

# PSYCHOLOGICAL AND SOCIODEMOGRAPHIC CORRELATES OF THE IRRITABLE BOWEL SYNDROME

PRITI ARUN, J.N.VYAS, R.R.RAI, KRISHNA KANWAL, CHANDRA SHEKHAR SUSHIL

## SUMMARY

*Thirty patients with the Irritable Bowel Syndrome (IBS) were evaluated for personality profiles and psychiatric morbidity. In comparison with normal controls, these patients were more neurotic, showed more anxiety and had a higher incidence of neurotic depression, anxiety neurosis and alcoholism. IBS was found to be more common in young, urban males and sedentary workers.*

## INTRODUCTION

Psychological factors are responsible for the production of psychosomatic illnesses. Life events, personality, constitutional makeup, stress, environmental factors have all been incriminated in the production of psychosomatic illnesses. The exact causes and mechanisms of disease production are yet to be known. Many attempts have been made to study these psychological correlates of psychosomatic illnesses. Psychological factors can affect the severity of symptoms as well as how the patient experiences them. The disturbed bowel activity of IBS can be regarded as a physiological expression of psychologic stress of other stimulus among individuals with a particular biological predisposition.

The patient's influences can play a major role in how symptoms are reported and whether medical treatment is sought. These patients are described as more neurotic, introverted and anxious (Esler & Goulston, 1973; Dinan et al, 1991). No definite personality type has been reported (Latimer, 1983) and a suggestion has been made that IBS sufferers do not have an inherent personality abnormality but have a quantitative departure from psychophysiological reactions of healthy persons in times of stress (Ryan et al, 1984).

Prevalence of psychiatric morbidity in IBS patients varies from 20%-64% (Singh et al, 1991; Kingham & Dawson, 1985; McDonald & Bouchier, 1980). A few studies have reported as high as 90-100% prevalence rate of psychiatric illnesses in IBS patients (Gomez & Dally, 1977; Young et al, 1976; Liss et al, 1973). Anxiety and depression are found to be more common in IBS group as compared to normal controls or those with organic gastrointestinal illnesses. Some studies report a very high prevalence rate of depression in IBS patients (Rose et al, 1986; Moffic & Paykel, 1975).

## MATERIAL AND METHODS

**Sample:** The sample for the present study comprised of thirty consecutively selected subjects attending the Gastroenterology OPD of the SMS Medical College and Hospital, Jaipur, diagnosed as having Irritable Bowel Syndrome by the consultant gastroenterologist. Before being diagnosed as IBS every patient underwent routine hematologic, urine and stool examinations as well as Gastroscopy, Sigmoidoscopy and Ultrasonography. The patient was included in the study only when the consultant

gastroenterologist had excluded all other organic causes and labelled the patient as having IBS. Similarly, 30 subjects, preferably relatives or attendants of these IBS patients matched on age, sex, economic status and occupation formed the control group. The criteria for inclusion in the control group was that they should not be have any history of IBS or dyspepsia in past or present, and no history of psychiatric or major physical illness in the last one year.

**Tools:** Both the groups were subjected to detailed evaluation, which included a complete history. IBS patients were further evaluated for their psychiatric status and after a detailed mental status examination, provisional diagnosis according to ICD-9 was made. Diagnosis was then confirmed by two consultants in the department of psychiatry. Both the groups were subjected to Hindi version of PEN inventory, (Menon & Verma, 1988), Beck depression inventory (Hindi version) (Beck et al, 1961), and Hamilton anxiety rating scale (1969). The results were statistically analyzed and compared with those of control and among IBS patients.

## RESULTS AND DISCUSSION

### Sociodemographic correlates of IBS

Sociodemographic data (Table 1) shows that the majority (69%) of patients were in the age group 21 to 40 years and 70% were males; 80% had a family income above Rs. 2000/- per month; 36% of patients were Govt. servants and 20% were housewives. The majority (93.3%) were educated upto secondary and above; 70% were married; 80% of the patients were from urban areas and 60% were from joint families. Sharma and Chawla (1982) reported that the majority of cases present in either the third or the fourth decade. Fielding (1977) reported these patients to be typically young adults whose symptoms began in late adolescence. In our study most of the patients had the onset of symptoms 2 to 4 years ago. Our findings are consistent with those of earlier studies.

Pimparker (1971) reported IBS to be 3 times more common in Indian males. Hislop (1971) found IBS to be more common in women, the sex ratio being 2.4:1 and Young et al (1976) found a female : male ratio of 4:1. Fielding (1977) reported IBS to be twice as common in women as in men. Welch et al (1985), in a study of psychoneurotic symptomatology of reporters and non-reporters of IBS suggested that the preponderance of women referred to outpatient clinics may reflect sociologi-

**Table 1**  
**Sociodemographic Variables**

	IBS	Control	Total	$\chi^2$
<b>I. AGE (years)</b>				
10-20	4 (13%)	2 (6.6%)	6	
21-30	11 (36%)	13 (43%)	24	
31-40	10 (33%)	8 (26%)	18	NS
41-50	3 (10%)	4 (13%)	7	
51-60	2 (6.6%)	3 (10%)	5	
<b>II. SEX</b>				
Male	21 (70%)	21 (70%)	42	NS
Female	9 (30%)	9 (30%)	18	
<b>III. ECONOMIC STATUS</b> (Family Income/month)				
Below 100	-	-	-	
300-499	-	-	-	
500-999	-	-	-	
750-999	1 (3.3%)	1 (3.3%)	2	NS
1000-1999	5 (16.6%)	7 (23%)	12	
Above 2000	24 (80%)	22 (73.3%)	46	
<b>IV. OCCUPATIONAL</b>				
Student	4 (13.33%)	4 (13.33%)	8	
Housewife	6 (20%)	4 (13.33%)	10	
Laborer	-	-	0	NS
Farmer	1 (3.33%)	-	1	
Govt. servant	11 (36%)	13 (36%)	24	
Professional	5 (16%)	6 (20%)	11	
Business	3 (10%)	3 (10%)	6	
<b>V. EDUCATION</b>				
Illiterate	-	-	-	
Literate	-	-	-	
Primary	1 (3.33%)	1 (3.3%)	2	
Middle	1 (3.33%)	3 (10%)	4	
Secondary	9 (30%)	7 (23%)	16	NS
Graduate	10 (33.3%)	10 (33.3%)	20	
Post-graduate	9 (30%)	9 (30%)	18	
<b>VI. MARITAL STATUS</b>				
Single	8 (26%)	9 (30%)	17	
Married	21 (70%)	21 (70%)	42	NS
Remarried	1 (3.33%)	-	1	
(Separated/divorced/widowed: nil)				
<b>VII. RELIGION</b>				
Hindu	30 (100%)	30 (100%)	60	
Muslim	-	-	-	
<b>VIII. DOMICILE</b>				
Urban	24 (80%)	25 (83.3%)	49	
Rural	6 (20%)	5 (16%)	11	NS
<b>IX. FAMILY TYPE</b>				
Joint	18 (60%)	20 (66.6%)	38	
Nuclear	12 (40%)	10 (33.3%)	22	NS
<b>X. FAMILY SIZE</b>				
Large (more than 5)	14 (46.6%)	11 (36.6%)	25	
Small (upto 5)	16 (53.3%)	19 (63.3%)	35	NS

**Table 2**  
**Depression and Anxiety Scores**

	Mean	S.D.	t	p
<b>A. Depression : Beck Depression Inventory</b>				
IBS	14.16	10.03	5.43	<.001
Control	3.56	3.71		
<b>B. Anxiety: Hamilton Anxiety Rating Scale</b>				
IBS	14.36	9.50	7.152	<.001
Control	1.46	2.71		

**Table 3**  
**Psychiatric Morbidity among IBS patients (ICD-9)**

Psychiatric Morbidity	No.	%
Present	11	37
Nil Psychiatry	19	63
<b>Type of Psychiatric Morbidity</b>		
Anxiety Neurosis	3	10
Neurotic Depression 6	20	
Alcohol Dependence	2	6.6
Premature Ejaculation	1	3.3
Frigidity	1	3.3

**Table 4**  
**Neuroticism, Psychoticism And Extraversion Scores**

	Mean	S.D.	t	p
<b>A. Neuroticism</b>				
IBS	8.56	4.394	4.39	<.001
Control	4.26	3.08		
<b>B. Psychoticism</b>				
IBS	4.9	2.92	5.597	<.01
Control	1.5	1.6		
<b>C. Extraversion</b>				
IBS	10.6	2.85	2.493	<.01
Control	12.43	2.84		

cal factors rather than the severity of IBS. Our findings are similar to those of Pimparker (1971) as opposed to those of Fielding, Hislop, and Young et al. A similar number of women in our study may reflect health care seeking behaviour of Indian women and sociological factors rather than the true incidence of illness.

Pimparker (1971) found IBS to be more common in sedentary workers. Our findings are consistent with his as none of the patients were labourers and the majority were government servants (36%) and housewives (20%). The educational level of IBS patients corresponded with their occupational status. In our study, 70% of IBS patients were married as also reported by Pimparker (1971). In this study, the majority of IBS patients (80%) were urban. Desai (1982) reported IBS to be more common in urban than in rural population in India. Preponderance of urban patients may be due to their sedentary life style and health care seeking behaviour.

### Psychiatric Morbidity and IBS

In this study, we found that 70% of IBS patients had mild to severe depression; the difference between the IBS and control group was statistically significant on Beck's depression inventory (Table 2). This high percentage may be due to some items of the depression Inventory related to appetite and loss of weight, which may increase the score. The other factor is hopelessness which is often reported by many patients. Many of these patients had tried allopathy and other disciplines of medicines, eg. homeopathy and ayurvedic treatment with partial or no improvement. In one third of the cases, the duration of previous treatment taken was two years or more. However, depression as diagnosed according to ICD-9 was present in only 10% of cases (Table 3). Hislop (1971) noted depressive symptoms in 80% of patients and 22.4% of patients were judged to be suicidal. Kapoor (1985) found 16.4% and Singh et al (1991) 28% of patients to suffer from neurotic depression.

The difference between the anxiety scores of IBS and control group on Hamilton Anxiety Rating Scale was significant. Anxiety neurosis as diagnosed according to ICD-9 was present in 20% of cases. Hislop (1971) reported anxiety symptoms in 68.7% of patients. Singh et al (1991) reported anxiety state in 24% and Kapoor (1985) in 7.3% of patients.

Other psychiatric diagnoses were alcoholism, frigidity and premature ejaculation. Singh et al (1991) reported premature ejaculation, impotence (8%) and one case each of schizophrenia and obsessive compulsive disorder. McDonald and Bouchier (1980) reported that 53% of cases having a psychiatric illness were from a non-organic gastrointestinal illness group and Young et al (1976) reported that 76% of IBS patients had psychiatric illness. In contrast, Thornton et al (1990) found that the majority of IBS patients did not have elevated levels of anxiety or depression nor was there evidence of significantly abnormal illness behaviour.

### Personality and IBS

IBS patients scored higher than normals on neuroticism and psychoticism scales of PEN inventory and the difference between both the groups was highly significant (Table 4). IBS patients scored significantly lower than normal on the extraversion scale. A number of studies have reported IBS patients to be significantly more neurotic than normal control (Almy, 1950; Esler & Goulston, 1973; Palmer et al, 1974; Latimer, 1983; Dinan et al, 1991) and suggest that psychological profiles of IBS patients may be less specific than hitherto thought. They observed moderate degree of psychoneurotic disorder amongst IBS patients but it was not significantly different from organic gastrointestinal patients. Bergeron and Monto (1985) found 4 subgroups on administering MMPI, which were inadequate dependency, somatization of affect, reaction depression and anger and denial.

High scores on neuroticism scale are characterized by mood swings, lack of concentration, worries,

psychosomatic symptoms, nervousness, sensitivity and inferiority feeling (Eysenck & Eysenck, 1976). High psychoticism scores in our findings correlate with the anger and denial subgroup of individuals in the study reported by Bergeron and Monto (1985). Low tolerance of frustration and aggressive tendencies are features of persons scoring high on the psychoticism scale (Eysenck, 1976). Nicholas et al (1990) found that IBS patients had increased levels of depression and pessimism, were more self centered and tended to use denial in coping with stress, as reflected by high MMPI scores on depression and hysteria scales. Though the difference between patients with functional gastrointestinal illness and healthy controls were statistically significant, the absolute differences were small, suggesting that these findings are of minimal clinical significance and personality is not causally related to functional gastrointestinal disease.

On the basis of this study the following conclusions can be drawn:

1. A significant number (though not all patients) of IBS have psychiatric morbidity.
2. IBS patients have significantly higher neuroticism and psychoticism scores on PEN inventory as compared to controls. This makes them prone to develop psychosomatic illness.
3. IBS patients have significantly higher scores on anxiety and depression rating scales.

### REFERENCES

- Almy, T.P. (1950) The IBS, Back to Square one. *Digestive Disease Sciences*, 25, 401-403.
- Beck, A.T., Ward, C.H., Mendelson, M., Mock, J. & Erbaugh, J. (1961) An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561.
- Bergeron, C.M. & Monto, G.L. (1985) Personality patterns seen in IBS patients. *American Journal of Gastroenterology*, 80, 448-451.
- Dinan, T.G., O'Keave, V., O'Boyle, C., Chua, A. & Keeling, P.W. (1991) A comparison of the mental status, personality profiles and life events of patients with Irritable Bowel Syndrome and Peptic ulcer disease. *Acta Psychiatrica Scandinavica*, 84, 26-28.
- Desai, H.G. (1982) Irritable Bowel Syndrome. *Journal of Association of Physicians India*, 30, 351.
- Esler, M.D. & Goulston, K.J. (1973) Levels of anxiety in colonic disorders. *New England Journal of Medicine*, 288, 16-20.
- Eysenck, H.J. & Eysenck, S.B.J. (1976). *Eysenck Personality Questionnaire Manual*. San Diego, California: Edits/Educational and Industrial Testing Service.
- Fielding, J.E. (1977). The Irritable Bowel Syndrome. *Clinical Gastroenterology*, 6, 609-622.
- Gomez, J. & Dally, P. (1977). Psychologically mediated abdominal pain in surgical and medical out patient clinics. *British Journal of Psychiatry*, 1451-1453.
- Hamilton, M. (1969). Diagnosis and rating of anxiety. *British Journal of Psychiatry*, (special publication), 76-79.

- Hinlop, I.G. (1971). Psychological significance of Irritable Bowel Syndrome. *Gut*, 12, 452-457.
- Kapoor, K.K. (1985). Clinical profile of IBS. *Indian Journal of Gastroenterology*, 4, 15-16.
- Kingham, J.G.C. & Dawson, A.M. (1985). Origin of chronic right upper quadrant pain. *Gut*, 26, 783-785.
- Latimer, P.R. (1983). Irritable Bowel Syndrome. *Psychosomatics*, 24, 205-218.
- Liss, J.L., Alpers, D. & Woodruff, R.A. (1973). The irritable colon syndrome and psychiatric illness. *Diseases of Nervous System*, 34, 151-157.
- McDonald, A.J. & Bouchier, P.A.D. (1980). Non-organic gastrointestinal illness: a medical and psychiatric study. *British Journal of Psychiatry*, 136, 276-283.
- Menon, D.K. & Verma S.K. (1988) *Manual for Hindi PEN Inventory*. Varanasi: Rupa Psychological Centre.
- Moffic, H.S. & Paykel, E.S. (1975) Depression in medical inpatients. *British Journal of Psychiatry*, 126, 346-353.
- Nicholas, J.T., Sidney, F.P., Barbara, B., Colleen, K.T., Alan, R.Z. & Melton, L.J. III (1990). Relation among personality and symptoms in non ulcer dyspepsia and the IBS. *Gastroenterology*, 99, 327-333.
- Pimparker, B.D. (1971) Irritable Colon Syndrome. *Indian Practitioner*, 24, 65-71.
- Palmer, R., Stonehill, E. & Crisp, A. (1974) Psychological characteristics of the Irritable Bowel Syndrome. *Postgraduate Medical Journal*, 50, 416-419.
- Ryan, W.A., Kelly, M.G. & Fielding, J.F. (1984) The normal personality profile of Irritable Bowel Syndrome patients. *British Journal of Medical Science*, 153, 127-129.
- Rose, J.D.R., Troughton, A.H., Harvey, J.S. & Smith, P.M. (1986). Depression and functional bowel disorders in gastrointestinal outpatients. *Gut*, 27, 1025-28.
- Singh, R.K., Chandra, S. & Vig, J.C. (1991) A clinical psychiatric study of patients suffering from irritable bowel syndrome. *Indian Journal of Behavioral Science*, 1, 102-103.
- Sharma, M.P. & Chawla, Y. (1982) Irritable bowel syndrome. *Journal of Association of Physicians India*, 31, 163-166.
- Thornton, S., McIntyre, P., Murray-Lyon, I. & Gruzellier, J. (1990) Psychological and psychophysiological characteristics in irritable bowel syndrome. *British Journal of Clinical Psychology*, 29, 343-345.
- Welch, G.W., Hillman, L.C. & Pomare, E.W. (1985) Psychoneurotic symptomatology in the IBS: A study of reporters and non-reporters. *British Medical Journal*, 291, 1382-1384.
- Welch, G.W., Stace, A.H. & Pomare, E.W. (1984) Specificity of psychological profiles of irritable bowel syndrome patients. *Australia New Zealand Journal of Medicine*, 14, 101-104.
- Young, J., Alpers, D.H., Norland, C.C. & Woodruff, R.A. (1976). Psychiatric illness and irritable bowel syndrome. *Gastroenterology*, 70, 162-166.

Priti Arun\* MD, Senior Resident, Dept. of Psychiatry, PGIMER, Chandigarh; J.N.Vyas MBBS, DM & SP, Professor & Head, Dept. of Psychiatry, S.P. Medical College, Bikaner; R.R.Rai, MD, DNB (Gastroenterology), Associate Professor; Krishna Kanwal MD, Assistant Professor, Dept. of Psychiatry, S.M.S. Medical College, Jaipur; Chandra Shekhar Sushil MD, Assistant Professor, Medical College, Kota.

\*Correspondence: House No. 99, Sector 18/A, Chandigarh 160 018.