

Functional Dyspepsia and Psychiatric Morbidity - Is It Relevant to Indian Population?

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ABSTRACT

BACKGROUND

Functional Dyspepsia (FD) is a common psychosomatic gastrointestinal disease. Role of psychological factors and stressful life events is controversial in the aetiology of this syndrome and are often ignored during its evaluation. There is dearth of data from the developing world. We aimed to study the psychiatric morbidity and the role of stressful life events in the exacerbation of FD.

METHODS

This is a prospective case control study. 120 patients with diagnosis of FD were compared with ulcer disease patients (60) and normal controls (60). After satisfying the inclusion and exclusion criteria, details regarding demographic profile and GI symptoms were recorded with the help of questionnaire. Each individual was then examined for the occurrence of stressful life events in the preceding one year by using presumptive stressful life events scale. Somatosensory amplification score was calculated from a validated questionnaire. Patients were also examined using ICD-10 symptom check list – psychiatric case identification screener.

RESULTS

Total number of patients was 240. Psychiatric morbidity was more common in patients with FD patients when compared with peptic ulcer disease patients and controls. Mood disorder was the prominent psychiatric diagnosis in FD patients followed by anxiety disorders. History of sexual abuse and multiple somatic symptoms were significantly more common in FD patients. Total number of stressful life events and somatosensory amplification score was higher in the FD patients.

CONCLUSIONS

Psychiatric illness, multiple somatic symptoms, total stress score, number of stressful life events and somatosensory amplification scores were higher in FD patients.

KEYWORDS

Functional Dyspepsia (FD), Peptic Ulcer Disease (PUD)

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BACKGROUND

Psychosomatic medicine is an area of scientific study concerned with the relationship between psychological factors and physiological phenomena. Among the various psychosomatic disorders gastrointestinal disorders form a major share.¹ Functional dyspepsia is an important gastroduodenal psychosomatic disorder affecting several millions of people worldwide. Dyspepsia is defined as recurrent pain or discomfort centered in the upper abdomen. An organic cause for dyspepsia is seen only in 40 %.²

Sensitivity of bowel functions to emotional disturbances or environmental stressors have been widely discussed. Recent reviews have shown that psychological and emotional factors are involved in the pathophysiology of functional dyspepsia.³ The explanations range from the belief that such factors exacerbate a primary psychological disorder, to the notion that psychological distress disturbs an otherwise normal gastrointestinal physiology. Studies have shown that there is a relationship between psychiatric illness and functional dyspepsia.⁴⁻⁷ Patients with functional dyspepsia have a higher incidence of psychiatric diagnosis including depression, panic, generalized anxiety disorders and somatoform disorders. Psychological factors correlate with the number of gastrointestinal symptoms and extra intestinal symptoms.^{8, 9}

Role of acute life stress in dyspepsia is controversial. Stress could perhaps cause symptoms by alteration of gastrointestinal motility, autonomic dysregulations or by reduction in visceral pain threshold.⁸ acute painful stimuli or cognitive stress suppresses post prandial antral motility and induces gastric relaxation in normal subjects and patients with functional dyspepsia, but these events are not associated with symptoms. Studies of patients with FD indicated that almost all patients were experiencing at least one chronic stressor (e.g.: marital, employment, financial, housing, illnesses, death).^{10,11}

For many patients with functional dyspepsia abdominal symptoms are a part of a constellation of somatic and psychological complaints. Many of these patients rank anxiety and family problems more important than dyspepsia. It is seen that antidepressants are being increasingly used in the treatment of FD, despite dearth of controlled trials demonstrating the efficacy in FD. Psychological interventions like relaxation training, stress management, cognitive behavior therapy and hypnotherapy have also been observed to be beneficial in some cases.^{12,13}

A large number of patients are being referred to tertiary health care facility for endoscopic evaluation. But a major share of these patients turns out to be functional dyspepsia. Perhaps by going through the history of various stressors and underlying psychiatric illness we would be able to identify FD patients with confidence and treat them without referral for endoscopy in the primary care setting. We do not have enough data from our part where various factors contributing to FD differ from the Western world. Data regarding the role of psychological factors in IBS is large but is less available for FD.

Aim of the study was to assess the psychiatric morbidity and role of stressful life events in exacerbation of FD.

METHODS

This is a prospective case control study. The study was conducted in the Department of Gastroenterology, Thrissur Medical College from June 2018 to September 2019. The study was approved by institutional ethics committee. All patients enrolled for the study gave written informed consent for the study.

Inclusion Criteria

Functional dyspepsia group (FD) - Patients who satisfied Rome III criteria in the age group of 18 to 60 yrs. were consecutively enrolled for the study. Functional dyspepsia was diagnosed if persistent upper abdominal discomfort or pain was present. Discomfort was characterized by presence of early satiety, post prandial fullness and bloating present for at least 3 months with symptom onset at least 6 months before, without an identifiable structural or biochemical abnormality to which it can be attributed. Peptic ulcer disease group (PUD) - Those with peptic ulcer disease diagnosed during endoscopy were included. Normal controls were selected from hospital visitors.

Exclusion Criteria

Functional dyspepsia group (FD) - Those who have comorbid illness (diabetes, hypertension, tuberculosis), mental retardation, deaf and mute patients, those who cannot cooperate with the study, those on drugs (NSAIDS, Aspirin) and those who did not give consent for the study were excluded from the study. Peptic ulcer disease group (PUD) - Those with complications of peptic ulcer disease. Normal controls – excluded patient relatives.

Data Collected through Questionnaire

1. Socio demographic information
2. Gastrointestinal data – includes presenting gastrointestinal complaints (using validated questionnaire¹⁴) and other associated complaints, family history of similar illness, history of surgical procedures, examination findings and details regarding investigations
3. Psychiatric history – includes past history of psychiatric illness, family history of psychiatric illness, history of substance abuse and deliberate harm
4. ICD 10 Symptom check list – semi structured instrument used to record the clinicians assessment of psychiatric symptoms. Clinician phrases necessary symptom questions and if positive response is obtained it has to be probed further to confirm the clinical relevance and severity.
5. This instrument (ICD 10) consists of
 - a. Face sheet –to record basic information about the patient.
 - b. Screener-To screen the patients for the presence of psychological complaints, medically unexplained complaints or behaviour which deviated from culturally accepted norms. It also records coexistent disability, physical disorders and psychological stressors.

- c. Section for screening for symptoms of major syndrome categories.
6. Presumptive stressful life event scale (PSLES) –In addition to the 51 items of life events scale of Gurmeet Singh et al,¹⁵ 14 new items were added. The stress scores in this scale were quantified for each item.
 7. Somatosensory amplification scale (SSAS) – developed by Barsky AJ.¹⁶ It is a ten item self-reported questionnaire. It is a validated scoring system.^{17,18} The SSAS asks the respondent how much he/she is bothered by various uncomfortable visceral and somatic sensations most of which are not pathological symptoms of serious diseases. SSAS scores are related to somatisation and hypochondriacal symptoms.

Operational Procedure (Figure 1)

Patients attending Gastroenterology outpatient department with symptoms of dyspepsia were evaluated by thorough history, physical examination and routine blood and urine examination. Then all the patients underwent ultrasonography (USG) and endoscopy. Patients were then examined by an independent psychiatrist after the endoscopy. Nature of dyspepsia was not informed to the psychiatrist. Using the questionnaire, information on sociodemographic and other relevant clinical variables were collected. Each individual was then examined for the occurrence of significant life events in the preceding one year using PSLE scale. The test was administered by reading out the stressful life events one by one and asking the patient to indicate the occurrence of any event in the affirmative or negative. All the positive responses were probed further to establish the full details of all events that occurred in the last one year. Information was corroborated by interviewing a key informant.

All the patients were then administered the somatosensory amplification scale (SSAS). Ten questions were read out one by one and the patients were asked to grade the responses to each question as one of the five following response 1-not at all; 2-no; 3-don't know; 4-correct; 5- very correct. Total score of each patient was then calculated. Then all patients were examined by means of semi structured interview which was guided by ICD-10 symptom check list. After recording the basic information in the face sheet the positive symptoms were checked in the psychiatric case identification screener. If any of the symptoms were found positive the modules for the respective categories would be explored and other differential diagnosis would also be considered. If necessary other modules were also referred.

Statistical Analysis

The data was tabulated. The three groups (FD, PUD and normal controls) were compared with one another for the following variables -sociodemographic data, psychiatric diagnosis, total number of stressful events and stress score and somatosensory amplification scale score. Chi-square test was used whenever appropriate. Student's "t" test was

applied to compare total number of stressful events and stress score.

RESULTS

Sociodemographic Characteristics

The mean age of patients with FD was 36.15 +/- 10.03 SD and those with peptic ulcer disease was 48.7 +/- 6. 5SD. Females predominated the FD group (M: F=33:87) and males in the peptic ulcer group (M: F=48:12). 78.3% (94) of the FD patients and 83.3% of the peptic ulcer group were married.

History

Duration of GI symptoms was more in patients with FD with a maximum of 5 to 10 yrs. (51.6 %) and in peptic ulcer group patients less than one year (40 %). Majority of FD (70 %) patients and PUD patients (90 %) belonged to low socio-economic status group. Past history of psychiatric illness was there in 15 % (18) of FD patients and 10 % (6) of PUD patients. History of substance abuse was more in PUD patients (60%) while compared to FD patients (20 %). 26.7 % of the subjects with FD reported to have a history of being subjected to sexual abuse in the past. Only 6.6 % of those with PUD had similar history. Number of physical symptoms were more in those with FD (Mean - 2.42 SD 0.581) compared to those with PUD (1.316 SD 0.432) p=0.001.

Psychiatric Diagnosis

Among the subjects with FD 62.5 % had a psychiatric diagnosis. Only 3.1% of those with normal controls had psychiatric diagnosis. (p=0.001).Among the subjects with PUD 48.3 % had a psychiatric diagnosis. The difference was statistically significant when compared with the normal controls. (p=0.001) There was no statistically significant difference between FD and PUD patients. Table 1 shows the diagnostic split up of psychiatric diagnosis among FD patients. Dysthymia was the common diagnosis followed by moderate depressive episode. Among 75 patients with psychiatric diagnosis 28 people had more than one diagnosis. Dysthymia was the diagnosis most often associated with other diagnosis. Table 2 shows the split up of psychiatric diagnosis among PUD patients. Among 30 patients with psychiatric diagnosis 4 patients had more than one diagnosis.

Stressful Life Events (Table -3)

Total number of stressful life events, mean number of stressful life events and PSLES were higher in FD patients when compared to PUD patients and normal controls. When the above parameters are compared with the normal controls there was significant difference between FD and PUD patients. However there was no significant difference seen when FD and PUD patients were compared.

Somatosensory Amplification (Table-3)

The SSAS score in FD patients was higher than that of the normal controls (p=0.001). The SSAS score of PUD patients were higher than that of normal controls (p=0.067). When

the SSAS score of FD and PUD patients were compared there was statistically significant difference between the two (p=0.001). FD patients were showing higher SSAS score.

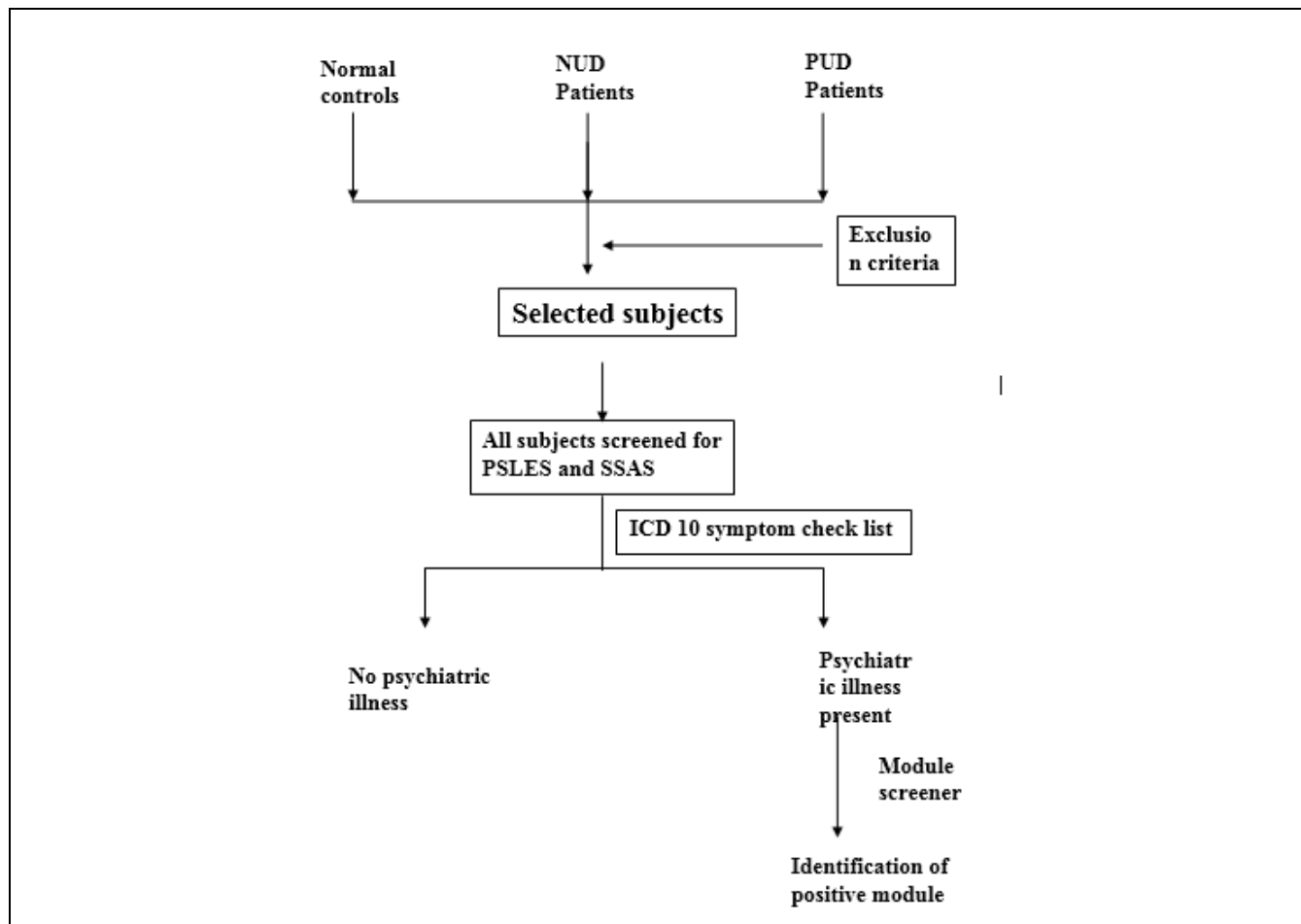


Figure 1. Patient Flow during the Study

SI. No.	Psychiatric Diagnosis	No.
1	Mental and behavioural disorders due to use of alcohol Dependence syndrome – currently using the substance	2
2	Mental and behavioural disorders due to use of tobacco Dependence syndrome – currently using the substance	6
3	Mild depressive episode	7
4	Moderate depressive episode without somatic syndrome	20
5	Moderate depressive episode with somatic syndrome	13
6	Severe depressive episode without psychotic symptoms	4
7	Recurrent depressive disorder-current episode mild without somatic syndrome	6
8	Recurrent depressive disorder-current episode moderate without somatic syndrome	6
9	Dysthymia	24
10	Specific phobia	3
11	Panic disorder	6
12	Generalized anxiety disorder	3
13	Undifferentiated somatoform disorder	3

Table 1. Psychiatric Diagnosis among FD Patients

SI. No.	Psychiatric Diagnosis	No.
1	Mental and behavioural disorders due to use of alcohol Dependence syndrome – currently using the substance	4
2	Mental and behavioural disorders due to use of tobacco Dependence syndrome – currently using the substance	12
3	Bipolar affective disorder currently in remission	1
4	Mild depressive episode	6
5	Moderate depressive episode without somatic syndrome	3
6	Severe depressive episode without psychotic symptoms	3
7	Dysthymia	6

Table 2. Psychiatric Diagnosis among PUD Patients

Variable	FD +/- SD	PUD +/- SD	N +/- SD	FD Vs N P Value	PUD Vs N P Value	FD Vs PUD P Value
Total No. of stressful events	488 SD- 1.8	225 SD- 1.6	120 SD- 0.967	0.043 t = 2.25	0.047 t =2.31	0.752 t = 0.41
Mean No of Stressful events	4.1	3.75	2	0.043	0.047	0.752
PSLES	170.37 SD – 77.04	154.60 SD- 60.13	111.27 SD – 35.77	0.001	0.043	0.582
SSAS score	27.43 SD- 6.721	17.58 SD-5.195	15.93 SD-4.56	0.001	0.067	0.001

Table 3. Values of PSLES and SSAS Score

DISCUSSION

Dyspepsia is a chronic or recurrent pain or discomfort centered in the upper abdomen. Of the patients with chronic dyspepsia, 50 to 70 % did not have significant structural lesion identified at upper endoscopy.^{19,20} The pathophysiological characteristics of symptoms of FD are poorly understood. Many patients have symptoms that overlap with other functional gastrointestinal disorders like

IBS, functional heart burn and non-cardiac chest pain. Patients with functional GI disorders also often manifest extra gut symptoms such as migraine, headache, fibromyalgia and other urological and gynaecological dysfunction.

Psychological factors were present in 50 % of FD patient's in general medical practice and almost 90% of patients followed up in tertiary Gastroenterology setting.²¹ Study by Goldberger demonstrated that 52 % of FD patients had emotional problems compared to 10 % in ulcer disease patients.²² Stress usually precedes the onset of functional bowel disorders. Study comparing stressful life events in patients with FD with ulcer disease and normal controls found that 67 % of the functional disease patients experienced severe life events before the onset of bowel symptoms compared to 23 % of both organic and normal controls.²³ It is hypothesized that life stresses may trigger the onset of functional symptoms and decision to seek medical attention, but psychological factors, coping strategies and social support mechanism determine the extent, severity and duration of symptoms.²⁴

Symptoms are the result of bodily sensation and their subsequent cortical interpretation. Somatosensory amplification refers to the tendency to experience somatic sensation as intense, noxious or disturbing. Emotional distress prompts people to seek care for common symptoms for which they would not seek care in the absence of emotional distress. The tendency to amplify broad range of bodily sensations may be an important factor in experiencing, reporting and functioning with an acute and relatively mild illness. Somatosensory amplification is more powerful in females and is a significant correlate of somatisation.

The present study identified higher prevalence (62.5 %) of psychiatric illness in FD patients compared to PUD patients (48.1 %). There was statistically significant difference between FD and normal controls. Mood disorders are the prominent psychiatric diagnosis among functional dyspeptics followed by anxiety disorders. Dysthymia was the common diagnosis followed by depressive episode. History of sexual abuse and presence of multiple somatic symptoms was significantly more in functional dyspeptics. The total stress score and number of stressful life events were more in functional dyspeptics. The somatosensory amplification score was significantly higher in FD patients compared to the PUD patients.

In summary this study definitely shows that psychiatric morbidity is more in patients with functional dyspepsia. Functional dyspeptics experience a greater number of stressful life events and have higher somatosensory amplification score. These features along with the absence of alarm features may help the clinician in identifying and managing functional dyspepsia in a primary care setting.

CONCLUSIONS

Psychiatric morbidity is very common with functional dyspeptic patients. They experience more number of stressful events compared to their healthy controls. It may

be helpful to differentiate functional dyspepsia from organic dyspepsia especially in the absence of alarm features.

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