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Original Research Article

Assessment of IBS symptoms among patients of lower socio-economic strata attending medicine OPD in a tertiary care hospital in South Delhi

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ABSTRACT

Background: Irritable bowel syndrome (IBS) is a common functional disorder throughout the world with no clear diagnostic markers. The diagnosis relies mostly on clinical presentation. In India, IBS is less estimated in lower socioeconomic group population. The objective of this study was to assess the proportions of symptoms compatible with IBS, and its prevalence among the patients of low socio-economic strata.
Methods: An OPD based observational study carried out in a tertiary care hospital in south Delhi for a period of 10 years (Nov-2006 to Oct-2016). This hospital caters to low socioeconomic strata. All the study subjects were interviewed based on questionnaires compatible with Manning and Rome II criteria
Results: Symptoms of IBS was more in male (65.12%) and highest prevalence was in the age group 31 to 35 years (56.62%), flatulence was found to be the most common symptom compatible with IBS (58.37%) followed by pain abdomen (42.9%), loose motion (38.6%) and constipation (30.5%). The other important associated symptoms were headache 47.7% and insomnia in 44.62%.
Conclusions: The symptoms compatible with IBS are common among the lower socioeconomic strata leading to a negative impact on their health-related quality of life and work performance, with high rate of physician's visits and further deteriorating their economic condition. Early diagnosis and health education may improve the quality of life and productivity in this population.

Keywords: Irritable bowel syndrome, Low socio-economic, Strata prevalence

INTRODUCTION

Irritable bowel syndrome (IBS) is a common functional gastrointestinal disorder, characterized by chronic recurring abdominal pain or discomfort and altered bowel habits, in association with altered generation and interpretation of bowel function, which is not accompanied by anatomical anomalies or biochemical abnormalities.[1-4] A dysregulation of the brain-gut axis that interacts with visceral hypersensitivity and associated with digestive motor disturbances and micro-inflammation of the gut may be responsible for the symptom generation. Psychosocial stressors may interact with biological factors which are further modulated by cultural beliefs and practices resulting in variations in observed symptoms constellation and health seeking behaviors, a bio-psychosocial disorder. Throughout the world, about 10-20% of adults have symptoms compatible with IBS, and most studies show a female predominance but in India its prevalence is as low as 4.2%.[5,6,8] There is a general perception that IBS is less of a problem in Asia and its epidemiology is to be different.

In addition, the prevalence rates of IBS itself vary in Asia with higher rates were being documented from more affluent urban communities of Japan, Singapore and Guangzhou in China.[10,11] The incidence of IBS is equal between adults and adolescents but the symptoms of IBS usually start in the early childhood or adolescence.[12-15] Although IBS is not a life-threatening condition for most patients it is a chronic recurrent illness that is often accompanied by severe impairment in health related quality of life (HRQOL) measures like decrease in concentration, energy, vitality and self-confidence, and increase in absence rates from work stations.[16-18] The patients with IBS have impaired HRQOL that is significantly worse than that of patients with diabetes mellitus or end-stage renal disease.[19,20] A better outcome is achievable if a positive diagnosis of IBS is made, based on clinical symptoms alone, rather than making a diagnosis by exclusion. Several diagnostic criteria exist and each new criterion refers to the insufficiencies of the previous ones. The most commonly accepted diagnostic criteria include the original Manning criteria and the subsequent series of "Rome foundation" defined criteria. The most commonly accepted Rome III criteria defines IBS as recurrent abdominal pain or discomfort for at least 3 days per month during the previous 3 months associated with two or more of the following with onset at least 6 months before diagnosis: symptoms improvement with defecation, onset associated with a change in the frequency of stools and onset associated with a change in form or appearance of stools.[21-24] The initial presentation and exacerbation of IBS symptoms are often preceded by major psychological or physical stressors (e.g., gastrointestinal infection).[25-26] IBS is often unrecognized or untreated, with as few as 25% of sufferers seeking professional health care.[27] There is no published data available on the prevalence of IBS or its related symptoms among migratory population of low socioeconomic class in this region in India. Assessment of IBS and other related psychosomatic symptoms in this study provides an added importance. With this background, this study was conceived and carried out to assess the burden of problem in this population.

METHODS

This is an OPD based observational study carried out over a period of 10 years from November 2006 till October 2016, in Majeedia hospital now renamed as HAHC hospital attached to Hamdard Institute of Medical Sciences and Research. The aim of the present study was to find out the prevalence of somatization disorders and symptoms of irritable bowel syndromes among the patients coming to the medicine OPD keeping in mind the fact that this hospital caters patients of low socio-economic strata and the population consists mainly of daily wagers who have migrated here from different regions of the country in search of job. The social class of the patients in the study was calculated using modified Kuppuswamy scale in urban area.[28] 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 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.

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

Any hereditary disease, seizure disorder, thyroid disorders or drug and alcohol abuse.

RESULTS

Four thousand patients fulfilling above inclusion and exclusion criteria were included in the study and were further evaluated based on the questionnaire on demographic characteristics and IBS symptoms and other symptoms of psychosomatic disorder. The study sample comprised of 2245 males (56.12%) and 1755 women (43.87%) i.e. there is male predominance in the prevalence of IBS symptoms.

Relationship of IBS with age of the patient

The prevalence of IBS symptoms in study population were highest (46.66%) among the age group 31- 35 years and it was almost equally distributed among male (23.72%) and female (22.9%) followed 36 to 40years (30.62%).

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

Age in years	IBS (n = 4000)		
	Total	Male	Female
15-20	18 (0.45%)	7 (0.175%)	11 (0.27)
21-25	42 (1.05)	30 (0.75%)	10 (0.25%)
26-30	455 (11.37%)	275 (6.87%)	180 (4.5%)
30-35	1865 (46.66%)	949 (23.72%)	916 (22.9%)
36-40	1225 (30.62%)	699 (17.47%)	526 (13.15%)
41-45	395 (9.87%)	283 (7.07%)	112 (2.8%)
Total	4000	2245	1755

Demographic characteristics

Presented in Table-2 show that the majority of the study subjects were from outside the Delhi (65.95%). 53.87% of the subjects were living with <4 family members in the same house and 47.35% patients belong to lower or

upper-lower socioeconomic strata. Only 38.37% of the subjects were practicing some recreational activity (some form of physical activity) whereas 60.8% of them were suffering from some other chronic diseases like hypertension, diabetes mellitus and bronchial asthma.

Table 2: Demographic characteristics of the patients.

	Characteristics	Number (%)
Origin of family	Delhi	1362 (34.05%)
	Outside Delhi	2638 (65.95%)
Number of the family members living in the same house	< 4 members	2155 (53.87%)
	4 - 6 members	581 (14.52%)
	>6 members	1264 (31.6%)
Socio-economic status of the family	Upper (I)	02 (0.05%)
	Upper middle (II)	462 (11.55%)
	Middle/lower middle (III)	1148 (28.7%
	Lower/upper lower (IV)	1894 (47.35%)
	Lower (V)	494 (12.35%)
Recreational activity	Games	246 (6.15%)
	Physical exercises (including yoga)	1289 (32.22%)
Subjects suffering from chronic disease	Hypertension	1452 (36.3%)
	Diabetes mellitus	658 (16.45%)
	Any other	322 (8.05%)

Table 3: Frequency of symptoms compatible with IBS in study subjects.

Symptoms compatible of IBS		Number (%)
Recurrent abdominal pain or discomfort		1716 (42.9%)
Changes in the bowel habits	Constipation	1220 (30.5%)
	Loose motion	1545 (38.62%)
	Alternate constipation and loose motion	1235 (30.87%)
Abdominal distension accompanied by abdominal pain		2335 (58.37%)
Passage of more gas than usual over the past three months		644 (16.1%)
Feeling of incomplete rectal evacuation after defecation		2310 (57.75%)
Feeling comfortable after complete rectal evacuation		980 (24.5%)
Passage of mucous with stool		564 (14.1%)
Worsening of IBS symptoms after consuming certain foods		879 (21.97%)
Difficulty during defecation accompanied by straining or longer staying in the toilet		1460 (36.5%)
Inability to control rectal sphincter and involuntary soiling of inner wear		912 (22.8%)
Bloating		618 (15.45%)

Frequency of symptoms compatible with IBS

Data presented in Table-3 shows that the most common symptom compatible with IBS was abdominal distension accompanied by abdominal pain (58.37%), followed by feeling of incomplete evacuation of rectum after getting rid of the stool (57.75%) and recurrent abdominal pain or discomfort (42.9%). Furthermore, 38.62% were having loose motion as predominant symptom of IBS and 30.87% are having alternate constipation and loose motion. 36.5% of the patients has difficulty during defecation accompanied by straining or longer staying in the toilet and 21.97% of the study patients mentioned eating some foods resulted in worsening of their abdominal pain which led to alteration in their stool passage and was usually accompanied by abdominal distension.

Features of abdominal discomfort and pain

The site distribution of abdominal pain is presented in Table 4. It shows that 24.3% subjects were not sure about the site of the abdominal pain. The duration of abdominal pain is summarized in Table 5 with the vast majority of cases (55.1%) experiencing pain for less than one hour. The frequency of abdominal pain was once a week in 23.1%, on daily basis in 15.3% and once in a month in 11.8% of the study subjects. The nature of the abdominal pain was colicky in 22.2%, recurrent burring in 23.7% and pressure in the abdomen in 13.4 % of the study subjects.

Table 4: Site of abdominal pain in study subject.

Site of pain	Frequency (%)
Entire abdomen.	26.6
Above the umbilicus.	18.8
Under the umbilicus	13.2
Right lower abdominal region	5.9
Left lower abdominal region	11.2
Not sure about the site of pain	24.3

Table 5: Duration of abdominal pain among study subjects.

Duration of pain	Frequency (%)
Less than one hour	55.1
1-2 hours	17.5
3-4 hours	6.1
Most of the day	21.3

Additional symptoms not compatible of IBS

Apart from symptoms compatible with IBS majority of our patients were having other associated psychosomatic symptoms like headache in 77.7%, insomnia in 44.62% and chest pain in 25.87% (Table 6).

Table 6: Additional symptoms present in the study subjects.

Additional symptoms not compatible of IBS	Yes (%)
Headache	1908 (47.7%)
Palpitation	515 (12.87%)
Breathlessness	735 (18.37%)
Chest pain	1035 (25.87%)
Insomnia	1785 (44.62%)
Vomiting	405 (10.12%)
Vaginal discharge	306 (7.65%)
Neck pain	35 (0.87%)

DISCUSSION

IBS is a common functional disorder and has been shown to be variable in its prevalence rates throughout the world. The prevalence rate ranges from 4% in Iran to 30% in Nigeria. Also, data has been shown that IBS affects almost a quarter of western communities.[1,2] No clear diagnostic markers exist for IBS; thus, the diagnosis of the disorder is based on clinical presentation.[1] Our study is unique in respect to the study population and duration of study. Our study population comprises of the patients of the lower socioeconomic strata where the disease is considered to be not a significant problem but this study shows high prevalence of IBS symptoms among this population especially in the peoples who has migrated from various regions of country in search of the better livelihood. Findings from this study are supported by various factors such as low overall quality of life, poor health care facilities and high stress factors.

The study relies on specific and validated IBS diagnostic criteria to explore the symptoms pattern of IBS. It also estimates the prevalence of other significant psychosomatic disorders associated with the symptoms of IBS like 47.7% of our study population complained of headache and 44.62% were having on and off chest pain that was not associated with any organic disease, which were further disabling in these patients. IBS is a common functional disorder with a female preponderance in IBS symptoms but data from our study demonstrate a male preponderance in IBS symptoms which supports the earlier reports in general Indian population which may be due to more health consciousness of male as compare to female in this population.[5,6] The mean age for IBS symptoms in India in general population 39.4 years whereas in our study population the mean age of patients having IBS symptoms is 34.3 years which further deteriorates the economic condition of these patients due to frequent absenteeism from work place.[7] Abdominal pain or discomfort is a key symptom for diagnosis of IBS. The pain improves after defecation and/or have its onset associated with a change in the frequency or form of stool.[7] The present study demonstrated that the abdominal distension accompanied by abdominal pain is the most prevalent symptom compatible with IBS present among 58.37% of study subjects. A sense of incomplete evacuation of the rectum after defecation were present in 57.75% of the same subjects. A 32.3% of the subjects used to return to the toilet for a second time and improved after complete evacuation of the rectum. Supportive symptoms which are not a part of the diagnostic criteria of IBS are not uncommon among the study subjects like straining during defecation (36.5%), bloating (15.45%) and passage of mucus with stool (14.1%). Abdominal pain in IBS is highly variable in its intensity, characters and location.[22] Data from the present study demonstrate abdominal pain includes entire abdomen (26.6%) above umbilicus (18.8%), but 24.3% patients were not sure about the location of the abdominal pain.

Furthermore, the present study demonstrates that recurrent colic (22.2%) and recurrent burning pain (23.7%) are the most common characteristic of IBS which are more prevalent in our study subjects, followed by repeated pressure on stomach in 13.4% of the subjects. The duration of abdominal pain subsides in less than one hour in 55.1 %, 1-2 hours in 17.5%, 3-4 hours in 6.1% and lasted for most of the day in 21.3% of the study subjects. The frequency of abdominal pain in the study subjects was daily in 15.3%, weekly in 23.1% and monthly in 11.8% of the subjects. Abdominal pain is often exacerbated by eating some foods and improved by passage of flatus or stools.[22]

However, 21.97% of the study subjects reported worsening of abdominal pain which was associated with either diarrhea, constipation or distension, after eating certain types of food. Abdominal pain results from having fast foods in the majority of the subjects i.e.

41.1%, green or red chili in 21.4%, legumes such as lentils, beans in 15.4% and vegetables such as cabbage and cauliflower in 15.2% of subjects. Abdominal pain or disorder may be mild enough to be ignored or it may interfere with daily activities and increases the rates of absenteeism of work place and increases the rates of physician visits.[23] Recurrent abdominal pain came out to be a reason of absenteeism from their workplace and school and reduces their work performance in 28.2% of our study subjects. The underlying etiology of this condition is unknown but emotional stress, anxiety and diet are various contributing factors for IBS which exacerbate its symptoms.[24] It is well documented that sports and other recreational activities improve wellbeing and play a unique role to cope with stress and emotional upset. This study supports the effects of sports on amelioration of stress on IBS symptoms among the students. Further, it explores that IBS symptoms are more prevalent in subjects whose family shifted to Delhi from other regions (migration for the search of employments). This may be explained by the fact that functional disorders are aggravated by change in housing or atmosphere. It also finds that most of the subjects apart from having symptoms compatible with IBS most of them also suffers from other psychosomatic disorders like headache in 47.7%, insomnia in 44.62%, chest pain without any ECG changes in 25.87%, breathlessness and palpitation with no positive chest finding of any disease in 18.37% of the study subjects. So, this study conclusively shows that family size plays a very important role in inducing and precipitating IBS symptoms. Small family (less than 4 members) had more IBS symptoms in which loneliness (psychological) may be the contributory factor. In larger family, more IBS symptoms may be due to less caring and limitation of resources whereas the mid family size (5-10 members) had lesser IBS symptoms due to equitable distribution of resources and sharing of joys and sorrows adequately. Many IBS sufferers first develop symptoms during their teenage and support of the family may help them to cope with the diseases and it plays a unique role in decreasing their anxiety and tensions.[25] In this study it was found that there is a strong relationship between symptoms compatible with IBS and living with parents or with others that can be explained by the fact that living without parents or losing one of them leading to more stress, less caring, psychological traumas, and less supports in many life issues and it is well documented a functional disorders usually triggered by stress.[26]

CONCLUSION

The present study shows that the symptoms compatible with IBS is common in middle aged males between 30 to 40 years and widely present in upper lower and lower socioeconomic strata people living in south Delhi of national capital region of India. There is a significant association between the, migration, economical status, family size, and food habits, and IBS symptoms. More in depth studies are needed to explore these phenomena further.

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