

Original Research Article

Prevalence of associated psychosomatic symptoms in patients of irritable bowel syndrome

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ABSTRACT

Background: Irritable bowel syndrome (IBS) is a functional disorder of gastrointestinal tract with unclear aetiology and no reliable biomarkers like other chronic and functional disorders. Majority of the patients of IBS suffer from various forms of psychosomatic disorders as comorbidity that further exaggerate the complexity of diagnosis and management of IBS. The aim of the present study was to find the prevalence of commonly associated psychosomatic symptoms associated with IBS in the patients of lower socioeconomic strata.

Methods: This is a prospective observational study carried out over a period of 10 years from November-2007 till October-2017, in HAH hospital attached to Hamdard Institute of Medical Sciences and Research. A structured questionnaire comprising of a total of 36 closed ended questions was designed. Eleven questions were about the demographic characteristics and twenty-five were pertaining to IBS symptoms according to Manning and Rome III criteria with some necessary modifications. Various psychosomatic illnesses were recorded separately after ruling out the organic cause with appropriate investigations.

Results: In the present study out of 4000 patients with IBS symptoms, 70.8% were having some form of psychosomatic symptoms. Patients with psychosomatic disorders were significantly more often young in age and females (53.28%), showing highest number of patients belonging to the age group 26-35 years (51.44%). 34% patient had two or more psychosomatic illnesses. Headache (62.26%) and insomnia (63.03%) were the commonest followed by chest pain (36.54%). Chest pain (77.68%), headache (62.26%) and insomnia (56.07%) was more common in male whereas palpitation (60.58%) and breathlessness (57.68%) was more common in female.

Conclusions: There is significantly high prevalence of psychosomatic illness in the patients of IBS in the low socio-economic strata. The young patients (productive age group) are more affected which may be responsible for further deteriorating their social and economic condition.

Keywords: Low socio-economic strata, Irritable bowel syndrome, Psychosomatic disorder

INTRODUCTION

Irritable bowel syndrome (IBS) is a functional disorder of gastrointestinal tract with unclear aetiology and no reliable biomarkers like other chronic and functional disorders. A dysregulation of the brain-gut axis, interacting with visceral hypersensitivity may be

responsible for the symptom generation whereas psychosocial stressors interacting with biological factors which are further modulated by cultural beliefs and practices are responsible for variations in observed symptoms constellation. It has also been suggested that psychological factors, particularly those associated with the process of somatization play an important role and

may even act as markers of IBS onset.¹ The overall burden of IBS is affected by high comorbidity of other medical and psychological disorders. Approximately 65% of patients with IBS have comorbid extra-intestinal symptoms and disorders such as fibromyalgia, back pain, urogenital problems, sleep problems.²⁻⁶ Additionally, 40%-60% of IBS patients (compared to 20% of the overall population) report comorbid psychiatric disorders such as anxiety disorders, depression, and post-traumatic stress disorder.^{7,8} Patients with IBS are also more likely to report low quality of life and up to 38% of IBS patients in tertiary care settings have contemplated suicide as a result of their symptoms.^{9,10} Although most patients with IBS do not meet criteria for psychological disorders, considerably higher rates of IBS are found in patients with psychiatric diagnosis. However, it is not clear whether psychiatric disorders precede a diagnosis of IBS or is a consequence of it. Recent studies have shown that subjects with IBS have higher levels of depression, anxiety and neuroticism as compared to those without IBS.^{11,12} Various studies have shown that as many as 30-40% of patient with IBS have co-morbid depression or anxiety disorder.^{13,14} It has also been reported that patients who come to medical attention tend to have a greater number of symptoms and are more anxious and depressed.^{15,16} This sparked researchers to believe that there may be causal relationship between psychological factors and IBS symptoms.

Although associated psychosomatic symptoms are more prevalent in western countries however there is very little research looking into the prevalence of these psychosomatic symptoms in patients with IBS in a developing country like India which caters different groups of patients having significant socio-economic and cultural differences. Keeping these facts in consideration the present study is carried out to find the prevalence of commonly associated psychosomatic symptoms associated with IBS in the patients of lower socioeconomic strata.

METHODS

This is a prospective observational study carried out over a period of 10years from November-2007 till October-2017, in Majeedia Hospital now renamed as HAHC hospital attached to Hamdard Institute of Medical Sciences and Research. The data were collected from outpatient department visited by the patients. Relevant clinical information was retrieved through personal interview with the patients or his/her attendant, and medical prescribing records. Informed consent was taken from the patient prior to data collection. Social class was calculated using modified Kuppuswamy scale in urban area.²⁶ Classes 1 and 2 were considered as upper class and classes 3 and 4 were considered as middle class and 5 as lower class.

A structured questionnaire comprising of a total of 36 closed ended questions were designed. Eleven questions

were about the demographic characteristics and twenty-five were pertaining to IBS symptoms according to Manning and Rome III criteria with some necessary modifications and associated psychosomatic symptoms were recorded separately and were ruled out for organic cause by appropriate investigations.

Inclusion criteria

- Age group 15 to 45 years
- Both sexes
- Having multiple complaints
- Had undergone various investigations
- And no organic disease was identified and has failed to respond to all types of symptomatic treatment.

Exclusion criteria

- Patients on steroids
- Diagnosed with depression and anxiety
- Peptic ulcer disease due to *H. pylori*
- GERD, migraine, brain tumours, epilepsy
- Sympathomimetic drugs
- Congenital and acquired heart disease.

RESULTS

Total of 4000 patients fulfilling IBS symptoms criteria were included in the study and further evaluated for various psychosomatic symptoms.

Age and sex distribution of IBS: out of total 4000 IBS patient 56.12% were male and 43.87% were female and the prevalence of IBS symptoms in the study population were highest among 26-35years of age group (36.42%) (Table 1).

Table 1: Relationship of IBS symptoms with age of the patient.

Age in years	IBS (n = 4000)		
	Total	Male	Female
15-25	60 (1.5%)	39 (0.97%)	21 (0.52%)
26-36	2320 (58%)	1224 (30.6%)	1096 (27.4%)
36-45	1620 (40.5%)	982 (24.55%)	638 (15.95%)
Total	4000	2245 (56.12%)	1755 (43.87%)

Out of 4000 IBS patients 2832 (70.8%) were having different forms of presentation of psychosomatic symptoms with female predominance with the highest number of patients belonging to the age group 26-35years. From these 2832 patients, 1509 were females and 1323 were males. The psychosomatic symptoms in young females predominate in the age group of 26-

35years (59.11%) and in males in the age group of 36-45years (55.93%) (Table 2). The commonest psychosomatic symptom is headache (67.37%) followed by insomnia (63.03) and chest pain (36.54%) (Table 3). Palpitation is more common in females i.e., 60.5% which predominates in the age group of 36-45years (33.7%). Similarly, it is seen in the males.

Breathlessness is more common in the middle-aged females (57.68%) in the age group of 26-35years (31.5%) whereas in males it is almost equal in both the age group 26-35years and 36-45years.

Chest pain is more common in males (77.68%) which is seen to be more prevalent in the age group of 36-45years whereas in females it is more common in middle aged females of age group 26-35years (14%).

Insomnia is more common in males (56.07%) which is equally common in the age group 26-35 years and 36-45years whereas in females' insomnia is more common in the late - aged females (24%).

Vomiting is more common in females (58.76%) predominantly in the age group of 26-35years (40%) whereas in males it is more common in middle age group (30.3%).

Table 2: Correlation of IBS associated psychosomatic symptoms with age and sex of the patient.

Age in years	IBS patients with psychosomatic symptoms (n = 2832)		
	Total	Male	Female
15-25	32	18	14
26-36	1457	766	892
36-45	1343	705	638
Total	2832	1323	1509

Headache is more common in males (62.26%) particularly in the age group of 36-45years of age group whereas in females it is more common in the age group of 26-35 years i.e., 25%.

Table 3: Relationship of psychosomatic symptoms with age and sex of the IBS patients.

Psychosomatic symptoms	No. of patients	Age of the patient (in years)					
		15-25years		26-35years		36-45years	
		Male	Female	Male	Female	Male	Female
Headache	1908	12	07	544	480	632	233
Palpitation	515	01	02	94	136	108	174
Breathlessness	735	00	04	154	232	157	188
Chest pain	1035	06	02	322	146	476	83
Insomnia	1785	10	05	487	344	504	435
Vomiting	405	06	11	123	162	38	65

DISCUSSION

IBS is characterized by abdominal pain, severe bloating, and altered bowel habits and it has been observed that depression and anxiety commonly co-exist alongside IBS. "The fact that so many people with IBS have anxiety and depression has led many to speculate that IBS is primarily a psychological, not a physical, disorder. However, the condition is complex and most likely results from an interplay between psychological and biological factors.

Psychiatric disorders have been found to coexist with IBS patients as evident from various studies. Human psyche is affected by several factors like personality factors, altered health beliefs, and coping skills. Several studies show that among patients who seek medical attention for IBS, around 70% have psychiatric comorbidity.¹⁸⁻²⁰ Rates of psychiatric disorders are depression - 46%, generalized anxiety disorder - 34%, panic disorder - 31%, and somatization - 26%.²¹ Psychiatric disturbances among

persons with IBS may represent a reaction to stress of chronic GI illness.^{22,23} Severity of anxiety and depressive symptoms correlated with IBS symptoms.²⁴

In the present study the prevalence of psychosomatic comorbidity was around 70.8% which is high as compare to the other report 40% - 60% and 70% and also there is female predominance (53.28%) this may be due to the fact that majority of present study population is migrated from the other reasons for the search of livelihood and the IBS is coming in their way which further increased the chances of anxiety and depression.^{6,7,18-20}

In present study, as shown in Table 3 the different symptoms of depression in the patients of IBS were analysed and it was found that headache (62.26%) and insomnia (56.67%) were the most prominent symptoms among all the patients of IBS with predominance in the males particularly in the age group of 36-45years which may be responsible of their decreased performance at

work place and also leads to frequent absenteeism from work place.

Further in present study subjects another psychosomatic symptom associated with IBS was found to be chest pain in males (77.68%) whereas breathlessness (57.68%) and palpitation (60.5%) in females that caused repeated hospitalization in the fear of losing their lives that further deteriorates the economic condition of these patients.

It has also been seen that psychiatric disorders and IBS share common genetic predisposition. For example, SERT-P gene is associated with a subtype of IBS and the same polymorphism in promoter region of SERT gene is also seen in depression.^{25,26} Another study has reported that C/C genotype polymorphism in 5HT3A receptors is associated with increased anxiety and severity of IBS symptoms.²⁷

In summary, still there is little data to support the etiological role for psychiatric disturbance in IBS. However, it has significant impact on severity as well as outcome. Treatment of psychiatric disturbances can result in improvement of symptoms. Hence, it is important to recognize and treat them.

Stress is defined as acute threat to the homeostasis of an organism, real (physical) or perceived (psychological), and posed by events in the outside world or from within.²⁸ In the genetically predisposed individual, both early life stress and severe life threatening stress referred to as pathological stress can result in permanent irreversible enhancement of responsiveness of central stress circuits and vulnerability to development of functional disorders later in life. Later on, fear conditioning plays an important role in triggering stress responses to situations and context.

In IBS patients, it has been reported from many studies that stress is associated with symptom severity.²⁹ Nearly 51% of IBS patients report that a stressful event preceded the onset of the disorder.^{30,31} Patients with IBS have greater reactivity to stress. The identification of a specific stressor helps in planning treatment through psychological and pharmacological treatment.

A recent study which aimed to investigate the effect of stress on intestinal permeability in humans revealed that when the subjects were subjected to acute psychological stress there was increase in small intestinal permeability.³² Also when the link between posttraumatic stress disorder and IBS was investigated in an urban African Americans population, the former was found to be independently associated with IBS, thereby further strengthening the role of psychosocial stress in IBS.³³

These patients may be benefitted in terms of improvement of both symptoms of psychosomatism and IBS by using various forms of psychotherapy like patient counselling, meditation and drug treatment such as

antianxiety drugs, antidepressant drugs along with probiotics as it has been shown in the previous studies that antidepressants have shown some benefit in treating children with IBS symptoms.^{15,20} In a study of 98 children who took amitriptyline for FGID; 77 patients responded to the treatment for an average of 10.7 months and this effectiveness persisted.²⁹ Selective Serotonin Reuptake Inhibitors (SSRIs) are widely used for treating anxiety, depression, and somatization disorders. Four RCTs of SSRIs in IBS showed that a standard dose of an SSRI led to a significant improvement in health-related quality of life in patients (adults) with chronic or treatment resistant IBS.

From present study authors' understanding of the cause of psychosomatic symptoms associated with the patients of IBS is still in its evolution level but psychosocial factors contribute to predisposition, precipitation, and perpetuation of IBS symptoms.

CONCLUSION

It has been observed that depression and anxiety commonly co-exist alongside IBS. The fact that so many people with IBS have anxiety and depression has led many to speculate that IBS is primarily a psychological, not a physical disorder. Most of the patients of IBS are depressed and anxious which may manifest in the form of headache, breathlessness, insomnia, chest pain, palpitations and vomiting. Since most of these patients are young and at the top of their productivity, they need to be treated on priority and counselled well. The non-pharmacological corrective measures like patient counselling, meditation, recreational activities may improve the quality of life and productivity of these patients. However, it needs to be evaluated by further studies.

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REFERENCES

1. Welgan P, Meshkinpour H, Ma L. Role of anger in antral motor activity in irritable bowel syndrome. *Digestive Dis Sci.* 2000 Feb 1;45(2):248-51.
2. Riedl A, Schmidtman M, Stengel A, Goebel M, Wisser AS, Klapp BF, et al. Somatic comorbidities of irritable bowel syndrome: a systematic analysis. *J Psychosomatic Res.* 2008 Jun 1;64(6):573-82.
3. Sperber AD, Atzmon Y, Neumann L, Weisberg I, Shalit Y, Abu-Shakrah M, et al. Fibromyalgia in the irritable bowel syndrome: studies of prevalence and clinical implications. *Am J Gastroenterol.* 1999 Dec;94(12):3541.
4. Smith MD, Russell A, Hodges PW. How common is back pain in women with gastrointestinal problems?. *Clin J Pain.* 2008 Mar 1;24(3):199-203.

5. Guo YJ, Ho CH, Chen SC, Yang SS, Chiu HM, Huang KH. Lower urinary tract symptoms in women with irritable bowel syndrome. *Int J Urol*. 2010 Feb;17(2):175-81.
6. Elsenbruch S, Harnish MJ, Orr WC. Subjective and objective sleep quality in irritable bowel syndrome. *Am J Gastroenterol*. 1999 Sep;94(9):2447.
7. Drossman DA, Camilleri M, Mayer EA, Whitehead WE. AGA technical review on irritable bowel syndrome. *Gastroenterol*. 2002 Dec 1;123(6):2108-31.
8. Cohen H, Jotkowitz A, Buskila D, Pelles-Avraham S, Kaplan Z, Neumann L, et al. Post-traumatic stress disorder and other co-morbidities in a sample population of patients with irritable bowel syndrome. *European J Internal Med*. 2006 Dec 1;17(8):567-71.
9. Koloski NA, Talley NJ, Boyce PM. The impact of functional gastrointestinal disorders on quality of life. *Am J Gastroenterol*. 2000 Jan;95(1):67.
10. Miller V, Hopkins L, Whorwell PJ. Suicidal ideation in patients with irritable bowel syndrome. *Clin Gastroenterol Hepatol*. 2004 Dec 1;2(12):1064-8.
11. Koloski NA, Talley NJ, Boyce PM. Epidemiology and health care seeking in the functional GI disorders: a population-based study. *Am J Gastroenterol*. 2002 Sep 1;97(9):2290-9.
12. Locke GR, Weaver AL, Melton III LJ, Talley NJ. Psychosocial factors are linked to functional gastrointestinal disorders: a population based nested case-control study. *Am J Gastroenterol*. 2004 Feb;99(2):350.
13. Lydiard RB, Falsetti SA. Experience with anxiety and depression treatment studies: implications for designing irritable bowel syndrome clinical trials. *Am J Med*. 1999 Nov 8;107(5):65-73.
14. Tollefson GD, Tollefson SL, Pederson M, Luxenberg M, Dunsmore G. Comorbid irritable bowel syndrome in patients with generalized anxiety and major depression. *Ann Clin Psychiatry*. 1991 Jan 1;3(3):215-20.
15. Heaton KW, O'Donnell LJ, Braddon FE, Mountford RA, Hughes AO, Cripps PJ. Symptoms of irritable bowel syndrome in a British urban community: consultants and nonconsulters. *Gastroenterol*. 1992 Jun 1;102(6):1962-7.
16. Masand PS, Kaplan DS, Gupta S, Bhandary AN, Nasra GS, Kline MD, Margo KL. Major depression and irritable bowel syndrome: is there a relationship?. *J Clin Psychiatry*. 1995 Aug;56:363-7.
17. Kumar BR, Dudala SR, Rao AR. Kuppaswamy's socio-economic status scale-a revision of economic parameter for 2012. *Int J Res Dev Health*. 2013 Jan;1(1):2-4.
18. Posserud I, Agerforz P, Ekman R, Björnsson ES, Abrahamsson H, Simrén M. Altered visceral perceptual and neuroendocrine response in patients with irritable bowel syndrome during mental stress. *Gut*. 2004 Aug 1;53(8):1102-8.
19. Longstreth GF. Irritable bowel syndrome. In: Manu P, eds. *Functional Somatic Syndrome*. Cambridge: University Press; 1998:55-73.
20. Lydiard RB. Irritable bowel syndrome, anxiety, and depression: what are the links?. *J Clin Psychiatry*. 2001.
21. Farthing MJ. Fortnightly Review: Irritable bowel, irritable body, or irritable brain?. *BMJ*. 1995 Jan 21;310(6973):171-5.
22. Walker EA, Gelfand AN, Gelfand MD, Katon WJ. Psychiatric diagnoses, sexual and physical victimization, and disability in patients with irritable bowel syndrome or inflammatory bowel disease. *Psychological Med*. 1995 Nov;25(6):1259-67.
23. Kurina LM, Goldacre MJ, Yeates D, Gill LE. Depression and anxiety in people with inflammatory bowel disease. *J Epidemiol Community Health*. 2001 Oct 1;55(10):716-20.
24. Karling P, Danielsson Å, Adolfsson R, Norrback KF. No difference in symptoms of irritable bowel syndrome between healthy subjects and patients with recurrent depression in remission. *Neurogastroenterol Motility*. 2007 Nov;19(11):896-904.
25. Pata C, Erdal ME, Derici E, Yazar A, Kanık A, Ulu O. Serotonin transporter gene polymorphism in irritable bowel syndrome. *Am J Gastroenterol*. 2002 Jul;97(7):1780.
26. Camilleri M, Atanasova E, Carlson PJ, Ahmad U, Kim HJ, Viramontes BE, et al. Serotonin-transporter polymorphism pharmacogenetics in diarrhea-predominant irritable bowel syndrome. *Gastroenterol*. 2002 Aug 1;123(2):425-32.
27. Kilpatrick LA, Labus JS, Coveleskie K, Hammer C, Rappold G, Tillisch K, et al. The HTR3A polymorphism c.-42C> T is associated with amygdala responsiveness in patients with irritable bowel syndrome. *Gastroenterol*. 2011 Jun 1;140(7):1943-51.
28. Mayer EA, Naliboff BD, Chang L, Coutinho SV. V. Stress and irritable bowel syndrome. *Am J Physiol Gastrointestinal Liver Physiol*. 2001 Apr 1;280(4):G519-24.
29. Drossman DA. The role of psychosocial factors in gastrointestinal illness. *Scand J Gastroenterol Suppl*. 1996;221:1-4..
30. Whitehead WE, Crowell MD, Robinson JC, Heller BR, Schuster MM. Effects of stressful life events on bowel symptoms: subjects with irritable bowel syndrome compared with subjects without bowel dysfunction. *Gut*. 1992 Jun 1;33(6):825-30.
31. Rehman S, Habib A, Ahmad R, Baluja Z. Assessment of IBS symptoms among patients of lower socio-economic strata attending medicine OPD in a tertiary care hospital in South Delhi. *Int J Advances Medi*. 2017 Jul 20;4(4):1117-22.
32. Vanuytsel T, van Wanrooy S, Vanheel H, Vanormelingen C, Verschuere S, Houben E, et al. Psychological stress and corticotropin-releasing hormone increase intestinal permeability in humans

by a mast cell-dependent mechanism. *Gut*. 2014 Aug 1;63(8):1293-9.

33. Iorio N, Makipour K, Palit A, Friedenberg FK. Post-traumatic stress disorder is associated with irritable bowel syndrome in African Am. *J Neurogastroenterol and motility*. 2014 Oct;20(4):523.

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