID use. On the physiological side, stress is known to modify gastric blood flow, which plays an important role in gastric mucosal barrier and to affect possible mediators such as thyrotropin-releasing hormone, cytokines, and corticotrophin releasing hormone.

Stress seems to have variable effects on gastric motility: delayed gastric emptying could increase the risk of gastric ulcers, while accelerated emptying could increase the net acid load delivered to the duodenum, enhancing the risk of duodenal ulcer, skipped meals, and poor sleep might increase duodenal acid load still further.

Once an ulcer has developed, therapy is less effective in distressed individuals and their ulcers are more likely to recur over years. In humans, healing of both epidermal and mucosal wounds is impaired by stress.

The research community is rising to the challenge, with a diversity of groups designing studies in animal models, clinical populations, normal subjects, and other epidemiologic groups to see whether, as the present panel concludes, reports of death of ulcer psychosomatic have been greatly exaggerated.

Bak-Romaniszyn *et al.*[2] presented etiology, clinical manifestations, diagnostic procedures, and treatment of peptic ulcer disease (PUD) in children and adults increased gastric acid output, *H. pylori*, NSAIDs, and stress are the basic risk factors in PUD.

Chiba[3] proposed that only four factors are now considered most important for the development of peptic ulcers discovery, i.e., *H. pylori* infection, gastric acid, NSAID administration, and mental and physical stress.

Guo *et al.*[4] explored the underlying mechanisms of partial sleep deprivation, as a source of psychological stress, on gastric functions and its effect on mucosal integrity in humans and animals. These results provided experimental evidence on the gastric damaging effects of partial sleep deprivation and it could be one of the risk factors contributing to gastric ulcer formation.

Michael[5] described the role of psychosocial factors in PUD: Beyond *H. pylori* and NSAIDs.

Robert *et al.*[6] The American Psychiatric Publishing textbook of psychiatry (1,786 pages) documents that psychological factors like frustration or increase in responsibility have a large role in peptic ulcer.

As the significant number of patients with acid peptic diseases show psychological influences, the present study is a step to find out psychiatric morbidity in patients of acid peptic diseases.

Materials and Methods

This study consisted of a total number of 50 patients who were diagnosed as suffering from acid peptic disease by consultant gastroenterologist, were contacted in the Department of Medicine, Govt. Medical College, Patiala. A detailed history and physical examination was carried out in these patients by the doctor concerned. Informed consent (English/Punjabi) was obtained from all patients after fully explaining them the details of the study. Regular follow-ups were conducted to observe the psychiatric morbidity.

Approval to carry out the research work on human subjects was granted by Institutional Ethics Committee (IEC), Govt. Medical College, Patiala, Punjab.

This study was divided into two groups, group A (study group) consisting of 50 patients and group B (control group) consisted of 30 attendants accompanying the patients. The study group was further subdivided into two subgroups, i.e., those with and without psychiatric morbidity. Patient inclusion criteria were patients both males and females between the age group of 20 and 50 years. Patient exclusion criteria were patients with history of epilepsy, mental

retardation, pregnant females, patients with any chronic medical illness other than acid peptic disease, and on long-term treatment for any other medical and psychiatric illness, patients with complications of peptic disease like hemorrhage and perforation and who refused to give informed consent.

Following instruments were applied for the purpose of the study:

Personal bio-data performa

Personal bio-data performa included items or variables to study the sociodemographic profile of the patients. The variables included age, marital status, domicile, and patients' education, occupation and economic status and personal attributes like alcohol intake, smoking, drug intake, dietary habits, and family history of mental illness. Patients were also evaluated on attributes of acid peptic disease illness like age of diagnosis, duration of illness, and family history of acid peptic disease.

Symptom check list-80

Symptom check list-80 consisted of 80 items. These 80 items were further divided into nine subscales namely somatization subscale (12), depression subscale (13), paranoid ideation subscale (6), interpersonal sensitivity subscale (9), phobic anxiety subscale (7), anxiety subscale (10), obsessive compulsive neurosis subscale (10), anger hostility subscale (6), additional symptoms subscale (7). Each item was scored from 1 to 4, depending upon the severity of symptom ranging from absent, mild, moderate to severe symptoms. Depending upon the total score obtained by a given patient in the said subscale was added up. Depending upon the score, the maximum score obtained by any given patient was taken into consideration: if the score of the given subject was between 0 and 25% of the maximum score, he/she was placed in the category of absent; if the score was between 25 between 50% of maximum score, he/she was placed in category of mild; if the patient scored between 50 and 75% of the maximum score, he/she was placed in category of moderate; if he/she scored between 75 and 100% of the maximum score, he/she was placed in the category of severe.

Hamilton rating scale for depression

Hamilton rating scale for depression (HDRS) is widely used and accepted depression scale for measuring the severity of depression. This scale has 21 items, each of which is rated from 0 to 4 and 0 to 2. These ratings are derived from clinical interview with the patient. It has a high validity against global judgment and high reliability, both showing correlation above 0.90. The HDRS criteria for depression are no depression (total score of 0-7), mild depression (total score of 8-13), moderate depression (total score of 14-19), severe depression (total score of $\geq$20).

Hamilton rating scale for anxiety

Hamilton rating scale for anxiety (HARS) is semiquantitative. It was constructed solely to assess severity of the clinical condition and not to serve as a diagnostic tool. Only few of the 14 items are clinical signs to be directly observed during the interview. The majority of the items are symptoms and here the assessment must be based on the condition during the last days (minimum period 3 days). It is general rule for all items that every scale level includes the lower level, e.g., level 3 always includes levels 2 and 1. If an item is not present, the score is 0. The HARS criteria for generalized anxiety are no anxiety (total score of 0-5), mild anxiety (total score of 6-10), moderate anxiety (total score of 11-15), and severe anxiety (total score of >15).

Presumptive stressful life events

Presumptive stressful life events scale contains a list of 51 life events. This instrument is suitable and standardized in the Indian population. This list is used to record the number of life events in the past 1-year period. These life events can be further categorized on the basis of nature of events, i.e. desirability of events: whether the events are desirable, undesirable, or ambiguous, controllability of events: whether the events are under one's control or not, i.e., personal, impersonal events and exit and entrance events: whether the events are exit or entrance from social field.

All the instruments were administrated personally to the subjects. Any queries regarding any question were also explained. At the beginning a number of sociodemographic variables were noted in a personal bio-data performa. Then, symptom check list-80 was administered. Again, the symptoms were assessed clinically according to ICD-10 criteria. The data collected were subjected to statistical analysis and chi-square and *t*-test were applied to test the statistical significance.

Results and Findings

Helicobacter *pylori* alone does not explain fully the causation of PUD. There is a reasonable evidence that psychological stress is not only associated with ulcers but it is also a very plausible risk factor for PUD. Psychiatric disorders may antecedate and trigger many ulcers and are also responsible for adoption of unhealthy life styles, coping strategies and unnecessary use of drugs, smoking, and alcohol, which further worsen the course of acid peptic disease.

Christodoulou *et al.*[7] compared 34 male peptic ulcer patients to (a) a group of 37 healthy controls and (b) a group of 36 hospitalized controls suffering from illness unrelated to gastrointestinal tract, to indicate that psychopathological, psychosocial, character logical, and factors are important pathogenic contributors in ulcers.

Biebl *et al.*[8] studied 47 patients suffering from chronic recurrent duodenal ulcer by subdividing them in two groups according to whether the first manifestation of disorder occurred early or late in the life of each individual.

Lee *et al.*[9] compared 30 adults with gastrointestinal symptom in the absence of structural organic disease diagnosed with non-ulcer dyspepsia (NUD) to 30 healthy adults. All subjects were evaluated for anxiety and depressive symptoms, stressful life events, coping style, and social support.

In the study group, it was observed that the mean age was in the range of 37.20 years.

Lazebnik *et al.*[10] conducted a study in 68 men and 64 women at the age from 18 to 40 years suffering from gastroduodenal ulcer in order to examine the role of stress in ulcer formation. Medalie *et al.*[11] screened 8,458 Israeli men over age 40 years who had no history of duodenal ulcer, to confirm the importance of stress, lack of social support, and coping style in the development of duodenal ulcer.

The psychiatric morbidity was significantly ($P<0.01$) more in study group patients with SCL-80 mean score of 66.36 compared to 37.53 in control group subjects [Table 1]. Study group patients showed a significantly higher mean score on somatization ($P<0.001$), depression ($P<0.05$), anxiety ($P<0.05$) subscales of SCL-80 compared to control group subjects, as the mean score for somatization, depression and anxiety was 20.42, 15.48, and 13.28 compared to 8.10, 8.26, and 7.43 for respectively on these subscales in control group subjects. The results for other subscales of paranoid ideation, interpersonal sensitivity, phobia, OCN, and anger hostility were nonsignificant ($P>0.05$). It was observed that on the basis of SCL-80 scores, significantly ($P<0.001$) higher psychiatric morbidity was present in 29 patients from the study group (58% of cases) while 4 subjects showed psychiatric morbidity in the control group (13.33% of cases). Significantly severe symptoms of somatization ($P<0.001$), depression ($P<0.05$), and anxiety ($P<0.05$) were observed in patients of the study group with a percentage of 18%, 10%, and 16% compared to no subject in the control group suffering from severe symptoms on these subscales.

Similarly Jain *et al.*[12] conducted a study on 35 patients with NUD, 22 cases of PUD, 65 irritable bowel syndrome (IBS), and 45 controls. NUD, PUD, and IBS subjects showed significantly higher total MHQ scores (middle sex hospital questionnaire) and scores on subscales of somatization (7.8±3.4; $P<0.001$) and hysterical personality trait (5.5±2.8; $P<0.01$) compared to healthy controls. NUD subjects had significantly higher total MHQ scores (28.8±11.3;$P<0.001$). Magni *et al.*[13] assessed psychological distress using the Kellner–Sheffield symptom rating test in 61 consecutive unselective patients (duodenal ulcer=25, acute gastro-intestinal disorder=36). The DU and AGD patients had higher mean scores than the controls for neuroticism, anxiety, depression, and somatization.

The symptoms of depression were seen significantly ($P<0.01$) more in study group patients with a mean score of 11.52 compared to control group subjects with a mean score of 3.8 [Tables 2 and 3]. The anxiety symptoms were found significantly ($P<0.01$) more in study group patients with a mean score of 6.22 compared to 2.76 in control group subjects.

Similarly Renee *et al.*[14] analyzed the data drawn from the national comorbidity survey, representative household survey of the adult population of the United States (N=8,098). The results showed that generalized anxiety disorder (GAD) was associated with the significantly increased risk of self-reported PUD (odds ratio (OR)=28, 95% CI=1.4-5.7, P=0.0002). Ol'Khov *et al.*[15] evaluated 290 patients with duodenal ulcers and suggested that levels of

Table 1: SCL - 80 scores

SCL score	Group A		Group A	
	N=50	%	*N*=30	%
<20	9	18	14	46.67
21-40	14	28	12	40.00
41-60	4	14	0	0.00
61-80	4	08	1	3.33
81-100	2	04	2	6.67
101-120	3	06	1	3.33
>120	11	22	0	0.00
Total	50	100	30	100
Range	7-194		3-115	
Mean±SD	66.36±51.31		37.53±35.30	
T	3.81			
P	<0.01			
df	78			
Significance	HS			

Table 2: Scores on Hamilton's rating scale for depression

Hamilton score	Group A		Group A	
	N=50	%	*N*=30	%
0-7	21	42	24	80
8-13	7	14	3	10
14-19	12	24	3	10
>20	1	20	0	0
Total	50	100	30	100
Range	0-25		0-18	
Mean±SD	11.52±8.64		3.8±5.82	
T	4.33			
P	<0.01			
df	78			
Significance	HS			

vegetative labiality, anxiety, and depression in patients with duodenal ulcers were significantly higher compared to healthy subjects.

As per ICD-10 criteria, a significantly higher number of patients in the study group were diagnosed as depression ($P<0.05$), GAD ($P<0.02$), and somatization ($P<0.05$) as the percentages were 24, 26, and 18 compared to 6.67, 6.67, and 3.33% in control group subjects [Table 4].

Table 3: Scores on Hamilton's rating scale for anxiety

Hamilton score	Group A		Group A	
	N=50	%	*N*=30	%
0-5	29	58	25	83.33
6-10	6	12	5	16.67
11-15	10	20	0	0
>16	5	10	0	0
Total	50	100	30	100
Range	0-18		0-14	
Mean±SD	6.22±4.82		2.76±4.19	
T	3.24			
P	< 0.01			
df	78			
Significance	HS			

Similarly Talley *et al.*[16] conducted psychometric testing on 76 essential dyspepsia patients (including 18 patients with gastro-duodenitis), 76 randomly selected controls and 66 duodenal ulcer patients. It was seen that essential dyspepsia and duodenal ulcer patients were more neurotic and depressed than community controls.

The patients in the study group experienced significantly ($P<0.05$) more life events (personal, undesirable) compared to subjects in the control group [Table 5]. The mean score for personal events was 2.44 and for undesirable events was 3.04 in study group patients compared to 0.93 and 1.03 in control group subjects.

Similarly Lam *et al.*[17] conducted a study in a 100,000 population when Hong Kong, during the year 1962-85, went through significant socioeconomic and political changes. Both linear and auto-regression analyses showed that the perforation ratio correlated significantly with the society stress scores (r=0.57, $P<0.002$). Wachirawat *et al.*[18] conducted a retrospective case-control study at Siri Raj Hospital, Bangkok from March to December. The results showed that peptic ulcer was associated with chronic stress (oOR 2.9, $P=0.01$; 95% CI, 1.3-6.5)

Table 4: Clinical diagnosis according to ICD-10

ICD-10 diagnosis	Group A		Group B		Level of significance
	N=50	%	*N*=50	%	
F32 Depression					
Mild	4	8	1	3.33	$X^2=4.568$
Moderate	4	8	1	3.33	$P<0.05$
Severe	4	8	0	0	df=1
Total	12	24	2	6.67	S
F41.1 Generalized anxiety disorder	13	26	2	6.67	$X^2=4.568$ $P<0.05$ df=1 S
F45 Somatization	9	18	1	3.33	$X^2=4.487$ $P<0.05$ df=1 S
F40 Phobia	0	0	0	0	
F42 OCD	0	0	0	0	

Table 5: Presumptive stressful life events score from 1 year prior to time of evaluation

Nature of the event	Group A (*N*=50)		Group B (*N*=30)		*t*	*P*	S
	Total number of events experienced	Mean±SD	Total number of events experienced	Mean±SD			
Personal	122	2.44±1.26	28	0.93±0.13	3.25	<0.05	S
Impersonal	96	1.92±0.06	54	1.8±0.08	0.32	<0.05	NS
Desirable	62	1.24±0.12	42	1.4±0.09	0.76	<0.05	NS
Undesirable	152	3.04±0.01	31	1.03±0.12	2.80	<0.05	S
Ambiguous	82	1.64±0.11	65	2.16±0.31	0.13	<0.05	NS
Exit	16	0.32±0.04	9	0.3±0.01	0.01	<0.05	NS
Entrance	8	0.16±0.06	4	0.13±0.09	0.23	<0.05	NS

and family history of PU (OR=2.4, $P<0.03$; 95%, CI, 1.1-5.1), with an interaction effect between stress and irregular meal times (OR 4.8, $P=0.01$; 95% CI, 1.3-16.9). Medalie *et al.*[11] studied prospectively psychosocial as well as biologic, behavioral and demographic factors in 8,458 Israeli men over age 40 years who had no history of duodenal ulcer. Multivariate logistic regression analysis confirmed several previously reported factors: smoking (OR=1.64, CI=1.25-2.16), greater age (60 or more), (OR=1.85, 95%, CI=1.25-2.24), low salary (OR=1.50, 95% CI=1.14-1.96).

A significantly higher ($P<0.05$) number of patients in the study group consumed alcohol (32%), smoked (28%) compared to 13.33%, and 10.00% of control group subjects [Table 6]. Similarly a significantly higher ($P<0.01$) number of patients in the study group used NSAIDS (38%) compared to only 6.67% in control group subjects. Further, 32% of patients in the study group were shown to have significantly ($P<0.05$) stronger family history of acid peptic disease compared to 13.33% of subjects in the control group.

Similarly Miwa *et al.*[19] conducted a multicenter study involving 4,940 peptic ulcer patient after cure of *H. pylori* and follow-up was done for 2 years. The recurrence rate of gastric consumed alcohol and used NSAIDS. Katschinski *et al.*[20] conducted study in 76 recently diagnosed ulcer patients. It was seen that the risk of physically active work was associated with duodenal ulcer, with relative risk for moderate- and high-activity compared with sedentary work being 1.3 (0.6-30) and 3.6 (1.3-7.8) respectively.

A significantly higher number of patients with psychiatric morbidity were consuming alcohol regularly (27.58%, $P<0.05$), were heavy smokers (34.48%, $P<0.05$), chewed tobacco (17.24%, $P<0.05$), and used NSAIDS (48.27%, $P<0.001$), compared to 4.76, 9.52, 0, and 0% respectively in patients without psychiatric morbidity [Table 7].

Table 6: Analysis of risk factors for acid peptic disease

Factors	Group A		Group A		X^2	*P*	df	S
	N=50	%	*N*=30	%				
Alcohol	16	32	4	13.33	3.984	<0.05	1	S
Smoking	14	28	3	10.00	4.198	<0.05	1	S
NSAIDS	19	38	2	6.67	10.288	<0.01	1	HS
Beverages (tea/ coffee)	30	60	19	63.33	0.087	<0.05	1	NS
Diet								
Vegetarian	23	46	16	53.33	0.403	<0.05	1	NS
Non-Vegetarian	27	54	14	46.67	0.403	<0.05	1	NS
Family history of acid peptic disease	16	32	4	13.33	3.984	<0.05	1	S
Family history of mental illness	7	14	2	6.67	1.491	<0.05	1	NS
Depression	3	10.34	1	4.76				
Bipolar disorder	2	6.89	1	4.76				
Any other major psychiatric illness	0	0	0	0				

Table 7: History of substance use of abuse

	Acid peptic disease subjects				Level of significance
	With psychiatric morbidity		Without psychiatric morbidity		
	N=29	%	*N*=21	%	
Alcohol intake					
Occasional	4	13.79	3	14.28	$X^2=3.88$, $P>0.05$, S
Regular	8	27.58	1	4.76	
Dependent	0	0	0	0	
Tobacco use					
Smoking					
Light	1	3.44	1	4.76	$X^2=3.93$, $P>0.05$, S
Heavy	10	34.48	2	9.52	
Tobacco chewing	5	17.24	0	0	$X^2=4.01$, $P>0.05$, S
NSAIDS (analgesics)					
Occasional use (<3 times a week)	3	10.34	2	9.52	$X^2=14.06$, $P>0.001$, HS
Regular use (>3 times a week)	14	48.27	0	0	
Paracetamol	4	13.79	0	0	
Aspirin	8	27.58	0	0	
Nimulside	2	6.89	0	0	

Similarly Kurata *et al.*[21] analyzed the risk factors for the development of PUD in a population of 34,198 white, nonhispanic seventh-day adventists. Higher life-time prevalence (13.5% for men and 11% for women) of peptic ulcer was observed for users of stronger pain relievers and current cigarette smokers (OR>2.0, $P<0.0001$). Levenstein *et al.*[22] studied 33 patients with active ulcer using MMPI and Zung's anxiety and depression scales. It was concluded that a depressed mood and stress-related increase in use of alcohol and cigarettes may mediate between stress and ulcer formation.

A total of 24.13% of patients with psychiatric morbidity were taking tea/coffee (more than three times/day) compared to 19.04% in patients without psychiatric morbidity [Table 8]. Similarly, a higher number of patients with psychiatric morbidity were nonvegetarian (62.06%) compared to 42.85% of subjects without psychiatric morbidity. Further, spicy food consumption was significantly ($P<0.05$) more among patients with psychiatric morbidity (51.72%) compared to 23.80% in patients without psychiatric morbidity.

Similarly Levenstein *et al.*[23] assessed 75 patients with recent onset symptomatic duodenal ulcer and suggested that risk factors like sex, age, seasonality, family history, smoking, alcohol, coffee consumption, and NSAIDS were seen more in duodenal ulcer patients.

Table 8: Dietary factors in subjects

Dietary factors	Acid peptic disease subjects				Level of significance
	With psychiatric morbidity		Without psychiatric morbidity		
	N=29	%	*N*=21	%	
Beverages (tea/coffee)					
<3 times/day	9	31.03	10	47.76	$X^2=1.35$, $P>0.05$, NS
>3 times/day	7	24.13	4	19.04	
Diet					
Exclusively vegetarian	11	37.93	12	57.14	$X^2=1.79$, $P>0.05$, NS
Predominantly non-vegetarian	18	62.06	9	42.85	
Spicy food	15	51.72	5	23.80	$X^2=3.93$, $P>0.05$, NS

Table 9: Family history of mental illness in subjects

Family history	Acid peptic disease subjects				Level of significance
	With psychiatric morbidity		Without psychiatric morbidity		
	N=29	%	*N*=21	%	
Without family history	24	82.75	19	90.47	$X^2=0.58$, $P>0.05$, NS
With family history					
Depression	3	10.34	1	4.76	
Bipolar disorder	2	6.89	1	4.76	
Any other major psychiatric illness	0	0	0	0	

Table 10: Characteristics of acid peptic disease patients

Patients characteristics	Acid peptic disease subjects				Level of significance
	With psychiatric morbidity		Without psychiatric morbidity		
	N=29	%	*N*=21	%	
Age of diagnosis of acid peptic disease (in years)					
20-30	4	13.79	11	52.38	$X^2=8.636$, $P>0.01$, df=1, S
31-40	15	51.72	6	28.57	
41-50	10	34.48	4	19.04	
Duration of acid peptic disease (in years)					
0-5	4	13.79	13	61.09	$X^2=8.636$, $P>0.001$, df=1, HS
5-10	10	34.48	3	14.28	
>10	15	51.72	5	23.80	
Family history of acid peptic disease					
With family history	14	48.27	2	9.52	$X^2=8.405$, $P>0.01$, df=1, S
Without family history	15	51.72	19	90.47	

Family history of mental illness was more in patients with psychiatric morbidity, i.e., depression (10.34%) and bipolar disorders (6.89%) compared to 4.76% each respectively in patients without psychiatric morbidity [Table 9].

A significantly higher number of patients with psychiatric morbidity, i.e., 34.48%, were diagnosed as a case of acid peptic disease in the late age of 41-50 years compared to 19.04% of patients without psychiatric morbidity [Table 10]. Further, a significantly higher ($P<0.001$) number of patients (51.72%) with psychiatric morbidity had longer duration of acid peptic disease illness, i.e., >10 years compared to 23.80% in patients without psychiatric morbidity. Further, 48.27% of patients with psychiatric morbidity had significantly ($P<0.01$) stronger family history of acid peptic disease compared to 9.52% in patients without psychiatric morbidity.

Similarly Pomakov *et al.*[24] studied the development of acute ulcers in Sofia during the period of heavy economical recession. There was clear-cut increase in acute duodenal ulcers in the age group of up to 40 years (79% of cases). Ismo *et al.*[25] conducted a Finnish Twin Cohort study consisting of all same-sexed twin pairs born before 1958 with both twins alive in 1975. Concordance for PUD was significantly higher, i.e., 23.6% in monozygotic (MZ), compared to 14.8% in dizygotic (DZ) twin pairs. Christodoulou *et al.*[7] compared 34 male peptic ulcer patients to a group of 37 healthy controls. It was observed that more than 50% of patients had at least one first degree relative with peptic ulcer.

The present study was conducted with the aim of studying the psychiatric morbidity in patients of acid peptic disease. The study sample consisted of 50 patients of acid peptic disease with the mean age of 36-37 years. A total of 30 healthy attendants of the patients were also studied, who served as the control group.

Conclusions

From the present study, it was concluded that that there is significant relationship existing between the PUD and the various psychiatric morbidity factors as illustrated from the findings of this study.

References

1. Melmed RN, Gelpin Y. Duodenal ulcer: The helicobacterization of a psychosomatic disease? Isr J Med Sci 1996;32:211-6.
2. Bak-Romaniszyn L, Wojun S, Gil J. Planeta-Malecka I. Peptic ulcer disease etiology, diagnosis and treatment. Pol Merkur Lekarski 2004;17:128-32.
3. Chiba T. Future for basic and clinical studies on peptic ulcer disease. Nippon Rinsho 2004;62:429-34.
4. Guo JS, Chau JF, Cho CH, Koo MW. Partial sleep deprivation comprises gastric mucosal integrity in rats. Life Sci 2005;77:220-9.
5. Jones MP. The role of psychosocial factors in peptic ulcer disease: Beyond *Helicobacter pylori* and NSAIDs. J Psychosom Res 2006;60:407-12.
6. Hales RE, Yudofsky SC, Gabbard GO. American Psychiatric Publishing Textbook of Psychiatry: Textbook of Psychiatry. 5th Ed, Washington DC: American Psychiatric Publishingin; 2008. p. 1786.
7. Christodoulou GN, Alevizos BH, Konstantakakis E. Peptic ulcer in adults. Psychopathological, environmental, character logical and hereditary factors. Psychother Psychosom 1983;39:55-62.
8. Biebl W, Platz T, Bergant A, Judmaier G. Ulcer disease. Studies of patients with chronic recurrent duodenal ulcer in an attempt to differentiate subgroups based on age at disease onset, psychopathologic and biographical data. Z Psychosom Med Psychoanal 1986;32:272-82.
9. Lee S, Park M, Choi S, Nah Y, Abbey SE, Rodin G. Stress, coping and depression in non-ulcer dyspepsia patients. J Psychosom Res 2000;49:93-9.
10. Lazebnik LB, Arbuzova VG, Sokolova GN, Astaf'eva OV, Petrakov AV, Nilova TV, *et al*. Role of stress in the etiopathogenesis of duodenal ulcer in young patients. Eksp Klin Gastroenterol 2002;5:30-3, 126-7.
11. Medalie JH, Stange KC, Zyzanski SJ, Goldbourt U. The importance of biopsychosocial factors in the development of duodenal ulcer in a cohort of middle-aged men. Am J Epidemiol 1992;136:1280-7.
12. Jain AK, Gupta JP, Gupta S, Rao KP, Bahre PB. Neuroticism and stressful life events in patients with non-ulcer dyspepsia. J Assoc Physicians India 1995;43:90-1.
13. Magni G, Salmi A, Paterlini A, Merlo A. Psychological distress in duodenal ulcer and acute gastro-duodenitis: A controlled study. Dig Dis Sci 1982;27:1081-4.
14. Goodwin RD, Stein MB. Generalised anxiety disorder and peptic ulcer disease among adults in the United States. Psychosom Med 2002;64: 862-6.
15. Ol'ikhov OG, Pertseva TA, Gerasmchuk ON, Khrustaleva OS, Sokolovskiĭ AV, Baĭbuz TE. The assessment of psychophysiological status of patients with duodenal peptic ulcer. Lik Sprava 1996;3-4:120-2.
16. Talley NJ, Fung LH, Gilligan IJ, McNeil D, Piper DW. Association of anxiety, neuroticism, and depression with dyspepsia of unknown cause. A casecontrol study. Gastroenterology 1986;90:886-92.
17. Lam SK, Hui WM, Shiu LP, Ng MM. Society stress and peptic ulcer perforation. J Gastroenterol Hepatol 1995;10:570-6.
18. Wachirawat W, Hanucharurnkul S, Suriyawongpaisal P, Boonyapisit S, Levenstein S, Jearanaisilavong J, *et al*. Stress, but not *Helicobacter pylon*, is associated with peptic ulcer disease in a Thai population. J Med Assoc Thai 2003;86:672-85.
19. Miwa H, Sakaki N, Sugano K, Sekine H, Higuchi K, Uemura N, *et al*. Recurrent peptic ulcers in patients following successful *Helicobacter pylon* eradication: a multicenter study of 4940 patients. Helicobacter 2004;9:9-16.
20. Katschinski BD, Logan RF, Edmond M, Langman MJ. Physical activity at work and duodenal ulcer risk. Gut 1991;32:983-6.
21. Kurata JH, Nogawa AN, Abbey DE, Petersen F. A prospective study of risk for peptic ulcer disease in Seventh-Day Adventists. Gastroenterology. 1992;102:902-9.
22. Levenstein S, Prantera C, Varvo V, Spinella S, Arcà M, Bassi O. Life events personality, and physical risk factors in recent-onset duodenal ulcer. A preliminary study. J Clin Gastroenterol 1992;14:203-10.
23. Levenstein S, Kaplan GA, Smith M. Sociodemographic characteristics, life stressors, and peptic ulcer. A prospective study. J Clin Gastroenterol 1995;21:185-92.
24. Pomakov P, Gueorgieva S, Stantcheva J, Ténev T, Rizov A. Gastroduodenal ulcers during the period of acute economical crisis. J Radiol 1993;74:265-7.
25. Räihä I, Kemppainen H, Kaprio J, Koskenvuo M, Sourander L. Lifestyle, Stress and Genes in Peptic Ulcer Disease. Arch Intern Med 1998;158:698-704.

How to cite this article: Klair JS, Sidhu BS. A study of psychiatric morbidity in patients of peptic ulcer diseases. Chron Young Sci 2012;3:29-36.

Source of Support: Nil, **Conflict of Interest:** None declared