CHAPTER - III
METHODOLOGY

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This chapter focuses on the aims and objectives of the study and the research design which includes the various variables that have been considered, hypotheses, the tools used, the procedure for data collection and the statistical analyses done for the study.

Aim of the study :

As described earlier the main problem of the present research was to study the correlation between Acid - Peptic Disease (APD) and Irritable Bowel Syndrome on the one hand and alexithymia and psychological factors on the other.

Objectives of the study :

Following were the main objectives of the present study

1 To make a comparative study of the Alexithymic characteristics in APD and IBS

2 To study the relationship between Extroversion – Introversion and Neuroticism factors with APD and IBS.

3 To ascertain the relationship between certain psychological variables of the individuals suffering from APD & IBS with their symptoms These psychological variables included :

- Adjustment,
- Anxiety, and
- Depression

4. To find out whether the male patients and female patients differ with reference to Alexithymia, Extroversion – Introversion and Neuroticism factors, adjustment, anxiety and depression.
5 To know whether the normal population differs from the clinical population on the factors under study.

Variables

As this study was not a cause – effect based study, there were no specific independent or dependent variables However, the variables under study were as follows

Alexithymia, Personality dimensions (Neuroticism, Extraversion – Introversion), Adjustment, Anxiety and Depression.

Alexithymia

The term "Alexithymia" was coined by Sifneos (1972), it has been derived from the greek language where 'a' = lack; 'lexis' = word and 'thymos' = emotion. It refers to specific disturbance in psychic functioning characterized by difficulties in the capacity to verbalize affect and to elaborate fantasies

Alexithymia refers to affective deficits in, differentiating, identifying and communicating one's feelings and to a cognitive style marked by concrete, utilization, externally focused thought rather than introspection, fantasy and day dreaming. It is observed that the prevalence of alexithymia is substantially higher among the patients who suffer from various pain, psychological and psychiatric disorders as compared to healthy control group individuals

Adjustment

In a general way, adjustment is a concept known to most of us. There are however, different ways of adjusting, most of which a healthy body does for us automatically

Adjustment may be defined as the process of interaction between the individual and his environment for the sake of bringing harmony between them by any means. No person is cent percent adjustable, but majority of the people are adjustable to the situation wherever they are. The failure of coping effort on biological, socio-cultural and emotional levels may impair an individual's adjustment on other levels.

Dimensions of Personality – Neuroticism, introversion and Extroversion

As defined by Allport "Personality is the most dynamic organization within an individual of these psychophysical systems that determine his unique adjustment to the environment."

Neuroticism, stability, introversion and Extroversion are the dimensions of personality and these tendencies are found in the persons who are neurotic, introverted and extroverts respectively. The former terms go with the latter characteristic of any individual

Neuroticism is a minor maladjustment and may not aggravate. But if it does aggravate than this may lead to neurosis.

Introversion is an attitude of introverts where the mental tendencies are directed inwards. In any given interaction the energy focus flows inwardly first and then to the outer reality.

Extraversion is an attitude of extroverts where the mental tendencies are directed primarily to the outer object In any given interaction the energy focus flows to the outer object first and then to the inner reality.

Anxiety

The term anxiety has been derived from the Latin word 'Angustus' meaning narrow or constricted and 'Ango anxi' meaning to bind, draw, throttle or strangle. Drever (1958) has defined Anxiety as "A chronic complex emotional state with apprehension or dread as its most prominent component characteristics of various nervous and mental disorders "

According to May (1950), anxiety is "the apprehension cued off by a threat to some value which the individual holds essential to his existence as a personality."

As observed by Sinha (1962) anxiety is fast becoming a part of the contemporary Indian scene. However, Daftuar (1972) expressed doubt on some measures of anxiety including Taylor's manifest Anxiety scale.

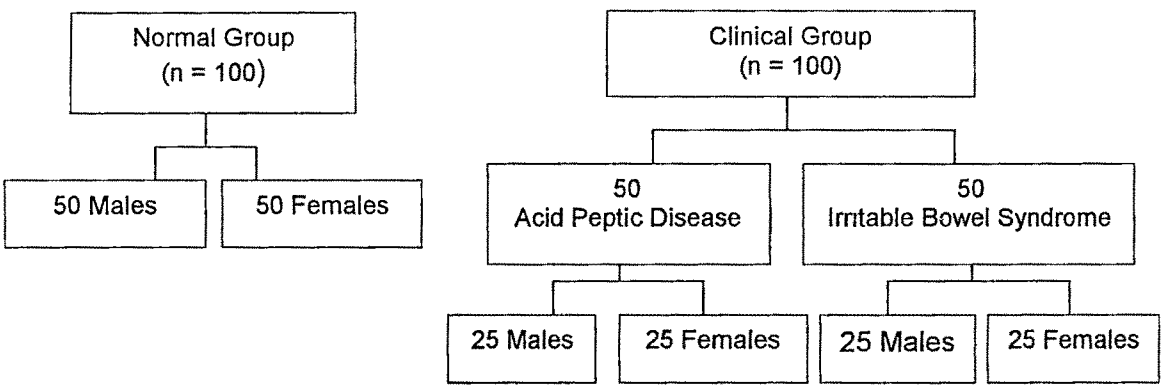
Depression

All of us, at some point of time in our lives, have experienced depression. Words like grief, sadness, pessimism, unhappiness, loneliness, etc., are used to convey depressive feelings. Breaking of traditional values and blind aping of the Western culture also has affected the Indian society adversely. Under such circumstances, anyone can fall an easy prey to depression.

Coleman (1981) has defined depression as "an emotional state characterized by extreme dejection, gloomy rumination, feelings of worthlessness, loss of hope and often apprehension".

Sample

The sample for the study consisted of individuals coming from different walks of the society for treatment to the State General Hospital of Baroda It consisted of 200 adults who were classified into normal and clinical groups.



Hypotheses

Since the present research was basically a correlational study, no specific hypotheses were made However, the following major Null – hypotheses were formulated.

1. There will be no significant difference in terms of alexithymic characteristics between the normal group and clinical group.
2. The normal group and clinical group would not differ significantly in their levels of adjustment.
3. The normal group and clinical group will not differ significantly in terms of extraversion - introversion and neuroticism dimensions of personality

4. The normal and clinical group would not differ significantly in their level of anxiety
5 The normal group and clinical group will not differ significantly in terms of their depression levels
6. The normal and clinical groups would not differ in alexithymic characteristics with respect to their gender.
7. There would be no significant difference in alexithymic characteristic with reference to the interaction between gender and the normal and clinical groups.
8. The normal and clinical groups would not differ significantly in their adjustment levels in terms of gender.
9. There would be no significant difference in adjustment levels with respect to the interaction between the normal and clinical groups, respectively, with gender
10. The normal and clinical groups would not differ in extraversion - introversion and neuroticism dimensions of personality with respect to gender
11. There would be no significant difference in extraversion – introversion and neuroticism dimensions with respect to the interaction between the normal and clinical groups, respectively, with gender.
12. There would be no significant difference in the anxiety levels of the normal and clinical groups in terms of gender.
13. There would be no significant difference in anxiety levels in terms of the interactions of the normal and clinical groups respectively with gender.

14 The normal and clinical groups would not differ significantly in their depression levels with respect to gender.

15. There would be no significant difference in depression levels, in terms of the interaction of normal and clinical groups, respectively, with gender.

Tools

The tools used for this research were as follows.

1 The 20 items Toronto Alexithymia Scale (TAS-20) (Bagby, et al, 1994)

2. Maudsley Personality Inventory (MPI -1) (Jalota and Kapoor, 1964,1965)

3 Bell adjustment Inventory (BAI) (Mohsin and Shamshad, 1970)

4 Hamilton Anxiety Scale (HPS) (Hamilton,1993)

5 Beck's Depression Inventory (BDI) (Beck, et al, 1961)

Toronto Alexithymia Scale (TAS – 20)

The twenty items Toronto Alexithymia Scale (TAS –20) is a self report measure of the alexithymia construct that was developed by Taylor, et al (1992), in an attempt to improve the psychometric properties for the original twenty six item version of the scale. The TAS – 20 comprises of 20 items that are categorized on the basis of three dimensions, viz ,

1. Difficulty in identifying and distinguishing between feelings and bodily sensations,
2. Difficulty in describing feelings, and
3. Externally Oriented Thinking

Item selection

To extract a new set of items from the items pool used to create the TAS-R, 965 students attending a large Canadian University were taken as subjects. This sample (derivation sample) consisted of 389 males and 576 females with a mean age of 21 8 years

In order to examine and explicate the relationships between the existing factors of the TAS, an additional seventeen items were written and added to the original twenty six items. Seven of these new items were written to reflect the imaginal processing compound of the alexithymia construct, two of these seven items referred to day dreaming and five assessed other kinds of imaginal activity. Of the remaining ten new items, five items had content relevant to externally oriented thinking and five items had content related to communicating feelings to others.

Four sub-scales were derived on the basis of previous factor analysis of the original twenty-six items as well as rational theoretical considerations and the content relevancy of the seventeen newly written items. In total, four hypothesized facets (i e. content domains) of the alexithymia construct, viz, identifying feelings communicating feelings, imaginal processing and externally oriented thinking were represented by a pool of forty-three items each presented in a five-point Likert type rating format.

All the forty - three items were examined for their relationship with social desirability. They were correlated with the Marlowe – Crowne social Desirability Inventory. Any item that correlated ≥ 0.20 was deleted. The items were also examined for homogeneity of content with respect to their specific facet of the

alexithymia construct. For this phase of the analysis, items were retained if they revealed adequate correction. Item total correlations (≥ 0.20) with the other items assessing the same facet of the construct and adequate corrected item total correlations (≥ 0 20) with the remaining items on the other content domains Finally, twenty-four items remained. These were inter-correlated and subjected to a series of factor analyses (principal axis factoring, varimax rotation) Items were retained as meaningful to the construct if they loaded significantly (≥ 0.35) on one and only one of the rotated factors. This was done corresponding to the three homogenous content domains. The three factors were then rotated to a varimax solution.

Examination of the factor loadings for the three factor solution revealed that four of the twenty -four items failed to load significantly (≥ 0 35) on any one of the three obtained factors. These items were eliminated. Eventually twenty items remained, these formed the 'Twenty item Toronto Alexithymia Scale' (TAS-20).

Internal Consistency and Reliability :

The TAS-20 demonstrates an acceptable internal consistency. (Cronbach's alpha = 0.81) with the derivation sample, as did each of the three factors (Factor 1 = 0.78, Factor 2 = 0.75 and Factor 3 = 0 66). There was a small but statistically significant difference between the mean TAS –20 score for men (Mean = 51.14, S.D = 10.40) and the mean score for women (Mean = 48.99, S D = 11 48) [t (964) = 2 96, p < 0 01]

There was a low magnitude correlation between TAS – 20 scores and age (r = -0.13, p < 0 01)

The test-retest reliability of the TAS – 20 was examined with a separate sample of 72 students (24 males and 48 females). The mean age for this sample was 20.8 years. The test – retest reliability was found to be 0.77. Examination of the endorsement pattern frequency for each of the twenty items revealed no evidence of skewness for any of the items. Five of the items are negatively keyed

Validity:

Two separate college student samples were used to assess the convergent and discriminant validity of the TAS-20. The first sample consisted of eighty five under graduate students (28 males and 55 females) attending a large Canadian University. The mean age was 21.47 years. The second sample consisted of 83 undergraduate students (28 males 61 females) from the same university. Their mean age was 25.41 years.

The evaluation of convergent and discriminant validity was done by correlating the TAS – 20 with several self report measures of traits theoretically related to alexithymia (convergent validity) as well as traits presumably unrelated to the construct (discriminant validity).

The concurrent validity of the scale was assessed by taking a behavioral medicine sample This sample consisted of thirty nine patients (14 males and 25 females) who were referred for assessment and possible treatment in the Behavioral Medicine Out patient Clinic of a large metropolitan hospital The

patients were randomly selected, their diagnosis being primarily anxiety disorders, somatoform disorders or somatic diseases traditionally regarded as psychosomatic. The age range was from 20 to 66 year. With this sample, the inter-rater agreement among three clinicians for the modified twelve item Beth Israel Hospital Psychosomatic Questionnaire (BIQ) was statistically significant [Kappa = 0.510] To assess the concurrent validity of the TAS - 20 and its three factors, the patient's scores were correlated with the mean score of the three clinicians for the twelve items BIQ and for the two six item subscales rating affect awareness and operatory thinking. The TAS – 20 and its three factors showed positive correlations with the total BIQ scores.

Table 3 : Correlations of the TAS – 20 and factor scales with interviewer ratings on the Beth Israel Hospital Psychosomatic Questionnaire.

BIQ	TAS – 20	F1	F2	F3
Total Score	**0.53 ****	**0.36 ***	**0.57 ****	**0.30 ***

- P < 0 05, ** P < 0.01

Scoring :

The TAS – 20 has 20 items pertaining to three domains or factors viz,

Factor 1 = Difficulty identifying feeling

Factor 2 = Difficulty describing feeling and

Factor 3 = externally oriented thinking.

Factor 1 comprises of seven items, Factor 2 comprises of five items and Factor 3 comprises of 8 items. These items are scored on a five-point Likert type rating format Items 4,5,10,18 and 19 are negatively keyed.

However, for the present research the response pattern was modified and comprised of only 'Yes' or 'No' categories This was done, because the main intention was just to judge the presence or absence of alexithymia and not its extent Accordingly, all the twenty items of the three dimensions/factors i.e. difficulty in identifying and distinguishing between feelings and bodily sensations, difficulty in describing feelings and externally oriented thinking are scored as zero or one. The maximum score possible is twenty. A score of five or less than five implies absence of alexithymia. While higher the score (>5) greater is the degree of alexyhimia

Maudsley Personality Inventory (MPI 1) :

The Maudsley Personality Inventory (MPI) developed by H J. Eysenck (1947) is a well known tool employed for testing the degree of neuroticism – stability and introversion – extraversion It's Hindi prima facie equivalent version was developed by Jalota and Kapoor (1964, 1965).

The Hindi version of the MPI – I asseses the dimensions of Neuroticism-stability and introversion – extraversion, It is suitable for normal and abnormal adults, and also for adolescents. The vocabulary required is that of the average newspaper. Although no time limit is enforced in testing, the short scale takes about 3 to 5 minutes, while the long scale takes about 15 to 20 minutes. There are 48 items in this Inventory. Items 1 to 12 constitute the short scale while all the 48 items of the inventory constitute the long scale. Each of these items is answerable as either 'Yes', 'No' or '?'.

Sample :

150 Post graduate students (75 male and 75 female) were taken as the standardization sample

Scoring :

Responses on each item are scored as per the distribution of items in long and short scales These are depicted in the following table.

Table 4 : Distribution of items in the Neuroticism and Extraversion dimensions of the long scale of the M.P.I

Dimensions	Item Number	Total Number of Items	Maximum Raw Scores	Correct Response Direction.
Neuroticism in Long scale	2,3,6,7,10,11,13, 15,17,19,21,23,25, 27,29,31,33,35,37, 39,41,43, 45and 47	24	48	'Yes'
Neuroticism in Short Scale	2,3,6,7,10 and 11	6	12	'Yes'
Extraversion In Long Scale	1,4,5,8,9,12, 20,26,28,32, 34,38,42,44, 46,48	16	32	Yes
	14,16,18,22, 24,30,36 and 40	8	16	'No'
	Total	24	48	
Extraversion in short Scale	1,4,5,8,9 and 12	6	12	'Yes'

As shown in the table the 48 items of the inventory are distributed among two personality dimensions. Each item has three response alternatives scored 0,1,2 from neuroticism and extraversion and any single item contributes to only one of the two dimensions The total composite neuroticism or extraversion score is simply the sum of raw scores on all 24 items in the two dimensions All the items answerable in the category "yes" are given a weightage of 2 scores (excepting 8 items which are scored as 2 only when answered as "No") and all "?" answers with one score. The response directions of correct answer are given in the earlier table The raw scores are then converted into standard scores to compare the degree of neuroticism and extraversion with the norms. These standard scores are shown in a distribution of M = 50 and S.D = 10 The formula for conversion of raw to standard score is as follows. (Garret, 1958)

$$X = \frac{\sigma^{1}}{\sigma} (X - M) + M^{1}$$

Table 5 : Conversion of Raw Scores to Standard Scores.

Raw Score on The Items	MPI Dimensions of Long Scale Standard Scores	
	Neuroticism	Extraversion
1	28	6
2	29	8
3	30	10
4	31	12
5	32	13
6	33	15
7	34	17
8	35	18
9	36	19
10	37	21
11	38	23
12	39	24
13	40	26
14	41	28
15	42	29
16	43	31
17	44	32
18	45	34
19	46	36
20	47	37
21	48	39
22	49	41
23	50	42
24	51	44
25	52	45
26	53	47
27	54	49
28	55	50
29	56	52

Raw Score on The Items	MPI Dimensions of Long Scale Standard Scores	
	Neuroticism	Extraversion
30	57	53
31	58	55
32	59	57
33	60	58
34	61	60
35	62	62
36	63	63
37	64	65
38	65	66
39	66	68
40	67	70
41	68	71
42	69	73
43	70	74
44	71	76
45	72	78
46	73	79
47	74	81
48	75	82
Raw Score Mean	**23.294**	**28.081**
Raw Score standard Deviation	**10.019**	**6.312**

Reliability and Validity :

For the full scale the mean neuroticism (N) score for the total sample was 23.2 with a S.D of 10.0 The mean extraversion (E) score for the total sample was 27.8 and S.D was 6.2. Findings on the short scale are similar showing a mean neuroticism score of 7.1 S D = 3.1 and an extraversion score of 8 2 and S.D = 2 5

The correlation between N and E for the long scale was 0 223. The reliability coefficient by comparing the first half and the second half yields for N = + 567 and E = + 358 When corrected to full length these figures become for N = + .71 and For E = + 42

Adjustment Inventory :

Bell's adjustment inventory was originally developed in 1934 for counseling adults. It is a well-known tool in psychological literature pertaining to adjustment. It was adapted and standardized by S M. Mohsin and Shamshad Hussain (1969) in Hindi

This inventory comprises of 4 dimensions, viz, Home Adjustment, Health adjustment, Social Adjustment and Emotional adjustment. The total number of items is 135 The number of items in each dimension is shown in the following table.

Table 6 : Number of items related to areas of adjustment in Mohsin – Shamshad adapted version of BAI.

Areas of Adjustment	No. of Items.
Home	35
Health	31
Social	34
Emotional	35
Total	**135**

The Inventory is self administering and has no time limit, Normally it takes 35 to 40 minutes to be completed. It can be administered to an individual or a group at a time

Scoring :

The inventory is scored by counting the number of responses marked in each area of adjustment The responses to which the score is to be given are depicted in the scoring key. Each response has to be given a score of '1' High scores indicate unsatisfactory or poor adjustment in the areas of home, health social and emotional adjustment. Low scores indicate satisfactory adjustment. The sum of scores in different areas gives a measure of total adjustment

Table 7 : Scoring key to BAI

Items on Home Adjustment	Items on Health Adjustment	Items on social Adjustment	Items on Emotional Adjustment
6 Yes	9 Yes	3 No	2 Yes
8 Yes	20 Yes	5 No	4 Yes
11 Yes	22 Yes	7 No	9 Yes
13 Yes	24 Yes	10 Yes	14 Yes
15 Yes	26 Yes	12 No	17 Yes
18 Yes	30 Yes	16 Yes	25 Yes
21 No	35 Yes	19 Yes	32 Yes
27 Yes	40 Yes	23 No	37 Yes
29 Yes	44 Yes	28 No	39 Yes
31 Yes	47 Yes	33 Yes	42 Yes
34 Yes	51 Yes	36 Yes	45 Yes
38 Yes	55 Yes	41 No	47 Yes
43 Yes	60 Yes	46 Yes	54 Yes
48 Yes	63 Yes	50 Yes	57 Yes
52 Yes	66 Yes	53 No	61 Yes

Items on Home Adjustment	Items on Health Adjustment	Items on social Adjustment	Items on Emotional Adjustment
56 Yes	71 Yes	58 Yes	65 Yes
59 Yes	76 Yes	62 No	68 Yes
64 Yes	81 Yes	67 Yes	70 Yes
69 Yes	84 Yes	73 No	72 Yes
75 Yes	87 Yes	77 Yes	74 Yes
79 Yes	91 Yes	80 Yes	78 Yes
83 Yes	96 Yes	85 No	82 Yes
81 Yes	99 Yes	88 Yes	86 Yes
94 No	104 Yes	90 Yes	92 Yes
98 Yes	110 Yes	93 No	95 Yes
100 No	114 Yes	97 No	103 Yes
102 No	119 Yes	101 Yes	106 Yes
105 Yes	124 Yes	107 Yes	109 Yes
108 Yes	128 Yes	113 Yes	111 Yes
112 Yes	132 Yes	122 No	115 Yes
116 Yes	134 Yes	125 Yes	118 Yes
121 Yes		130 Yes	120 Yes
126 Yes		135 Yes	123 Yes
129 Yes		117 Yes	127 Yes
133 Yes			131 Yes

Reliability :

The test – retest reliability and odd even reliabilities of the various dimensions and the total test are given in the following table.

Table 8 : Reliability Values of BAI

Dimensions	Test – Retest	Odd Even (Full Test)
Home	.700	.806
Health	.804	824
Social	.868	.738
Emotional	.919	855
Total	.926	932

Hamilton Anxiety Scale (HAS)

Hamilton's Anxiety Scale comprises of 14 dimensions. These are used to assess the severity of anxiety symptomatology. The scale is rated by the clinician. Evaluation is based on the interviewer's assessment of the patient's condition at the time of interview. Only few of the 14 items are clinical signs to be observed during the interview. The majority of the items are symptoms (patient complaints) and here the assessment must be made on the condition during the last few days (minimum period = 3 days). The score assigned to the 14 dimensions ranges from 0 to 4. It reflects the severity of the symptom from neutral to maximal severity.

The 14 dimensions, each representing a behavioral manifestation are as follows

1. Anxious Mood :

It includes the emotional condition of uncertainty about the future, these comprise of

- Worry

- Insecurity
- Irritability
- Apprehension and
- Dread

2. Tension :

This dimension includes,

- Inability to Relax
- Nervousness,
- Restlessness
- Bodily Tensions
- Fatigability
- Startle response
- Trembling.

3. Fears :

This dimension includes the anxiety aroused when the patient finds himself in special situations. Relief is obtained by avoiding such situations. These situations involve fear of,

- Dark
- Strangers
- Being left alone
- Animals
- Traffic
- Crowds etc

4. *Insomnia :*

This dimension covers only the patient's subjective experience of sleep length and sleep depth It includes,

- Difficulty in falling asleep
- Broken sleep
- Unsatisfying sleep and fatigue on waking
- Dreams
- Nightmares
- Night terrors

5. *Difficulties in Concentration and Memory :*

This dimension covers,

- Difficulty in concentration
- Poor memory
- Difficulty in making decisions about everyday matters

6. *Depressed Mood :*

This dimension covers both the verbal and non–verbal communication of,

- Sadness
- Depression
- Despondency
- Helplessness
- Hopelessness
- Loss of interest
- Lack of Pleasure in hobbies

- Early Waking
- Diurnal Swing

7. *General Somatic Symptoms (Muscular) :*

This dimension includes,

- Weakness
- Muscular Pains and Aches
- Muscular Stiffness
- Muscular twitching
- Grinding of teeth
- Unsteady voice

8. *General Somatic Symptoms (sensory) :*

This dimension includes increased fatigability and weakness merging into real functional disturbances of the senses It includes,

- Tinnitus
- Blurring of Vision
- Hot and Cold flushes
- Feeling of Weakness
- Prickling sensations

9. *Cardiovascular Symptoms :*

This dimension includes,

- Tachycardia,
- Palpitations
- Pain in chest
- Throbbing of Vessels

- Fainting feeling
- Missing beat

10. Respiratory Symptoms :

This dimension includes

- Feelings of constriction or contraction in throat or chest
- Choking feelings
- Sighings
- Dysponea (Difficulty in Breathing)

11. Gastrointestinal Symptoms :

This dimension includes,

- Difficulty in Swallowing Sinking Sensation of the stomach
- Dyspepsia
    - heart burn or burning sensations in the stomach
    - abdominal pains in the stomach related to meals
    - fullness
    - nausea
    - vomiting
- Bowel Irritability (Diarrhea or constipation)
- Loss of Weight

12. Genito – Urinary Symptoms :

This dimension includes non–organic or psychic symptoms such as,

- Frequency of micturition
- Urgency of Micturition
- Menstrual irregularities
- Anorgasmia

- Dyspareunia
- Premature Ejaculation
- Loss of erection
- Impotence

13. Autonomic symptoms :

This dimension includes symptoms like,

- Dryness of Mouth
- Blushing or pallor
- Sweating
- Giddiness or dizziness
- Tension headache
- Raising of Hair

14. Behavior at Interview (General) :

This dimension is based on the Patient's behavior during interview. These involve,

- Tenseness
- Nervousness
- Agitated
- Restlessness - Pacing
- Fidgeting : hands, picking fingers, clenching tics,
- Tremor of Hands
- Paleness
- Stained face
- Increased Muscular Tone
- Sweating or Hyperventilation

Scoring :

The assessment grades in all items of the Hamilton Anxiety Scale are as follows.

0 = absence of anxiety

1 = Mild anxiety

2 = Moderate anxiety

3 = Severe anxiety,

4 = Very severe, grossly disabling

A total score from 0 – 5 = No Anxiety

A total score from 6 – 14 = Minor Anxiety

A total score of 15 or more = Major Anxiety

Reliability :

The reliability of the Hamilton Anxiety Scale is 0 89 which is remarkably high and illustrates psychiatric assessments under suitable conditions.

Beck's Depression Inventory (BDI)

Beck's Depression Inventory was formulated in 1967. The BDI is a 21 items self – report measure used for assessing the severity of depressive symptomatology.

The questionnaire consists of 21 items, which comprise of four self-descriptive statements. The scores assigned to these statements range from 0 to 3. The scores reflect the severity of the symptom from neutral to maximal severity. Each item reports a behavioral manifestation and is not based on any

theory regarding the etiology or underlying psychological processes in depression. The symptom attitude categories of the inventory are as follows,

1. Mood
2. Pessimism
3. Sense of Failure
4. Lack of Satisfaction
5 Guilt feeling
6. Sense of Punishment
7 Self dislike
8. Self Accusation
9 Suicidal Ideas
10 Crying Spells
11. Irritability
12. Social withdrawal
13 Indecisiveness
14. Distortion of Body Image
15 Work Inhibition
16. Sleep disturbance
17. Fatigability
18. Loss of Appetite
19. Weight Loss
20. Somatic Preoccupation
21 Loss of libido

Scoring :

The individual's total score on the 21 items can be used to judge the extent of depression There is no arbitrary score that can be used to classify the degree of Depression. However, Beck (1976) has suggested the following guidelines to interpret the scale.

0 – 9	Normal Range Depression
10 – 15	Mild Depression
16 – 19	Mild Moderate Depression
20 – 29	Moderate Severe Depression
30 – 63	Severe Depression

The BDI is easily self administered. However, when the need arises the interviewer reads out the statements and asks the respondent to choose any one Standardized instructions have been developed in order to provide uniformity and minimize interview effects. The normal procedure in the administration of the BDI is to take additional notes to support the quantified scores as obtained.

Reliability and Validity :

The BDI rates high on reliability and validity. The author reported a Pearson's correlation coefficient value obtained between the odd and even categories of BDI of 0.86 which increased to 0 93 with the Spearman – Brown formula

The concurrent validity determined by the Kruskal – Wallis analysis of various ranks yielded a p - value of difference less than 001 (i.e. $p < 0\ 01$)

Bryson and Pilen (1984) reported and internal reliability coefficient of 0.76 They found that the BDI inter - item reliability is comparable across both sexes and across different methods of test administration The BDI scores correlated highly with clinical observer ratings of Depression (r = .65 to .77) In relation to other scales and inventory measures a correlation of 5γ with Zung's self – rating scale for Depression was reported

Procedure of Data Collection:

For this research, individuals coming from various parts of India to the State General Hospital, Baroda, and diagnosed as having either Acid Peptic Disease or Irritable Bowel Syndrome were contacted

Primarily, it was assured that these diseases had occurred due to psychological reason This assertion was made on the basis of the diagnosis of the physicians treating them in the hospital or clinic.

Each patient was contacted individually, nice rapport was established with each patient. Then the various tests were administered

Basic information such as name, age, sex, education, religion, etc was also recorded

The same procedure was also carried out for hundred normal individuals comprising the normal group.

Age was not taken as a demographic variable However, the individuals from both the normal and clinical groups fell between the age range of 19 to 45 years.

Data thus collected, was grouped and put to statistical analyses.

Statistical Analysis :

For the present study statistical techniques used were Multivariate Analysis of Variance (MANOVA) and t - test. Basic descriptive statistics like Means, Standard Deviations etc were also used Correlation coefficient were also obtained for some of the main variables