Method
DESIGN

The primary aim of the present investigation was to compare Obese and Normal Weight Adolescents of both the genders on Personality and its dimensions, Perceived Stress and Strain, Perceived Family Environment and its dimensions, Parental Acceptance Rejection and its dimensions, Attitude towards Body Image and its dimensions, Indices of Negative Affect (viz., Irritability and Depression), Optimism, Psychological Well-Being and Eating habits were also included in the investigation.

To measure Obesity the Body Mass Index was used. The formula used to calculate BMI was:

\[
\text{BMI} = \frac{\text{Weight in Kilograms}}{(\text{Height in Metres})^2}
\]

For measuring Personality Spielberger's State-Trait Anxiety Inventory (1983), Eysenck's Personality Questionnaire - Revised (1985), Wallston and Wallston's Health Locus of Control Scale (1982) and Cheek and Buss (1981) Self-Esteem scale were used. For measuring Perceived Stress and Strain, Presumptive Stressful Life Events Scale by Singh et al. (1984) and Daily Hassles and Uplifts Scale by Kanner et al. (1981) were used. The effect of Stress was assessed by the Stress Symptoms Scale by Heilbrun and Pepe (1985). For measuring Perceived Family Environment and its dimensions, Family Environment Scale by Joshi and Vyas (1986) was used. It studied three main dimensions, viz., Relationship, Personal Growth and System Maintenance. For measuring the Perception of Parental Child rearing Practices and its dimensions, viz, Warmth, Aggression, Neglect and Rejection,
Parental Acceptance Rejection Questionnaire (Mother’s version) by Rohner et al. (1979) was used. For measuring Attitude to Body Image and its dimensions, viz, Total of Body Self Relation dimension (which further yielded seven subscales) and Additional Multidimensional Body Self Relation dimension (which yielded five subscales). Multidimensional Body Self Relation Questionnaire by Cash (1991) was used. Buss and Durkee’s Scale (1957) was used for measuring Irritability. Zung’s Self Rating Depression Scale (1965) was used to assess Depression. Scheier and Carver’s Optimism Scale (1985) was used for measuring Optimism. For measuring Psychological Well-Being PGI-Well-Being scale by Verma and Verma (1989) was used. In all the raw data consisted of 53 variables.

A semi-structured interview schedule was also administered to the subjects to assess their eating habits and the factors triggering eating behaviour. The subjects were asked to maintain a Diary for a week noting what they ate for three square meals and the snacks consumed by them.

SAMPLE

Total sample comprised of 400 subjects which included 200 boys and 200 girls. Three weight groups viz., High, Low and Normal based on BMI index were formed separately for both the genders. The procedure was that in males those scoring below 22 on BMI formed the Low weight group; those falling between 22 and 27 formed the Normal weight group; and those scoring above 27 formed the High weight group. Number of male adolescents whose BMI was above 27 were forty three in number. Similarly, for females those scoring below 22 on the BMI formed the Low weight group, those falling between 22 and 26 formed the Normal weight group.
and those scoring above 26 formed the High weight group. Number of female adolescents whose BMI was above 26 were forty six in number. The criteria followed for group formation based on BMI was the same as is used in Endocrinology department of Post Graduate Institute of Medical Sciences and Research, Chandigarh and other medical institutes in the country. These adolescents were randomly selected from schools in and around Chandigarh.

The age range of the total sample was 13–18 years and their average age was 15.4 years. The age range for the male adolescent sample was also 13–18 years and their average age was 17 years. For female adolescent sample the age range was 14–18 years and the average age was 15.7 years.

Accordingly nine groups were formed. Total sample (n = 400), females (n = 200); males (n = 200); male Low weight group (n = 37); male High weight group (n = 43); male Normal weight group (n = 120); female Low weight group (n = 58); female High weight group (n = 46); and female Normal weight group (n = 96).

Additional aim of the present study was to relate BMI to Personality and its dimensions, Perceived Stress and Strain, Perceived Family Environment and its dimensions, Parental Acceptance Rejection and its dimensions, Attitude towards Body Image and its dimensions. Indices of Negative Affect, viz., Irritability and Depression, Optimism, and Psychological Well-Being were also related to BMI.
TESTS

The following standardised tests were used:

1. State Trait Anxiety Questionnaire (Spielberger et al., 1983)
2. Optimism Scale (Scheier and Carver, 1985)
3. Irritability Scale (Buss and Durkee, 1957)
4. Self-Esteem scale (Cheek and Buss, 1981)
5. Health Locus of Control Scale (Wallston et al., 1982)
6. Daily Hassles and Uplifts Scale (Kanner et al., 1981)
7. Stress Symptoms Rating Scale (Heilbrun and Pepe, 1985)
8. Parental Acceptance Rejection questionnaire by Rohner et al. (1979)
9. Zung’s Self Rating Depression Scale (Zung, 1965)
10. PGI Well-Being Scale (Verma and Verma, 1989)
11. Presumptive Stressful Life Events Scale (Singh et al., 1984)
12. Multidimensional Body Self Relation Questionnaire (Cash, 1991)
13. Eysenck’s Personality Questionnaire – Revised (Eysenck et al., 1985)
14. Family Environment Scale (Joshi and Vyas, 1996)
15. Semi-structured interview schedule was used to assess Eating habits of the subjects and listing of what triggers their eating.
16. Diary Method: The subjects were asked to maintain a diary to record their daily food intake for a week.

BRIEF DESCRIPTION OF TESTS

The State -Trait Anxiety Inventory (STAI)

(Spielberger et al., 1983)

The State-Trait Anxiety Inventory (STAI) was developed by Spielberger et al. (1983) to provide standardised self-reported scales to assess both state and trait anxiety.
State anxiety has been defined as consisting of subjective feelings of tension, apprehensions, nervousness and worry and activation (arousal) of the autonomic nervous system generated by certain situations, e.g., denial anxiety, test-taking anxiety and anxiety about flying. Trait anxiety refers to relatively stable Personality dimensions reflecting individual differences in anxiety proneness.

The test consists of 40 items, 20 to measure State anxiety and 20 to measure Trait Anxiety. On the State Anxiety form the subjects, respond to each item in terms of severity (not at all, somewhat, moderately so, very much). On trait anxiety form, subjects respond in terms of frequency categories (almost never, sometimes, often, almost always). These categories are assigned numbers from 1 to 4. Items are both direct and reverse scored. Scores may range from 20 to 80 for either form. It has a reliability coefficient 0.78 for males and 0.85 for females (Pastore et al., 1996). On an average, alpha coefficients for State Anxiety have been reported to be 0.90. The test has adequate content, concurrent and construct validity. This scale has been used in India by Azar (1997), Innocent (1999), Mohan et al. (1999), Mohan (2000), Mohan (2001), among others.

Optimism Scale
(Scheier and Carver, 1985)

To assess Optimism, a short form of Optimism scale developed by Scheier and Carver (1985) was used. Optimism is a general feeling and inclination to hopefulness and confidence. It is a disposition to take bright and hopeful view of things. The optimism scale contains four items to be rated on a 5-point scale ranging from
'to a very great extent' to 'almost no extent'. Total optimism scores are obtained by adding on all the four items.

The scale has an internal reliability (Cronbach alpha) of 0.76 and a test-retest reliability of 0.79. (Scheier and Carver). The test has been successfully used in India by Saini (1998) and Innocent (1999) among others.

**Irritability Scale**

(Buss and Durkee, 1957)

The Irritability scale has been taken from full form of Buss-Durkee inventory. This scale attempts to assess anger, which may remain latent or become manifest in angry aggression.

Irritability represents a readiness to explode with negative affect at the slightest provocation. It includes quick temper, grrouchiness, exasperation and rudeness. Assault, verbal hostility, indirect hostility and negativism are all forms of aggression, while resentment and suspicion represent hostility.

This 17-item scale is a part of an aggressiveness factor that also includes physical, indirect and verbal aggression. Some items are scored in a reverse manner while the rest are scored directly. The total score is the sum of all scores added together. This scale has adequate reliability and validity. This scale has been used in India by Mohan et al. (1993), Saini (1998), Sehgal (1999), Innocent (1999), Sehgal (2000), Mohan (2000, 2001).

**Self-Esteem Scale**

(Cheek and Buss, 1981)

The scale contains six general items, in keeping with the nature of Self-Esteem as a global trait. Self-Esteem is the way one feels about oneself including the degree to which one possesses self-respect and self-acceptance.
The Self-Esteem scale by Cheek and Buss (1981) correlates 0.88 with the well known questionnaire of Rosenberg’s Self-Esteem scale (1965), which suggests that they are measuring roughly the same trait. Self-Esteem correlates negatively with shyness (-0.51) and positively with extroversion (0.38). Mohan (1994), Saini (1998) and Innocent (1999) have successfully used this scale in India.

**Health Locus Of Control Scale (HLOC)**
(Wallston et al., 1976)

Wallston & Wallston (1982) constructed a Health Locus of Control scale to measure Internal and External Health Locus of Control dimensions. It consists of 11 items – 6 items of Externality and 5 items of Internality. The Health Locus of Control items have a six point rating scale in terms of agreement and disagreement (Wallston & Wallston, 1982). This scale is an area specific measure of expectations, regarding Locus of Control developed for prediction of health related behaviour. Scores range from 11 to 66.

Concurrent validity of HLOC scale was reported to be 0.33 with Rotter’s Internal External scale. The alpha reliability of the scale is 0.72. The test has been successfully used in India by Saini (1998), Innocent (1999), Mohan (2000), Sehgal (2000) and Mohan (2001) among others.

**Daily Hassles And Uplifts Scale**
(Kanner et al., 1981)

The Daily Hassles and Uplifts scale was constructed by Kanner et al. (1981) to assess the number, severity and intensity of the daily hassles and uplifts that the subject has experienced in the last month. The ‘Hassles Scale’ consisted of a list of hassles or every day irritants. These cover the areas of health, family, friends, the environment, practical considerations and chance occurrences.
Subjects are requested to indicate any hassles that have been experienced during the last month and rate how severe these have been on a 3-point scale, 3 being ‘a great deal’ and 0 being ‘None or not applicable’.

The ‘Uplift scale’ consists of a list of uplifts; minor life-events that make people feel good. Subjects are asked to indicate the uplifts they have experienced during the last month and rate their experience of each on a 3-point scale, 3 being ‘A great deal’ and 0 being ‘None or not applicable’.

The present study used a revised version of Hassles and Uplifts scale by Delongis et al. (1982) which is a shorter version of Kanner et al. (1981) test and consists of 53 items. The test has been successfully used in India by Saini (1998), Innocent (1999), Mohan (2000), Mohan (2001) and Mohan et al. (2001).

**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 in earlier stress research. The Stress Symptoms Rating Scale is an inquiry into the amount of Stress experienced 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 stress symptoms (for the previous year) alone 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 has been found to be 0.93 by Heilburn and Putter (1986). Evidence for validity has come from differential elevations of stress found in groups, otherwise identified as more stressful. The test has been successfully used in India by Gujral (1990), Saini (1998), Innocent (1999) and Mohan (1999, 2000).

**Parental Acceptance Rejection Questionnaire**
(Rohner et al., 1979)

The Parental Acceptance Rejection Questionnaire is a self-report instrument designed to measure an individual's perceptions of parental acceptance and rejection. Parental acceptance-rejection is a bipolar dimension of parental behaviour with acceptance defining one end of the continuum and parental rejection defining the other end.

There are three versions of Parental acceptance rejection questionnaire. All versions of PARQ consist of four scales:

(i) **Perceived Parental Warmth / Affection.**

This refers to parent-child relationship where parents are perceived to give love and affection without qualification but not necessarily with great demonstration. Accepting parents are generally seen as liking their child, they are seen as approving of his personality and seem to take interest in his activities and well being. It may be manifested by showing approval of the child, playing with him, enjoying him, fondling, cuddling him, comforting and consoling him.

(ii) **Perceived Aggression / Hostility**

This refers to (a) condition where the child believes his parents are angry bitter or resentful of him (b) to conditions where the child believes his parents intend to hurt him, physically or
verbally. Parents who are seen as being aggressive are often viewed as being critically impatient, irritable, or antagonistic towards the child. Apparently aggressive, hostile parents may be viewed as nagging, scolding and ridiculing their child and they may say how the child gets on their nerves or express their frustration and irritation at the child’s behaviour in other ways.

(iii) Perceived Neglect / Indifference

This refers to a condition where the child sees his parents as unconcerned or uninterested in him. Such parents are seen by the child as paying little attention to him, and they are apt to be viewed as spending a minimum amount of time with him. When such parents are together their children may be perceived to ignore the child’s request for health, attention or comfort. They may be seen as forgetting promises made to him, and they are often regarded as failing to attend the needs important to the child’s happiness or wellbeing. Neglecting or indifferent parents are not necessarily seen to be hostile, however they simply may be viewed as cold, distant or unconcerned about their child.

(iv) Perceived Parental Rejection (undifferentiated)

This refers to a condition where the child sees his parents as withdrawing warmth from him, i.e., they are seen as rejecting him. Parents who are perceived to be rejecting seem not to like their child, they seem to disapprove of him or resent him and they are often seen as viewing him as a burden rather than a pleasure.

The scale Warmth / Affection in the PARQ contains 20 items. The scales measuring Aggression / Hostility and Neglect / Indifference each contain 15 items, and the fourth scale (Rejection, undifferentiated) contains 10 items. So there are in total 60 items. The item are scored on 1 to 4 scale showing the extent to which the
statement holds true for themselves, with few items to be scored in reverse manner.

A study in 1975 of 58 students in a large New England University by Rohner and Cournoyer revealed a spread of alpha scores from 0.83 to 0.96 with a median coefficient of 0.91 for this test. The present study used Child’s version of the test.

**Zung’s Self Rating Depression Scale**
(Zung, 1965)

Zung’s Self-Rating Depression Scale was designed to provide a brief quantification of depressive state. It comprises of 20 items, rated on a four point scale (i.e. a little, some, good part, or most of the time) assessing the depressive symptoms selected by the author as being most typically experienced by patients with depressive disorders. The higher scores indicate more depression. The scale is said to be an excellent checklist of some twenty most common complaints comprising the modern concept of depression (Farby, 1980).

Zung (1965) reported some normative data for the ZSRS from several psychiatric patient groups and for 1000 normal subjects, clearly demonstrating the validity of the scale.

Knight et al. (1983) reported norms and reliability data for the State-Trait Anxiety Inventory and the Zung’s Self Rating Depression Scale. The correlation between patients’ age and score on the ZSRS was 0.90 (p<0.01). The ZSRS correlated 0.54 with the State Anxiety and 0.70 with the Trait Anxiety (p<0.001 in both cases).

This scale has already been used frequently in Indian studies. Upmanyu and Reen (1990, 1991); Upmanyu and Dhingra (1993)
have used the scale and reported it to possess adequate psychometric characteristics. Kaur (1989), Verma (1994), Kaur (1994), Rajwinder (1994), Moudgil (1998), and Innocent (1999) have also used the scale successfully in India.

**PGI Well-Being Scale**
(Verma and Verma, 1989)

Many attempts have been made in the past to measure positive mental health. In 1970, the General Well-Being schedule was developed by Dupuy (1970). The PGI Well-Being Scale (Verma & Verma, 1989) is a modified version of Dupuy's General Well-Being Scale. Thus the PGI General Well-Being scale is a 20 item self-administered scale constructed by Verma & Verma (1989) to suit Indian population. The scoring is easy and is carried out by just counting the number of tick marks with scores ranging from 0-20. People were found to be at all score range levels. KR20 reliability of the scale was found to be 0.98 and test retest reliability was found to be 0.86. In India the scale has been successfully used by Chaudhary (1995), Saini (1998), Innocent (1999), Mohan (2000, 2001).

**Presumptive Stressful Life Events Scale**
(Singh et al., 1984)

Using an open ended questionnaire along with Holme's and Rahe's Social Adjustment Rating Schedule on a sample of 200 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, i.e., events experienced in the last one year and life time. Analysis of various demographic variables for this population revealed no differences on this scale for age, marital
state, 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 occurrences 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 the life time, without suffering any adverse physical and psychological disturbances. The scale is simple to administer to literate and illiterate subjects.

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

Subjects were asked to report the relative stress they have actually experienced or imagine 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., language of subject's preference.

In India Azar (1997), Innocent (1999), Bahl (1999), Mohan (2000, 2001) have used this scale.

**Multidimensional Body Self Relation Questionnaire** (Cash, 1991)

The Multidimensional Body Self-Relation Questionnaire (MBSRQ) has been developed through an extensive process or rational-empirical item selection and validation research including factor-analytic approach. The MBSRQ is a 69 item self-report
inventory for the assessment of self-attitudinal aspect of the body-image construct and the inventory contains the 54 item short form (BSRQ) of the original 140 item BSRQ (Winstead and Cash, 1984), the 9-items Body Area 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 spates from replicated factor analysis. The conceptual scales were derived from the perspective that body image is a self attitude comprised of 3 psychological dimensions or dispositions towards one's body, viz., affective ("Evaluation"), Cognitive ("Attention/Importance") and Behavioural ("Action/Activity"). The BSRQ conceives the body in terms of three somatic domains – Physical aesthetics ("Appearance"), Physical competence ("Fitness") and Biological Integrity ("Health").

Thus the BSRQ permits the derivation of 9 sub-scales from three Attitudinal dimensions and three somatic domain conceptual matrix. On conceptual and empirical grounds the Attention/Importance and Appearance/Evaluation sub-scales may be combined within each of the three somatic domains to comprise the "Orientation" sub-scales. This alternative permits derivation of 6 sub-scales. Appearance Evaluation, Appearance Orientation, Fitness Evaluation, Fitness Orientation, Health Evaluation and Health Orientation. The factor analytic scoring produced same 6 sub-scales, albeit with some differences in constituent items, plus an additional seventh sub-scale termed "Illness Orientation".
The MBSRQ Sub-Scales

A. The BSRQ Factor sub-scales

(i) **Appearance Evaluation**: Reflects feeling of physical attractiveness or unattractiveness, satisfaction or dissatisfaction with one's looks. High scorers feel mostly positive and satisfied with their physical appearance. This sub-scale consists of seven items.

(ii) **Appearance Orientation**: Reflects 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 “grooming behaviour” to look their best. This sub-scale consists of twelve items.

(iii) **Fitness Evaluation**: Reflects feeling of being physically fit or unfit. High scorers regard themselves physically fit, “in shape” or athletically active and competent. This sub-scale consists of three items.

(iv) **Fitness Orientation**: Reflects 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. This sub-scale consists of thirteen items.

(v) **Health Evaluation**: Reflects feelings of physical health and/or the freedom from physical illness. High scorers feel their bodies are in good health. This sub-scale consists of six items.

(vi) **Health Orientation**: Reflects extent of investment in a physically healthy lifestyle. High scorers are “health conscious” and try to lead a healthy lifestyle. This sub-scale consists of eight items.
(vii) **Illness Orientation**: Reflects 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. This sub-scale consists of five items.

B. **Additional MBSRQ Sub-scales**

(viii) **Body Area 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. This sub-scale consists of nine items.

(ix) **Fat Anxiety**: This special scale concerns one’s emotional apprehension about weight gain or discomfort about one’s overweight. This sub-scale consists of only one item.

(x) **Weight Consciousness**: This special scale reflects one’s extent of awareness of small changes in weight, i.e., “weight watching”. This sub-scale consists of only one item.

(xi) **Subjective Weight**: This special scale reflects how one perceives and labels one’s weight from being underweight to being overweight. This sub-scale consists of two items.

(xii) **Eating Restraint**: Items reflect the extent of weight control through dieting and fasting, i.e., by showing restraint in eating. This sub-scale consists of only one item.

(xiii) **Current Diet**: This scale reflects the amount of recent dietary habits of an individual. This sub-scale consists of only one item.

The scale was used successfully in India by Rajwinder (1994) and associates.
Eysenck’s Personality Questionnaire Revised
(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 three 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 one hundred dichotomously response items: thirty two items for Psychoticism scale, twenty three for Extraversion scale, twenty four for Neuroticism scale and twenty one for Lie (social desirability) scale.

Eysenck (1960) described extraversion “as impulsive behaviour with social tendencies and introversion as controlled and responsible behaviour. A typical high scorer on Neuroticism was described as an anxious worrying individual who is moody and frequently depressed. A high Psychoticism scorer may be described as solitary and not caring for people”. The Lie (social desirability) scale is variously described as “a desire to conform to social norms” (Edwards and Heathers, 1962). Eysenck and Eysenck (1964) concluded that it did successfully identify the individuals “faking good”.

The alpha reliability for the revised scale has been found to be as follows:

<table>
<thead>
<tr>
<th>Gender</th>
<th>P</th>
<th>E</th>
<th>N</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>0.78</td>
<td>0.90</td>
<td>0.88</td>
<td>0.82</td>
</tr>
<tr>
<td>Females</td>
<td>0.76</td>
<td>0.85</td>
<td>0.85</td>
<td>0.79</td>
</tr>
</tbody>
</table>

**Family Environment Scale**
(Joshi and Vyas, 1987)

To measure family environment, the Family Environment Scale (F.E.S) of Moos (1974) has been adapted and standardized in Indian conditions by Joshi and Vyas (1987) in Hindi language. The aim of the scale is to obtain the social, i.e., interpersonal and environmental characteristics of families and to assess perception of family environment.

The original F.E.S. questionnaire consists of 90 statements. The statements in the inventory try to identify characteristics of an environment which would exert or press towards all the important constituents of its main domains, i.e., Cohesion, Achievement Orientation, Moral Religious Emphasis, etc. In the process of adaptation 11 original items were dropped as a result of an item analytic and item discrimination study and the final scale has 79 items. The scale includes 10 areas that encompass three broad interdependent and yet separately identifiable dimensions, viz, **Relationship, Personal Growth and System Maintenance**.

**Relationship aspect** is measured by Cohesion, Expressiveness and Conflict subscales. **Personal Growth aspect** is measured by Independence, Achievement Orientation, Intellectual Cultural Orientation, Active Recreational Orientation and Moral
Religious Emphasis subscales. System Maintenance aspect is measured by Organization and Control subscales.

**Relationship dimensions of F.E.S.**

(i) **Cohesion**: The extent to which the family members are concerned and committed to the family and the degree to which the family members are helpful and supportive of each other.

(ii) **Expressiveness**: The extent to which family members are allowed and encouraged to act openly and to express their feelings directly. The family participates actively in various kinds of recreational and sporting or festivity type of activities.

(viii) **Moral Religious Emphasis**: The extent to which family actively discusses and emphasizes ethical and religious issues and values.

**System Maintenance dimensions of F.E.S.**

(ix) **Organisation**: Measures how important order and organisation is in the family in terms of structuring the family activities, financial planning, explicitness and clarity about family rules and responsibilities.

(x) **Control**: Assesses the extent to which the family is organised in a hierarchical manner, the rigidity of the family rules and procedures and the extent to which family members order each other around.

Each item of every sub-scale is to be rated on a five-point scale ranging from 0 to 4. There are some negatively framed items for which the scoring is in reverse direction of weightage, i.e., 4 to 0. The total score of each subscale has to be obtained by adding...
scores obtained on each of the respective items of that scale. In this manner for each sub-scale.

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. The scale has been used in India by Vohra (1993).

A semi-structured interview schedule was administered to get information about demographic variables, parental weight status, health habits, profession, etc. Diary method was used to assess eating habits and nutritional behaviour of subjects. Subjects were asked to maintain a diary for one week to record their daily food intake and moods and events which triggered snacking and overeating.

**PROCEDURE**

The battery of questionnaires was administered to a sample of 400 students, 200 boys and 200 girls chosen from various schools in and around Chandigarh. These subjects were given the questionnaires in a booklet form and were requested to respond to them truthfully. They were assured that their results and the information obtained would be kept strictly confidential and will be used for research purposes only.

**INSTRUCTIONS FOR THE QUESTIONNAIRES**

1a. **Instructions for the State Trait Anxiety Inventory (State Form)**

Instructions for the State Anxiety Questionnaire were: A number of statements which people have used to describe themselves are given below. Read each statement and then
blacken the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any of the statements but give the answer which seems to describe your present feelings best.

1b. **Instructions for the State Trait Anxiety Inventory (Trait Form)**

Instructions for the Trait Anxiety Questionnaire were: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any of the statements but give the answer which seems to describe your present feelings best.

2. **Instructions for the Optimism Scale**

Instructions for the Optimism scale were: “Choose any one of the following alternative through encirclement to indicate your degree of agreement with the statement”. The response options are:

- To a great extent is (5),
- To much extent is (4),
- To some extent is (3),
- To small extent is (2),
- Almost no extent is (1).

3. **Instructions for the Irritability Scale**

Instructions for the irritability scale were: “For the statements given here tick either of the alternatives, i.e., ‘Yes’ or ‘No’, which you think best describes yourself”.

4. **Instructions for the Self-Esteem Scale**

Instructions for the Self-Esteem scale were: “For the statements given here, tick either of the alternatives i.e., ‘Yes’ or ‘No’, which you think best describes yourself.”
5. **Instructions for the Health Locus of Control Scale**

Instructions for Health Locus of Control were: “Listed below are a number of statements about various topics which represent different shades of opinion. On each statement people may show their agreement or disagreement. Please indicate whether you agree or disagree with each statement by circling any one: SD, MD, Sd, Sa, MA, SA, where

SD is Strongly disagree; MD is Moderately disagree; Sd is Slightly disagree (Sd); Sa is Slightly agree; MA is Moderately agree (MA); and, SA is Strongly Agree.

6. **Instructions for the Daily Hassles and Uplifts Scale**

Instructions for the Daily Hassles and Uplifts Scale were: “Given below are 53 statements with the scale of 0–3 on each side. Please circle one number on the left side to describe the situations as Hassles and circle one number on the right hand side to describe the situation as Uplifts, 0 implies being ‘none/not applicable’ and 3 implies ‘a great deal’.

The statements used for assessing Hassles and Uplifts and the response alternatives for each scale are given below:

<table>
<thead>
<tr>
<th>Hassles</th>
<th>Uplifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much of a hassle was this item for you yesterday?</td>
<td>How much of an uplift was this item for you yesterday?</td>
</tr>
<tr>
<td>0 = None or not applicable</td>
<td>0 = None or not applicable</td>
</tr>
<tr>
<td>1 = Somewhat</td>
<td>1 = Somewhat</td>
</tr>
<tr>
<td>2 = Quite a bit</td>
<td>2 = Quite a bit</td>
</tr>
<tr>
<td>3 = A great deal</td>
<td>3 = A great deal</td>
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</tbody>
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7. **Instructions for the Stress Symptoms Rating Scale**

Instructions for the Stress Symptoms Rating Scale were: “Given here are 25 statements with a scale of 0–5. Rate the frequency of each item for the previous year along the following scale:
0 is Not at all; 1 is Less than once per month; 2 is Between once per week and once per month; 3 is Amount once per day; 4 is Between once per day and once per week; 5 is More than once per day”.

8. **Instructions for the Parental Acceptance Rejection Questionnaire**

Instructions for the Parental Acceptance Rejection Questionnaire were: “In the following pages few statements have been given which shows how mothers behave with their children. You think how your mother behaves with you and which statements are applicable for you. In front of each statement there are four options. If you think that your mother’s behaviour is same as stated in the statement then question yourself, “Is it always true” or “Is it sometimes true”. If you think your mother has always behaved in the same manner as stated here put a sign of (x) in front of “Always true”. If you think your mother has behaved only sometimes like that, then put a sign of (x) in front of “Sometime true”. If you think your mothers’ behaviour towards you is not according to the statement then you question yourself “Is it sometimes true” or “Rarely true”, then put a sign of (x) in front of rarely true, if it rarely happens. If you feel that the statement never holds true for you then put a sign of (x) in front of “Almost never true”. While answering keep in mind that there are no right or wrong answers. Therefore, as far as possible be honest. Answer how you actually feel about your mother. Do not answer to the question. “How you want her to be” but how she actually behaves with you, i.e., how you feel about her”.

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9. **Instructions for the Zung’s Self Rating Depression Scale**

Instructions for the Zung’s Self-Rating Depression scale were: “Listed below are twenty statements. Please read each statement carefully and decide how much you agree or disagree with the statement. There are four alternatives given in front of each statement. Of these you have to choose one alternative on the answer sheet in the following fashion:

1—Not at all, 2—Moderately often, 3—Often, 4—All the time”.

10. **Instructions for the PGI Well-Being Scale**

Instructions for the PGI-Well-Being scale were: “For the statements given below, tick in the cell against each item which is applicable to you”

11. **Instructions for Presumptive Stressful Life Events**

Instructions for the Presumptive Stressful Life Events scale were: “Given below is a set of 50 events that take place normally during the course of life. Some of these may apply to you also. Kindly indicate by yes or no, whether the event has occurred ever or in the last one year and approximate date/month/year if it has occurred. Also indicate how stressful it was for you. Rate from 0 to 3. 0 means not at all, 1 to some extent, 2 to a great extent, 3 means considerable extent.”

12. **Instructions for Multidimensional Body Self-Relation Questionnaire**

Instructions for the Multidimensional Body Self Relation Questionnaire were: “The following pages contain a series of statements about how people might think, feel or behave. You are asked to indicate the extent to which each statement pertains to you personally.”
Your answers to the items in the questionnaire will be confidential. So please do not write your name on any of the materials. In order to complete the questionnaire, read each statement carefully and decide how much it pertains to you personally. Using a scale like the one below, indicate your answer on the computerised answer sheet by blackening the appropriate circle to the right of the numbers of the statements which item numbers.

A —Definitely Disagree, B —Mostly Disagree, C —Neither Agree nor Disagree, D —Mostly Agree, E —Definitely Agree

For the items 61–69, indicate how satisfied you are with each of the following areas of your body by choosing one of the following response alternatives:

A —Very Dissatisfied, B —Mostly Dissatisfied, C —Neither Satisfied nor Dissatisfied, D — Mostly Satisfied, E — Very Satisfied

13. Instructions for the Eysenck’s Personality Questionnaire—Revised

Instructions for the Eysenck’s Personality Questionnaire—Revised (EPQ-R) were: “Please answer each question by putting a circle around the ‘Yes’ or ‘No’ following the question. There are no right or wrong answers and no trick questions. Work quickly and do not think too long about the exact meaning of the question. Please check that you have answered all the questions”.

14. Instructions for the Family Environment Scale

Instructions for the Family Environment Scale were: “Given below are 79 statements about the ways the family-members interact with each other. Please answer each question by putting right or wrong, i.e., tick or cross which you think best describes your family”.

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15. **Instructions for Semi-Structured Interview Schedule**

Instructions for semi-structured interview were: “Please go through all the questions and fill them up. Do not omit any items.”

16. **Instructions for the Diary Method**

Instructions for the Diary method were: “Please maintain a Diary for a week noting what you eat for three square meals. Please also record the number of times you took snacks in a day and the kind of snack you ate each time along with the quantity. Also write about your mood or any special event which triggered your eating.”

**SCORING**

Scoring for all the tests was done as per the instructions given in the scoring manuals of the tests. The scores were then tabulated and subjected to various statistical analysis, viz., t-ratio, 2x3 Analysis of Variance, Correlation analysis and regression analysis.