ABSTRACT

Introduction

Abdominal pain and altered bowel habits in the absence of any recognized disease is known as Irritable Bowel Syndrome (IBS).

IBS is one of the most commonly encountered gastrointestinal disorders, and it is also one of the least understood, because it is not a disease but a syndrome composed of a number of conditions with similar manifestations. This is one of the “functional intestinal disorders” in which psychological assessment procedures could play a major role. According to Berkow and Fletcher (1992) IBS fits into a category of gastrointestinal (GI) illnesses in which a pathological condition is not present, poorly established or does not entirely explain the clinical state. IBS is described as a functional disorder because there is no agreed structural abnormality associated with it. It follows that there is no agreed pathophysiology in IBS (Dent, 2000). Hatch, Fisher and Rugh (1990) defined IBS as “…the presence of abdominal pain and altered bowel habits in the absence of any known pathophysiological symptoms and including symptoms of clinical anxiety and/or depression.”

In 1978, Manning and Colleagues reported a set of symptoms based criteria that they believed separated patients with IBS from those with structural diseases of the gastrointestinal (GI) tract, but some have suggested that this criterion may only be valid in women.

One of the difficulties in dealing with suspected IBS patients is the perceived ambiguity associated with establishing the diagnosis. In an effort to develop criteria for all functional gastrointestinal (GI) disorders,
intentional working teams were developed in 1990, and one team convened in Rome, Italy in 1991 to develop criteria specifically for the functional bowel disorders. This ‘Rome I’ criteria were difficult to apply, because of their relative complexity, using symptoms factor analysis, literature review, and further international consensus efforts, the ‘Rome I’ criteria were modified to the ‘Rome II’ criteria.

**Diagnostic criteria for IBS (Rome II criteria)**

1. At least 12 weeks, which need not be consecutive in the preceding 12 months, of abdominal discomfort or pain that has two out of three features:
   a. Relieved with defecation and / or
   b. Onset associated with a change in frequency of stool matter and / or
   c. Onset associated with a change in form (appearance) of stool.

   And

2. Symptoms that cumulatively support the diagnosis of IBS:
   a. Abdominal stool frequency (more than three bowel movements per day and less than three bowel movements per week).
   b. Abdominal stool form (lumpy, hard, loose, or watery).
   c. Abdominal stool passage (straining, urgency, feeling of incomplete evacuation).
   d. Passage of mucus and,
   e. Bloating or feeling abdominal ‘distention’.

**Symptoms**

IBS is a heterogeneous disorder with distinct symptoms presentations. Different subsets of IBS can be defined based on the dominant symptoms.
**Altered bowel habits:** The disturbance in bowel function is gradually progressive, eventually developing a characteristic pattern, which for most is one of alternating constipation and diarrhea, with one of these symptoms predominating. The frequency and quality of each symptom, although highly variable from individual to individual, are fairly consistent for a specific patient.

**Abdominal pain:** Abdominal pain is considered to be an important feature of IBS. IBS should not be diagnosed in the absence of abdominal discomfort or pain (Drossman, et al., 2000). It is the commonest symptom. According to Rome II criteria, abdominal pain or discomfort is a prerequisite clinical feature of IBS.

**Abdominal distention (bloating), belching and flatus:** Bloating or perceived abdominal distention is a common complaint in IBS. Belching and “excessive” flatus is also commonly reported. Abdominal bloating is particularly troublesome for IBS patients.

**Increased stool mucus:** Increased stool mucus is often seen in IBS. The amount of mucus produced by patients with IBS is variable and its pathogenesis obscure. In some instance it goes unnoticed until question draw attention to it, whereas in others it is prominent enough to cause concern to the patient.

**Non colonic gastrointestinal symptoms:** IBS is accompanied by numerous symptoms referable to other sections of the gastrointestinal tract. Dyspepsia, heartburn, pyrosis, nausea, vomiting and esophageal symptoms these clinical features can help support the diagnosis of IBS but in themselves are not diagnostic (Keeling and Fielding, 1975; Watson, et al., 1976; Costantini, et al., 1993).
**Extraintestinal symptoms:** Although gastrointestinal symptoms predominate, extraintestinal complains are common in IBS. Patients with functional bowel disorders have higher incidences of peptic ulcer disease, hypertension, low back pain, headaches, and rashes than the general population and more commonly reported fatigue, loss of concentration, insomnia, palpitations and unpleasant tastes in the mouth (Whitehead, et al., 1982; Whorwell, 1986; Crouch, 1988).

**Psychological features and stress:** In 85 percent of patients, psychologic factors either precede or coincide with the onset of gastrointestinal complaints and in only 15 percent do the gastrointestinal complaints come first (Hislop, 1971; Wangle, et al., 1965).

**Inciting events:** Clearly, there may be an association between exacerbations of IBS and stressful or anxiety provoking experiences. Food intolerances mean ingestion of specific foods, such as wheat and milk products, as well as alcohol caffeine-containing beverages, or cigarette smoking may also play a role (Whitehead, et al., 1990).

**Justification**

The investigator found that IBS has an increasing prevalence rate in adolescents. For example a population based study of 507 middle school and high school students by Hyams, et al. (1996) indicated that 6-14% of the adolescent population note symptoms consisted with IBS. Only medication is not sufficient for its treatment. If, psychological interventions are also used along with medication, treatment could be more effective. The etiology of irritable bowel syndrome (IBS) tends to be complex and multi-factorial and there is still a lack of understanding.
of how different psychosocial factors are associated with the syndrome. So there is an ample scope for study on the psychological aspects of IBS. It is also observed that very few research work have been done on the subject in India and whatever explained by these researches, mainly focused more or less on anxiety, depression and stress. For the better understanding of these people with IBS, it is very much needed to fill the gap by carrying out a research in this particular field. In the present study efforts has been made to identify some psychosocial factors as the causes of IBS.

**Objectives of the study**

1. To find out the contribution of emotional maturity in the development of IBS among adolescents.

2. To find out the contribution of parenting style in the development of IBS among adolescents.

3. To find out the contribution of socio-economic status in the development of IBS among adolescents.

4. To study and compare IBS and Non–IBS adolescents with regard to some psychological variables such as emotional maturity, parenting styles of mother and father and marital conflict or adjustment of their parents.

5. To study and compare IBS and Non–IBS adolescents with regard to an important social variable i.e. socio-economic status.

In order to achieve the objectives and to carry out the research in a scientific manner the investigator have postulated certain hypotheses.
Hypotheses

On the basis of previous research findings in this area, expert’s opinion and personal experiences, the following hypotheses were formulated for empirical testing:

1. Emotional maturity will significantly contribute to the development of IBS among adolescents.

2. Parenting style will significantly contribute to the development of IBS among adolescents.

3. Socio-economic status will significantly contribute to the development of IBS among adolescents.

4. IBS and Non IBS groups will differ significantly with regard to their emotional maturity, in terms of:
   - Emotional instability/ Stability
   - Emotional regression/ Progression
   - Social maladjustment/ Adjustment
   - Personality disintegration/ Integration
   - Emotional dependence / Independence

5. IBS and Non IBS groups will differ significantly with regard to their perception of parenting style of mother, in terms of:
   - Rejection Vs. Acceptance
   - Carelessness Vs. Protection
   - Neglect Vs. Indulgence
   - Utopian expectation Vs. Realism
   - Lenient standards Vs. Moralism
   - Freedom Vs. Discipline
   - Faulty role expectation Vs. Realistic role expectation
6. IBS and Non IBS groups will differ significantly with regard to their perception of parenting style of father, in terms of:
   - Rejection Vs. Acceptance
   - Carelessness Vs. Protection
   - Neglect Vs. Indulgence
   - Utopian expectation Vs. Realism
   - Lenient standards Vs. Moralism
   - Freedom Vs. Discipline
   - Faulty role expectation Vs. Realistic role expectation
   - Marital conflict Vs. Marital adjustment of parents

7. IBS and Non IBS groups will differ significantly with regard to their socio-economic status.

The problem

The problem of the present research was stated as-

“To study the psychosocial correlates of irritable bowel syndrome (IBS) among adolescents.”

Variable of the study

Independent variable – Three independent variables named emotional maturity, parenting style and socioeconomic status of the respondents have been selected for the present investigation.

- Emotional maturity - The first variable called as emotional maturity comprised of five distinguished dimensions i.e. emotional instability/stability, emotional regression/progression, social maladjustment/adjustment, personality disintegration/integration, and emotional dependence/independence.
• **Parenting style** - The second variable named parenting style comprised of eight distinguished dimensions i.e. Rejection Vs. Acceptance, Carelessness Vs. Protection, Neglect Vs. Indulgence, Utopian Expectation Vs. Realism, Lenient Standard Vs. Moralism, Freedom Vs. Discipline, Faulty role expectation Vs. Realistic role expectation and Marital conflict Vs. Marital adjustment.

• **Socioeconomic status** - The third variable was socioeconomic status which comprised of education, occupation, income, and caste of the parents of the respondents.

**Dependent variable** – Irritable bowel syndrome (IBS) has been selected as dependent variable.

**Sample**

In the present study a total sample consisted of 200 adolescents in which half of the sample (N=100) was based upon the respondents of IBS and other half (N=100) was based upon the respondents of Non-IBS. The age range of the respondents was 13-18 years. The sample was selected by the use of purposive sampling technique for IBS and random sampling technique for Non-IBS respondents. Further, Students having IBS were screened out on the basis of diagnostic criteria, which were found only in ten schools out of fourteen CBSE schools located in Meerut city proper. Then with the help of the roll list, taken from the class teacher, the investigator randomly selected equal non-IBS counterparts from that particular class in which IBS respondents were found.
Measuring Tools

In the present research following tests and materials were used:

1) **Questionnaire based on Rome II criteria**: A questionnaire based on Rome II criteria was prepared and used to assess the IBS among the adolescents. It has two forms – male and female. Male form contains 6 items and female form contains 7.

2) **Emotional Maturity Scale**: Emotional Maturity Scale by Y. Singh and M. Bhargava (1998) was used to measure the emotional maturity of adolescents. Authors of the present scale, prepared a list of Five factors of emotional maturity which is given below:
   a) Emotional Stability.
   b) Emotional Progression.
   c) Social Adjustment.
   d) Personality Integration.
   e) Emotional Independence.

3) **Parenting Scale (P-Scale)**: Parenting Scale (P-Scale) by Dr. R. L. Bharadwaj, H. Sharma and A. Garg (1998) was used to measure the perception towards parenting style. Eight parenting models have been included in the present scale which may be enumerated as under:
   a) Rejection Vs. Acceptance
   b) Carelessness Vs. Protection
   c) Neglect Vs. Indulgence
   d) Utopian expectation Vs. Realism.
   e) Lenient standard Vs. Moralism.
   f) Freedom Vs. Discipline.
   g) Faulty role expectation Vs. Realistic role expectation.
h) Marital conflict Vs. Marital adjustment.

4) Socioeconomic Status Inventory: Socioeconomic Status Inventory by Dr. A. C. Vashishtha was used to measure the social standing or social position of the respondents. To assess socioeconomic status of the respondents, four criteria were taken in this inventory.
   a) Education
   b) Occupation
   c) Income
   d) Caste

Scoring

Scoring of the responses given in screener was done according to Rome II criteria and scoring of all three tests was done according to the instructions given in respective manuals. They are as below:

1. Questionnaire based on Rome II criteria: The scoring method of the questionnaire is as follows -

   • **Female form:** If response on item no. 1 is ‘yes’, on item no. 2 is ‘no’, on item no. 3, ‘yes’ on any one out of first four categories, on item no. 4 response is ‘yes’ and, ‘yes’ on at least two of item no. 5-8, IBS is diagnosed. (compulsory ‘yes’ on item 1 and at least two of 4-6)

   • **Male form:** If response on item no. 1 is ‘yes’, on item no. 2, ‘yes’ on any one out of first four categories, on item no. 3 response is ‘yes’ and, ‘yes’ on at least two of item no. 4-7, IBS is diagnosed. (compulsory ‘yes’ on item 1 and at least two of 3-5)

2. Emotional Maturity Scale: Items of the scale are in question form demanding the information for each in either of the five options
mentioned below: -

Very much   much   undecided   probably   never

The items are so stated that if the answer is very much a score of 5 is given; for much 4; for undecided 3; and for probably 2 and for negative answer of never a score of 1 is to be awarded. Therefore the higher the score on the scale, greater the degree of the emotional immaturity and vice-versa.

3. Parenting Scale (P-Scale): The scoring of this parenting scale is of quantitative type and is based on five point scale as suggested by Likert. The scoring and determination of mothering and fathering as well as parenting is a complex one and the following things are to be kept in mind at the time of scoring the scale: -

- Each item of the scale is to be scored from upper to lower in terms of 1, 2, 3, 4 and 5. The scoring of item number 4, 11, 18, 25 and 32 will be in reverse order (i.e. 5, 4, 3, 2, 1).

- The obtained scores are to be transferred on the last page at the space divided for both the parents and are to be added vertically to determine the raw score for mothering and fathering separately for different modes of parenting.

4. Socioeconomic Status Inventory: Scoring of socioeconomic inventory is as follows- item number 1 and 3 is to be scored from upper to lower in terms of 1, 2, 3, 4 and 5. The scoring of item number 2 and 4 will be in reverse order (i.e. 5, 4, 3, 2, 1).

Administration
In the present study data was collected in two sessions. The first session was conducted in group situation to identify students with IBS. After taking due permission of the School authorities, the investigator met the students class wise. Thereafter forming rapport with the students by giving a short orientation about the research and the test, a questionnaire based on Rome II criteria was distributed to screen out the students with IBS, after getting their consent. At the time, when the students of a particular class were undergoing the test, the investigator was present to sort out any misconception or problems. The screener was applied on all the students of class 9 to 12. In the same manner data was collected from fourteen C.B.S.E. schools of Meerut city.

The screener was administered on total 3808 students of class 9 to 12 from these schools.

Students having IBS were screened out on the basis of the diagnostic criteria, which were found only in ten schools out of fourteen schools. Then with the help of the roll list, taken from the class teacher, the investigator randomly selected equal non-IBS counterparts from that particular class in which IBS respondents were found.

The second session was also done in a group situation with IBS respondents and their counterparts selected in the sample, both the groups were tested separately and data was collected on the rest of the three tests i.e. emotional maturity scale, parenting scale and socioeconomic inventory. The Investigator after orienting, gave instructions and respondents were told to fill the tests. The investigator was present to sort out the problems and misconception regarding any of the questions of the tests. When all the respondents had completed, the tests were collected and they were thanked for their cooperation.
The same procedure was followed in rest of the schools. This procedure was followed till the responses of all 100 IBS respondents and 100 non-IBS counterparts were collected. After collecting all the data from each school, with the help of scoring methods mentioned in manual of each test, scoring was done and data was tabulated.

**Experimental design and Statistical analysis**

After collection, the data was processed and analyzed in accordance with the outline laid down for the purpose at the time of developing the research plan. The purpose of the study was to find the predictors of IBS. In the present investigation, three psychosocial variables (emotional maturity, perception of parenting style and socioeconomic status) were selected as independent variables. Research was designed to examine the relationship between the predictor variables and the criterion variable and to find out predictors of irritable bowel syndrome. For statistical analysis of data, multiple regression was used. Since, the researcher had also hypothesized that there will be a difference between IBS and non-IBS group, t-test was used to test these hypotheses and to compare two groups (IBS and non IBS).

**Major findings**

All the hypotheses made earlier were subjected to empirical testing and findings of the present study are summarized as follows:

First hypothesis, that emotional maturity will significantly contribute in the development of IBS among adolescents, proved partially correct and the investigator found a significant contribution of
two dimensions (viz. emotional stability and social adjustment) of emotional maturity out of five dimensions in the development of IBS.

Second hypothesis, that parenting style will significantly contribute in the development of IBS among adolescents, proved incorrect. It means that the investigator did not find any of the dimensions of parenting style significantly contributing in the development of IBS.

Third hypothesis, that socio-economic status will significantly contribute in the development of IBS among adolescents, proved incorrect. Result shows that the investigator did not find significant contribution of socioeconomic status in the development of IBS among adolescents.

Fourth hypothesis, that IBS and non-IBS groups will differ significantly with regard to their emotional maturity, proved correct for all the components of emotional maturity. Result showed that IBS group has significantly greater mean score on emotional instability, emotional regression, social maladjustment, personality disintegration and emotional dependence than the mean score of non-IBS group. As higher scores reflect emotional immaturity, it indicates that there is a positive relationship between emotional immaturity and IBS. If emotional immaturity is high there is high chances of developing IBS. All dimensions of emotional maturity have significant correlation with IBS which is also in support of present findings.

Fifth hypothesis, that IBS and Non-IBS groups will differ significantly with regard to their perception of parenting style of mother, proved partially correct. On some dimensions namely Rejection Vs. Acceptance, Lenient standard Vs. Moralism and Faulty role expectation
Vs. Realistic role expectation, the investigator found that IBS group has significantly lower mean scores on these dimensions in comparison to non-IBS group. It means that respondents with IBS perceive the behaviour of their mother as negative towards them and it affects them adversely. Therefore, hypotheses made in this context were accepted. But on Carelessness Vs. Protection, Neglect Vs. Indulgence, Utopian expectation Vs Realism and Freedom Vs. Discipline dimensions, no significant difference was found between the two groups. Therefore hypotheses made in this regard were rejected.

Sixth hypothesis, that IBS and Non-IBS groups will differ significantly with regard to their perception of parenting style of father, also proved partially correct. On some dimensions namely, Neglect Vs. Indulgence, Utopian expectation Vs. Realism, Lenient standard Vs. Moralism and Faulty role expectation Vs. Realistic role expectation and Marital conflict Vs. Marital adjustment of their parents. The investigator found that IBS group has significantly lower mean scores on these dimensions in comparison to non-IBS group. It means that respondents with IBS perceive the behaviour of their father as negative towards them and also perceive their parents as having more marital conflicts which affects them adversely. Therefore, the hypotheses made in this regard were accepted. But on Rejection Vs. Acceptance, Carelessness Vs. Protection and Freedom Vs. Discipline dimensions, no significant difference was found between the two groups. Therefore hypotheses made in this regard were rejected.

On the whole, findings related to parenting styles of mother and father are summarized as follows:
Two groups (IBS and Non-IBS) were compared on fifteen dimensions of parenting style of mother and father and out of these only on eight dimensions (i.e. Rejection vs. Acceptance (m), Lenient standards Vs. Moralism (m), Faulty role expectations Vs Realistic role expectation (m), Neglect Vs. Indulgence (f), Utopian expectations Vs. Realism (f), Lenient standards Vs. Moralism (f) Faulty role expectations Vs Realistic role expectation (f) and Marital conflict Vs. Marital adjustment of parents) difference between both the groups (IBS and Non-IBS) was found significant. The significant two group difference indicates that IBS group perceives their parents as having more negative modes of parenting styles than their counterparts. The present findings are in expected direction and are also supported by correlation coefficient reported in table no. 4.01, which indicates that these dimensions of parenting style of mother and father have significant correlation with IBS. But, even then these dimensions did not emerge as predictor of IBS. The possible reason for this variation is that in correlation, variables influence each other and due to these influences they may reflect as significant but when in multiple regression, the influence of each variable on the other is partialled out, the true relationship emerge and their contribution was not found significant. Though these dimensions did not emerge as predictors but, significant correlation and two group difference suggest the possible role of these dimensions in the development of IBS and adolescents exposed to such negative modes of parenting style are at risk.

On the other hand, rest of the dimensions i.e. Carelessness Vs. Protection (m), Neglect Vs. Indulgence (m), Utopian expectations Vs. Realism (m) Freedom Vs. Discipline (m), Rejection vs. Acceptance (f), Carelessness Vs. Protection (f) Freedom Vs. Discipline (f) were not significantly correlated with IBS, the difference between both the groups
were not found significant and these dimensions did not emerge as predictor also. So the findings are consistent with each other. But the findings are not found in expected direction. So, to resolve this conflict and to reach on some conclusion more studies are needed in this direction. Therefore, it is recommended for further testing and verification.

Seventh hypothesis, that IBS and Non-IBS groups will differ significantly with regard to their socio-economic status, proved incorrect as the investigator has not found any significant difference between the two groups. Although the mean score of IBS group is greater than non IBS group but this difference is negligible. It means socioeconomic status of parents has no effect on IBS.

Conclusion

1. Two dimensions of emotional maturity (i.e. Emotional instability and Social maladjustment) significantly contributes in the development of IBS as shown in result that their contribution is 18 percent in the development of IBS.

2. Parenting style is not contributing significantly in the development of IBS

3. Socioeconomic status has no significant contribution in the development of IBS

4. Adolescents with IBS significantly differ from Non-IBS group with regard to their emotional maturity. It is evident from the result that on all the dimensions of emotional maturity mean score of IBS group is
higher than the mean score of non-IBS group. It means IBS group is emotionally more immature than non-IBS group.

5. Though effect of carelessness, neglect, utopian expectations, and freedom by mother has been found non-significant, rejection, lenient standards and faulty role expectations by mother significantly affects the development of IBS among adolescents.

6. Neglect, utopian expectations, lenient standards and Faulty role expectations by father affects significantly but rejection, carelessness and freedom has no significant effect in the development of IBS among adolescents.

7. Marital conflict between parents has negative effect on adolescents and significantly affects the development of IBS among them, as the mean score of IBS group was found significantly lower than non-IBS group.

8. Socioeconomic status of parents has no significant effect in the development of IBS among adolescents as significant difference was not found between both the group (IBS and non-IBS).

It can be said that findings of the present study are very encouraging. As the review of literature indicated uncertainty about the possible causes of IBS, the present study turned out to be successful in finding out two predictors of IBS among adolescents which is the strength of the present study. Both the predictors are related to emotional maturity and it’s a well known fact that emotional maturity could be enhanced so it could be possible to control the onset or development of IBS among adolescents due to their emotional immaturity. So, the present findings would be of great help to
understand the possible causes of the development of IBS and also help in its prevention.

Significant difference between IBS and Non-IBS adolescents on some dimensions of parenting styles of mother and father as well as on marital conflict Vs. marital adjustment of their parents indicates that these dimensions significantly affect the development of IBS among adolescents though they did not emerged as predictors. So, scope for more probing and research in this area has emerged.

Total number of students on which the screener was administered was 3808, from which 100 students with IBS were identified, thus claiming a ratio of 1:38. The percentage of IBS in the selected sample is 2.63%. This percentage is quite alarming and indicates that IBS is prevailing among adolescents.

Most of the studies done in this area were comparative studies related to personality and pathological condition of the IBS patients. But the present study was aimed at finding out the predictors and possible contributors of IBS in which it succeeded to some extent.

Most of the studies in this area were done on adult population but in the present study an effort has been made to study the IBS among adolescents and this is the another strength of the present research. Knowledge about the possible predictors would be of great help in early identification of IBS and preventing it at an earlier stage thus reducing the incidence of IBS in adults.

The present study, inspite of encouraging and expected findings, has limited focus. It is based on limited data as it was done on a sample of 200 adolescents of C.B.S.E. school from Meerut city, it could be
replicated on a larger sample to verify the findings. As the study clearly indicates that Irritable Bowel Syndrome is prevailing among adolescents so the study needs to be carried out in rural, semi urban and metropolitan settings and with students from other than C.B.S.E. board. Gender difference should be examined with regard to IBS in Indian context. Some attempts should be made to explore the role of motives such as social approval and achievement motives, academic achievement, self- esteem and coping styles also. Some results which were not found in the expected direction could be reassessed for further verification.

Inspite of certain limitations in the present study, it may prove a guideline for future researchers in this area.
REFERENCES


