

# Prevalence of Irritable Bowel Syndrome in Rural Belt of Jammu

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## ABSTRACT

**Background:** Irritable Bowel Syndrome (IBS) is a recurrent disorder characterized by abdominal pain or discomfort, in association with altered generation and interpretation of bowel function, which is not accompanied by anatomical anomalies or biochemical abnormalities. Early detection is needed, as it affects the quality of life markedly. Aim of the study was to investigate the epidemiological factors related to IBS in rural areas of Jammu, J&K, India.

**Methods:** It was hospital based study conducted in Akhnoor, with a total of 286 patients attending the OPD of the Sub-District-Hospital between July 2018 to February 2019 selected for the study and sampling. Bowel Disease Questionnaire; Mayo Clinic, Rochester, Minnesota, was used for collection of data from the selected patients. Socio-demographic variables alongside association of various types of disorders were studied in relation to IBS and the results were tabulated.

**Results:** IBS was found to be present in 29.37% of the patients studied, slightly higher in females (30.53%). High income group showed significantly lower prevalence (24%) of IBS. 27 out of 59 IBS patients had affect on Quality of Life. 31 out of 71 patients agreeing to the use of substances suffered from IBS. 'Diarrhea' was the predominant symptom in 52.38% patients. Female sex hormones and other bodily mechanisms can be reasoned behind higher occurrences of gastrointestinal motility disorders in women.

**Conclusions:** The study can be considered to be quite representative of the general population of the rural-Jammu, but descriptions involved in

the questionnaire can be made clearer with pictorial representations as well.

**Key words:** Irritable Bowel Syndrome (IBS), Constipation, Diarrhea

## INTRODUCTION

Irritable bowel syndrome (IBS) has been defined as a functional disorder of gastrointestinal tract without any accompanying structural defect, in which normal activity of bowel either exaggerated or distorted in such a way that it leads to constipation or diarrhoea and frequently to abdominal pain or discomfort. It may be described as a dysregulation of the brain – gut axis that interacts with visceral hypersensitivity. It can be associated with observed digestive motor disturbances and micro inflammation of the gut, with the possibility of an imbalance of the intestinal bioflora. [1] The prevalence is known to be higher in western countries as compared to Asian countries. The estimated prevalence of IBS within the community is somewhat between 10% and 25%. [2] The rapid socio-economic development in the last two decades would have created some kind of transition in socio-cultural environment and health status in Asia. [3] The prevalence of IBS among Asian communities continues to be on the rise. [4] International IBS prevalence upon meta-analysis, is estimated to be 11.2% (95% confidence interval: 9.8-12.8), with variation by geographic region; the lowest occurring in south Asia (7.0%) and the highest in South America (21%). [2]

Symptoms improvement with defecation, onset associated with a change in frequency of stools and onset associated with a change in form or appearance of stools. [5][6] IBS are also associated with markedly reduced quality of life and high utilization of health care resources. Only a very small section of the population affected by IBS is referred to a gastroenterologist and is generally characterized by more pronounced intensity and higher physiological and psychosocial issues in comparison to the ones in primary care. [7]

There are very few community based epidemiological studies on IBS in rural area of Jammu hence it was planned to undertake the study. The aim of this study, therefore, was to find out the prevalence of IBS in population of Akhnoor and to determine the socio-demographic variables, health-care seeking behaviour and its relationship with psychiatric disorders.

**MATERIAL AND METHODS**

A prospective, hospital-based study was conducted in sub-district hospital,

**RESULTS**

Akhnoor, with a total of 286 patients attending the OPD of the hospital between July 2018 to February 2019 selected for the study and sampling. Bowel Disease Questionnaire; Mayo Clinic, Rochester, Minnesota, [8] was used for collection of data from the selected patients. Socio-demographic variables alongside association of various types of disorders were studied in relation to irritable bowel syndrome and the results were tabulated accordingly. Further distribution of patients according to the symptoms of IBS was also done. A general criterion of including patients of 18-60 years was followed.

Data classification and analysis was done using SPSS Software version 19 and various Excel Sheets were used for tabulation. Hypothesis testing and importance of the data was analysed using a chi-square ( $\chi^2$ ) and degree of freedom (df) was utilized to determine if a certain null hypothesis can be rejected based on the total number of variables and samples within the experiment.

**Table 1: Demography and IBS**

Demographic Variables	IBS		Total	
	With IBS: n(%)	Without IBS: n(%)		
<b>Age</b>				
18-30 Years	21 (17.65)	98 (82.35)	119	$\chi^2 = 3.07$ df=2, p>0.05
31-40 Years	29 (34.52)	53 (65.47)	82	
>40 Years	34 (40.00)	51 (60.00)	85	
<b>Sex</b>				
Male	44 (28.38)	111(71.62)	155	$\chi^2 = 0.19$ df=1, p>0.05
Female	40 (30.53)	91 (69.47)	131	
<b>Marital Status</b>				
Married	53 (30.99)	118 (69.01)	171	$\chi^2 = 37.5$ df=2, p<0.001
Unmarried	23 (26.44)	64 (73.56)	87	
Others	8 (28.57)	20 (71.43)	28	
<b>Education Level</b>				
Illiterate	10 (35.71)	18 (64.29)	28	$\chi^2 = 15.52$ df=3, p<0.05
Middle School Lvl	21 (35.59)	38 (64.41)	59	
Secondary School Lvl	35 (23.97)	111 (76.03)	146	
Higher	18 (33.96)	35 (66.04)	53	
<b>Income Group*</b>				
Low (<1L)	8 (32.00)	17 (68.00)	25	$\chi^2 = 38.95$ df=3, p<0.001
Lower Middle (1L- 3L)	31 (30.10)	72 (69.90)	103	
Upper Middle (3L-8L)	39 (29.32)	94 (70.68)	133	
High (>8L)	6 (24.00)	19 (76.00)	25	

\*Declared Annual Income of the Family

This prospective study was performed on 286 subjects, within the age-group of 18 to 60 years. IBS was found to

be present in 29.37% of the patients studied, with the majority of them (40%) pertaining to more than 40 years of age. Income groups

of Low, Lower Middle and Upper Middle had higher prevalence (29-32%). High income group showed significantly lower prevalence of IBS. There was some

significant relation to the education level as well ( $p < 0.05$ ), with lowly educated population showed higher prevalence. (Table 1)

**Table 2: Disorders and IBS:**

Disorders	IBS		p-value
	With	Without	
<b>Health related Quality of Life</b>			
Affected	27	32	$\chi^2 = 10.71$ df=1, $p < 0.001$
Not Affected	57	170	
<b>Pain</b>			
Present	16	35	$\chi^2 = 32.19$ df=1, $p < 0.01$
Absent	68	167	
<b>Substance use</b>			
Present	31	40	$\chi^2 = 5.76$ df=1, $p < 0.05$
Absent	53	162	
<b>Gastro-esophageal Reflux Disease</b>			
Present	21	24	$\chi^2 = 21.0$ df=1, $p < 0.001$
Absent	63	178	
<b>Psychiatric Disorders</b>			
Present	18	17	$\chi^2 = 27.42$ df=1, $p < 0.001$
Absent	66	185	

Out of the 59 patients who were responding as to affect Quality of Life, 27 were diagnosed with IBS. Similarly out of 71 patients agreeing to the use of substance (like alcohol), 31 were diagnosed with IBS. Psychiatric Disorder was a major driver of IBS among patients as more than 50% (18/35) of such patients had IBS. As much as 25.0% (21) IBS patients reported gastroesophageal refluxes, which was significantly higher than those without IBS, which stood at 11.88% (24). (Table 2)

Alternating diarrhea and constipation (11.9%) was among the least common subtype among the respondents. (Table 3)

**DISCUSSION**

The prevalence of IBS in the present study was slightly higher in females (30.53%) as compared to males, but the findings are not conclusive, however studies from several Asian countries reveal female predominance. [9] Ghoshal et al [10] however showed that there wasn't much difference in prevalence amongst males and females in a community study from India. Female sex hormones and other bodily mechanisms can be reasoned behind higher occurrences of gastrointestinal motility disorders in women. [11]

Wilson et al [12] found quality of life affected among patients, and our study findings were also in agreement to that. Chronic pelvic pain was higher among females with IBS, with 58.6% females complaining about it, quite in line to the findings of Walker et al. [13] Significant association was found between substance use disorders, like alcohol abuse, and IBS, quite similar to the findings of Masand et al. [14] IBS was further reported to be higher in prevalence among patients with psychiatric issues, and stood at 51.42%, similar to the

**Table 3: Distribution of Patients according to symptoms:**

IBS Symptoms	Number of Cases	% of Cases
Diarrhea	44	52.38
Constipation	26	30.95
Alternating diarrhea and constipation	10	11.90
Incomplete evacuation of bowel	47	55.95
Relief of pain after bowel movement	55	65.48
Change in frequency of stools	51	60.71
Change in consistency of stools	41	48.81
Urgency of passing stools	34	40.48
Straining of stools	30	35.71
Mucous in stools	26	30.95
Bloating	35	77.38

Total no of Cases of IBS: 84

The type of IBS wherein 'diarrhea' was the predominant symptom (in 52.38%) was most common among the patients. Relief of pain after bowel movement (65.48%) and change in frequency of stools (60.71%) were also common symptoms.

findings of Dewsnap et al. [15] Upper gastrointestinal tract was also significantly involved in IBS patients.

Average prevalence among patients attending the hospital OPD during the period was found to be 29.37%, but quite specific to the rural belt- Akhnoor, in the Jammu region, lying in north India. There was no door-to-door survey incorporated and no random sampling undertaken. The limitation of the present study is that it is very difficult to find out the true prevalence of IBS as it is quite dependent on the diagnostic criteria applied.

## CONCLUSION

This being the very first study on the subject in this region, and encompassing a wide range of population, but under controlled circumstances, that it was applicable on only the patients reporting before the hospital OPD, the results and outcomes are very definitive and significant. The study can be considered to be quite representative of the general population of the rural-Jammu as significant number of patients pertained to almost all the social segments of the society and the hospital is quite approachable to the public in general. The study has helped in providing an alternative point of view on the demographic patterns in the disease, but more of such studies are suggested to ascertain the real prevalence of the disease in the area. At the same time the descriptions involved in the questionnaire can be made clearer with pictorial representations as well.

## DECLARATIONS:

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