CHAPTER-III

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The present investigation was designed to test various hypotheses concerning “Depression in adolescence”. The empirical verification of the proposed hypotheses is dependent, firstly, on the reliable measurements of the variables of ultimate interest, and secondly, on the methods and procedures employed for deriving conclusions from such measurements. This required:

(a) Selection of an adequate sample;
(b) Selection of appropriate tools that could be profitably used for reliable measures; and
(c) Selecting suitable statistical techniques for analyzing the data.

Thus, it is pertinent to describe the sample, the specific tools, and the method and procedures employed in completing the research being reported.

The description of the sample providing data for testing the proposed hypotheses is given in the subsequent pages. This chapter also describes the tools which have been used for collecting data; in addition the information concerning administration and scoring of the tests used is also given in subsequent pages. Moreover, the procedure of analyses has also been discussed in this chapter.

SAMPLE

150 male and 150 female adolescents in the age range of 12 to 19 years comprised the sample. The sample were selected from different colleges in Haryana. The Haryana state was divided into four different zones on the basis of socio-cultural parameters.

Zone 1- Ambala- Panchkula- Yumananagar- Kurukshetra-Karnal- Panipat.
Zone 2- Kaithal- Jind- Fatehabad- Hissar- Sirsa.
Zone 3- Bhiwani- Rohtak- Jhajhar- Sonipat.
Zone 4- Gurgaon- Rewari- Mahendergarh- Faridabad-Mewat.
From each zone equal number of male and female adolescents were selected.

The age of 150 males adolescents ranged from 12 to 19 years (M = 14.90, SD= 1.55), whereas for 150 female adolescents the age ranged from 12 to 19 years (M= 14.90, SD= 0.90). The sample was delimited to the subjects who were available to participate in this study, thus, limiting the assumption of randomization.

TESTS

The following tests were used:

(A) Self Report Measures of Depression

1. Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961);
2. Minnesota Multiphasic Personality Inventory, D-scale (Hathaway & McKinley, 1967);
3. Zung Self-Rating Depression Scale (Zung, 1965);

(B) Cognitive Assessment Measures

1. Automatic Thought Questionnaire (Hollon & Kendall, 1980);
2. Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974);
3. Dysfunctional Attitude Scale: Form A (Weissman, 1973; Weissman & Beck, 1978);

(C) Measures of Personality

1. IPAT Neuroticism Scale Questionnaire (Scheier & Cattell, 1961);
2. Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975);

(D) Measures of Social Support

Social Support Questionnaire A (SSQ: Sarson, Levine, Basham, & Sarason, 1983);

(E) Measures of Body Image

MEASURES OF DEPRESSION

The fact that there is a need for assessing depression, whether as an affect, a symptom, or a disorder is obvious by the numerous scales and inventories available and in use today.

In the present study, Beck Depression Inventory, Zung Self-Rating Depression Scale, and MMPI-D scale have been used as measures of depression. This has been done keeping the view their extensive use by researchers working in the area of depression. There are several reasons for the use of multiple depression scales. First, past research has extensively used these measures of depression; Second, researches have reported similarity as well as dissimilarity among these measures of depression; Third, the different construction of these scales, and their individual characteristics of item array, cause serious difficulties in comparing one study using one scales with another using a different scale. Given some contextual differences among the scales; there may be distinctive patterns of correlation of these scales with several other factors.


   The Beck Depression Inventory in its various forms (Beck & Beck, 1972; Beck, 1972, 1967; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is one of the most frequently used self-report depression inventories in contemporary clinical research. Originally designed to be "Interviewer" assisted, current practice appears to be to allow respondents to self-administer the inventory by marking their responses on a paper and pencil type form of the BDI. Although the inventory was designed as a clinical instrument, in practice it is frequently employed in studies using college populations, dichotomizing students into "depressed" and "no depressed" groups based on self-administered BDI responses obtained during large screening sessions.

   The Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item self-report test for assessing severity of depressive symptomatology. The scale consists of items containing four alternative statements, and each item scores on a 0 to 3 basis for severity (range: 0 - 63). The BDI has been demonstrated to correlate satisfactorily with ratings of severity made by independent
clinicians (Beck, 1967; Beck et al., 1961) and has a split-half reliability of .93 (Beck et al., 1961).

A series of validity and reliability studies (Beck & Beamesderfer, 1974; Pichot & Lemperiere, 1974; Beck, 1967) generally support the BDI as a measure of depressive severity (e.g., 0-9: normal; 10-18: mild; 19-25: moderate; and 26 and above: moderately severe to severe). The BDI was selected to provide an index of severity of depression.

The inventory has also been factor analyzed by several investigators, and has been used for the detection of depression in groups of unselected psychiatric patients and among medical inpatients. In practice, the range of cutoff scores in research is highly variable. A review of literature involving the BDI revealed that the criteria for non-depressed groups ranged from <2 (Carson & Adams, 1980) to <13 (Roth & Rehm, 1980) on the standard length inventory. On the short form of the inventory (Beck et al., 1972) cutoffs for the depressed categories ranged from 7 (Kilpatrick-Tabak & Roth, 1978) to < 21 (Johnson & Crockett, 1982). Clearly a subject designated as depressed in one study may not be similarly designated in another.

Focusing on the use of the BDI with college students, Sacco (1981) challenged the test-retest reliability of the depression inventory. His concerns about the temporal stability of the BDI are based largely on his experience with classifying college students as depressed on one day using their BDI scores only to have their classification change on re-administering the BDI on another day (Sacco & Hokanson, 1978). According to Sacco, failure to assess depression level just prior to conducting an experiment thus leads to misleading if not invalid result. Sacco’s concern about the test-retest reliability of the BDI, are not without rebuttal.

Using non-depressed college students, Miller & Seligman (1973) reported a test-retest reliability coefficient (r) of .74 after a three month interval, and Pehm (1976) reported test-retest reliability coefficient (r) of .75 after one month. Oliver & Burkham (1979) reported a test-retest coefficient of .78 for college students over a week’s period. Retesting psychiatrically hospitalized adolescents, Strober, Green, & Carlson (1981) reported test-retest reliability coefficient of .69. Gallagher, Nies, & Thompson (1982) reported even more impressive test-retest coefficients with normal
(r=.86) and depressed (r=.79) elderly. The time interval between administrations for the latter study ranged from 6 to 21 days. Although the published reliability coefficients are impressive, they do not specifically address Sacco's concern about the ability of the BDI to classify an individual within the same depression category on two occasions.

Hatzenbuehler, Parpal, & Matthews (1983) while classifying college students as depressed or non-depressed found that whereas the overall test-retest reliability coefficients were acceptable, particularly when both administrations of the BDI occurred on the same day, the consistency of classification of subjects into the mild and moderate levels of depression was poor.

Schaefer et al. (1985) found alpha coefficients for the BDI measures of men to be .94 (psychiatric) and .88 (chemical dependency) ward.

These studies clearly suggest that although the published reliability coefficients are impressive, they specifically do not address Sacco's (1981) and Hatzenbuehler et al. (1983) concern about the ability of the BDI to classify an individual within the same depression category. Despite these concerns, BDI has enjoyed widespread popularity in the literature concerned with the assessment of depression. Keeping in view this fact, current study used BDI as a measure of depressive severity.

2. Minnesota Multiphasic Personality Inventory: Depression Scale (Hathaway & McKinley, 1967)

The Minnesota Multiphasic Personality Inventory (MMPI) is designed to provide an objective assessment of some of the major personality characteristics that effect personal and social adjustment. The inventory was originally developed "to assess those traits that are commonly characteristics of disabling psychological abnormality" (Hathaway & McKinley, 1967, p. 1).

The nine MMPI originally developed scales described briefly below are often referred to as the 'clinical' scales. The clinical scales are all empirical scales developed by selecting items which differentiated between two groups. The criterion groups for all but two of the scales consisted of individuals with some type of personality disorder. The trait names assigned to these scales are those that correspond to the
psychiatric diagnosis of individuals in the criterion groups. The nine clinical scales along with their abbreviations are as follow: hypochondriasis (Hs); depression (D); hysteria (Hy); psychopathic deviate (Pd); masculinity-femininity (MF); paranoid (Pa); psychasthenia (Pt); schizophrenia (Sc); and hypomania (Ma). Many other scales given subsequently have been developed from the same items; social introversion is one that is commonly scored. There are also three validating scales: Lie (L), Validity (F), and correction (K).

The inventory consists of 550 affirmative statements, covering a wide range of subject matter from the physical condition to moral and social attitude of the individual being tested. The subject is asked to sort all the statements in three categories: 'True', 'False', and 'Cannot say'. The inventory items can be presented to the subject either in a card (box) form for individual use or in a booklet form with separate answer sheet suitable for both individual examination and group testing. Both these forms were designed for adults from about 16 years of age upward, although they have also been employed successfully with somewhat younger adolescents (Hathaway & Monacheri, 1963).

The data which have been reported on the reliability of the MMPI appear to be quite satisfactory. The authors (Hathaway & McKinley, 1942; McKinley & Hathaway, 1941, 1944), using the card form with unselected normal, reported test-retest coefficients, ranging from .57 to .83, for six of the clinical variables. The time between testings varied from three days to more than one year. Cottle (1950) reported test-retest coefficients ranging from .46 to .91 for unselected normal who took both the card form and the group form within one week. Holzberg & Alessi (1949) reported test-retest coefficients for unselected psychiatric patients who took both the complete version and shortened version of the card form within three days. Coefficients of correlation ranged from .52 to .95.

This self report questionnaire designed by Hathaway & McKinley (1942); Mckinley & Hathaway (1942, 1944) covers the range of motivational, physical, and affective symptoms. MMPI- D scale consists of 57 items, each item is in a form of a simple statement. The subject is asked to sort all the statements. The subject is asked to sort all the statements into two categories (1) True or (2) False, depending upon how he feels about each statement. Score of 1 is given to the statement which reveals
the depressive attitude of the subject. Scores range from 1-57, higher score indicates greater severity of depression in a subject.

3. **Zung Self-Rating Depression Scale (ZSRS: Zung, 1965).**

   The Zung-D is a 20-item scale measuring the frequency of depressive symptomatology. Of the 20-items used, ten are worded symptomatically positive, and ten symptomatically negative. Thus, the scale appears well balanced with equal number of positive and negative statements. The items include such statements as "I feel down hearted and blue", "I have trouble with constipation", "I get tired for no reason", "My life is pretty full".

   The respondent is given a choice between the categories: "none or a little of the time", "some of the time", "part of the time", and "most or all of time" with numerical values ranging from 1 to 4 for positively worded items and 4 to 1 for negative statements. The total sum of scores for twenty statements range from 20 to 80, with a higher score signifying more depression. Zung (1965) reported that the Zung-D index of 50 serves as a criterion score to distinguish clinically depressed persons from normal.

   The author has extensively documented psychometric properties of the scale. Moreover, Zung (1971) argued that the Zung-D can discriminate the measurements of depression and anxiety in a clinical population. Gabrys & Peters (1985) found support for the scale's reliability by judge or self-report and the predictive and discriminant validities with functionally diverge groups. Another study (Tanaka-Matsumi & Kameoka, 1986) reported Cronbach alpha coefficient of 0.81 for a sample of 391 normal college students. The authors also found evidence for convergent validity but the discriminant validity was not clearly demonstrable, as pairs of anxiety and depression scores correlated strongly.

   Another study (Schaefer et al. 1985) estimated the internal consistencies of Zung Self-Rating Depression Scale by computing alpha coefficients. The Zung alphas were .90 (psychiatric ward) and .86 (chemical dependency ward). The authors found that the results favour the Zung over the MMPI- D Scale and, to a lesser degree, the BDI as a measure of depressive symptomatology in men. In general the Zung produced better validity coefficients than the Beck, which in turn yielded higher
correlations with our criteria than did the MMPI Depression scale. The authors further concluded that additional research on the scales' validities in women would be useful.

The Zung SDS, developed by Zung (1965) to "fill the need for assessing depression whether an affect, a symptom or a disorder", was chosen because of its accepted clinical values (Blumenthal, 1975). It covers a broad range of depressive symptomatology dealing with the areas of pervasive affect, physiological equivalent and psychological concomitants (Zung, 1965). It has a well established validity, reliability and replicability (Blumenthal, 1975; Zung, 1965, 1967; Zung, Richards, & Short, 1965). Additionally it is short, convenient to administer, and being self completed, it is not subject to the halo effect of rater bias spoken of by Pilowsky, Levine, & Boulton (1969) and Kendell (1968).

(B) Measures of Cognitive Dysfunction

1. Automatic Thought Questionnaire (ATQ: Hollon & Kendall, 1980)

Automatic Thought Questionnaire is a 30-item questionnaire designed to measure the frequency of occurrence of negative automatic thoughts found in depression. Items are rated on a 5-point scale: 1 = "not at all", 2 = "sometimes", 3 = "moderately often", 4 = "often", and 5 = "all the time". The items are rated for occurrence during the past week. Examples of typical items are "I am no good", "My life is a mess", "I am a failure", "I am worthless", "I hate myself", and "My future is bleak". The range of possible scores is from 30-150. The questionnaire, developed with a college student population, discriminated between depressed subjects and non-depressed subjects. Hollon & Kendall (1980) reported high internal reliability, strong correlation with severity of depression, and good item-total statistics. In 348 college students, the Automatic Thought Questionnaire correlated significantly with both the Beck Depression Inventory and the Minnesota Multiphasic Personality Inventory-Depression scale, the coefficients of correlation ranged from .45 to .70. Also using a college sample, Dobson & Breiter (1983), and Harrell & Ryan (1983) reported that ATQ possessed adequate internal reliability and strong sensitivity to the severity of depression. The ATQ was the most sensitive measure related to level of depression.

Dobson & Shaw (1986) found that the ATQ correlated positively and significantly with the two depression indices. Also, the ATQ correlated positively and
significantly with every other cognitive assessment measure, and non significantly with those cognitive response test scales not measuring depressive conditions. The authors concluded: “the Automatic Thought Questionnaire demonstrates strong convergent and discriminant validity”. Cronbach's alpha coefficients were found to be .94, .95 and .95 for different groups comprising of normal, psychiatric control and depressed respectively.

Thus Automatic Thought Questionnaire is a reliable and valid measure of the frequency of occurrence of negative automatic thoughts found in depression.

2. Hopelessness Scale (HS: Beck, Weissman, Lester, & Trexler, 1974)

The need for an instrument capable of assessing a respondent's negative expectancies has led to the development of the hopelessness scale. The underlying assumption is that hopelessness can be readily objectified by defining it as a system of cognitive schemas whose common denomination is negative expectations about the future.

The hopelessness scale is a self-report measure of view about the future in the form of checklist of 20 items to which the subject responds "true" or "false". Out of 20 true-false statements, 9 were keyed false and 11 were keyed true. For every statement each response is assigned a score of 0 or 1, and the total hopelessness score is the sum of the score on the individual items. Thus, the possible range of scores is from 0 to 20. The hopelessness scale was found to have a high degree of internal consistency and showed a relatively high correlation with the clinical ratings of hopelessness and other self-administered measures of hopelessness. The internal-consistency of the scale on a population of 294 hospitalised patients was analysed by means of coefficient alpha (KR-20), which yielded a reliability coefficient of .93.

The validity data presented for the hopelessness scale are deemed sufficient to justify its use on a continuing basis. The hopelessness scale is an instrument that may be used by both professionals and para-professionals involved in the detection and assessment of hopelessness as an important variable in many psychopathological processes.

This measure has been evaluated in a number of studies and has been found to be reliable, sensitive and easily administered.

The test format used is that of typical self-report attitude scale. For each belief or attitude (the items), seven response categories are presented (totally agree; agree very much; agree slightly; neutral; disagree slightly; disagree very much; totally disagree). On apriori basis, determinations were made as to whether a disagreement or an agreement response indicates an adaptive or maladaptive reaction to the belief in a question. Scaling is on a modified Likert (1932) model, with the adaptive end of the scale assigned an arbitrary value of one, the next category is two, etc. and, with zero being used for omits on each item. Each individual, then has a score for every item and, his total DAS score is simply the sum of the scores he/she received on each item. The higher the total score, the more distorted is the individual's way of thinking.

The Dysfunctional Attitude Scale (DAS) was originally a 100 item scale devised to measure the respondents use of typical depressive assumptions (Beck, 1975). A sample of 275 undergraduates (100 males and 175 females) at the Pennsylvania State University were administered the 100-item version of the DAS by a member of the Department of Psychology. The major criticism which was voiced related to the length of time required to complete the 100 items. Therefore, in an attempt to balance brevity and reliability, the data obtained from this population were subjected to a factor analysis, and an adaptation of a method described in Gulliksen (1950) was employed to construct two parallel forms of 40-items each (DAS-A and DAS-B). The range of possible scores is 40 to 280.

In the present study, Dysfunctional Attitude Scale, Form A was used. The DAS- Form A is a 40-item measure, designed to assess the respondents' endorsement of typical depressogenic assumptions (Beck, 1975). The scale has been found to possess necessary psychometric properties. Form-A, used in this study, is reported to have high internal reliability, correlation with other cognitive assessment measures and sensitivity to severity of depression (Dobson & Shaw, 1986; Dobson & Breiter, 1983; Weissman & Beck, 1978).
(C) Measures of Personality

1. IPAT Neuroticism Scale Questionnaire (Scheier & Cattell, 1961)

The Neuroticism Scale Questionnaire (NSQ) is a brief, standard, easily administered and scored inventory, measuring degree of neuroticism or "neurotic trend". It is suitable for normal and abnormal adults and adolescents. It helps diagnosis by giving a quantitative evaluation of neurotic trends without requiring the time of skilled practitioners. NSQ scores discriminate not only between neurotics and normals, but also between varying degree of slightly neurotic trend in persons usually classed as normal. Thus, the NSQ can be usefully applied to the vast number of essentially normal persons for whom assessment of neurotic trend is nevertheless important in occupational acceptability and in understanding and improving adjustment and proficiency. The NSQ is rooted firmly by validation research, in the common core of clinical judgement regarding the symptoms and nature of neurosis. As shown in the research literature, the numerical value obtained from the NSQ corresponds to what is common to the judgements of psychiatrists and clinical psychologists in regard to neurotic trend.

Neuroticism Scale Questionnaire (NSQ) measures the following factors:

(1) Factor I : Tender-mindedness vs. Tough-mindedness.
(2) Factor F : Depressiveness vs. Happy-go-lucky.
(3) Factor E : Submissiveness vs. Dominance.
(4) Factor An : Factor Q4 : Ergie tension vs. Relaxation.

Factor C : Ego Weakness vs. Ego Strength.
Factor O : Guilt Proneness vs. Assured Self Confidence

The last three dimensions listed above, as indicated, are known to group together in a second-order factor of anxiety and the test provides only one separate subscore for these three dimensions - an anxiety score- which becomes the fourth component of the test.

Distributions of items in the four components of The Neuroticism Scale Questionnaire (NSQ)
<table>
<thead>
<tr>
<th>Factor-component</th>
<th>Questions</th>
<th>No. of items</th>
<th>Range of scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overprotected, tender-minded sensitivity (I+)</td>
<td>1-5, 21-25</td>
<td>10</td>
<td>0-20</td>
</tr>
<tr>
<td>Depressive overseriousness (F-)</td>
<td>6-10, 26-30</td>
<td>10</td>
<td>0-20</td>
</tr>
<tr>
<td>Submissiveness, Dependence (E-)</td>
<td>11-15, 31-35</td>
<td>10</td>
<td>0-20</td>
</tr>
<tr>
<td>Anxiety [O+, Q4+, C-]</td>
<td>16-20, 36-40</td>
<td>10</td>
<td>0-20</td>
</tr>
</tbody>
</table>

Each item has three response alternatives scored 0, 1, 2, from lower to higher level of neuroticism and any single item contributes to only one of the four components. The total composite neuroticism score is simply the sum of raw scores on all 40 items in the four components. Thus, the possible range of scores is from 0 to 80, with higher scores indicating more neurotic trends.

The psychometric properties of the questionnaire in the Indian setup are also well documented (Hundal & Upmanyu, 1974).

2. **Eysenck Personality Questionnaire (EPQ: Eysenck & Eysenck, 1975)**

Eysenck's earlier measure of personality, that is, Eysenck Personality Inventory was concerned with three major dimensions: Extraversion (E), Neuroticism (N) and social desirability (L). The EPQ in addition to the E, N, and L-scales provides a measure for a new dimension, psychoticism (P), also called "tough-mindedness". The P-scale of the EPQ is the result of prolonged effort, having undergone numerous item revisions and tunings of item amalgams along the way to better meet the several theoretically given desiderata.

The questionnaire as currently constituted, present a three dimensional analysis of personality, with orthogonal super-factors of extraversion-introversion (E-I), neuroticism (N), and psychoticism (P). In addition, it includes some lie scale (L) items. Thus it provides an additional scale, i.e., P scale. The three other scales in it -
extraversion, neuroticism and lie scale have already been used in Eysenck's Personality Inventory, and Junior Personality Inventory.

Regarding the scores on lie scale items, a number of interpretations have been offered by different persons. It is variously described as "desire to conform to social norm's (Edwards & Heathers, 1962; Edwards, 1959), "ideal self" (Michaelis & Eysenck, 1971), "nice personality" (Skinner et al. 1970), "motivational distortion" (Cattell, 1965), etc. It is also called "faking good" response set. The subject has a motivation to give a false picture of self, rather a better picture of self than he really is. This tendency has been viewed as more or less an error to be avoided or response bias to be overcome, counter balanced or suitably corrected. Lately there has been a tendency amongst various investigators to consider it as a separate, independent and powerful personality factor, to be measured in its own right (Verma, 1977; Michaelis & Eysenck, 1971; Edwards, 1964). The present study did not attempt to exclude cases on the basis of lie-scale, instead lie-scale has been used as an important dimension of personality, to be measured in its own right.

Eysenck Personality Questionnaire ia a reliable and valid measures of personality.

(D) Measures of Social Support

Social Support Questionnaire (SSQ: Sarason, Levine, Basham, & Sarason, 1983)

Social support questionnaire (SSQ) developed by Sarason, Levine, Basham, & Sarason (1983) consists of 27 items. Each one asks a question to which a two-part answer is requested. The item asks the subject (a) to list the people to whom they can turn and on whom they can rely in given sets of circumstances, and (b) indicate how satisfied they are with these social supports on a 6-point Likert Scale (very satisfied, fairly satisfied, a little satisfied, a little dissatisfied, fairly dissatisfied, very dissatisfied). The SSQ yields two scores: (a) perceived availability of the number of supportive persons listed (SSQ-N), and (b) satisfaction with available support (SSQ-S). The number (N) score for each item of the SSQ is the number of support persons listed. The social support available to deal with a given problem is rated on a scale ranging from "very satisfied" to "very dissatisfied". This yields a satisfaction (S) score for each item that ranges between 1 and 6. The overall N and S scores are obtained by

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dividing the sum of N or S scores for all items by 27, the number of items included in the Social Support Questionnaire.

The Social Support Questionnaire has been found to have a number of desirable psychometric properties. It was found to have (a) stability over a 4-week period of time, and (b) high internal consistency among items.

The authors concluded that the modest correlation between SSQ-N and SSQ-S provides a strong basis for analyzing social support into its components. The perceived availability of support reflected by the SSQ-N score, and the satisfaction with the support that is available, reflected by the SSQ-S score, each appear to be worthy of study and analysis. More recently, Kumari & Sharma (1990) concluded that very high SSQ-N/SSQ-S correlation observed in Indian culture, raises some doubt about the cross-cultural generalizability. Sarason et al. (1983) claim that social support is not a unitary concept when assessed by the SSQ, and that perceived availability of support and satisfaction with the support that is available are worthy of study and separate analysis. The authors further concluded that factor analysis of the two SSQ scales in Indian and other Asian cultures will, however, be desirable before a firm statement on this issue can be made. Despite these concerns which are significant, it can be stated that SSQ is a useful tool for research aiming at examining the role of social support.

(E) Measures of Body Image

1. The Multidimensional Body-Self Relations Questionnaire (Cash, 1991)

The multidimensional Body- Self Relations Questionnaire (MBSRQ) has been developed through an extensive, iterative process or rational-empirical item selection and validation research, including factor-analytic research. The MBSRQ is a 69-item self-report inventory for the assessment of self-attitudinal aspect of the body-image construct. The inventory contains the 54-item short form (BSRQS) of the original 140 item BSRQ (Winstead & Cash, 1984), the 9-item Body Areas Satisfaction Scale (BASS), plus 6 weight related items. The MBSRQ was developed (on the basis of conceptual, empirical, and psychometric criteria) from earlier versions.

The BSRQ proper may be scored in either of two ways:

1. Based on the original conceptual scales, or
2. Based on the orthogonal scales from replicated factor analysis.
The conceptual scales were derived from the perspective that body image is a self attitude comprising of three psychological dimensions or dispositions toward one’s body: affective- (“Evaluation”), cognitive (“Attention/Importance”), and behavioral (“Action” or Activity”). The body is conceived of in terms of three somatic domains: Physical aesthetics (“Appearance”), ‘Physical competence’ (“Fitness”), and biological integrity (“Health”).

Thus, the BSRQ permits the derivation of 9 subscales from a 3 (Attitudinal dimension) X 3 (Somatic Domain) conceptual matrix. On conceptual and empirical grounds, the Attention/Importance and Appearance/Evaluation subscales may be combined within each of the three somatic domains to comprise the “orientation” subscales. This alternative permits derivation of 6 subscales: Appearance Evaluation, Appearance Orientation, Fitness Evaluation, Fitness Orientation, Health Evaluation, and Health Orientation. The factor analytic scoring produced the same 6 subscales, albeit with some differences in constituent items, plus an additional, seventh subscale termed “Illness Orientation”.

The MBSRQ Subscales

(A) The MBSRQ Factor Subscales

1. **Appearance Evaluation**: Feeling of physical attractiveness or unattractiveness; Satisfaction, or dissatisfaction with one’s looks. High Scorers feel mostly positive and satisfied with their physical appearance.

2. **Appearance Orientation**: Extent of investment in one’s appearance. High scorers place importance on how they look, pay attention to their appearance, and engage in lots of "growing behavior" to look their best.

3. **Fitness Evaluation**: Feeling of being physically fit or unfit. High scorers regard themselves as physically fit "in shape", or athletically active and competent.

4. **Fitness Orientation**: Extent of investment in being physically fit or athletically competent. High scorers value fitness and are actively involved in activities to enhance or maintain their fitness.

5. **Health Evaluation**: Feelings of physical health and/or the freedom from physical illness. High scorers feel their bodies are in good health.
6. **Health Orientation:** Extent of investment in a physically healthy lifestyle. High Scores are "health Conscious" and try to lead a healthy lifestyle.

7. **Illness Orientation:** Extent of reactivity to being or becoming ill. High Scorers are alert to personal symptoms of physical illness and are apt to seek medical attention.

(B) **Additional MBSRQ Subscales**

8. **Body Areas Satisfaction Scale (BASS):** High composite scorers are generally happy with most areas of their body. Low scorers are unhappy with the size or appearance of several areas of their body.

9. **Fat Anxiety:** This special scale concerns one’s emotional apprehension about weight gain or discomfort about being overweight.

10. **Weight Vigilance:** This special scale reflects one’s extent of awareness of small changes in weight....."weight watching".

11. **Self-Classified Weight:** This special scale reflects how one perceives and labels one’s weight from very underweight to very overweight.

12. **Dieting/Restraint:** Two items reflecting the extent of weight control: dieting and fasting.

**Administration of Tests**

The tests were administered in six sessions, following uniform sequence. In the first session, MMPI-D Scale and IPAT Neuroticism Scale Questionnaire were administered. In the second session, Beck Depression Inventory and Dysfunctional Attitude Scale were completed. In the third session, Zung Self-Rating Depression Scale and Automatic Thought Questionnaire were administered, whereas in the fourth session, subjects completed Eysenck Personality Questionnaire and Social Support Questionnaire. In the fifth session, Hopelessness Scale and Multidimensional Body Self-Relation Questionnaire were administered. In the last session, subjects were asked to answer two items, namely (i) to what they attribute depression and (ii) mention the strategies used by them to cope with depression.

The tests were administered to subjects in groups of 5 to 7 subjects in accordance with the instructions given by authors of the tests. The instructions for different tests were read aloud to the group comprising of 5 to 7 subjects. The
instructions in typed form were also provided to the subjects. The doubts of the subjects were removed before permitting them to take the test. Each form was checked to see if any omission was there and if so, the particular subject was asked to complete that question or questions.

Strict supervision was exercised in order to see that the subjects do not discuss or take up help from each other while performing on the tests. The general testing conditions were satisfactory. Sincere efforts were made to establish rapport with the subjects in order to elicit reliable and authentic information.

Subjects were told that information was being collected purely for research purpose. They were also assured that the information to be collected would remain strictly confidential and presented only in a form in which no person could be identified. The promise of privacy appears to have gone a long way in establishing psychological rapport, since a large number of subjects contacted the investigator later on and enquired about their performance on the tests used.

**Scoring of Tests**

The tests were scored strictly in accordance with the procedure suggested by the authors of different tests. As a result of scoring different tests, several measures mentioned below were obtained.

**I. Three measures of Depression**

1. Depression scores obtained by scoring MMPI- Depression Scale;
2. Depression scores obtained by scoring Beck Depression Inventory;
3. Depression scores obtained by scoring Zung Self-Rating Depression Scale.

**II. Three measures of Cognitive Dysfunction**

1. Negative automatic thoughts,
2. Dysfunctional attitude, and
3. Hopelessness.

**III. IPAT Neuroticism Scale Questionnaire** was scored for deriving scores pertaining to Factors I, F, E, and An.
IV. Four measures concerning psychoticism, neuroticism, extraversion, and social desirability were obtained by scoring Eysenck Personality Questionnaire.

V. Social Support Questionnaire was scored for measures, namely SSQ-N and SSQ-S scores.

VI. Thirteen measures were obtained from the multidimensional Body- Self Relations Questionnaire;
1. Appearance Evaluation;
2. Appearance Orientation;
3. Fitness Evaluation;
4. Fitness Orientation;
5. Health Evaluation;
6. Health Orientation;
7. Illness Orientation;
8. Body Areas Satisfaction;
9. Fat Anxiety;
10. Weight Consciousness;
11. Subjective Weight;
12. Current Dieting; and

Thus, as a result of scoring different tests, 29 types of score were available.

Analysis

The data were analysed to obtain the following information:

1. Frequency distribution, mean, standard deviation, skewness, and kurtosis for different measures.

2. Bivariate correlations between different measures.

3. Factor analysis for the measures of depression, dysfunctional attitudes, negative automatic thoughts, hopelessness, psychoticism, neuroticism, social desirability, extraversion, social support, and body image.

The analyses were done separately for: (a) male adolescents and (b) female adolescents. The reasons for separate analyses have been discussed earlier.