CHAPTER III

METHOD

The main objective of this study was to examine the effect of social support and body image on depression among adolescents in the context of the intervening role of negative cognition. As a consequence, several hypotheses have been formulated. The empirical verification of the proposed hypotheses, however, depends upon:

1. Selection of adequate sample.
2. Tools used for collecting data, and
3. Methods and procedures employed for deriving conclusions from different measures.

Thus, it seems appropriate to describe the sample, the tools used and the methods and procedures employed in completing the research being reported. Presented in this chapter is a description of the sample used for collecting reliable measures pertaining to the objectives of the study. The information concerning different tests is also given. Also presented in this chapter is a description of the procedure followed for the administration and scoring of different tests. This chapter also includes the procedures followed for the analysis of data.

Sample

250 males and 250 females participated in the study. Sample of 250 males (aged 13-18 years) and 250 females (aged 13-18 years) were selected from various schools and colleges in Haryana, Punjab, Himachal Pradesh and Chandigarh.

The majorities of the participants were from upper/middle class families and lived with both parents. The subjects to be included in this study were also required to be showing:

1. No evidence of drug addiction or alcoholism, and
2. Not currently in treatment for any diagnosed psychiatric disorder.

Several demographic characteristics, for example, marital status, employment status, education and place of residence (urban/rural) were controlled in the sense that participants were unmarried, unemployed and belonged to urban areas,
Moreover, they were school/college students. The sample was limited to participants also who were available to participate in this study, thus limiting the assumption of randomization.

**Tests Used**

The following tests were used in the present study:


1. **Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961).**

   The original BDI, first published in 1961, consisted of twenty-one questions about how the subject has been feeling in the last week. Each question has a set of at least four possible answer choices, ranging in intensity.

   For example:
   - (0) I do not feel sad.
   - (1) I feel sad.
   - (2) I am sad all the time and I can’t snap out of it.
   - (3) I am so sad or unhappy that I can’t stand it.

   When the test is scored, a value of 0 to 3 is assigned for each answer and then the total score is compared to a key to determine the level of depression. 10-18 indicates mild-moderate depression, 19-29 indicates moderate-severe depression and 30-63 indicates severe depression. Higher total scores indicate more severe depressive symptoms. Some items on the BDI have more than one statement marked with the same score. For instance, there are two responses under the Mood heading that score a 2: (2a) I am blue or sad all the time and I can’t snap out of it, and (2b) I am so sad or unhappy that it is very painful.
The development of the BDI was an important event in psychiatry and psychology because it represented the shift of healthcare professionals' view of depression from a Freudian, psychodynamic perspective, to one guided by the patient's own thoughts or "cognitions". It also established a principal followed in the development of further self-report questionnaires, that items can initially be gathered by verbatim reports from patients themselves, with validation studies suggesting theoretical constructs (e.g. using factor analysis), rather than trying to develop an instrument from a purely theoretical basis which may prove to be invalid.

The instrument remains widely used in research; in 1998 it had been used in over 2000 empirical studies. It has been translated into multiple European languages as well as Arabic, Japanese, Persian, and Xhosa. The BDI provides a measure of severity of symptoms, rather than a diagnosis. Some may consider it inappropriate to make a diagnosis of depression solely on the basis of a self-report inventory.

The BDI was originally developed to detect, assess, and monitor changes in depressive symptoms among people in a mental health care setting. It is also used to detect depressive symptoms in a primary care setting. The BDI usually takes between five and ten minutes to complete as part of a psychological or medical examination.

The sum of all BDI item scores indicated the severity of depression. The test is scored differently for the general population and for individuals who have been clinically diagnosed with depression. For the general population, a score of 21 or over represents depression. For people who have been clinically diagnosed, scores from 0 to 9 represent minimal depressive symptoms, scores of 10 to 16 indicate mild depression, scores of 17 to 29 indicate moderate depression, and scores of 30 to 63 indicate severe depression. The BDI can distinguish between different subtypes of depressive disorder, such as major depression and dysthymia (a less severe form of depression).

The BDI has been extensively tested for content validity, concurrent validity, and construct validity. The BDI has content validity (the extent to which items of a test are representative of that which is to be measured) because it was constructed...
from a consensus among clinicians about depressive symptoms displayed by psychiatric patients. Concurrent validity is a measure of the extent to which a test concurs with already existing standards; at least 35 studies have shown concurrent validity between the BDI and such measures of depression as the Hamilton Depression Scale and the Minnesota Multiphasic Personality Inventory-D. Following a range of biological factors, attitudes, and behaviors, tests for construct validity (the degree to which a test measures an internal construct or variable) have shown the BDI to be related to medical symptoms, anxiety stress, loneliness, sleep patterns, alcoholism, suicidal behaviors, and adjustment among youth.

Higher BDI scores have been shown in a few studies to be inversely related to educational attainment; the BDI, however, does not consistently correlate with sex, race, or age.


Zung self rating depression scale is intended to map complex behavioral changes, cognitive processes and their affective concomitants. The scale is said to be an excellent checklist of some twenty most common complaints comprising the modern concept of depression (Farby, 1980). Content analysis of various depression measurements suggests that the ZSDS covers five of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III, American Psychiatric Association, 1980) depressive symptoms completely, whereas four are partially covered. The Zung self-rating depression scale is a 20-item scale measuring the frequency of depressive symptomatology. Out of 20 items included in the scale, 10 are worded symptomatically positive and 10 symptomatically negative.

The scale appears well balanced with equal number of positive and negative statements. The items were worded in a positive as well as negative direction in order to break any tendency towards response set. A brief description of the 20 depressive symptoms is given below:
<table>
<thead>
<tr>
<th>Item</th>
<th>Symptom</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Sadness</td>
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<tr>
<td>2.</td>
<td>Diurnal variation</td>
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<tr>
<td>3.</td>
<td>Spells of crying</td>
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<td>4.</td>
<td>Sleep disturbance</td>
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<td>5.</td>
<td>Anorexia</td>
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<td>6.</td>
<td>Loss of libido</td>
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<td>7.</td>
<td>Weight loss</td>
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<td>8.</td>
<td>Constipation</td>
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<td>9.</td>
<td>Tachycardia</td>
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<td>10.</td>
<td>Fatiguability</td>
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<td>11.</td>
<td>Loss of concentration</td>
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<td>12.</td>
<td>Psychomotor retardation</td>
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<td>13.</td>
<td>Psychomotor agitation</td>
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<td>14.</td>
<td>Hopelessness</td>
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<tr>
<td>15.</td>
<td>Indecisiveness</td>
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<td>16.</td>
<td>Irritability</td>
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<td>17.</td>
<td>Self-depreciation</td>
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<td>18.</td>
<td>Emptiness</td>
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<tr>
<td>19.</td>
<td>Suicidal Thought</td>
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<tr>
<td>20.</td>
<td>Dissatisfaction</td>
</tr>
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</table>

The maximum contribution of behavioral and somatic features to the full scale score is 50 per cent (items 2 to 10, 13).

In using the scale, the subjects are asked to rate each of the 20 items in terms of symptoms or feelings described, response alternatives ranged from 'a little of the time' to 'most of the time'. The response alternatives are given a score of 4 to 1 or 1 to 4 for positively and negatively worded items respectively. The scores range from 20 to 80 with higher scores indicating the presence of higher depressive tendency.

The author especially Tanka- Matsumi & Kameoka (1986), Gabrys & Peters (1985) and Schaefer et al. (1985) have also found that the scale possesses adequate
psychometric characteristics. In an extensive study, Gabyrs & Peters (1985) reported alpha coefficient of 0.91 for 282 family escorts, 0.88 for 369 depressed clients, and 0.93 for 218 non-depressed clients. A split-half (odd-even) reliability coefficient of 0.94 (corrected for length) was found for a total of 869 depression checklist. The authors concluded that the findings support the scale’s reliability by judge or self report and the predictive and discriminant validities with functionally diverse groups.

Another study (Tanka -Matsumi & Kemeoka, 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.

The problem of the specificity of various self-report instruments particularly with regard to the distinction between anxiety and depression has attracted the attention of a number of authors. Zung has addressed himself to this question and claims that the scale can distinguish depressive reactions from anxiety reactions and from other personality disorders. This concern with specificity becomes important only when one attempts to use the self-report scales as diagnostic instruments, a purpose for which they were never intended (Carroll, Fielding, & Blashki, 1973).

Despite some concern about discriminant validity of the scale, the review of literature (e.g. Upmanyu, & Upmanyu, & Dhingra, 1992; Upmanyu & Reen, 1990, 1991) reveals that Zung self rating depression scale has been extensively used by researchers as self-report measures of depressive tendencies. The present study also made use of Zung’s scale for assessing depressive symptoms or tendencies.


The Automatic Thought Questionnaire (ATQ: Hollon and Kendall, 1980) is a measure of negative cognition. The respondents rate on a 5-point scale, 1 – “not at all”’ 2 – “sometimes”, 3 – “moderately often”, 4 – “often”, and 5 – ‘all the time’. How often they have experienced 30 negative cognitions during the past month. Examples of typical items included in ATQ are:

1. I am no good.
2. My life is a mess.
3. I am a failure.
4. I am worthless.
5. My future is bleak.
6. It's just not worth it.
7. I feel so helpless.
8. I can't finish anything.

Scores on the 30 items are summed to give total score for ATQ negative. It yields a score ranging from 30 to 150, with higher scores indicating more frequent negative thoughts. To assess criterion validity, the scores on the ATQ were correlated with the scores on the Beck Depression Inventory and the Minnesota Multiphasic Personality Inventory. The Pearson Correlations ranged from .45 to .70 in a sample of 348 college students. High internal reliability and correlation with severity of depression were also found in investigations by Dobson & Breiter (1983), and Harrell & Ryan (1983). Thus the ATQ was the most sensitive measure related to level of depression.

The questionnaire has been shown to differentiate depressed and non-depressed samples (Dobson and Breiter, 1983) and to have greater specificity to depression than the Dysfunctional Attitude Scale (Hollon, Kendall, & Lumry 1986). The questionnaire has also been used in Indian set-up and demonstrated to possess adequate psychometric characteristics (Upmanyu & Reen, 1991).

4. Social Support Questionnaire (SSQ; Sarson, Levine, Basham, & Sarason, 1983).

Social Support Questionnaire (SSQ) developed by Sarason, Levine, Basham, & Sarason, (1983) consists of 27 items. Each of the 27 items 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 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: perceived availability of the number of supportive persons listed (SSQ-N) and 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 given problem is related 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 dividing the sum of N and 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 satisfaction with the support that is available, reflected by the SSQ-S scores, each appears 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 doubts about the cross-cultural generalizability. Sarason et al, (1983) claim that social support is not a unitary concept when assessed by the SSQ, and the 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.

5. **Multidimensional Body Self-Relation Questionnaire (MBSRQ: Cash, 1991).**

The Multidimensional Body-Self Relation Questionnaire (MBSRQ) is a 69-item self-report inventory for the assessment of self-attitudinal aspects of the body-image construct for people of 15 years of age and older. Body image is conceived as an individual attitudinal disposition toward the physical self (Cash & Pruzinsky,
As attitudes, these dispositions include evaluative, cognitive and behavioural components. Moreover, the physical self encompasses not only an individual’s physical appearance but also the body’s competence or ‘fitness’ and its biological integrity or ‘health/illness’ (Cash & Pruzinsky, 1990).

A cross-validated principal-components’ analysis of the original database (Brown, Cash, & Milkula, 1990) support the conceptual components of the instrument. The MBSRQ’s Factor Subscale reflect two dispositional dimensions – ‘evaluation’ and ‘cognitive –behavioral orientation’ – vis-à-vis each of the three somatic domains of ‘appearance’, ‘fitness’, and ‘health/illness’. A minor exception was an emergence of separate health and illness orientation factor.

In addition to its seven Factor Subscale, the MBSRQ has three special multi-item subscales: (1) The Body Areas Satisfaction Scale (BASS) which approaches body- image evaluation as dissatisfaction with body areas attributes (similar to earlier inventories such as Secord and Jourard’s Body Cathexis scale,Bohrnstedt’s Body Parts Satisfaction Scale, and Franzoi’s Body Esteem Scale ) (Cash,1997),(2) the Overweight Preoccupation Scale which assesses fat anxiety, weight vigilance, dieting, and eating restraint;(3) the Self-Classified Weight Scale which assesses self-appraisals of weight: ‘very underweight’ to ‘very overweight’.

The MBSRQ is differentiated from other cognitive measures of body image in that it includes measures that are designed to determine the amount of time that people spend trying to improve various aspects of themselves (orientation). The inclusion and measurement of orientation is clearly advantageous in the exercise domain as these measures allow people to ascertain whether time spent in the improvement of fitness and appearance has any impact on their self evaluation. It should be noted, however, that the fitness evaluation and orientation subscales of the MBSRQ, although labeled as fitness related, contain items that predominantly reflect sport and skill-related content rather than fitness. Thus, positive changes in fitness evaluation brought about by exercise participation, may not be assessed adequately with these scales.

Various studies have made use of the MBSRQ, for example, Thompson and Psaltis (1988) reported correlation greater than .50 between physical appearance
evaluation and figure ratings, with larger figure rating being associated with greater body dissatisfaction, and Keeton, Cash, & Brown (1990) reported a significant correlation between the appearance evaluation subscale of the MBSRQ and the Body Parts Satisfaction Questionnaire (BPSQ) ($r=.66$). Cash (1989) also found that overall appearance evaluation could be predicted from the sum of satisfaction with various body parts, unlike the whole-body and body-part perceptual devices, which were unrelated.

**Reliability and validity**

The MBSRQ employs two items with which people categorize their body weight and others’ perception of their weight, on a 5-point Likert scale ranging from very underweight to very overweight. The reliabilities of the subscale range from 0.83 to 0.92, which shows a high level of internal consistency (Cronbach’s alphas) and from 0.85 to 0.91, depicting a high level of temporal stability over one month (Winstead & Cash, 1984). All subscales possess acceptable internal consistency and stability (Cash, 1997).

The MBSRQ is unique in its multidimensional assessment and has been used extensively and successfully in body-image research. Some of the investigations, using the MBSRQ, shall be mentioned below. Investigations range from basic psychometric studies to applied and clinical research, involving both correlational and experimental methodologies (Cash, 1997). Investigations by Cash (1991, 1993) on ‘Binge-eating and body images, among the ‘obese’ and ‘Body-image’ attitudes among obese enrolled in a commercial weight-loss program respectively, examined the affects of body image on obese people. Cash (1995) investigated the affects of eating disturbances on body image in a study entitled ‘Body image disturbances and self-discrepancy theory’. Physical exercise is an important construct of body image, as has been highlighted in the relevant literature. A study by Cash, Novy, & Grant (1994) entitled ‘Why do women exercise?: Factor analysis and further validation of the reasons for exercise inventory also emphasizes the role that physical exercise plays on body image. Studies of body-image therapy by Cash and Grant (1996) highlight the comparative efficacy group and modest-contact treatment of body
image therapy. The MBSRQ has been widely used, as can be seen in the above-mentioned studies, which confirm the MBSRQ’s strong, convergent, discriminant and construct validities (Cash, 1997).

Health Evaluation

The subscale is typified by perception of physical health and/or the freedom from physical illness. High scorers feel their bodies are in good health. Low scorers feel unhealthy and experience bodily symptoms of illness or vulnerability to illness (Cash, Counts, & Huffine, 1990).

Health Orientation

It indicates the amount of time spent trying to lead a healthy lifestyle. High scorers are ‘health conscious’ and try to lead healthy lifestyles. Low scorers are more apathetic about health (Cash & Hicks, 1990).

Illness Orientation

According to Rieves and Cash (1996) the illness orientation subscale indicates the 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. Low scorers are not especially alert or reactive to the physical symptoms of illness.

Appearance Evaluation

Jacob and Cash (1994) state that the appearance evaluation subscale evaluates feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with a person’s appearance. High scorers feel mostly positive and satisfied with their appearance whereas low scorers indicate a general unhappiness with physical appearance.

Appearance Orientation

The subscale assesses the amount of time spent by a person to improve appearance. High scorers place more importance on looks, pay attention to appearance, and engage in extensive grooming behaviours. Low scorers are apathetic about appearance; looks are not especially important and low scorers do not expend much effort to ‘look good’ (Cash & Labarge, 1996).
**Fitness Evaluation**

Fitness evaluation is characterized according to Cash, Novy, & Grant (1994), by feelings of being physically fit or unfit. High scorers are regarded as physically fit, ‘in shape’, or athletically active and competent. Low scorers are generally physically unfit, ‘out of shape’, or athletically unskilled. High scorers value fitness and are actively involved in activities to enhance or maintain fitness levels. Low scorers do not value physical fitness and do not incorporate regular exercise activities into their lifestyles.

**Fitness Orientation**

The fitness orientation subscales assesses the amount of time spent trying to be physically fit or athletically competent (Cash, 1994). High scorers value fitness and are actively involved in activities to enhance or maintain fitness levels. Low scorers do not value physical fitness and do not incorporate regular exercise activities into lifestyles.

**Body Areas Satisfaction Scale**

The Body Areas Satisfaction Scale (BASS) determines satisfaction with body areas. High composite scorers are generally content with most areas of the body. Low scorers are unhappy with the size or appearance of several areas (Cash, Ancis, & Strachan, 1997).

**Overweight preoccupation**

This subscale assesses a construct referring to fat anxiety, weight vigilance, dieting, and eating restraint (Lewis, Cash, Jacob, & Bubb-Lewis, 1997).

**Self-Classified Weight**

This scale, according to Cash, Grant, Schovlin, & and Lewis (1992), reflects how a person perceives and labels weight, from being very underweight to being very overweight.
BODY COMPOSITION

Body composition includes measurements such as height, weight, skinfolds and circumferences of various body segments or areas. These measurements provide a practical and inexpensive alternative for estimating body composition. Several prediction equations have been developed utilizing circumference measurements in combination with skinfold measurement. Various limb and body girths are measured and used in equations that predict body density or fat-free body mass.

Reliability and Validity

The precise assessment of body composition measurements, in particular skinfold thickness can be difficult, and therefore extreme care is required. In general there is not enough attention paid to an accurate measurement technique and consequently reproducibility cannot be obtained (Lohman & Pollock, 1981).

Prior to measuring athletes, or others, for monitoring purposes, the tester should develop the appropriate technique for taking skinfolds. This has been shown to reduce the level of error in repeated measurements among investigators (Jackson & Pollock, 1976; Lohman & Pollock, 1981). Repeated measures on at least twenty subjects should be made in order to establish reproducibility. The anthropometrist needs to ensure that the tension of the caliper jaws remains constant throughout the range of measurement. The caliper needs to be checked to make sure that the needle is on zero to insure that inaccurate measurements will not be taken.

The skinfold site should be carefully located using the correct anatomical landmarks. Skinfold thickness has been shown to vary by an average of two to three millimeters when the calipers were placed two and a half centimeters from the correct site (Ross & Marfell-Jones, 1991). Inaccurate location of skinfold site was also found to be the greatest source of error among investigators (Ross & Marefell-Jones, 1991).

Measurement is recorded two seconds after the full pressure of the calips is applied (Ross & Marfell-Jones, 1991). The standardization is necessary since adipose tissue is compressible (Martin, 1984). A constant recording time enables test/retest comparisons to be made while controlling for skinfold compressibility.
Two to three measurements should be taken at each site with the average value being used in any further calculations, if two measurements are taken, and the median value used if three measurements are taken. Skinfold sites need to be measured in succession to avoid experimental bias. A complete data set needs to be obtained before repeating the measurements for the second and third time. This helps to reduce the effects of skinfold compressibility.

Skinsfold measurement should not be taken after training or competition, sauna, swimming or showering since exercise, warm water and heat produce hyperemia (increased blood flow) in the skin with a concomitant increase in skinfold thickness. Additionally, dehydration has been suggested (Consolazio, Johnson, & pecora, 1963) to cause the skinfold thickness to increase due to changes in skin turbidity.

**Administration of tests**

The following tests were administered in a random sequence:


The tests were administered in small groups comprising of 10 to 15 subjects. Subjects were contacted through their teachers. Sincere efforts were made to establish rapport with the subjects for eliciting authentic information. It was revealed that the subjects were motivated to fill different questionnaires since many of them contacted the investigator later on for knowing about their performance in different tests. Efforts were made to ensure that the subjects do not fake their responses.
Scoring of tests

The tests were scored strictly in accordance with the procedures suggested by the authors. Hand scoring was done by using separate keys for respective tests in the study. Social Support Questionnaire was scored for two measures of social support: SSN and SSQ. The Zung Self-rating Depression Scale was used as a measure of depression. The Beck Depression Inventory was scored for measure of depression. Likewise Negative Automatic Thought Questionnaire was scored for the measures of negative thoughts. Multidimensional Body Self Relation Questionnaire was scored for the measure of body image.

These tests were scored in accordance with the instructions given by the authors of different tests.

Analysis:

The following statistical techniques were used for the purpose of analysis of the data:

1. Descriptive statistics like mean, median, mode, standard deviation, skewness & kurtosis.
2. 2X2X2 analysis of variance was used keeping in view the objectives and hypothesis of the present study. The three variables included in 2X2X2. Analysis of variance referred to negative cognition, social support and body image. These variables were manipulated at two levels referring to high versus low negative cognition, high versus low social support and high versus low body image.

The results obtained by applying 2X2X2 analysis of variance are presented and discussed in the next chapter.