METHOD

Design

The primary aim of the present investigation was to compare the chronically ill adolescents scoring high on mental health with chronically ill adolescents scoring lower on mental health on, Depression, Perceived Social Support, Perceived Parental Bonding Dimensions, Measures of Stress, Ways of Coping, Eysenckian Personality Dimensions, Self Esteem and Family Environment Dimensions viz. Relationship Dimensions, Personal Growth Dimension and System Maintenance Dimension.

2X2 Analysis of Variance was conducted with the mental health and gender as independent variables. 2 levels of mental health viz. high mental health and low mental health were taken and 2 levels of gender viz. male and female were taken. The effect of these two independent variables singly and jointly was analyzed for all 33 variables.

Mental Health was measured using the General Health Questionnaire (GHQ) devised by Goldberg and William, (1972). Depression was assessed using Beck Depression Inventory devised by Beck et al. (1967).

Perceived Social support was assessed using the Social Support Scale developed by Zimet et al. (1988). It is designed to assess perceptions of social support adequacy from specific sources viz. Family, friends, and significant others.

Perceived Parental Bonding was measured by Parental Bonding Instrument by Parker et al. (1979). It has two dimensions viz. Perceived Parental Care and Perceived Parental Overprotection.

For assessing Measures of Stress the following tests were used: Presumptive Stressful Life Events Scale (PSLE) devised by Singh et al. (1984) was used to measure number and stressfulness of life events. Stress Symptoms Rating Scale devised by Heilbrun and Pepe (1985) was used to
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Measure Stress Symptoms. To assess different Coping Styles, the Ways of Coping (WOC) Questionnaire devised by Folkman and Lazarus (1985) was used.

Personality was assessed using Eysenck’s Personality Questionnaire – Revised by Eysenck et al. (1985). It yields scores on Extraversion/Introversion, Psychoticism, Neuroticism and Social Desirability.

Self Esteem was measured using Rosenberg Self Esteem Scale by Rosenberg (1965).

Family Environment Scale (FES) developed by Joshi and Vyas, (1985) was used to assess perception of family Environment. It measures a child’s perception of his/her family environment on different dimensions – Relationship dimension, Personal Growth Dimension and System Maintenance Dimension. Relationship Dimension includes subscales viz. Cohesion, Expressiveness and Conflict. Personal Growth Dimension includes the subscales viz. Independence, Achievement Orientation, Intellectual and Cultural Orientation, Active Recreational Orientation and Moral Religious Emphasis. The third dimension i.e. System Maintenance Dimension includes subscales viz. Organization and control.

SAMPLE

The total sample comprised of 300 subjects. In the first phase of study, 240 chronically ill adolescents from non-life threatening categories viz. Gastrointestinal Disorders, Respiratory Disorders, Skin Disorders were selected. Those selected had already been diagnosed by doctors of government hospitals and private clinics. Each disorder group comprised of 80 chronically ill adolescents with 40 males and 40 females. The healthy control group with 30 male adolescents and 30 female adolescents not suffering from any chronic illness was also taken from the city based schools and colleges as a comparison group.

In the second phase respondents were administered the GHQ-30
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Scale (Goldberg and William, 1972). Based on the norms of the test, score of 6 was taken as the cut off point to divide the group into high and low mental health groups. Those who scored below 6 were categorized as High Mental Health Group (HMH) and those who scored above 6 were categorized as Low Mental Health Group (LMH). Those who scored 6 on GHQ were considered as borderline case and were not included in the final sample.

The Inclusion criteria for the groups were:

1. age range from 15 to 19 years
2. Duration of illness from 2-4 years
3. Absence of any Hospital admission due to illness.

Respondents were matched on age and socio economic status. All the subjects were explained about the nature and aim of the investigation and their role in the study and informed consent was obtained from all of them before they were enlisted as subjects.

Tests and Tools Employed

4. Beck Depression Inventory (BDI) (Beck et al., 1967).
5. Presumptive Stressful Life Events Scale (PSLE) (Singh et al., 1984)
7. Ways of Coping Questionnaire (WOC) (Folkman and Lazarus, 1985)
8. Eysenck Personality Questionnaire-Revised (EPQ-R) (Eysenck et al., 1985)
9. Rosenberg Self Esteem Scale (SE) (Rosenberg, 1965)

10. Family Environment Scale (FES) (Joshi and Vyas, 1965)

In addition, general information schedule was given to the respondents for age, gender, education, Religion, Urban/Rural background, Size of the family, Education of Parents and Profession of Parents.

BRIEF DESCRIPTION OF TESTS

1. General Health Questionnaire-30 (GHQ) (Goldberg and William, 1972)

30 item version of GHQ self administered screening instrument was developed by Goldberg and William (1972) to detect psychological disturbances in community setting. It consists of questions about social activities and psychological and physical signs and symptoms. It is made up of four sub scales: 1) Somatic Symptoms 2) Anxiety and Insomnia 3) Social Dysfunction 4) Severe Depression.

The GHQ is simple in its wording. It begins with questions regarding somatic symptoms and proceeds to questions that are overtly psychological. The potentially more disturbing items e.g. those related to suicidal ideation are left to the end. Questions relate to present and recent complaints that the respondents may have experienced over the past few weeks. Responses are to be endorsed on a four point scale.

The authors found the test-retest reliability found to be 0.77 and split half reliability at 0.92. The sensitivity and specificity of the GHQ-30 was 91.4% and 87% respectively. GHQ-30 has been recommended first level screening measure of emotional distress (Banks, 1983). In many nonpsychiatric setting, the General Health Questionnaire (Goldberg, 1972) has proved to be a valuable tool. GHQ mainly developed for adults but has been successfully used with Indian adolescents by Rao, (1978); Rosario, (1988); Arulmani, (1999); Bhola and Kapur, (2000); Singh, (2001); Kaur, (1997); Caur (2007) and Shalini, (2006).
2. The Multidimensional Scale of Perceived of Social Support (MDPSS) (Zimet et al., 1988)

MDPSS is a 12-item instrument that measures an individual's perceived level of social support. It is designed to assess perceptions of social support adequacy from specific sources; family, friends, and significant others. Participants were asked to rate their perceived level of social support on a seven-point Likert scale from 1 "very strongly disagree" to 7 "very strongly agree". The whole scale has 12-items, score can range from 1-84 (higher scores indicating a greater level of social support).

It has been found that over all score and the scores for subscales (family, friend and significant others) separately show acceptable published test-retest reliability, Factorial validity and Construct validity. Significant others and friends factors were found to be moderately correlated ($r = .63$), the family subscale was found to be more independent from the other two, with correlations of (.24) and (.34) with significant others and friend, respectively. Internal reliability ranged from .84 to .92 for the scale as a whole (Zimet et al., 1988; Zimet et al., 1990; Canty-Mitchell and Zimet, 2000). The test has been successfully used in the Indian setting by Singh (2001).

3. Parental Bonding Instrument (PBI) (Parker et al., 1979)

The PBI is a 25 item self report measure of respondent's recollections of parent's attitudes and behaviours during the first 16 years. Respondents were asked to answer questions based on how they remember their parent, using a Likert type scale ranging from 0("very like") to 3("very unlike") . PBI was developed using factor analysis from self reports of experiences with the parents in childhood. The scale consists of two factors Maternal/Paternal Care (i.e. Care Vs Indifference and rejection) and Maternal/Paternal Over Protection (i.e. over protection vs encouragement of autonomy). Higher scores on the two scales indicate higher perceived parental care and over protection, respectively.

The 12 items of the Maternal/Paternal Care factor allow a maximum
score of 36 and the 13 items of the over protection factor permit a maximum score of 39. The two factor scores are negatively correlated \((r=.24)\) suggesting that the two dimensions are not independent \((\text{Parker et al., 1979})\), i.e. over protection is associated with lack of care.

Adequate internal consistency has been demonstrated in numerous studies using a split half technique. The scale also has high test re-test reliability over a 3-week period of both Care Scale \((r=.76; p<.001)\) and Over Protection Scale \((r=.63; p<.001)\) \((\text{Parker et al., 1979; Parker, 1989})\). The scales Inter-Rater reliability, Convergent and Predictive validity are also established \((\text{Parker, 1989})\). The scale has been used in India by Shalini \((2001; 2006)\).

4. **Beck Depression Inventory (BDI)** \((\text{Beck et al., 1967})\)

The Beck Depression Inventory is a 21 items scale measuring attitudes and symptoms associated with depression. Each item is scored from 0 to 3 and all items are summed to produce a total score that may range from 0 to 63; higher scores indicate greater severity of depression. BDI is self report measure tapping the cognitive, affective, motivational and physiological aspect of depression that occurred over the previous week. \((\text{Beck, 1967})\). The symptoms assessed by the BDI include the following content areas- mood, pessimism, sense of failure, self dissatisfaction, punishment, guilt, self dislike, crying, suicide ideations, self accusations, irritability, body image, work difficulty, insomnia, fatigability, weight loss, loss of appetite, somatic preoccupation and loss of libido.

This scale has been used in India by Kumar \((1990)\); Upmanyu et al., \((1995)\); Gupta \((1999)\); Opara \((1999)\); Kaur\((2005)\); Salariya \((2006)\) and Ramma \((2006)\).

5. **Presumptive Stressful Life Events Scale (PSLES)** \((\text{Singh et al.,1984})\)

Using an open ended questionnaire along with Holmes and Rahe's Social Readjustment Rating Schedule on a sample of two hundred adult subjects, a suitable scale of stressful life events as experienced by the Indian
population was constructed and standardized by the authors for two time spaces, that is, last one year and life time. Analysis of various demographic variables for this population revealed no differences on this scale for age, marital status, education and occupation. Authors claim the scale to have acceptable content validity and reliability. Norms for total number of life events experienced as well as the presumptive stress score were established for each event for this population. The frequency of occurrence of each event in Indian population was also obtained. It was calculated that individuals in the society are likely to experience an average of two stressful life events in the past one year and ten events in a life time without suffering any adverse physical or psychological disturbance. The scale is simple to administer to literate and illiterate subjects.

Thus, authors were able to develop a Presumptive Stressful Life Events Scale (PSLES) consisting of 51 life events. These 51 items were further classified according to (a) whether they were personal or impersonal (not dependent on the individual's action), (b) according to whether they were (i) desirable (ii) undesirable, (iii) ambiguous.

Subjects were asked to report the relative stress they have actually experienced or imagined they would feel on each item specified in the scale in terms of percentages keeping 100 as the highest score. Items on the list were presented in English or Hindi or Punjabi viz. the language subjects preferred.


6. Stress Symptoms Rating Scale (Heilbrun and Pepe, 1985)

Heilbrun and Pepe (1985) constructed the Stress Symptoms rating scale which is a response-defined measure of stress in contrast to the stimulus-defined measures being used earlier in stress research. The Stress Symptoms Rating Scale is an enquiry into the amount of stress experiences without regard to what provoked them. They selected 25 symptoms of stress from a list that
Selye (1976) identified as readily detectable by the individual. The subject is required to rate the frequency of each of the stress symptoms (for the previous year) on a six-point scale ranging from "Not at all" to "More than once per day" (i.e. ranging from 0 to 5). The stress score is the summation of scores obtained over all the ratings.

The alpha reliability for the scale was found to be .93 by Heilbrun and Putter (1986). Symptomatic stress has been reported in more depressed college women, in college women with anorexic characteristic (Heilbrun and Putter, 1986). This scale has been successfully used in India by Gujral (1990), Mohan and Associates (1997;1998;1999;2000;2001;2002;2003;2006), Sehgal (2003), Shourie (2003), Sharma (2005), Ramma (2006) and Caur (2007).

7. Ways of Coping Questionnaire (WOC) (Folkman and Lazarus, 1985)

One of the most popular instruments for assessing Coping is the Ways of Coping Questionnaire (WOC) constructed by Folkman and Lazarus, (1985). This has been used with a wide range of different populations. The Ways of Coping Questionnaire assesses thoughts and actions individuals use to cope with the stressful encounters of everyday living. It is derived from the cognitive - phenomenological theory of stress and coping that is articulated in stress, appraisal and coping (Lazarus and Folkman, 1984).

The Ways of Coping Questionnaire has been widely used ranging from community samples to parents of Down's Syndrome (Folkman and Lazarus, 1985).

Various different subscales for this instrument have been proposed based on different samples and factor analysis, but typically a distinction is found between direct or "Problem-Focused" Coping strategies or behaviors and "Emotion-Focused" Coping Strategies which may involve wishful thinking or suppression and avoidance of difficult feelings.

The Ways of Coping Questionnaire (WOC) is a 66 item questionnaire which contained eight empirically derived subscales.
Description of the Ways of Coping Sub Scales

**Confrontive Coping:** Describes aggressive efforts to alter the situation and suggests some degree of hostility and risk taking.

**Distancing:** Describes cognitive efforts to detach oneself and to minimize the significance of the situation.

**Self Control:** Describes efforts to regulate one's feelings and actions.

**Seeking Social Support:** Describes efforts to seek informational support, tangible support, and emotional support.

**Accepting Responsibility:** Acknowledges one's own role in the problems with a concomitant theme of trying to put things right.

**Escape - Avoidance:** Describes wishful thinking and behavioral efforts to escape or avoid the problems. Items on this Scale contrast with those on Distancing, which suggest detachment.

**Planful Problem Solving:** Describes deliberate problem-focused efforts to alter the situation coupled with an analytic approach in solving the problem.

**Positive Reappraisal:** Describes efforts to create positive meaning by focusing on personal growth. It also has religious dimensions.

Individuals respond to each item on a 4-point Likert Scale indicating the frequency with which each strategy is used. 0 indicates "Does not apply and/or not used" 1 indicates "Used Somewhat", 2 indicates "Used quite a bit" and 3 indicates "Used a great deal".

Raw scores were calculated for each Scale. The alpha coefficient for the Ways of Coping scales were quite variable ranging from .61 to .79. The questionnaire also exhibits adequate face validity and construct validity.

Ways of Coping Questionnaire has been used on a wide range of different populations by Parkes (1986); Saini (1998); Opara (1999); Mohan (1997; 2002; 2003; 2004; 2005; 2006); Shourie (2003) and Caur (2007).
8. **Eysenck Personality Questionnaire - Revised (EPQ-R)** (Eysenck et al., 1985)

The EPQ-R has been developed by Eysenck et al. (1985). The EPQ was originally constructed by Eysenck and Eysenck (1975) to measure varied dimensions of Personality viz Extraversion (E), Neuroticism (N) and Psychoticism (P). It also consists of a Lie (Social Desirability) Scale. The Scale was revised by Eysenck et al. (1985) to improve the psychometric weaknesses of the Psychoticism Scale. The revised version of the Scale consists of 90 dichotomously responded items. Eysenck proposed a dimensional model of Personality E, N, P and L and a psychobiological model to parallel these dimensions (Eysenck et al., 1985). The model is a hierarchical one that conceptualizes each of the four broad dimensions subdivided at a lower level into narrower and more specific traits which finally may be subdivided into habits of reaction or aggregates of behavioural instances regarded as personality. Eysenck et al. (1985) have chosen to concentrate on the highest level of analysis because the supertraits are more replicable across age, sex and methods (rating versus self-report).

The alpha reliabilities for the revised scales have been found to be as follows:

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EPQ-R has been used in India by Datta (1985); Ghalawat (1986); Tayal (1987); Sarup (1987); Mohan et al. (1987, 1991); Dehra (1989); Arora (1990); Gujral (1990); Dhir(1991); Sehgal and Rumeena(1996); Sehgal (1996; 1999); Mohan(1999; 2000; 2002; 2006); Shourie (2003); Sharma (2005); Salariya (2006),Ramma (2006) and Caur(2007).

9. **Self-Esteem (SE)** (Rosenberg et al., 1965)

The Self-Esteem Scale has been developed by Rosenberg et al. (1965). It is a self-report measure of global personal self-esteem. Rosenberg
Self-Esteem Scale was originally designed to measure adolescent's global feeling of self worth. **Self Esteem** is defined as "the evaluation which an individual makes and customarily maintains with regard to himself, expressed as an attitude of approval or disapproval (Rosenberg, 1965). The Rosenberg self-esteem scale is a 10-item scale which measures the self acceptance aspect of self-esteem.

The respondents are required to rate their responses along a 4-point scale ranging from "strongly agree, agree, disagree to strongly disagree". In order to reduce the acquiescence effects, the items were evenly divided between being worded positively and negatively in content. Scores range from ten to forty. Higher scores are suggestive of higher self esteem.

**Rosenberg (1965)** reported test-retest reliability of the scale to be 0.85. **Suls et al.(2000)** reported the internal reliability of Self Esteem Scale to be 0.86. The validity of the test came out to be 0.56 to 0.83 with several other measures. Its correlation with Cooper Smith's Self Esteem Inventory was reported to be 0.59, with CPI Self Acceptance Scale to be 0.27. It has been used in the Indian set up by **Singh (2001)**.

10. **Family Environment Scale (Joshi and Vyas, 1985)**

The Family Environment Scale (FES) developed by Joshi and Vyas, (1985) measures a child's perception of his/her family environment on different dimensions viz. **Relationship Dimension, Personal Growth Dimension and System Maintenance Dimension.**

I) **RELATIONSHIP DIMENSION**

Relationship Dimension includes the following subscales viz. **Cohesion, Expressiveness** and **Conflict**.

**Cohesion** subscale measures the degree of commitment, help and support family members provide for one another, for example; the way they support one another, the amount of energy they put into what they do at home, and how much feeling of togetherness there is in the family.
Expressiveness subscale measures the extent to which family members are encouraged to act openly and to express their feelings directly, for example: how openly family members talk around home, how freely they discuss their personal problems, and how often they just pick up and go if they feel like doing some thing on the spur of the moment.

Conflict subscale measures the amount of openly expressed anger, aggression and conflict among family members.

II) PERSONAL GROWTH DIMENSION

The Personal Growth Dimension includes the following subscales viz. Independence, Achievement Orientation, Intellectual and Cultural Orientation, Active Recreational Orientation, Moral and Religious Emphasis subscales.

Independence subscale measures the extent to which family members are assertive, are self-sufficient, and make their own decisions.

Intellectual and Cultural Orientation subscale taps the extent to which family members are assertive, are self-sufficient, and make their own decisions.

Achievement Orientation subscale taps the extent to which activities, such as school and work, are cast into an Achievement oriented or competitive framework.

Active Recreational Orientation subscale taps the extent of participation in social and recreational activities.

Moral Religious Emphasis subscale measures the degree of emphasis on ethical and religious issues and values.

III) SYSTEM MAINTENANCE DIMENSION

System Maintenance Dimension includes the following subscales viz. Organization and Control.
**Method**

**Organization** subscale measures the family’s emphasis on clear organization and structure in planning family activities and responsibilities, for example how carefully activities are planned, how neat and orderly family members are and how clearly each person’s duties are defined.

**Control** subscale measures the extent to which the rules are set and procedures are used to run family life.

In short the FES helps in assessing the overall environment of an individual’s family and how these different dimensions can have impact on his/her personality and well being. The reliability coefficient for the ten sub scales was found to be varying from a low of 0.68 for independence to a high of 0.86 for cohesion. When test-retest method was used on 47 family members belonging to 9 families with a time interval of 8 weeks. The scale and its sub scales have high Content validity. FES has been used in India by Kaur (2002) and Thapar (2002).

**PROCEDURE**

All the respondents were contacted for the testing sessions and requested to volunteer for the testing schedules. Informed consent from the respondent’s parents were taken explaining the rationale of the study and ensuring confidentiality of the responses. These respondents were then given the questionnaires in a booklet form and were requested to respond to them truthfully according to given instructions, which was explained to them in groups and where need was it was explained personally. They were assured that the information they give about themselves and their results would be kept strictly confidential and used for research purposes only.

The testing schedule was conducted personally in 3 sittings with a group of 15 respondents at a time. The testing schedule was started by firstly, asking the participants to fill in the general information schedule and then proceed to responding to the tests one after the other in 3 sittings as planned.
INSTRUCTIONS FOR THE QUESTIONNAIRES

1. Instructions for General Health Questionnaire- 30- (GHQ-30)
   Following instructions were given "We would like to know if you have had any medical complaints and how your health has been over the past few weeks. Please answer all the questions on the following pages simply by understanding the answer that you think most nearly applies to you. Remember that we want to know about present and recent complaints".

2. Instructions for Multi Dimensional Perceived Social Support Scale (MDPSS)
   Following instructions were given "Rate each item on the following scale: Very Strongly disagree-1, strongly disagree-2, Disagree-3, Neutral-4, Agree- 5, strongly agree-6, Very strongly agree-7".

3. Instructions for Parental Bonding Instrument
   Following instructions were given "This questionnaire lists various attitudes and behaviors of parents. As you remember your parents in your first 16 years. Would you place a tick in the most appropriate column next to each question. The columns are: (1) Very like (2) Moderately like (3) Moderately unlike (4) Very unlike".

4. Instructions for Beck Depression Inventory (BDI)
   Following instructions were given "On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group, which best describes the way you have been feeling the past week including today. Circle the number beside the statement you picked, if several statement in the group seem to apply equally well, circle each one".

5. Instructions for Presumptive Stressful life Events Scale – (PSLES)
   Following instructions were given "Given below are a list of common life events which are experienced by almost everyone at some time or other
Method

in their life. Kindly put a tick mark against all those events that you may
have experienced during the past one year in column 1 and those you have
experienced at any time prior to that in your life in column 2”.

6. Instructions for Stress Symptom Rating Scale

Following instructions were given “Rate the frequency of each item for
the previous year along the following scale: Not at all (0), Less than once per
month (1), Between once per week and once per month (2), Between once
per day and once per week (3), About once per day (4), More than once per
day (5). Indicate your answer by circling a number for each item. Be sure to
answer every item”.

7. Instructions for Ways of Coping Questionnaire

Following instructions were given “To respond to the statements in this
questionnaire, you must have a specific stressful situation in mind. Take a
few moments and think about the most stressful situation that you have
experienced in the last week. By “stressful” is meant a situation that was
difficult or troubling for you either because you felt distressed about what
happened, or because you had to use considerable effort to deal with the
situations. The situation may have involved your family, your job, your friend,
or something else important to you. Before responding to the statements,
think about the details of this stressful situation, such as where it happened,
who was involved, how you acted, and why it was important to you. While you
may still be involved in the situation, or it could have already happened, it
should be the most stressful situation that you experience during the week.
As you respond to each of the statements, please keep this stressful situation
in mind. Read each statement carefully and indicate, by circling the
appropriate option to what extent you used it in the situation. Please respond
to each item using the following scale: 0- Does not apply or not used, 1- Used
somewhat, 2- Used quite a bit, 3- Used a great deal.”
8. **Instructions for the Eysenck Personality Questionnaire- Revised (EPQ-R)**

Following instructions were given “Please answer each question by encircling Yes or No. There is no right or wrong answer or no trick questions. Work quickly and do not take too long about the exact meaning of the question. Please check that you have answered all questions.”

9. **Instructions for Rosenberg Self Esteem Scale (SE)**

Following instructions were given “This is a chance to look at your self. Its not a test. There are no right or wrong answers and everyone will have different answers. Be sure that your answers show how you feel. This will be kept private and not shown to anyone. When you are ready to begin, read each statement and select your answer. There are four possible answers for each statement: Strongly agree, Agree, Disagree and Strongly Disagree. Choose your answer and put a tick over one of the four possible answers.”

10. **Instructions for the Family Environment Scale (FES)**

Following instructions were given “put a tick mark in the box against the choice of your response. Answer quickly and truthfully. Your responses will be kept strictly confidential. Do not spend too much time on any particular item.”

**SCORING AND STATISTICAL ANALYSIS**

Scoring for all the given tests was done as per the instructions provided in the scoring manuals of the tests. The scores were then subjected to various statistical treatments and analysis i.e. Means, SD’s t-ratios were calculated as also, Analysis of Variance (ANOVA), Discriminant Functional Analysis (DFA), Correlation Analysis and Multiple Regression Analysis were conducted.