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Evaluating the Incidence of Somatoform Disorder Among Patients with GI Symptoms: An Assessment using the PHQ-15 Scale

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Abstract

Background: We aimed to evaluate the incidence of somatoform disorder among patients with predominantly gastrointestinal symptoms visiting the gastro department using the PHQ-15 scale. Aims and Objectives: To quantify the incidence of somatoform disorders among patients with GI symptoms, to evaluate the more

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common symptoms observed among these patients and to provide counselling for patients confirmed with somatoform disorder. Methodology: This was a six-month prospective observational study conducted in the outpatient wards of a tertiary care hospital. The study included both genders above 18 years of age who did not have active GI disorder but presented with GI symptoms. The Patient Health Questionnaire Physical Symptoms (PHQ-15) scale was employed to evaluate the presence of somatoform disorders. Results: Out of 2,338 Gastro OPD patients, 50 were diagnosed with somatoform disorder. Common symptoms included fatigue, nausea, joint pain, back pain, stomach pain, palpitations, constipation, diarrhea feeling tired, trouble sleeping and chest pain. Although most were referred to a psychiatrist by the gastroenterologist, 18% did not accept psychiatric consultation. Conclusion: We conclude the study by stating that accurate diagnosis of somatoform disorder helps support overlooked patients. Despite reluctance to seek psychiatric help, proper counselling by psychiatrists can improve both physical and mental health in the Indian population.

Keywords: Gastroenterologist, Patient Counseling, PHQ-15 Scale, Psychiatrists, Somatoform Disorder.

1. Introduction

Somatic Symptom Disorder (SSD) is a psychiatric illness defined by physical symptoms (e.g., pain, fatigue, abdominal referred pain, gastrointestinal symptoms) but no demonstrable medical explanation. Such symptoms generate considerable distress and impairment of living activities, which frequently end up with intensive medical workups. In contrast to malingering, SSD patients suffer from actual distress, with symptoms lasting even when no underlying physical disease is found. SSD is often associated with anxiety, depression, and functional disorders, such as fibromyalgia and chronic fatigue syndrome (somatoform disorders, 2007). Its incidence ranges between 5% to 7%, with a more frequent occurrence in women and younger people (under 30 years) (Lakshmi, 2020). Although no specific cause is known, early life stress, abuse, anxiety, and genetic predisposition are implicated. Diagnosis is made with distressing somatic symptoms, with a high number of thoughts or behaviors, around them and with symptom duration for more than 6 months. A thorough assessment is required to exclude other underlying medical conditions and determine the extent of symptoms (Ryan & H., 2023).

Somatic Symptom Disorder (SSD) has a major impact on patients' quality of life, making it an interruption to their work, their social relationships, and their daily activities. Due to the presence of co-morbid pathophysiology (anxiety, depression), individuals with SSD suffer from the vicious cycle of worsened distress and repeated consultations with medical professionals. The financial burden from repeated medical tests and loss of employment places additional pressure on patients and families (Lakshmi, 2020).

In addition, somatization disorder is of interest for functional gastrointestinal diseases as its prevalence is estimated between 15% and 48% for gastro patients. One of the important features of SSD, especially in gastrointestinal symptoms, is the gut-brain axis. Dysregulation of the microbiota-gut-brain axis, which regulates gut

homeostasis and stress responses, underlies functional gastrointestinal disorders (e.g., abdominal pain, bloating, and altered bowel habits). These signs are frequently co-morbid with chronic stress and early life trauma, during which stress disrupts gut function and gut microbiota, increasing gastrointestinal problems (Kozlowska et al., 2020).

SSD often overlaps with functional GI disorders, including irritable bowel syndrome (IBS) and Chronic Uninvestigated Dyspepsia (CUD), both of which include unexplained GI symptoms and are frequently comorbid with psychiatric conditions (Muhammad et al., 2009; North et al., 2007). Somatization can aggravate these symptoms, thus making diagnosis and therapy difficult. The outcome of SSD treatment is contingent upon multidisciplinary (physical and psychological) management. Clinicians must acknowledge mind-body interactions, through the microbiota-gut-brain axis. Early psychological and physical symptom-based intervention can enhance patient outcomes and quality of life.

2. Literature Survey

(Jaison Jacob et al., 2021) distributed an online questionnaire to 803 frontline Health Care Professionals (HCPs). The objective of the study was to assess the incidence of somatoform symptoms in frontline HCPs in India. The instrument that was applied to the study of the profile of participation was Screener for Somatoform Disorder (SSD). The findings of the study revealed that frontline HCP assails a high risk of somatoform symptoms and a selected group of mental disorders (depression, anxiety, and stress).

(Margot W M et al., 2018) conducted a two-stage prevalence study on 1046 consecutive patients. The study objective was to measure the incidence of, and functional impairment due to, somatoform disorders and their comorbidity with anxious/depressive disorders. The result of the study showed that the comorbidity of somatoform disorder and anxiety depressive disorders was 3.3 times more likely than expected.

(K. H Fuchs et al., 2017) have done a case-control study of 750 patients suffering from foregut symptoms and heartburn. This study aimed to evaluate patients with foregut symptoms, referred for possible antireflux surgery, regarding their relationship with GERD and somatization tendencies based on control data from an unselected population. The result of the study revealed a variety of symptoms in patients with GERD, in patients with foregut symptoms, and an unselected population of volunteers and there is no difference in the risk for somatization between patients with foregut symptoms and those with documented GERD.

(Jerzy A Sobanski et al., 2015) have performed analytical research in hospital day-care units for neurotic and behavioral illnesses. The study was planned to evaluate the relationship between gastrointestinal problems and stressful marital events. Results indicated that in most cases both anxiety disorders or somatization disorders symptoms co-existed with irritable bowel syndrome and functional dyspepsia.

Muhammad Iqbal Afridi, et al (2009) designed a descriptive study in a clinical environment with 1165 patients. The objective of the study was to estimate GI symptoms in depressed patients. For diagnostic purposes, WHO classification ICD-10 criteria were used. Investigations found that GIT somatization is a problem of everyday occurrence among the depressed patients of developing countries and the GI symptoms are frequent in depressed patients.

3. Proposed System Design and Methods

3.1. *Study Design*

Six-month prospective observational research was carried out in a hospital setting.

3.2. *Study Site*

Outpatient Department of Tertiary Care Teaching Hospital, Bangalore.

3.3. *Inclusion Criteria*

Both genders above 18 years of age did not have active GI disorder but presented with GI symptoms.

3.4. *Exclusion Criteria*

- Patients who were not willing to participate in the study.
- Pregnant and lactating women.
- Patient with a known case of somatoform disorder.

3.5. *Data Collection*

The research students were posted in the gastroenterology department and people who met inclusion criteria were included, informed consent was obtained from each patient. After going through the profile completely and confirming that the patient did not have any GI disorder but presented with GI symptoms, the Patient Health Questionnaire Physical Symptoms (PHQ-15) scale was employed to evaluate the presence of somatoform disorders. Once patients were confirmed with somatoform disorders, patient counselling was provided to the patients.

3.6. *Statistical Analysis:*

Descriptive statistics and Cramer's V test were employed for statistical analysis.

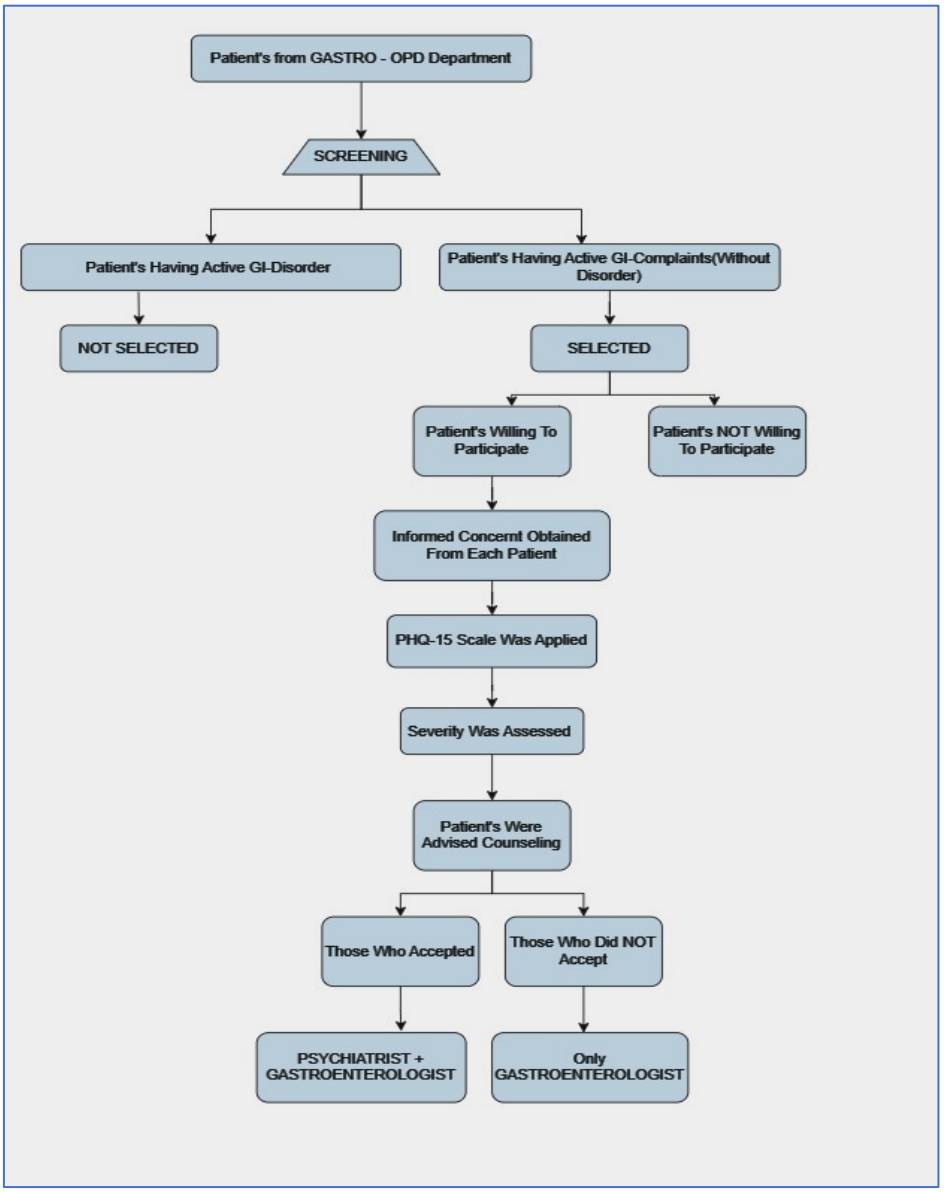

Fig. 1. Study Design.

3.7. *Results*

Demographics: 50 patients (29 males, 21 females); majority aged 36-54 years.

Table 1. Distribution of patients based on investigations.

SL.NO	INVESTIGATIONS CARRIED OUT	NO. OF PATIENTS	PERCENTAGE (%)
1	USG ABDOMEN AND PELVIS	7	14%
2	COLONOSCOPY	1	2%
3	ENDOSCOPY	5	10%
4	USG ABDOMEN AND PELVIS + COLONOSCOPY	1	2%
5	INVESTIGATIONS SUGGESTED NOT DONE	9	18%
6	NONE	27	54%
	TOTAL	**50**	**100%**

Table 1, shows the distribution of patients based on investigations carried out. Investigations were carried out to rule out any active GI disorder and provide evidence towards the confirmation of somatoform disorder.

Table 2. Distribution of patients based on PHQ-15 scale.

SL.NO	SCORE ON PHQ-15 SCALE	NO. OF PATIENTS	PERCENTAGE (%)
1	0-4 (MINIMAL)	5	10%
2	5-9 (LOW)	16	32%
3	10-14(MEDIUM)	16	32%
4	15-30(HIGH)	13	26%
	TOTAL	**50**	**100%**

Table 2, shows the distribution of patients based on the PHQ-15 scale. The severity of somatic symptoms was measured using the Patient Health Questionnaire-15 (PHQ-15) scale.

Table 3. Distribution of patients based on gender and PHQ-15scale score.

GENDER	NUMBER OF PATIENTS			
	MINIMAL (0-4)	LOW (5-9)	MEDIUM (10-14)	HIGH (15-30)
MALE	2	10	9	8
FEMALE	3	6	7	5
TOTAL	**5**	**16**	**16**	**13**

Table 3, shows the distribution of patients based on gender and PHQ-15scale score.

Table 4. Distribution of patients based on age and PHQ-15 scale score.

AGE GROUP (YEARS)	NUMBER OF PATIENTS			
	MINIMAL (0-4)	LOW (5-9)	MEDIUM (10-14)	HIGH (15-30)
18-36	2	4	4	2
36-54	2	9	5	9
54-72	1	3	4	1
72-90	0	0	3	1
TOTAL	5	16	16	13

Table 4, shows the distribution of patients based on age and PHQ-15scale score.

Table 5. Distribution of somatic symptoms in patients with medium and high PHQ-15 scale scores.

SL.NO	SOMATIC SYMPTOMS PRESENTED	NO. OF PATIENTS	
		MEDIUM SCORE	HIGH SCORE
1	STOMACH PAIN	13	11
2	BACK PAIN	12	12
3	PAIN IN ARMS, LEGS OR JOINTS	15	13
4	MENSTRUAL CRAMPS OR OTHER PROBLEMS WITH PERIODS (WOMEN ONLY)	2	5
5	HEADACHES	7	11
6	CHEST PAIN	8	12
7	DIZZINESS	7	8
8	FAINTING SPELLS	3	5
9	FEELING OF HEART POUND OR RACE	7	11
10	SHORTNESS OF BREATH	6	9
11	PAIN OR PROBLEMS DURING INTERCOURSE	0	0
12	CONSTIPATION, LOOSE BOWELS OR DIAARHEA	11	11
13	NAUSEA, GAS, OR INDIGESTION	14	13
14	FEELING TIRED OR HAVING LOW ENERGY	16	13
15	TROUBLE SLEEPING	15	13

Table 5: shows the distribution of somatic symptoms in patients with medium and high PHQ-15 scale scores. The most common symptoms for patients with medium and high PHQ-15 scores included fatigue, low energy, trouble sleeping, pain in the arms/legs or joints, and digestive issues.

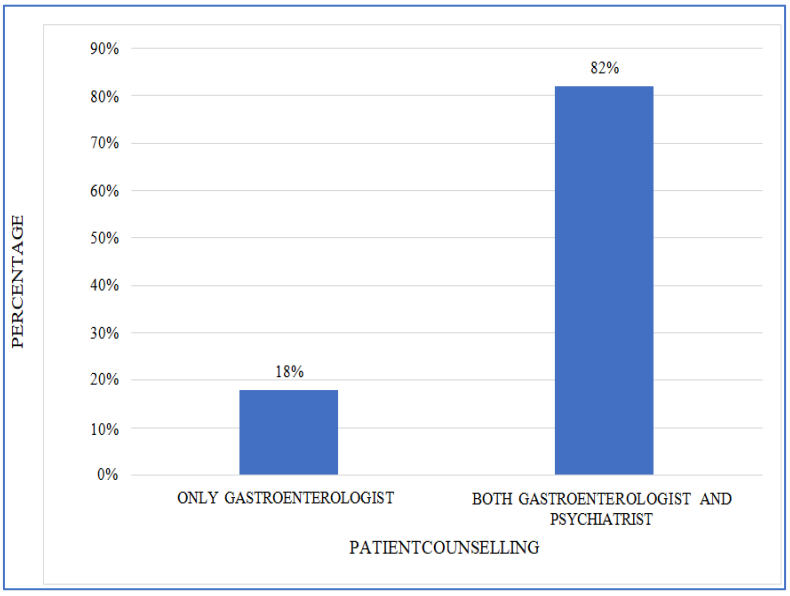

Fig. 2. The distribution of patients based on patient counselling provided.

Figure 2 shows the distribution of patients based on the patient counselling provided.

4. Statistical Analysis

Table 6. (Cramer's V Test) Statistical Association between Age and PHQ-15 scale score.

Cramer's V	**0.7129682**

The Cramer's V statistic for the association between Age Group and PHQ-15 scale scores was 0.713, indicating a strong association between these variables. This suggests that age group and PHQ-15 scale scores are related.

Table 7. (Cramer's V Test) Statistical Association between Gender and PHQ-15 scale score.

Cramer's V	**0.133**

- A value of 0.133 indicates a weak association between Gender and the PHQ-15 scale scores.

The Cramer's V statistic for the association between the Gender and PHQ-15 scale scores is 0.133, indicating a weak association between the categorical variables. This suggests that there is a slight relationship, but it is not particularly strong.

5. Discussion on Results

A total of 50 patients who met the inclusion criteria were enrolled in the study, out of 2338 patients who visited the Gastroenterology Outpatient Department (OPD),

50(2.13%) were diagnosed with somatoform disorder. Among these 50 patients, 29 (58%) were male and 21 (42%) were female. 38 (76%) patients had no significant social history, while 6 (12%) were both alcoholics and smokers, 4 (8%) were smokers, and 2 (4%) were alcoholics. Each patient did not carry a family history of somatoform disorder, which is also striking in the light of considerable importance given to family history in the diagnosis of psychiatric disorders.

In terms of age distribution, 25 patients (50%) were in the age group36-54 years, followed by 12 (24%) in the age group 18-36 years, 9(18%) in the age group 54-72 years, and 4 (8%) in the age group 72-90 years. This was consistent with the findings of (De Waal et al., 2018). Among the 50 patients, 20 (40%) had comorbidities, while 30 (60%) had no other medical history. Hypertension was the most common comorbidity (10%), followed by hypothyroidism (8%), and a combination of hypertension and diabetes (8%). All the patients were taking treatment for the above-mentioned conditions.

Based on clinical presentations, 45 patients have been with distinct symptoms and 5 patients have been with uniform symptomatic. The most frequent complaints were fatigue, vomiting/dyspepsia, pain in the arms/leg or joints, back pain, epigastric pain, chest pain, sleep disturbance, and altered bowel habits. Studies were conducted to exclude an active GI disease and create evidence for the diagnosis of somatoform disorder. Among 50 patients, investigations were carried out for 14 patients, investigations were suggested but not carried out in 9 patients and 27 patients it was not carried out. Of those 14 patients, 7 patients (14% underwent abdominal and pelvic sonographic imaging, 5 patients (10% underwent colonoscopy, 1 patient (2% underwent colonoscopy, and 1 patient (2% underwent abdominal and pelvic sonographic imaging and colonoscopy.

The severity of somatic symptoms was measured using the Patient Health Questionnaire-15 (PHQ-15) scale. The scores were categorized as minimal (0-4) in 5 patients (10%), low (5-9) in 16 patients (32%), medium (10-14) in 16 patients (32%), and high (15-30) in 13 patients (26%). During the pilot study, patients were not comfortable/satisfactory to report the parameter - pain or problems during sexual intercourse. Because of this, considering the evaluation using partial raw score this parameter was excluded from the study.

The most common symptoms for patients with medium and high PHQ-15 scores included fatigue, low energy, trouble sleeping, pain in the arms/legs or joints, and digestive issues. These findings were also in agreement with the work carried out by (Zolotareva, 2023).

Among 29 male patients, the interpreted PHQ-15 scale score was minimal in 2 patients, low in 10 patients, medium in 9 patients and high in 8 patients. Similarly, among 12 female patients, the PHQ-15 scale score was minimal in 3 patients, low in 6 patients, medium in 7 patients and high in 5 patients. These results were consistent with the findings of (Hinz et al., 2022). Age-wise, the PHQ- 15 score distribution varied, with higher scores seen in the 36-54 years age group. This was like findings in previous studies by (Nummi et al., 2017; Kocalevent et al., 2013).

A total of 9 patients opted not to consult with a psychiatrist and received counselling solely from a gastroenterologist, whereas 41 patients were counselled by both a gastroenterologist and a psychiatrist. Medications commonly prescribed included tricyclic antidepressants, antipsychotics, benzodiazepines, and serotonin-norepinephrine reuptake inhibitors (SNRIs), either alone or in combination. These results align with the findings of (Kleinstäuber et al., 2014).

Statistical modelling using Cramer's V test did not show a strong association between gender and PHQ-15 scores. In contrast, a strong relationship was found to exist between age and PHQ-15 scores, meaning that age is a central factor in the intensity of somatoform symptoms.

6. Conclusion

In conclusion, an accurate diagnosis of somatoform disorder is crucial as it provides a clear label and assigns responsibility to patients who might otherwise be overlooked in a diagnostic system that is increasingly focused on laboratory tests and various treatments.

The study also highlighted that although counselling was recommended, one-fifth of patients did not seek psychiatric support. This indicates a common reluctance within the Indian population to consult psychiatrists, often perceiving such counselling as unnecessary. However, in practical terms, proper psychiatric counselling is essential for helping patients understand their condition and can significantly improve both their physical and mental well-being.

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Limitation

The primary limitation of the study was the small sample size, given that somatoform disorder is relatively a rare disorder.

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There is no funding to report.

Conflicts of Interest

The authors report no financial or any other conflicts of interest in this work.

Data Availability

All data generated and analyzed are included in this research article.

Ethical Approvals

The study protocol was approved by the Institutional Ethical Review Board, St. Philomena's Hospital & College of Nursing, Bengaluru, Karnataka, India, with approval number EC/NEW/INST/2020/3413.

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