CHAPTER 4
CHAPTER IV

METHOD AND PROCEDURE

The purpose of present study is to find out the effect of stress, locality and gender on the reasoning ability, personality traits and academic achievement of Xth grades along with the interactional effects. The effect will be studied with the help of statistical technique of 3x2x2 analysis of variance. This chapter seeks to outline the designed employed, sample selected, tools used, procedure adopted for data collection and statistical analysis conducted to realize objectives of the study.

4.1 DESIGN OF THE STUDY

The research design is the detailed plan of the investigation. In fact, it is the blueprint of the detailed procedures of testing the hypotheses and analyzing the obtained data. The research design, thus, may be defined as the sequence of those steps taken ahead of time to ensure that the relevant data will be collected in a way that permits objective analysis of the different hypotheses formulated with respect of the research problems. Thus research design helps the researcher in testing the hypotheses by reaching valid and objective
conclusions regarding the relationship between independent and dependent variables.

The present study is basically concerned to know the influence of stress-prone behaviour locality and gender psychological traits (cognitive and non-cognitive) of the students at high and higher secondary level. For this factorial design was employed. From operational point of view it is a matter of varying the independent variable in order to know the effect of such variable on the dependent variables. The independent variables in the present study are taken as stress, sex and locality. The dependent variables were taken as reasoning ability, personality traits and academic achievement.

4.2 SAMPLE

The sample of the present study were female and male students (N = 769) belonging to both rural and urban localities and studying in Xth class in high/higher secondary schools of Jammu province.

All these schools, from where these data were collected fall in the territorial jurisdiction of Jammu region comprising of six districts. Since the location of the various schools was geographically and climatically different and some districts were militancy infected, viz. Doda, Poonch and Rajoury. Therefore, these three districts were not included in the study. So the researcher was restricted to take the sample for the present study from three districts of
Jammu region viz. Jammu, Kathua and Udhampur on the basis of stratified random technique. Detail of final sample has been given in Table 4.1

**TABLE 4.1**

Detail of Final Sample

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>School</th>
<th>Male</th>
<th>Female</th>
<th>Urban</th>
<th>Rural</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Happy Hr. Sec. School Udhampur</td>
<td>70</td>
<td>40</td>
<td>110</td>
<td>-</td>
<td>110</td>
</tr>
<tr>
<td>3</td>
<td>Unique Public High School Gaggarh (Jammu)</td>
<td>40</td>
<td>20</td>
<td>-</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>Kendriya vidyalaya Sajivan</td>
<td>39</td>
<td>36</td>
<td>-</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>5</td>
<td>Tinny Tot High School Jammu</td>
<td>35</td>
<td>40</td>
<td>75</td>
<td>-</td>
<td>75</td>
</tr>
<tr>
<td>6</td>
<td>Army School Ratnu Chak Jammu</td>
<td>32</td>
<td>23</td>
<td>55</td>
<td>-</td>
<td>55</td>
</tr>
<tr>
<td>7</td>
<td>United School Jammu Basti Jammu</td>
<td>26</td>
<td>09</td>
<td>-</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>8</td>
<td>Little Flower School Kumar Colony Jammu</td>
<td>25</td>
<td>35</td>
<td>-</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>9</td>
<td>Co-operative Public School Jammu</td>
<td>20</td>
<td>43</td>
<td>63</td>
<td>-</td>
<td>63</td>
</tr>
<tr>
<td>10</td>
<td>MIER Jammu</td>
<td>27</td>
<td>30</td>
<td>57</td>
<td>-</td>
<td>57</td>
</tr>
<tr>
<td>11</td>
<td>Govt High School Bani (Kathua)</td>
<td>60</td>
<td>30</td>
<td>-</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>
4.3 TOOLS USED

Following tools were used:

3. 16 Personality Factors Questionnaire (Cattell and Eber Indian Adaptation of Kapoor & Tripathi, 1982).
4. Academic Achievement (For this annual marks of each student of last years were taken into consideration).

4.3.1 Battery of Stress Scales (Bisht, 1998)

There is glaring scarcity of tools measuring different types of stresses. Some available tools appearing apparently as measuring some of the types of stresses are – Family Questionnaire (Herbert, 1952) which gives a family tension index, Schedule of Recent Experience (Martin, 1983) of family stress, Job Stress (Gardsh, 1976) which is for employees, Educational Stress Events Inventory (Sharratt, 1983) to measure job related stress and Stress Scale for School Psychologists (Beitman, 1983). There is of course, availability of tools which measure one or the other components of stress. E.g., anxiety tools are developed by Taylor (1953), Mandler and Sarason (1952),
Alpert and Haber (1960), Liebert and Morris (1967), Sinha (1966), Sinha and Sinha (1968), McNair et. al. (1971): for measuring frustration. Conflict can be measured by conflict board by Uppadhayay. But these measures do not suffice the purpose of measuring some exclusive stress types having all the four components of stress, viz., frustration, conflict, pressure and anxiety in them. Therefore for the measurement of thirteen types of stresses, a ‘Battery of Stress Scale’ was developed and standardized. This battery has the following scales in it:

(i) Scale of Existential stress (SES)
(ii) Scale of Achievement stress (SAdhS)
(iii) Scale of Academic stress (SAS)
(iv) Scale of Self-concept stress (SSCS)
(v) Scale of Self-actualization stress (SSAS)
(vi) Scale of Physical stress (SPS)
(vii) Scale of Social stress (SSS)
(viii) Scale of Role stress (SRS)
(ix) Scale of Institutional stress (SIS)
(x) Scale of Family stress (SFS)
(xi) Financial stress scale (FSS)
(xii) Scale of Vocational stress (SVS)
(xiii) Scale of Superstition stress (SSuS)
Development and Standardization of the Battery

All the thirteen scales of the battery were developed and standardized simultaneously. Six approaches were adopted for the standardization purpose, viz.,

(i) Methodological Approach
(ii) Theoretical Approach
(iii) Static Approach
(iv) Rational Approach
(v) Empirical Approach
(vi) Normative Approach

Methodological Approach

Under this approach a search of method for measuring stress was done. One method of measuring stress is idiopathic advocated by Vinokur and Selzer (1975), Theorell (1974), Paykel and Uhlenhuth (1972), Ander et. al. (1974). Proclaiming its accuracy, they say “It may also reflect the subject’s perception as well as his way of coping with life change events”. This widely used method of measuring stress measures stress through subjective feelings of distress or interpretive perceptual responses. For developing the battery of stress scales this idiographic method was taken.

Theoretical Approach

Five-point scale was thought appropriate because it takes into account the average category into account too. So far
continua are concerned, two continua are taken. One is of frequency along which items are located in terms of frequency (i.e., always, often, sometimes, rarely and never). The other is of quantity along which items are located in terms of quantity (i.e., very much, much, so, little and not at all).

**Static Approach**

Stress is conceptualized as having following components:

- Frustration
- Conflict
- Pressure
- Anxiety

**Rational Approach**

Inventories of items in Hindi of different type of stresses were prepared. Inventory items are distributed over the four components of the different types of stresses. Frustration items are based on delays, lack of resources, losses, and failures. Conflict items show three types of conflict – approach – avoidant, double – approach, and double – avoidant conflicts. Pressure items are on competitive achievement, sustained concentration of efforts, and rapid changes. The worry items of anxiety are on conscious concern about consequences, negative expectation and negative self evaluation. The emotionally items of anxiety are on uneasiness and nervousness, Further, more,
(i) The items of scale of self-concept stress (SSCS) are distributed over potency and activity dimensions of self concept. The different types of self concepts under these two dimensions are:


**Activity:** Active – passive, sharp – dull, fast – slow, dynamic – nondynamic.

Some items are to measure self-concept stress, when self concept was incongruent with introjected values (A) and some items; measure self – concept stress when self concept is incongruent with introjected values, not with introjected values (B).

(ii) Items of Scale of Self-actualization stress (SSAS) were centred on the ten main characteristics of a self – actualizing
person. They measured self actualizing stress when it was due to:
a) Prevention by society
b) Dominance by lower needs.

(iii) Items of Scale of Role Stress (SRS) inventory are distributed over the four types of role stress, viz.,

a) Sex – role stress
b) Status – role stress,
c) Variety of roles stress and
d) Role – confusion stress.

(iv) Scale of Existential – stress (SES) items are for measuring these types of existential stresses -

a) Aesthetic
b) Religious
c) Ethical
d) Human attitude
e) Guilt
f) Meaninglessness and
g) loveliness

In order to counteract social desirability, some unfavourable items are also kept in each scale.

Empirical approach

a) Selection of Items – It was done in a three – fold manner –
(i) By content analyzing the items,
(ii) By knowing the predictive validity of items, and
(iii) By knowing the discriminatory power of items.

b) Descriptive Statistics – To know the nature of scores by Scales SK and KU were calculated. Reliability of mean, median and SD of scores scored by scales was also chalked out.

c) Determining Psychological Properties of Scales - Four psychological properties of the scales were determined. viz.,
   (i) Reliability – Reliability of the scales of the battery was calculated in three ways for knowing (a) dependability i.e., short term test-retest correlations (b) stability i.e., retest after a longer interval (c) internal consistency, i.e., split-half correlations (Table 1) and correlation between total scores and scores on each of the component (Table 2).

**TABLE - 1**

<table>
<thead>
<tr>
<th>Dependability</th>
<th>Stability</th>
<th>Internal Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIS</td>
<td>0.78</td>
<td>0.73</td>
</tr>
<tr>
<td>Scales</td>
<td>Frustration</td>
<td>Conflict</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>SAS</td>
<td>0.87</td>
<td>0.82</td>
</tr>
<tr>
<td>SFS</td>
<td>0.88</td>
<td>0.86</td>
</tr>
<tr>
<td>FSS</td>
<td>0.83</td>
<td>0.72</td>
</tr>
<tr>
<td>SSS</td>
<td>0.77</td>
<td>0.70</td>
</tr>
<tr>
<td>SSuS</td>
<td>0.82</td>
<td>0.78</td>
</tr>
<tr>
<td>SVS</td>
<td>0.90</td>
<td>0.84</td>
</tr>
<tr>
<td>SPS</td>
<td>0.91</td>
<td>0.83</td>
</tr>
<tr>
<td>SSCS</td>
<td>0.87</td>
<td>0.84</td>
</tr>
<tr>
<td>SSAS</td>
<td>0.89</td>
<td>0.78</td>
</tr>
<tr>
<td>SRS</td>
<td>0.78</td>
<td>0.76</td>
</tr>
<tr>
<td>SES</td>
<td>0.79</td>
<td>0.72</td>
</tr>
<tr>
<td>S AchS</td>
<td>0.70</td>
<td>0.66</td>
</tr>
</tbody>
</table>

TABLE 2
Internal Consistency Coefficients (Correlation between Total and Component Scores).

N = 243
<table>
<thead>
<tr>
<th></th>
<th>0.48</th>
<th>0.55</th>
<th>0.46</th>
<th>0.32</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFS</td>
<td>0.40</td>
<td>0.32</td>
<td>0.48</td>
<td>0.25</td>
</tr>
<tr>
<td>FSS</td>
<td>0.55</td>
<td>0.38</td>
<td>0.51</td>
<td>0.41</td>
</tr>
<tr>
<td>SSS</td>
<td>0.43</td>
<td>0.34</td>
<td>0.53</td>
<td>0.46</td>
</tr>
<tr>
<td>SSuS</td>
<td>0.48</td>
<td>0.54</td>
<td>0.47</td>
<td>0.39</td>
</tr>
<tr>
<td>SPS</td>
<td>0.51</td>
<td>0.42</td>
<td>0.46</td>
<td>0.52</td>
</tr>
<tr>
<td>SSCS</td>
<td>0.39</td>
<td>0.46</td>
<td>0.32</td>
<td>0.45</td>
</tr>
<tr>
<td>SSAS</td>
<td>0.33</td>
<td>0.48</td>
<td>0.33</td>
<td>0.60</td>
</tr>
<tr>
<td>SRS</td>
<td>0.42</td>
<td>0.51</td>
<td>0.29</td>
<td>0.23</td>
</tr>
<tr>
<td>SES</td>
<td>0.44</td>
<td>0.28</td>
<td>0.22</td>
<td>0.38</td>
</tr>
<tr>
<td>S AchS</td>
<td>0.44</td>
<td>0.37</td>
<td>0.40</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Note: all correlations were significant at 0.05 level. The types of components are according to the types of stresses measured by the scale in question.

(ii) Validity – all the scales appear to be having content validity and item validity. The method of selecting items supports this supposition. In addition, construct validity (discriminability) was estimated for all scales in a two – fold fashion. The first type tested if the construct measured differentiated students on some related construct. For this memory was taken. The second type tested if the construct measured by the scales was not related to construct
predictory theory. For this internal evaluation was taken. In both the construct validity was affirmed.

(iii) Homogeneity- All the scales were correlated with each other. Obtained correlations were moderate in magnitude indicating that the scales were measuring one main construct, i.e. stress in general and different type of stresses in particular.

(iv) Transferability – For this one sample 100 was drawn from the students of Almora district and one of 100 from Lucknow district. The means of various scale scores of these sample students were tested for difference by $t$ analysis. The non significant $t$'s fairly indicated that items of scales were not concentrating on one kind of situation and they can be used across different populations.

**Normative Approach**

Percentile – norms were established for scales of the battery. Normative data were collected from a sample of 300 students of class IX and X. the age group was 13 + to 17. Results are presented in table 3. The corresponding grouping of high, average and low stress in terms of percentiles for interpretation is –

<table>
<thead>
<tr>
<th>Stress Level</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>High stress</td>
<td>P70 or above</td>
</tr>
<tr>
<td>Average stress</td>
<td>P49 to P31</td>
</tr>
<tr>
<td>Low stress</td>
<td>P30 or below</td>
</tr>
</tbody>
</table>

Thus, all the six approaches indicate that the battery of 13 stress scales is well standardized.
Scoring

The scoring is as follows for positive statements.

<table>
<thead>
<tr>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Total</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much</td>
<td>Much</td>
<td>Average</td>
<td>Less</td>
<td>Not at all</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For negative statements, it is just vice-versa. The total will be separated for frequency and quantity. The grand total will be the sum of frequency score and quantity score. Thus each scale will yield

a) Frequency of stress score
b) Quantity of stress score
c) Total stress score

In the present study only seven stress i.e SAS, SSCS, SPS, SSS, SFS, FSS and SVS were taken out of the thirteen stresses.

4.3.2 Reasoning Ability Test (Dubey, 1992).

To measure the reasoning ability of students, the investigator selected Reasoning Ability Test by Dubey (1992) as this test is most appropriate test for the age group taken in the sample and
tests the reasoning ability of students in a broad way. Moreover this test has already been used successfully by many researchers.

In order to test the reasoning ability of students the author has constructed this test which consists of two parts, Part – I has 40 questions related to reasoning ability in the form of numerical series. In every question 5-6 numbers are given and the students are supposed to write the next two numbers by finding any relationship with that series. In Part II there are 20 questions in the form of analysis or relationship. To every question there are four alternatives and among these four alternatives one is correct. Students are required to circle that alternative which he/she think is most appropriate for the solution of that problem.

Each questions in Part I and II carry one mark and total of the marks of Part I and II are the total marks of the students on the Reasoning Ability Test. Time to complete this test is 60 minutes excluding the time for instructions etc.

Reliability of the test was measured with the help of test retest method which came to 0.72. This value of coefficient of reliability is quite high.

Validity of the test was measured with the help of content validity and construct validity. This value is also quite high (0.67) which tells about the soundness of the test for future use.
4.3.3 **16 Personality Factors Questionnaire (Cattell and Eber, Indian Adaptation by Kapoor and Tripathi, 1982).**

The 16 PF is an objectively scorable test devised by basic research in the field of psychology to give the most complete coverage of the personality in possible brief time. This test was designed for use with individuals aged 16 and above for literate individuals whose educational level is roughly equivalent to that of a normal high school student.

In Form C and Form D, there are eight items for Factor B scale, seven items for the motivational distorting scale and six items for each of the remaining scale.

Three alternative answers are provided for each of the questions, since the two alternatives, ‘forced choice situation for bidding any’ middle of road and may produce aversion to the test on the part of the examination.

**Reliability**

**EQUIVALENCE CO-EFFICIENT OF THE TEST FORM FOR EACH FACTOR**

| Form | A | B | C | E | F | G | H | I | L | M | N | O | Q1 | Q2 | Q3 | Q4 | with 0.35 0.49 0.48 0.39 0.36 0.44 0.55 0.47 0.16 0.25 0.16 0.51 0.35 0.40 0.33 0.37 |
Validity

The concept validity of the scale can be evaluated directly by correlating the scale with the pure factor it was designed to measure.

Scoring

Two card board stencil scoring keys are used, one cover factors (Traits) A, C, F, H, L, N, Q1, Q2 and the other factors B, E, G, I, M, O, Q2 and Q4. Simply fit the stencil over the answer sheet and count the marks visible through the holes. For factor A, Allowing either 2 or 1 indicated by the number printed adjacent to the hole. Add these scores and enter the total in the space indicated by the arrow on the stencil for factor A (raw score), but the factor B is peculiar in that each correct mark visible in a hole gives a score of 1 only. It is similar for other factors.

Interpretation of the Primary Factors

Predictions of score on various criteria, and assignment of individuals to various diagnostic clinical groups, can be carried out actuarially, by computation from standard scores, using methods discussed in detail in the Handbook and elsewhere. Where no correlations with criteria are known, knowledge of psychological nature of the factors must guide initial prediction until empirical studies can be done in a particular situation. Moreover even where correlational, actuarial evidence about a certain criterion is available, it is desirable to
add psychological judgement to immediate statistical computations to allow for changes of personality with learning, maturation, etc. or for anticipated changes in life situation.

Each of the primary factors by the 16 PF has an alphabetic design (A through Q4), a technical title (which is given in parentheses in the following descriptions), and a brief, less technical title (given here in bold face), which the practitioner will most commonly use.

The definitions and interpretations of the factors as given below, are short, non-technical and, of course, less exact than the more intensive discussions available in the Hand Book for well defined occupational and clinical groups provide the psychologists with additional insights into the meaning and operation of the factors.

Capsule descriptions of the Sixteen Primary Personality Factors

Low score direction

High score direction

Factor A

Reserved, Detached, Vs. Outgoing, Warmhearted

Critical, Cool (Sizothymia) Easy going, Participating

(Affectothymia)

The person who scores low (sten of 1 to 3) on Factor A tends to be stiff, cool, skeptical, and aloof. He likes things rather than people, working alone, and avoiding compromises of viewpoints. He is likely to be precise and “rigid” in his way of doing
things and in personal standards, and in many occupations these are desirable traits. He may tend, at times, to be critical, obstructive or hard.

The persons who scores high (sten of 8 to 10) on Factor A tends to be good natured, easy going, emotionally expressive ready to cooperate, attentive to people, soft hearted, kindly, adaptable. He likes occupations dealing with people and socially impressive situations. He readily forms active groups. He is generous in personal relations, less afraid of criticism, better able to remember names of people.

Factor B

| Less intelligent, concrete | Vs. | More intelligent, Abstract Thinking (lower Scholastic Mental capacity) | Dull |

The person who scores less tends to be slow to learn and grasp, dull, given to concrete and literal interpretation. His dullness may be simply a reflection of low intelligence or it may represent poor functioning due to psychopathology.

The person who scores high on Factor B tends to quick to grasp ideas, a fast learner, intelligent. There is some correlational with level of culture as well as with some alertness.
Factor C

Affected by Feelings, Vs. Emotionally Stable,
Emotionally less Stable, Faces Reality, Calm
Easily upset, (lower ego strength) Mature (Higher ego strength)

The person who scores low on Factor C tends to be low in frustration tolerance for unsatisfactory conditions, changeable and elastic, evading necessary reality demands, neurotically fatigued, fretful, easily emotional and annoyed, active in dissatisfaction, having neurotic symptoms (phobia, sleep disturbances, psychosomatic complaints, etc.) Low Factor C score is common to almost all forms of neurotic and some psychotic disorders.

The person who scores high on Factor C tends to be emotionally mature, stable, realistic about life, unruffled, possessing ego strength, better able to maintain solid group morale. Sometimes he may be a person making a resigned adjustment to unsolved emotional problems. Shrewd Clinical observers have pointed out that a good C level sore sometimes enables a person to achieve effective adjustment despite an underlying psychotic potential.

Factor E

Humble, Mild, Vs. Active, Independent,
Accommodating, Aggressive, Competitive,
Conforming (Submissiveness) Stubborn (Dominance)
The person who scores low on factor E tends to give way to others, to be docile, and to conform. He is often dependent, confessing anxious for obsessional correctness. This passivity is a part of many neurotic syndromes.

The person who scores high on Factor E is assertive, self-assured, and independent-minded. He tends to be austere, a law to himself, hostile or extra punitive, authoritarian (managing others) and disregards authority.

Factor F
Sober, Prudent, Serious, Vs. Happy-go-lucky, impulsive
Taciturn (Desurgency) Enthusiastic (Surgency)

The person who scores low on factor F tends to be restrained, reticent, introspective. He is sometimes dour, pessimistic, unduly deliberate, and considered smug and prim correctly by observers. He tends to be a sober, dependable person.

The person who scores high on this trait tends to be cheerful, active talkative, frank, expressive, care-free. He is frequently chosen as an elected leader. He may be impulsive.

Factor G
Expedient, Evades Rules, Vs. Conscientious, Persevering,
Feels Few Obligations Staid Rule-bound
(Weaker superego strength) (Stronger superego strength)
The person who scores low on Factor G tends to be unsteady in purpose. He is often casual and lacking in effort for group undertakings and cultural demands. His freedom from group influence may lend to antisocial acts, but at times makes him more effective, while his refusal to be bound by rules causes him to have less somatic upset from stress.

The person who scores high in Factor G tends to be exacting in character, dominated by sense of duty, persevering, responsible, planful, “fills the unforgiving minute”. He is usually conscientious and moralistic, and he prefers hardworking people to witty companions. The inner “categorical imperative” of this essential superego (in the psychoanalytic sense) should be distinguished from the superficially similar “social ideal self” of Q4.

Factor II

Shy. Restrained, Diffident, Timid

Vs. Venturesome, Socially-bold, Uninhibited, Spontaneous

The person who scores low on this trait to be shy, withdrawing, cautious and retiring. He usually has feelings of inferiority. He tends to be slow and impeded in speech and in expressing himself, dislikes occupations with person contacts, prefers one or two close friends to large groups, and is not given to keeping in contact with all that is going on around him.
The person who scores high on Factor H is sociable, bold, ready to try new things, spontaneous and abundant in emotional response. He is able to face wear and tear in dealing with people and grueling emotional situations, without fatigue. However, he can be careless of detail, ignore danger signals and consume much time in talking. He tends to be “pushy” and actively interested in the opposite sex.

Factor I
Practical Vs. Protected, Sensitive

The person who scores low on Factor I tends to be practical, realistic, masculine, independent, responsible, but skeptical of subjective, cultural elaborations. He is sometimes unmoved, hard, cynical and smug. He tends to keep a group operating on a practical and realistic “no-nonsense” basis.

The person who scores high on Factor I tends to be tender hearted, day-dreaming, artistic, fastidious and feminine. He is sometimes demanding of attention and help, impatient, dependent and impractical. He dislikes rude people and rough occupations. He tends to slow up group performance and to upset group morale by unrealistic fussiness.

Factor L
Trusting, Adaptable, Free Vs. Suspicious, Self-
Of Jealousy, Easy to get opinionated, Hard to Fool
on with (Pretension)

The person who scores low on Factor L tends to be free of jealous tendencies, adaptable, cheerful, uncompetitive, and concerned about other people, a good team worker.

The person who scores high on Factor L tends to be mistrusting and doubtful. He is often involved in his own ego, is self-opinionated and is interested in internal, mental life. He is usually deliberate in his actions, unconcerned about other people, a poor team member.

Factor M
Practical, Careful. Vs. Imaginative, wrapped up in
Conventional, Regulated Inner Urgencies, Careless of
by External Realities Practical Matters, Absent-minded

The person who scores low on Factor M tends to be anxious to do the right things, attentive to practical matters, and subject to the dictation of what is obviously possible. He is concerned over detail, able to keep in head in emergencies, but sometimes unimaginative.

The person who scores high on Factor M tends to be unconventional, unconcerned over everyday matters, self-motivated, imaginative, creative, concerned with “essentials” and obvious of particular people and physical realities. His inner directed interests
sometimes lead to unrealistic situations accomplished by expressive outbursts. His individuality tends to cause him to be rejected in group activities.

Factor N

Forthright, Natural, Artless   Vs.   Shrewd, Calculating
Sentimental                  Worldly, Penetrating

The person who scores low on Factor N tends to be unsophisticated, sentimental, crude and awkward, but easily pleased and content with what comes, and is natural and spontaneous.

The person who scores high on Factor N tends to be polished, experienced, worldly and shrewd. He is often hard headed and analytical. He has an intellectual, unsentimental approach to situations and approach to cynicism.

Factor O

Placid, Self-assured, Confident   Vs.   Apprehensive, Worrying,
Serene (Untroubled adequacy)   Depressed, Troubled

The person who scores low on Factor O tends to be placid with unshakable nerve. He has a mature unshakable confidence in himself and has capacity to deal with things. He is resilient and secure, but to the point of being insensitive of when a group is not going along with him, so that he may evolve antipathies and distrust.
The person who scores high on Factor O tends to be depressed, moody, a worried, full of foreboding and brooding. He has a childlike tendency to anxiety in difficulties. He does not feel accepted in groups or does not feel free to participate.

Factor Q1
Conservative, Respecting Vs. Experimenting, Critical,
Established Ideas, Tolerant Liberal, Analytical,
of Traditional Difficulties Free-thinking
(Conservatism)

The person who scores low on Factor Q1 is confident in what he has been taught to believe and accepts the “tried and true”, despite inconsistencies, when something else might be better. He is cautious and compromising in regard to new ideas. Thus he tends to oppose and postpone change, is inclined to go along with tradition, is more conservative in religion and politics, and tends to be interested in analytical “intellectual” thought.

The person who scores high on Factor Q1 tends to be interested in intellectual matters and has doubts on fundamental issues. He is skeptical and inquiring regarding ideas, either old or new. He tends to be more well informed, less inclined to moralize, generally more inclined to undertake experiments in life and more tolerant of inconvenience and change.
Factor Q2

Group-dependent, A “Joiner” Vs. Self-sufficient, Prefers own decisions, Resourceful

(Self sufficiency)

The person who scores low on Q2 prefers to work and make decisions with other people, likes and depends on social approval and admiration. He tends to go along with group and may be lacking in individual resolution. He is not necessarily gregarious by choice; rather he needs group support.

The person who scores high on factor Q2 is temperamentally independent, accustomed to going his own way, making decisions in taking action on his own. He discounts public opinion, but is not necessarily dominant in his relations with others (see Factor E). He does not dislike people but simply does not need their agreement or support.

Factor Q3

Undisciplined, Self-conflict, Vs. Controlled, Socially precise
Careless of Protocol, Follows Following Self-image (High own Urges (Low integration) self-concept control)

The person who scores low on Factor Q3 will not feel bothered to control and regard of social demands. He is not overly considerate, careful or painstaking. He may feel maladjusted and man maladjustments (especially the affective but not the paranoid) show Q3.
The person who scores high on Factor Q3 tends to have strong control of his emotions and general behaviour, is inclined to be socially aware and careful, and evidences what is commonly termed “self-respect” and regard for social reputation. He sometimes tends, however, to be obstinate.

Factor Q4
Relaxed, Tranquil, Torpid, Vs. Tense, Frustrated, Driven
Unfrustrated (Low ergic tension)

The person who scores low on Factor Q4 tends to be sedate, relaxed, composed and satisfied (not frustrated). In some situations, his over satisfaction can lead to laziness and low performance, in the sense that low motivation produces little trial and error. Conversely, high tension level may disrupt schedule and work performance.

The person who scores high on Factor Q4 tends to be tense, excitable, restless and impatient. He is often fatigued, but unable to remain inactive. In groups he takes a poor view of the degree of unity, orderliness and leadership. His frustration represents an excess of stimulation, but undischarged thrive.
4.4 DATA COLLECTION

Before the collection of data, permission of the concerned head of the institution was sought and timings were fixed with the class-incharge teachers.

After having finalized the research tools, data collection for the final stage of the study was undertaken on a sample of 889 students (males, females; urban and rural) from High/Higher Secondary school of namely Jammu, Udhampur and Kathua of J&K state. All the research tools namely Battery of Stress Scales, 16 Personality Factors, Questionnaire and Reasoning Ability Test were administered personally by the investigator herself. As the tests were lengthy, therefore, these were administered one after the other with some recurrent break in the two sessions spread over a period of 1-2 days for each school.

All possible efforts were made to make the students feel at ease and respond to the various tests with full concentration. All their queries were answered so as to satisfy their curiosity and motivate them to answer the tests and Questionnaire carefully. All efforts were made to get the co-operation of the students by telling that their responses would be kept strictly confidential.

Out of 889 students selected for the study, only 769 students were found effective and remaining 120 students were dropped due to their incomplete responses on one or the other test.
4.5 **STATISTICAL TECHNIQUES USED**

1. To identify the adolescents having different levels of stress, the technique of Quartiles (Q1 and Q3) were employed.

2. To find out various significant differences of various groups and to understand the joint effect of various independent variables on the dependent variables, the appropriate statistical technique was Analysis of Variance. Therefore, technique of three-way analysis of variance (3x2x2) was applied keeping in view the objectives and hypotheses laid down in the present study.