Summary & Conclusions:
This study was carried out in thirty patients with irritable bowel syndrome who were selected from those attending the gastro-enterology clinic, medical out-patient department and inpatients of the Dayanand Medical College & Hospital, Ludhiana. The main aims and objectives were:

1. To evaluate the organic, if any and functional (psychological) components of the illness.
2. To determine the psychological characters of the patients and
3. To assess the emotional stress factors in the genesis and perpetuation of the illness.

Only those patients were included in this study who did not have any organic disease as ruled out by a thorough physical examination and as investigated by routine blood examination, routine stool examination, barium enema examination and sigmoidoscopy. Each subject was then given a battery of psychological tests which included:

a. The Hamilton's Rating Scale for Depression,
b. The Maudsley Personality Inventory (MPI), and
c. PGI - Health Questionnaire-N₂(HQ-N₂).
All the patients also participated in a comprehensive interview with the psychiatrist to assess the mental status.

The results obtained in the present study may be enumerated as follows:

1. Most of the patients (63%) belonged to the age group from 21 to 40 years.
2. Out of the thirty patients studied, 23 were males and 7 were females.
3. Most of the patients had intermittent symptoms of the duration ranging from one to five years.
4. Two main clinical types of the syndrome were recognizable:
   (A) 'Spastic Colon', in which pain of colonic origin was present in all the patients while the bowel habit was variable - constipation, diarrhoea or normal constituting the sub-groups - 'Pain & Constipation', 'Pain & Diarrhoea' and Abdominal Pain respectively; and
   (B) 'Painless Diarrhoea', in which there was no abdominal discomfort.
The abdominal pain was usually localised in the periumbilical region (38%) and in lower abdomen (26%) or was generalised (22%). It was dull aching in 37% cases and of colicky type in 30% patients.

In 39% patients, the abdominal pain was relieved or decreased after the act of defaecation.

43% patients complained of passage of mucus along with stools, more commonly seen in 'Painless Diarrhoea' group patients.

On physical examination, some part of the colon was palpable and tender in eighteen (60%) patients.

Among the factors which appeared important in the genesis or precipitation of the symptoms of IBS, psychological factors stood prominent, at least one such factor being identifiable in 19 (63%) of the patients.

On sigmoidoscopy, increase in mucus secretion was observed in 13 (43%) cases.

On barium enema examination, decreased lumen of one or more segments of the colon (spastic segment) could be seen in 23 (77%) patients. The spastic segment revealed normal distensibility and appearances in the later films. Increased haustral markings were observed in 11 (34%) cases.
Post-evacuation radiographs showed acculated appearance of the colon in 9 (30%) cases, deficient mucosal pattern in 2 (6%) cases while normal appearances were obtained in 17 (57%) cases.

Out of the Hamilton's depressive symptoms, depressed mood was found in 25 (89%) patients whereas loss of interest in work in 18 (60%) and insomnia was found in 17 (57%) cases. Symptoms of hypochondriasis, agitation, and suicidal tendencies were found in 13 (43%), 12 (40%) and 11 (37%) patients respectively.

The means of the scores on the Hamilton's Depression Scale of the 'Spastic Colon' and the 'Painless Diarrhoea' groups were 14.91 ± 6.42 and 10.70 ± 5.99 respectively and the difference between these two means was found to be statistically significant. Also the difference of the mean values of the scores on the same scale of the 'Pain & Diarrhoea' and 'Painless Diarrhoea' sub-group patients i.e. 15.20 ± 4.07 and 10.70 ± 5.99 respectively, was found to be significant statistically. So it may be concluded that the patients having abdominal pain were significantly more depressed as compared to the patients who were not having any abdominal pain or discomfort. So our study confirms the relationship between depression and abdominal pain.
As per the "Health Questionnaire" (HQN), the mean values of the neurotic complaints of the 'Spastic Colon', 'Pain & Constipation', 'Pain & Diarrhoea', 'Abdominal Pain' and 'Painless Diarrhoea' sub-group patients were 24.43 ± 8.83, 23.00 ± 9.81, 31.20 ± 6.49, 21.66 ± 4.67 and 16.30 ± 3.89 respectively, which were higher as compared to that of the normal individuals (less than 9). So all the patients of IBS studied were found to be more anxious as compared to the normal population.

The mean of the scores of the "HUN-2 (PGI)" of the patients of 'Pain & Diarrhoea' sub-group (31.20 ± 6.49) differs significantly from those of the patients of 'Pain & Constipation' sub-group (23.00 ± 9.81), 'Abdominal Pain' sub-group (21.66 ± 4.67), and of 'Painless Diarrhoea' sub-group (16.30 ± 3.89) indicating that the patients having diarrhoea and pain were significantly more anxious than the patients having constipation or no abdominal discomfort. So it may be concluded that the symptoms of diarrhoea and pain are related to anxiety.

As per the "Maudeley Personality Inventory", patients of both the 'Spastic Colon' and 'Painless Diarrhoea' groups had means of scores 30.17 ± 11.03 and 27.43 ± 9.04 respectively on the neuroticism dimension, which were higher than the normal i.e., 19.89 ± 5. This suggests that all patients of IBS studied scored higher on
neuroticism dimension of personality as compared to the normal population.

The means of scores on neuroticism dimension of the 'Pain & Constipation', 'Pain & Diarrhoea', 'Abdominal Pain' and the 'Painless Diarrhoea' sub-groups were found to be 29.71 ± 13.99, 37.50 ± 4.27, 26.00 ± 4.61 and 27.43 ± 9.04, respectively. On statistical analysis of the above data, it was found that both the symptoms of diarrhoea and abdominal pain were related to higher scores on neuroticism dimension of personality but the patients having diarrhoea scored still more on this dimension as compared to the patients having pain. So this study establishes the relationship between diarrhoea and neuroticism dimension of personality.

As per MPI, on extraversion dimension of personality, the 'Pain & Constipation', 'Pain & Diarrhoea', 'Abdominal Pain' and the 'Painless Diarrhoea' sub-group patients scored 17.17 ± 6.18, 16.00 ± 2.01, 20.00 ± 5.65 and 22.90 ± 7.64 respectively which was less as compared to that of the normal population (24.91 ± 5), hence all the patients of 135 studied were introverted.
On doing statistical analysis of the above data, it was found that the patients who were having bowel disturbances associated with abdominal pain were significantly more introverted than the patients who had bowel disturbances alone. So our study establishes the correlation between the symptom of abdominal pain and extraversion dimension of personality.

Since all exhaustive investigative procedures including barium studies and sigmoidoscopy failed to reveal any organic pathology or etiological factor, it may be presumed that IBS has a psychological (functional) origin. This study shows that depression, anxiety and personality structure are the contributing factors in the etiopathogenesis of 'Irritable Bowel Syndrome', one of the most common gastrointestinal disorder.