Chapter IV

Method of Investigation
METHOD OF INVESTIGATION

This chapter includes the research design, the plan, strategy and structure of the present study. The nature of research, the variables employed, the samples- its nature and selection, the measures used in the main study and the statistical method used in the present investigation are described below. Based on the objectives, this study was conducted in two phases:

**Phase I:** Survey conducted for 412 college students.

**Phase II:** Psycho - Education Programme conducted for college students.

**NATURE OF RESEARCH**

In order to test the previously set up hypotheses, “a cross – sectional descriptive design” for Phase- I survey group and “Before and after” research design for Phase-II intervention group was adopted in the present study.

**Before and After Design**

\[
\begin{align*}
\text{Group -1} & = Y_1 \text{------} Y_2 \text{------} Y_3 \\
\text{Group -2} & = Y_1 \text{------} Y_2 \text{------} Y_3 \\
\text{------------------} & = \text{Psycho - Educational Training Programme} \\
\text{------------------} & = \text{No intervention} \\
\text{Group -1} & = \text{Experimental Group} \\
\text{Group -2} & = \text{Control Group} \\
Y_1 & = \text{Pre Test} \\
Y_2 & = \text{Post Test} \\
Y_3 & = \text{Follow up}
\end{align*}
\]

This design is chosen to determine the effect of Psycho Education Training among young adults. The effect of training is measured before and after the introduction of Psycho -Education programme. This design is superior as it can demonstrate the training effect after passage of time with a matched comparable group.
The study was conducted in two phases. In the first phase a cross – sectional descriptive design was used and the sample selected for the study consists of 412 college going students (M=19.6 SD=1.90) of both male and female from different educational and socio-economic background. This sample represents a cross - section of age groups. A total of 412 male and female respondents falling in the age group of 18 – 24 were selected for this study. In the second phase, the samples selected for the intervention consists of 65 first year college students (M=18.4 SD=.74) at Chennai. A control group consists of 65 first year students (M=18.0 SD=.29). These college students represent the main population used in first phase of the study. They are similar to the student population of main study in term of socio-economic background and their gender representation. The college students were selected for intervention study due to their high motivation level to undergo psycho educational training and also the support of the management for the educational programme. A letter was addressed to the college principal requesting permission to gather data from the young adults. A brief note about the present study was enclosed for information. The following inclusion/exclusion criteria were employed while selecting young adults for this research.

<table>
<thead>
<tr>
<th>Group</th>
<th>Sample Size</th>
<th>Mean Age</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey</td>
<td>412</td>
<td>19.6</td>
<td>1.90</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>65</td>
<td>18.4</td>
<td>0.74</td>
</tr>
<tr>
<td>Control Group</td>
<td>65</td>
<td>18.0</td>
<td>0.29</td>
</tr>
</tbody>
</table>

**Inclusion Criteria**

- Only young adults who were pursuing graduation were selected for this study.
- Those who belonged to the age group of 18-24 years
- Only the young with adequate fitness of health
- Those who belong to cross-section of socio-economic back ground
Exclusion Criteria

- Those who are physically challenged
- Those who are below 18 years and above 24 years
- Those who are studying in schools and PG courses

MEASURES

The sample selected for the phase one and two of the study was administered the following measures.

Three Factor Eating Questionnaire (TFQ-R-18)

Eating-related behaviours were assessed using a French translation of the Three-Factor Eating Questionnaire Revised 18-item version (TFEQ-R18) (Karlsson et al., 2000). The instrument is a shortened and revised version of the original 51-item TFEQ (Stunkard and Messick, 1985). The questionnaire refers to current dietary practice and measures three different aspects of eating-related behaviour: cognitive restraint of eating (CR: 6 items), uncontrolled eating (UE: 9 items) and emotional eating (EE: 3 items). Cognitive restraint of eating represents a conscious restriction of food intake in order to control body weight or to promote weight loss; uncontrolled eating measures the tendency to eat more than usual due to a loss of control over intake; and emotional eating characterizes overeating during dysphoric mood states (i.e. when feeling lonely, blue or anxious). Each score ranges from 0 to 100, with higher score indicative of greater level in the eating behaviour of interest. The TFEQ-R18 consists of 18 items on a 4-point response scale (definitely true/mostly true/mostly false/definitely false). Responses to each of the 18 items are given a score between 1 and 4 and item scores are summated into scale scores for cognitive restraint, uncontrolled eating, and emotional eating. Higher scores in the respective scales are indicative of greater cognitive restraint, uncontrolled, or emotional eating. Internal-consistency reliability coefficients (Cronbach’s α) for each of the 3 scales were above the 0.70 standard and below the 0.90 limit recommended for individual assessment (CR: 0.84 in adults, 0.80 in adolescents; UE: 0.83 in adults, 0.80 in adolescents; EE: 0.87 in adults, 0.78 in adolescents). In the present study sample internal consistency was .81& test retest reliability was .72.
Eating Attitudes Test (EAT-26)

Eating Attitudes Test is a self-report inventory that assesses attitudes and behaviours related to anorexia nervosa (David M Garner et al, 1982). Its 26 items are scored on a 6-point Likert-type format ranging from “always” to “never”. Garner et al. (1982) reported internal consistency in a female college student sample to be high (.83). Carter and Moss (1984) reported adequate 2- to 3-week test retest reliability (.84). EAT-26 scores correlated positively with other self-report measures of eating disorder symptoms (e.g. Gross et al. 1986; Henderson & Freeman, 1987; Mizes, 1988), and distinguished clinical eating disordered patients from normal participants and binge eating patients from anorexic and bulimic patients, however they failed to differentiate anorexic subjects from bulimic subjects (Williamson, Prather, McKenzie, & Blouin, 1990). The EAT-26 has acceptable criterion-related validity by significantly predicting group membership (Jones et al., 2001, p. 548). Research (Desai, Miller, Staples, & Bravender, 2008;) reports the EAT-26 highly correlates with the original EAT-40 instrument (r = .98). A study by Thome and Espelage (2004) reported a Cronbach’s alpha of .91 for the EAT-26 total scale. Possible scores on the EAT range from 0 to 78; scores 20 are generally considered as indicative of increased risk for disordered eating behaviour. In the present study sample internal consistency was .74 & test retest reliability was .69.

Body Awareness Questionnaire (BAQ)

The Body Awareness Questionnaire (Shields & Mallory & Simon, 1989) is an 18-item scale designed to assess self-reported attentiveness to normal non-emotive body processes, specifically, sensitivity to body cycles and rhythms, ability to detect small changes in normal functioning, and ability to anticipate bodily reactions. Body Awareness Questionnaire contains items such as “I notice differences in the way my body reacts to different foods” and “I notice specific bodily reactions to being over-hungry.” The questionnaire designed for use with adult college student and non-college student populations, the Body Awareness Questionnaire was normed on a predominantly white American adult sample and found to have a Chronbach reliability coefficient of 0.82 and a test-retest reliability of 0.80. (Shields, Mallory, and Simon, 1989). In the present study internal consistency was .79 and test retest reliability was .83.
**Dieting Beliefs Scale (DBS)**

The Dieting Beliefs Scale (Stotland & Zuroff, 1990) assessed the Weight locus of control. The original scale includes 16 Likert-type questions with 1 meaning “not at all descriptive of my beliefs” and 6 indicative of being “very descriptive of my beliefs”. An example of an externally oriented question is “A thin body is largely a result of genetics”; whereas; “each of us is directly responsible for our weight” is internally focused (Stotland & Zuroff, 1990). Higher scores on the DBS, normed on female college undergraduates of normal weight, indicate individuals who are more internally focused. The DBS demonstrates promise as an internally consistent and reliable research tool with a Chronbach’s alpha of .68 and a test-retest score of .81 (Stotland & Zuroff, 1990). In this study, internal consistency was .64 and test retest reliability was .69.

**Rosenberg Self-Esteem Scale (RSES)**

The Rosenberg Self-Esteem scale (Rosenberg, 1965) is the most widely used measure of global self-esteem. The scale is a ten item Likert scale with items answered on a four point scale - from strongly agree to strongly disagree with higher total scores representing greater self-esteem. The Rosenberg Self-Esteem Scale presented high ratings in reliability areas; internal consistency was 0.77, minimum Coefficient of Reproducibility was at least 0.90 (M. Rosenberg, 1965). A varied selection of independent studies each using such samples as – parents, men over 60, high school students, and civil servants – showed alpha coefficients ranging from 0.72 to 0.87 (all fairly high). Test-retest reliability for the 2-week interval was calculated at 0.85, the 7-month interval was calculated at 0.63 (Shorkey & Whiteman, 1978). The RES is closely connected with the Coopersmith Self-Esteem Inventory. In this study, internal consistency was .71 and test retest reliability was .77.

**Multidimensional Scale of Perceived Social Support (MPSS)**

The Multidimensional Scale of Perceived Social Support (Zimet et.al, 1988) has been widely used in both clinical and non-clinical samples. The MSPSS is a brief, easy to administer self-report instrument containing twelve items rated on a five-point Likert-type scale with scores ranging from ‘very strongly disagree’ (1) to ‘very strongly agree’ (7). It is meant to measure the extent to which an individual perceives social support from three sources Significant Others (SO), Family (FA) and Friends (FR). The MSPSS has
proven to be psychometrically sound in diverse samples and to have good internal reliability and test-retest reliability and robust factorial validity and has been tested on people from different age groups and cultural backgrounds and found to be a reliable and valid instrument. MSPSS consists of three sub-scales: Family, Friends, and Significant Others. Most investigations have revealed MSPSS to be a three-factor construct which demonstrates good to excellent internal consistency and test-retest reliability (with a Cranach’s alpha of 0.81 to 0.98 in nonclinical samples, and 0.92 to 0.94 in clinical samples). In this study, internal consistency was .83 and test retest reliability was .60.

**Beck Depression Inventory (BDI)**

The present BDI (Beck et al., 1996) is a 21 item self-report inventory measuring characteristic attitudes and symptoms of depression. The BDI takes approximately ten minutes to complete, and it requires a fifth-sixth grade reading age to adequately understand the questions. Internal consistency for the BDI ranges from 0.73 to 0.92 with a mean of 0.86 (Beck, Steer and Garbin, 1988). The BDI demonstrates high internal consistency, with alpha coefficients of 0.86 and 0.81 for psychiatric and non-psychiatric populations, respectively (Beck et al., 1988). The BDI has a split-half reliability co-efficient of 0.93. A meta-analyses of studies on the revised BDI’s psychometric properties by Richter et al., (1998) report advantages with the revised BDI’s high content validity and validity in differentiating between depressed and non-depressed people. Beck, Steer and Garbin (1988) reported that the revised BDI has been found to include three to seven factors, depending on the method of factor extraction. These include factors that reflect negative attitudes towards self, performance impairment and somatic disturbances, as well as a general factor of depression. Correlations with clinician ratings of depression using the revised BDI range from 0.62 to 0.66. Groth- Marnat (1990) reported moderate correlations between the revised BDI and other scales measuring depression such as the Hamilton Psychiatric Rating Scale for Depression (0.73) and the Zung Self Reported Depression Scale (0.76) and the MMPI Depression Scale (0.76). In this study, internal consistency was .86 and test retest reliability was .79.
The Survey of Recent Life Events (SRLE; Kohn & Macdonald, 1992) is a 41-item measure formulated to assess exposure to a variety of daily hassles. This measure was developed as an alternative to earlier measures (e.g., Daily Hassles Scale (DHS); Kanner et al., 1981), which were criticized for being contaminated by items, and a response format, that were thought to reflect subjective distress, rather than predict it (Dohrenwend & Shrout, 1985; Green, 1986; Kohn & Macdonald, 1992a). The SRLE utilizes a Likert scale format for respondents to indicate the extent to which an item was part of his or her life during the past month (1 = not at all, 4 = very much). This response format provides an alternative for individuals who have not recently experienced a particular item as distressing, unlike earlier measures. The sum of responses is calculated, with higher scores indicating a greater experience of daily hassles over the past month. The SRLE is composed of 6 subscales: 1) Social and cultural difficulties (α = .78; e.g., “Being let down or disappointed by friends”); 2) Work (α = .82; e.g., “Conflict with supervisor(s) at work”); 3) Time pressure (α = .81; e.g., “Too many things to do at once”); 4) Finances (α = .76 e.g., “Financial conflicts with family members”); 5) Social acceptability (α = .68; e.g., “Being ignored”); and 6) Social victimization (α = .76; e.g., “Being taken advantage of”). The SRLE has been found to demonstrate high internal consistency (α = .91). In addition, the measure has been shown to correlate significantly with perceived stress, trait anxiety, psychiatric symptomatology, and minor physical ailments (e.g., Kohn & Macdonald, 1992b). In the current investigation, the internal consistency of the scale was .88 and test retest reliability of the scale was .87.

**PROCEDURE**

In the first phase of the study, the investigator collected data from a sample of 412 subjects who responded to the above mentioned questionnaires. The systematic procedure of identifying the sample, approaching for cooperation and enlisting their support and administration of questionnaires were followed. Incomplete responses and data sheets were excluded from the study. This phase of the study covered a period of one year. The completed data were coded for analysis. The second phase of the study included the psycho-education intervention. The sample identified was college students.
Two groups of students who were matched for age and socioeconomic background were chosen. They were all assessed at the base line level (Pre - test) on all study related variables and one group was exposed to Psycho education programme. The control group was not given any training or exposure to any information. After first 3 months of training, all the groups were assessed on same variables and 6 months from the pre - test period, they were all reassessed. There were no dropouts, the investigator ensured to have data on all the subjects at all the phases of intervention.

PSYCHO-EDUCATIONAL PROGRAM

Professionals from the field of Psychology and Nutrition along with the investigator provided training to the students for a period of 03 months. Totally 15 sessions were given. Each session lasted for 03 hours. Personal attention was given for every subject. Doubts were clarified then and there. Each subject was given a course sheet so that they follow the sequence rightly while they perform at their residence. These training sessions were highly interactive in nature with lot of activities, work assessment, skills demonstration using visual aids and games. All the training sessions were conducted within the college premises.

FOCUS AREA OF THE TRAINING PROGRAM:

The psycho-educational program aims to focus on and comprises of following areas:

- Physical Fitness & Healthy Eating
- Body Self-Esteem & Image
- Health Values
- Health and Personal Hygiene
- Nutrition & Healthy Eating
- Stress Management
- Emotional Management
- Social support
- Eating Behaviours & Disorders
- Dieting Beliefs
Adolescence is the time when students have a feeling of inconsistency and confusion to the point of misery and helplessness. They are surprised at the stereotyped rules set by the adults and mostly try to violate them. When a rule is broken, it should have adequate justification or else the youngster gets confused and his sense of security is threatened. As a result, effective learning cannot take place and appropriate responses will not be established, and the likelihood of aggressiveness towards others will markedly increase.

Adolescence to young adulthood is a transition period when habits develop, basic skills are learned, social conscience is formed, and the very ability to learn is recognized. The youngster tries to learn many things on his own way and puts across his own ideas however incorrect the ideas may be. When parents criticize or rebuke the youngster’s experience their self-esteem tends to become low and as a result they are likely to be poor achievers. Everyone gets angry and all anger has a purpose that shows our concern. But continuously abusing them or showing hostile behaviour may give worry and insecurity to the youngsters, which makes them highly prone to stress. Stress directly affects the health of the youngsters. Nowadays, youngsters hardly place any value on health and live life just as it comes to them. They have less awareness about how physical health and mental health are correlated. This study was conducted keeping in mind the youngsters of today and how psychological training can actually make them to establish proper discipline and values with regard to their health. The samples were drawn from youngsters who participated in the intervention programme willingly. Fifteen life skills areas were taken for the intervention and it was conducted as sessions for three months. Each session was conducted for three hours. The areas taken for the study are as follows:

**Physical Fitness & Healthy Eating**

Being physically fit is an important aspect in the growth of adolescence to adulthood. Many young adults join gymnasiums irrespective of their genders. The importance of exercise and appearance was imparted through demonstrations and video clippings. Also the importance for eating balanced food during meal times and importance of burning unwanted fat from the body was demonstrated. The Body Mass Index and the negative effects of having a higher BMI were also shown to the youngsters through video clippings.
Body Self-Esteem & Image

Self-esteem is the evaluation of one’s self. The characteristics of high and low self-esteem and the causes of low self-esteem were made aware to the youngsters. The need for having a high self-esteem and the negative and positive effects of self-talk were also imparted in the training. Through a “Johari Window” activity, the youngsters came to know the estimation of one’s self. An activity to improve their self-confidence through “Ship building”, co-operation through “Star formation” and a game on search for the same family of animals were given for enhancing communication. The positive affirmations of health were imparted to the youngsters to have proper value and accept their body. Finally, an adjective checklist was provided to the youngsters to have a proper self-concept. The importance of Body esteem was also imparted to the youngsters. The incongruence between the real self and ideal self in relation to Body image and appearance was also rendered.

Health Values

Health is a positive state of well-being in terms of physical, social, mental and spiritual health. Training was imparted on how to maintain physical health through sleep, exercise, prayer, relaxation and regular diet, social health through social-support, mental health through meditation and relaxation and spiritual health through participating in prayer and worship was emphasized. The maintenance of good personal and mental hygiene and their bad effects on health was made aware.

Health and Personal Hygiene

In this session the students were made aware of various types of health promoting and compromising behaviours. Risk behaviours and its negative consequences were also taught in the session. The bad effects of substance use disorders and the relative outcomes were provided to the students through brochures and hand outs. The simple way for having good health was also emphasized. Life style factors, personality factors influencing Health behaviour and ways to change life styles to maintain optimum health were taught. Health and hygiene session includes orientation about how hygiene factors influence and enhance health and well-being. This session focused on healthy balance foods and appropriate food habits and eating pattern.
Nutrition & Healthy Eating

The different ways to combat diseases and maintain health was provided to the youngsters through diet and rules to good mental and physical hygiene. The food pyramid was also shown to the youngsters and how to balance their nutritional demands in terms of their socio economic status. The bad effect in consumption of junk foods and easily available fast foods to the youngsters was shown through video clippings. The lack of certain vitamins, minerals, and iron with deficiencies it could lead later in life was also imparted to the youngsters.

Stress Management

Stress is a kind of negative emotion accompanied by predictable bio-chemical, physiological, cognitive and behavioural changes and it is the consequence of a person’s appraisal process. The types of stress, sources of stress, personality factors and response to stress were made aware to the youngsters. The management of stress was given to the youngsters by training them in organizing their time, relaxation methods, assertiveness training and maintaining diary. The psychosomatic disorder on how attitudes cause diseases was exposed to them and the type of personality they belonged was made aware to them. In the relaxation training, the students were made to relax by using western approach like progressive muscle relaxation and autogenic relaxation. Eastern approaches like different breathing techniques and visualization were also given to them.

Emotional Management

For good personality we need proper perception, emotional balance and emotional quest. Training was given on how to manage the emotions by providing positive and negative reinforcements and the solutions for managing emotions. They were trained to control their emotions like anxiety and channelize them in a positive framework by analyzing their strengths, weaknesses, opportunities and threats through SWOT analysis. They were also subjected to find out how their perceptions make them have an outburst of emotions leading them to stress. Anger is one letter short of danger. Training was given on the bad effects on anger and how it can be properly channelized so that it will not affect health. The different technique to control and manage anger was made aware to them by putting them in situations and making them empathize and tell the best solutions
for tackling with them. The defense-mechanisms and their role in controlling anger were also imparted through training. Some simple breathing techniques were taught to them to manage state anger. Emotional management session was focused mainly on awareness and management of negative emotions like anger and anxiety.

**Social Support**

Importance of Social support and its positive role in enhancing health status were taught using activities and also the ways and technique of getting support from other were also taught. The ability of a person to maintain good relationship with others and how all are mutually dependent on each other were made aware to the youngsters by relating each of them with their family and neighbours and those surrounding them. Trust-walk was given as an activity to analyse how we trust each other when our eyes are tied and how reliable we are on the person who is leading us. The youngsters were trained on how to work as a team efficiently through games.

**Eating Behaviours & Disorders**

Healthy eating includes a balanced food at particular times of a day. Eating a nutritious food with the available resources was taught to the youngsters through a food time chart. The different eating disorders like Binge eating disorders (BED), Anorexia Nervosa (AN) and Bulimia Nervosa (BN) was also informed to the students to bring to their knowledge about the different eating behaviour patterns. This was shown through various images and the bad effects they carry during adulthood.

**Dieting Beliefs**

Dieting Beliefs indicates the centre point where our health is controlled and classified as internal and external locus of control. The internal factors contribute to our responsibility towards health and the external factors contribute to others responsibility of health like doctors or chance factors like luck, fate etc. The youngsters were trained on how to have internal locus of control through proper analysis of their body and behaviour. The negative effects of underrating and overeating were also shown to the students through video clippings.
STATISTICS USED

The survey data obtained on students sample in the first phase of the study were analysed descriptively. Pearson Product Movement Correlations were performed to assess the relationship among the study variables and Hierarchical Regression was carried out to infer the predictors of eating behaviours. The data obtained on the intervention group and control group at different phases in the second phase of the study were analysed using Repeated Measure ANOVA. Statistical analysis was performed using the statistical package for Social Sciences (SPSS) for windows. The next chapter deals with the tabulation of the results of the present study and discussion based on the statistical analysis of the same.