CHAPTER IV

DESIGN AND METHODOLOGY
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Overview of the study:

As it is believed since ancient times that health, wealth, social circumstances and thinking have a significant effect on anger. A person’s thinking and social circumstances are the ubiquitous parts of life which attributes to his/her behavior. Anger can be caused by damaged pride, unrealized expectations, or repeated hostile fantasies. The goal of anger is to accomplish a purpose or to blame others for person’s own shortcomings (externalizing blame). Anger can be used to justify oppressing others, to elevate low self-worth, to hide other feelings, and to displace other emotions such as using aggression to hide fear. An uncertain relation between health and angry/hostile behavior existed in the literature on adolescents. With data from a pilot study, one possible reason for this was explored: health measures such as blood pressure as well as angry/hostile behaviors might change with, or depend upon physical maturity, body size and body fatness. Anger is a natural emotion everybody experiences it and everybody express it. The problem is not anger. The "problem" is the mismanagement of anger. Due to such an important thing it has led hot discussion among the researchers, it has been thought that anger could be managed by some trainings. Various methods depend on the earlier research done in western countries are available which are helpful in the assessment and management of anger. After the assessment, management could be done by various trainings as psychological training, yogic training etc. For the focused purpose following design and methodology was used.

Design:

In the beginning all the selected measures were administered to entire sample of five hundred adolescents. On the basis of scores on anger expression, one low anger expression group (Q1) and one high anger of expression group (Q4) were formed for comparison, however, anger management interventions were given to high group. These identified high scorers were randomly assigned to various groups on the basis of lottery system.
Group I: This group comprised of thirty randomly selected respondents of both the sexes who had high anger expression. As psychological training was given to them for anger management so they are named as Psychological Group i.e. Group I or GI. Their age ranged from 14 to 18 years with a mean age of 16.4 years. All belong to Hindu religion and 30 percent of them were non vegetarian. They all were regular students of class IX to XII in a public school and belong to urban as well as rural residential background. The intervention module was fixed for all the participants of this group.

Group II: This group comprised of thirty randomly selected respondents of both the sexes who had high anger expression. As Yogic training was given to them for anger management so they are named as Yogic Group i.e. Group II or GII. Their age ranged from 14 to 18 years with a mean age of 16.37 years. All belong to Hindu religion and 33.33 percent of them were non vegetarian. They all were regular students of class IX to XII in a public school and belong to urban as well as rural residential background. The yoga exercises selected for the purpose were administered to the entire group in similar fashion.

Group III: This group comprised of thirty randomly selected respondents of both the sexes who had high anger expression. As both psychological and Yogic training were given to them for anger management so they are named as psychological + Yogic Group i.e. Group III or GIII. Their age ranged from 14 to 18 years with a mean age of 16.3 years. All belong to Hindu religion and 50 percent of them were non vegetarian. They all were regular students of class IX to XII in a public school and belong to urban as well as rural residential background. The yoga exercises selected for the purpose were administered to the entire group in similar fashion.
public school and belong to urban as well as rural residential background. Psychological and yogic inputs given to the participants of this group was common for all.

**Group IV:** This group comprised of thirty randomly selected respondents of both the sexes who had high anger expression. As no formal training was given to them for anger management so they are named as Control Group i.e. Group IV or GIV. Their age ranged from 14 to 18 years with a mean age of 16.5 years. All belong to Hindu religion and 43.33 percent of them were non vegetarian. They all were regulars student of class IX to XII in a public school and belong to urban as well as rural residential background. It was expected that informal sessions / time period of nine months may bring some positive changes in their anger expression.

**Sample**

A total of 500 subjects participated in present study to fulfill the requirement. Participation of the subjects in the present study was voluntary and informed consents were obtained from all the subjects. All subjects were of the age between 14 to 18 years (with the exception of 5 subjects of 13 year age) and from public schools situated at Najafgarh (New Delhi). They were selected for the present study on the basis of availability. Majority of the respondents i.e. 99 percent were of Hindu religion. All the students were regular students of (IX, X, XI or XII classes). The sample was represented by both the genders, however they were not with equal numbers. At the second stage two groups – (i) low anger expression and (ii) high anger expression group were formed on the basis of the scores of the respondents on anger expression. Since the anger expression scores were almost normally distributed so one hundred twenty subjects were identified as low anger group (first quartile) and one hundred twenty subjects were members of high anger group (fourth quartile). In the final stage only those 120 students were selected for anger management exercises, whose scores on anger expression was more than Q₃ points i.e. who belonged to 4th quartile of anger expression in the total sample of 500. These one hundred twenty subjects were further grouped in four groups randomly with thirty subjects in each. The four intervention programs (psychological, yogic, psychological + yogic and no intervention) were used for anger management of high anger expression participants. Which group will be given which intervention was also decided on random character.
All the respondents were unmarried and 28.33 percent of them were from rural background and remaining belonged to urban background.

**Measuring tools:**

Following tests/instruments were used for the purpose of data collection.

1. **Personal Data Bank:** The purpose of this Personal Data sheet was to collect personal and background information of the respondents. This sheet consists of information regarding the subject name, age, height, weight, religion, educational qualification, occupation, annual family income, address, class, marital status, background (urban/rural/metro), smoker/nonsmoker, alcoholic/non-alcoholic, vegetarian/non-vegetarian, favorite color, favorite drink, and consent to participate in research. A copy of personal data sheet is given in Appendix-A.

2. **STAXI (State trait anger expression inventory):** The original STAXI test was developed by C. D. Spielberger in 1994 and was published as STAXI in 1994. This scale consists of 44 items. The STAXI State Anger scale assesses the intensity of anger as an emotional state at a particular time. The Trait Anger scale measures how often angry feelings are experienced over time. The Anger Expression and Anger Control scales assess four relatively independent anger-related traits: (a) expression of anger toward other persons or objects in the environment (Anger Expression-Out); (b) holding in or suppressing angry feelings (Anger Expression-In); (c) controlling angry feelings by preventing the expression of anger toward other persons or objects in the environment (Anger Control-Out); and (d) controlling suppressed angry feelings by calming down or cooling off (Anger Control-In). The STAXI provides easily administered and objectively scored measures of the experience, expression, and control of anger for adults and adolescents. The STAXI was developed to assess components of anger and anger expression for a detailed evaluations of normal and abnormal personality and to measure the way these components of anger contribute to medical conditions such as hypertension and coronary heart disease. Recent studies on the nature of anger and its effects on mental and physical health guided the development of STAXI. To investigate the effects of anger on mental and physical disorders, the experience of anger must be clearly distinguished from anger expression and control." The STAXI is scored by hand using a two part carbonless form. The STAXI is quick and quite simple to administer and to score. It can be
administered in 5 to 10 minutes to individual and scored in about 5 minutes. State-Trait Anxiety Inventory (STAXI) : Trait anxiety was measured by the Hindi-Language version of STAXI (Spielberger, Sharma and Singh, 1973). STAXI has been presented in Appendix-B.

3. Body Mass Index: Body mass index (BMI) was used to assess general physical health of the participants. Body mass Index (BMI) or Quetelet index is a statistical measure of the weight of a person scaled according to height. It was invented between 1830 and 1850 by Belgian Polymath Adolphe Quetelet during the course of developing “social physics”. Body mass index is defined as the individual’s body weight (in kilogram) divided by the square of their height (in metre). The formula is universally used. BMI may be accurately calculated using any of the formula below, however, the researcher used first formula to determine BMI of the participants.

<table>
<thead>
<tr>
<th>SI units:</th>
<th>US Units</th>
<th>UK mixed Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI = (\frac{\text{weight(kg)}}{\text{Height}^2(m)})</td>
<td>BMI = (\frac{\text{weight(lb)}}{\text{height}^2(m^2)})</td>
<td>BMI = (\frac{\text{weight(stone)}}{\text{height}^2(m^2)})</td>
</tr>
</tbody>
</table>

BMI can also be determined using a BMI chart, which displays BMI as a function of weight (horizontal axis) and height (vertical axis) using color lines for different values of BMI or colors for different BMI categories.

The BMI is meant broadly to categorise population for purely statistical purposes. As noted, its accuracy in relation to actual levels of body fat is easily distorted by such factors as fitness level, muscle mass, bone structure, gender and ethnicity. People who are mesomorphic tend to have higher BMI than people who are endomorphic.

Similarly, ectomorphic individuals could conceivably receive a reading below the normal range, when in fact their body type makes it healthy for them to be thin. In fact, ectomorphs could obtain healthy readings even when their body fat percentage is higher than in healthy, as their low lean mass will lower the BMI.

People with short stature tend to have lower BMI. Therefore, they should use a lower cut off value for obesity diagnosis (Lopez-Alvarenga, Montesinos-Cabrera, Velaquez-Alva and Gonzalez -Barranco, 2003). The same applies to older people.
Whose reduced muscle can hide additional body fat without increasing BMI. There are some standard and widely accepted categories.

<table>
<thead>
<tr>
<th>Category</th>
<th>BMI range – kg/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely underweight</td>
<td>Less than 16.0</td>
</tr>
<tr>
<td>Underweight</td>
<td>From 16.0 to 18.5</td>
</tr>
<tr>
<td>Normal</td>
<td>From 18.5 to 25</td>
</tr>
<tr>
<td>Overweight</td>
<td>From 25 to 30</td>
</tr>
<tr>
<td>Obese class I</td>
<td>From 30 to 35</td>
</tr>
<tr>
<td>Obese class II</td>
<td>From 35 to 40</td>
</tr>
<tr>
<td>Obese class III</td>
<td>Over 40</td>
</tr>
</tbody>
</table>

Body mass index of the subject was assessed individually by measuring his/her weight in kilograms (with the help of a standard weighing machine) and height in meter (with the help of a standard metre marked cm and feet on it).

4. **General Health Questionnaire (GHQ)-12**: The present investigation includes general health questionnaire -12 or as popularly known as GHQ -12 (Goldberg and Hillier, 1979) a short screening tests for non- psychiatric disorder, to assess mental health. The GHQ - 12 is a self administered screening test, designed to identify short-term changes in mental health (depression, anxiety, social dysfunction and somatic symptoms). It is a pure state measure, responding to how much a subject feels that their present state “over the past few weeks” is unlike their usual state. It does not make clinical diagnoses and should not be used to measure long- standing attributes rather the GHQ focuses on the client’s ability to carry out “normal” functions and the appearance of any new disturbing phenomena. In the present investigation, the GHQ is used only as a screener for current psychological problems, rather than to diagnose psychiatric disorder. The GHQ - 12 (Goldberg, 1972) asks about psychological symptoms over the previous few weeks. It does not attempt to identify different levels of distress, rather than conduct detailed mental health assessments. The specific areas covered in the GHQ - 12 are depression, anxiety and social dysfunctioning designed for use by doctor, psychiatrists and researchers. This is an ideal tool for use in community and non- psychiatric situations.
The GHQ - 12 is very quick to administer and score as it contains only 12 questions. Nevertheless, it is just as reliable, valid and sensitive as its other longer versions. The reliability and validity of GHQ - 12 are well established (Banks, Clegg, Jackson, Kemp, Stafford and Wall, 1980; Goldberg and Hillier, 1979 and Goldberg 1972). The items of GHQ - 12 are to be rated on a four point scale with a scoring weight of 0 to 3. Thus, the total score may range from 0 to 36. The results produce a single score that makes it an excellent resource for research studies. Higher the score poor is general and psychological health and vice versa. Mohal (1991) prepared the Hindi version of this questionnaire. As it was available and the subjects of the present study were proficient in Hindi also, therefore, Hindi version of questionnaire was used in the present study (Appendix C).

5. Subjective Well-Being Inventory (SUBI): To assess the mental health of the SUBI (Sell and Nagpal, 1992) was used. This is a very robust and comprehensive instrument for assessing positive indicators of health, including perceptions of well being, happiness, life satisfaction, positive affect and feeling about social life. The SUBI has been standardized on adult Indian population. Developed by 'stepwise ethnographic exploration' process, this inventory, initially consisted of 130 items that were supposed to be measuring various areas of concern possibly related to or parts of well and ill being. This item pool was subjected to statistical treatment and factor analysis. The result was a 40 item version that assesses the subjective well being of the subjects on 11 factorial dimensions. A description of these 11 factors is given below:

(1) General well-being-positive affect (GWA-PA)

This factor refers to feelings of well being driven out of an overall perception of life which a respondent evaluates as functioning smoothly and joyfully.

(2) Expectation-achievement Congruence (EAC)

This factor refers to feeling of well being produced when one feels that one has achieved success and the standard of living as one expected.
(3) **Confidence in coping (CC)**

This factor refers to one’s perceived personality strength. It reflects one’s ability to master critical or unexpected situations and one’s ability to adapt to life changes and to face difficulties and adversities without breakdown.

(4) **Transcendence (Trans)**

This factor reflects feeling of well being derived out of value of a higher spiritual quality and one’s particular life experiences which go beyond ordinary day to day existence.

(5) **Family group support (FGS)**

This factor reflects feeling of well being derived from the perception of wider family when the respondent finds it as cohesive, supportive and helpful in illness and emotionally attached.

(6) **Social support (SS)**

This factor measures feelings of security and density of social networks.

(7) **Primary group concern (PGC)**

This factor measures positive and negative feelings about primary family.

(8) **Inadequate mental mastery (IMM)**

This factor assesses subject’s sense of insufficient control over, or inability to deal efficiently with, some day to day aspects of life.

(9) **Perceived-ill-health (PIH)**

The item on this factor refers to complaints regarding health and physical fitness.

(10) **Deficiency in social contacts (DSC)**

This factor assesses whether a respondent experiences lack of or deficiency in social relations and contacts through worries about being disliked and feelings of missing friends.

(11) **General well-being-negative affect (GWB-NA)**

This factor measures whether a subject possesses depressed outlook of life.

In the following table item numbers and direction of items are shown factor wise. The last column shows the scoring pattern of the item as per their direction. The original scoring pattern of all the factors is mentioned in the test manual. It is important to note that on seventh factor, the “Not Applicable” responses were scored
"zero", because the items on this factor were not applicable on unmarried and/or just married subjects. The inventory may also be used as an index of overall subjective well being by taking its total score on SUBI.

### Factors-Structure and Scoring of Subjective Well Being

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item Number</th>
<th>Direction of Item</th>
<th>Scoring of the 19 positive items is done by attributing 3, 2 and 1 to the given responses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1,5,6</td>
<td>All Positive</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>2,3,4</td>
<td>All Positive</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>7,8,9</td>
<td>All Positive</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>10,11,12</td>
<td>All Positive</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>21,22,23</td>
<td>All Positive</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>13.15.28</td>
<td>All Positive</td>
<td>Scoring of the 21 positive items is done by attributing 1, 2 and 3 to the given responses.</td>
</tr>
<tr>
<td>07</td>
<td>14.27.29</td>
<td>+,-,-</td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>16-20,20,31</td>
<td>All Negative</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>34-29</td>
<td>All Negative</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>32,33,40</td>
<td>All Negative</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>24,25,26</td>
<td>All Negative</td>
<td></td>
</tr>
</tbody>
</table>

Since the subjects of the present study were proficient in Hindi, a Hindi translation of SUBI prepared by Sharma (2002) was used to assess well being of the respondents. While preparing the Hindi version Sharma (2002) translated the statements in Hindi and these were assessed by 6 experts (from Hindi and English departments of M.D. University, Rohtak and Vaish P.G. College, Bhiwani). After modifying the Hindi translation as per the views of the experts, the two versions were comparatively evaluated by 2 experts.

The final Hindi version of SUBI was administered on 100 bilingual college students of Bhiwani. The original English version was administered on the subjects after an interval of 5 days. After a gap of one month, the translated test was administered on these subjects. The Pearson Product Moment correlation between original and translated versions of SUBI was .86. The test-retest reliability coefficient of correlation (over 1 month interval) of SUBI was .79. The final text of SUBI used in the present investigation has been shown in Appendix-D.
PROCEDURE:-

The data was gathered in small group (20-30) situations. At the first the investigator approached the group in school and a good rapport was established for creating congenial environment to extract authentic information from them, it was especially ascertained that no particular subject has undergone any major and significant life change. The selected subjects were requested to answer frankly and honestly as the information provided by them was to be kept confidential and would only be used for research purposes. When the subjects were comfortable and ready for the test then after obtaining consent of the subject to act as respondent, firstly, following instructions were given: “you will be given a set of questionnaire in which there are some personal questions regarding your personal data and you have to respond on the basis of your preference. Please read questions carefully before filling the information. There is no time limit but you have to fill it rapidly. Success of present work directly depends upon your valuable cooperation and sincerity.”

Firstly Personal Data Blank, GHQ, SUBI and STAXI were administered to the participants (N=500) in a small group of 20 -30 subjects in their class room settings after obtaining due permission from school administration and informed consent’s from participants. On the bases of their scores on anger expression, 120 subjects of low anger expression (QI) and 120 subjects of high anger expression, whose score is above Q3 - were selected for comparison. However, management/ intervention part of the study subjects of high anger expression group were selected. Subjects were informed about the general nature of the study as well as what would be required of them during the study. They were further divided randomly 30 each in four groups. These groups were administered SUBI, GHQ along with measurements of weight and height for BMI. After that anger management intervention programs were administered as per the design. For the first three groups three months training (twice in a week) for anger management was given. The first group (GI) was given Psychological training, the second group (GII) was given Yogic training, the third group (GIII) was given both Psychological and Yogic training while The fourth group (GIV) was taken as the control group and remained without any kind of formal intervention. Then after three months all the four groups were reassessed on dependent variables and training was given once in a week. The effect was then
checked and measured carefully to know if the training was helpful to them. Approximately after another three months after giving training of anger management SUBI, GHQ, BMI and STAXI was given to all the 120 subjects to see stability of the effect. This was repeated after another three months. A total training of nine months was given and effects were assessed 3 times.

For first three months, total 24 sessions were given at the rate of 2 sessions per week. In the second spell of three months, 12 sessions, one per week were imparted whereas in the last leg of three months no intervention program was given to the subjects. Assessment of anger expression, body mass index, general health and subjective well being were done at Basic (Pre), Post-I -after 3 months of intervention, post-2 after 3 months of post-I and lastly post-3-after another three months. All the intervention programs were kept constant as per their group for the entire duration of intervention.

Brief outlines of Intervention programs

Psychological Intervention

Out of the 120 students, the investigator made a group of 30 subjects by selecting them randomly and this group was named as Group I. The subjects of this group were given Psychological training to control their anger. The training was provided twice in a week to this group to maximum 24 sessions at first stage. The investigator sat in front of the students and cleared all the doubts raised by the respondents while they were having any doubts. The investigator gave 30 minutes to all the subjects in the group for psychological intervention. After establishing a good rapport with the subjects, it was especially ascertained that this particular subject has not undergone any significant and major life change. At first the subjects were asked to utter the word or phrase such as “relax” in a very gradual way or the other phrases like “om shanti om” or “take it easy” was uttered in a repeated manner while breathing deeply. Subjects can repeat the chosen word after taking long and deep breath in a very calm way and may repeat the word. Secondly subjects were to do reverse counting from 10 to 1 for 10 to 15 times. They can also drink a glass of water when they are in anger. If subjects repeat these things in anger then they will feel relaxed. Thirdly, the investigator gave another technique to control anger that is visualizing a relaxing experience from the past life the happier times of childhood
which the subjects have spent with their peer group and they may also recall the images of their loved ones such as parents and siblings. The subjects were given some psycho-educative discourses of 5-10 mts along with some documentary on ill effects of anger on various important domains of life. These exercise were done as per plan however, subjects were also instructed to follow these steps while experiencing anger.

**YOGIC INTERVENTION**

Out of the 120 students, the investigator made a group of 30 subjects by selecting them randomly and this group was named as Group II. The subjects of this group were given Yogic training to control their anger. As we know that in today's busy life people have no time to spend on themselves so they give way to a lot of problems and thus cause physical and mental problems to them. For them yoga is the best technique to get relief. Firstly the investigator provided an ambience which can bring peace and calmness to the subjects. First instruction that was given by the investigator to the subject is to breathe coming up from the gut. You can repeat this yoga step at least 10 times. Secondly, the investigator referred meditation and asanas like shavasna and padmasna. Subjects were made to sit in a dark room or a dim light room to do pranayam 4-5 times and the impact of this programme is long lasting. Thirdly, the investigator told the subjects that there should be no strenuous exercise while they are in the situation of anger. Everybody knows the effect of yoga on our mind, body and soul. Number of sessions were again kept equal to the group and each session was of thirty minutes.

**Psychological + Yogic Intervention**

Out of the 120 students, the investigator made a group of 30 subjects by selecting them randomly and this group was named as Group III. The subjects of this group were given both Yogic and psychological training to control and manage the anger. In this group the approach was combined with 24 sessions in first part, 12 sessions in second and no session in 3rd part, however, one session did not cross the thirty minutes.

**No intervention**

Out of the 120 students, the investigator made a group of 30 subjects by selecting them randomly and this group was named as Group IV. This group is control group and no intervention or formal training was given to these subjects to
control anger, however subjects of this group were also made to sit together for informal intervention/ gossip for about 30 minutes per session. The number of such informal sessions was also exactly same as in case of other three groups.

After giving general instructions regarding the testing, the selected test was administered after ensuring that the subject has understood the method of reply. The investigator sat beside the subjects and cleared all the doubts raised by the respondents while filling / recording his/her answers on response sheet. The subject took about 30-40 minutes to complete the set of given tests. After the completion of administration, the tests were taken back and it was ensured that the subjects had responded each item and in correct way. It was checked by the investigator that tests have been filled fully and the subject has left no questions. The subject was given a bundle of thanks with a feeling of gratitude for his/her cooperation. In the end of the 3rd spell i.e. after 9 months, a verbal report of the subjects were also taken to record their experiences. These verbal reports were later on used to discuss the results.

**ANALYSIS PLAN:**

Data was analyzed with the help of descriptive statistics, one way ANOVA for independent and repeated measure along with post hoc and t-test based mean comparisons. First of all means and standard deviation were computed and appropriate graphs were also prepared. Product movement correlations were also computed for checking of associations among the study variables. The statistical analysis was done with the help of SPSS 16.0 version. The obtained results and discussion on them have been presented in the chapter V.