

**Original Research Article**

**To Assess the Stool Characteristics and Bowel Habits in Patients of Irritable Bowel Syndrome in Central India**

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**Abstract**

**Background & Methods:** To assess the stool characteristics and bowel habits in patients of irritable bowel syndrome in central India. All the information given by the study participants was reserved under proper confidentiality, who had rapid weight loss with blood in stool were not included in this study.

**Results:** The severe prevalence of IBS was 05%. In our study, anxiety and depression 68% had a significant relationship with IBS and IBS had a significant ( $P = 0.038$ ), relationship with food intolerance 39% ( $P = 0.019$ ) and weight loss 27% ( $P = 0.479$ ). In our dietary data, the intake patterns of vegetables ( $P = 0.002$ ), meat intake ( $P = 0.037$ ), daily water consumption ( $P = 0.012$ ) showed a strong significant association with IBS.

**Conclusion:** Based on the present study results, IBS-C was the most prevalent type of IBS among our cases, and besides this, majority of our respondents did not have basic awareness about IBS. In terms of the dietary pattern of our subjects, vegetable consumption was found to lower the risk of IBS; however, the severity of IBS was increased highly among respondents who ate fast foods regularly. From this study, we have observed that IBS not only caused physiological problems but also psychological problems, which negatively affected the quality of life. To minimize these IBS-related physiological and psychological problems, proper knowledge about this disease is mandatory. Proper nutritional counselling will be needed to be introduced & water drinking habits.

**Keywords:** stool, bowel, habits, bowel syndrome.

**Study Design:** Observational Study.

**1. Introduction**

Bowel-related symptoms in IBS consist of abdominal pain, bloating, or discomfort that is either improved or aggravated by passing stool or flatus[1]. The symptoms can be associated with change in stool form or frequency and other symptoms including urgency, straining, and feeling of incomplete defecation.

Available data describe an average of 3-4 bowel movements per day in the first two weeks of life in term newborn infants. At the age of 4-6 months, bowel movement frequency drops

further to a frequency of once to twice per day[2]. In children younger than 2 years, a defecation frequency of 1-2 per day is described by several studies worldwide.

In the Rome IV era, the term “discomfort” has been eliminated from the criteria because the term is thought to be ambiguous to patients[3]. The current Rome IV definition for IBS required the patients to have recurrent abdominal pain, which is associated with defecation or a change in bowel habits. However, a recent global experts survey indicated that 53.8% felt that bloating was the most important feature of IBS, while only 25.6% felt that abdominal pain was. A large population-based internet survey from Japan also suggests that abdominal bloating has a great impact on the daily life of the patients with constipation predominant IBS[4].

Experience of psychosocial stress and exacerbation of GI symptoms in IBS patients show higher correlation than that in healthy individuals. IBS patients show more exaggerated colonic motility in response to experimental stress than healthy subjects[5]. A meta-analysis showed that colorectal distension in IBS patient is more likely to activate the anterior cingulate cortex, amygdala, and midbrain, which are important brain regions for stress response, but deactivates the medial and lateral prefrontal cortex than healthy controls. Furthermore, the right dorsolateral prefrontal cortex in IBS patients was less activated than healthy controls when subjects were exposed to the situation with necessity of cognitive flexibility and stress-coping[6].

## 2. Material and Methods

Present study was conducted at Department of Medical Gastroenterology, Mahatma Gandhi Memorial Medical College & Super Speciality Hospital, Indore for 01 Year on 400 cases. All the information given by the study participants was reserved under proper confidentiality, who had rapid weight loss with blood in stool were not included in this study. Female respondents who had gynecological issues such as postmenopausal syndrome (PMS) were excluded from this study to avoid the overlapping of IBS symptoms with PMS. The PMS state of the female respondents was confirmed medical personnel. Any students who were unwilling to give information were excluded from this study, and the participants had the right to withdraw their participation anytime during this study. During our study, proper checking and supervision of the data for consistency and completeness were carried out.

A systematic random sampling method was used to collect data from the respondents. A predesigned structured interviewing questionnaire was developed to collect data from the respondents. The questionnaire was composed of various information such as personal information (name, sex, age), socio-demographic information (marital status, monthly income), anthropometric information (body mass index [BMI]).

## 3. Result

**Table No. 1: Characteristics of IBS Cases**

Age	Mean	SD	P Value
Male age (mean±SD)	22.47	2.089	0.472
Female age (mean±SD)	21.95	1.829	
<b>BMI</b>			0.138
Male BMI (mean±SD)	22.15	2.587	
Female BMI	21.26	2.663	

(mean±SD)			
	No.	Percentage	
Marital status			
Unmarried	356	89	0.461
Married	44	11	

**Table No. 2: Assessment of the association of non-GI parameters with IBS**

Anxiety and depression	No.	Percentage	P Value
Yes	272	68	0.038
No	128	32	
Food intolerance	No.	Percentage	
Yes	156	39	0.019
No	244	61	
Weight loss	No.	Percentage	
Yes	108	27	0.479
No	292	73	

**Table No. 3: The association of various risk factors with IBS**

Vegetables intake pattern	No.	Percentage	P Value
Regularly	148	37	0.002
Irregularly	220	55	
Never	32	08	
Meat intake pattern & Fast Food	No.	Percentage	
Regularly	32	08	0.037
Irregularly	336	84	
Never	24	06	
Daily water consumption	No.	Percentage	
<8	204	51	0.012
08-10	168	42	
>10	28	07	

**Table No. 4: Characteristics of patients affected by IBS according to severity of disease**

	Mild IBS	Moderate IBS	Severe IBS
<b>Prevalence</b>	70%	25%	5%
<b>Practice type</b>	Primary	Specialty	Referred

#### 4. Discussion

From our study, we noticed a significant relationship between IBS and depression, as well as we noticed a significant relationship between daily water intake and IBS[7]. This finding is not so consistent with another study where an insignificant association was found between whole-day water consumption and odds of IBS among the adult population. From the analysis of our survey data, we found that 118 respondents had active IBS, and among them, the most predominant (54.2%) category of IBS was IBS-C. Our study result depicts a variation with a recently published US population-based survey where 37.3% of patients were diagnosed with IBS-C[8].

The monthly household family income of our respondents did not show any significant association with their IBS condition. So, for our study population, household family income may not be a cause of IBS condition, and this report is matched with a previous study where IBS was not a big problem in lower socioeconomic groups[9]. We tried to interpret a relationship between BMI and IBS, but we did not find any significant association between them. However, by reviewing previous IBS-related studies, we noticed that majority of them mentioned a positive association between obesity and IBS.

The current study concluded a significant association between the presence of IBS and the vegetable intake pattern of the respondents, which is an expression of the ability of vegetables to lower the symptoms of IBS. This finding is supported by another study, which stated an IBS lowering activity of vegetables as well as mentioned a significant association of IBS with fatty food consumption[10]. Our study showed that soft drinks consumption had an association with IBS, and our study participants reported that after consuming soft drinks, they faced various bowel and gas problems. In the present work, we noticed that tea-coffee consumption had a significant association with IBS, and IBS was more prevalent among those who consumed tea-coffee regularly. A similar study about the prevalence of IBS in Turkey observed that IBS was higher among individuals who did not take their meals regularly and did not consume a sufficient amount of fiber in their diet[11].

From the overall scenario, it was observed from this study that our study population not only suffered from diarrhea and constipation-predominant IBS but also highly suffered from flatulence predominant IBS, which is comparable with a study conducted in India among medical students[12].

#### 5. Conclusion

Based on the present study results, IBS-C was the most prevalent type of IBS among our cases, and besides this, majority of our respondents did not have basic awareness about IBS. In terms of the dietary pattern of our subjects, vegetable consumption was found to lower the risk of IBS; however, the severity of IBS was increased highly among respondents who ate fast foods regularly. From this study, we have observed that IBS not only caused physiological problems but also psychological problems, which negatively affected the quality of life. To minimize these IBS-related physiological and psychological problems,

proper knowledge about this disease is mandatory. Proper nutritional counselling will be needed to be introduced & water drinking habits.

## 6. References

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