CHAPTER-III

PROCEDURE AND TECHNIQUES

To carry out any research investigation, it is necessary to adopt a systematic method and procedure. By methodology of any research we mean the selection of the representative sample from out of general population, applying appropriate research tools and techniques, collecting relevant data and analysis and interpretation of the same for scientific investigation of the problem.

DESIGN OF THE STUDY

Descriptive survey method of research was employed for the present study. This method is concerned with the surveying, description and investigation of some phenomena or issues, the conditions and relationships that exist, practices that prevail and beliefs, attitudes and points of view that are held etc. The design of the present study involved an analysis of the psychological problems in relation to ego-identity, locus of control and family cohesion of the adolescents at the +2 stage. It was also correlational involving the finding out of relationship between various areas of psychological problems and ego-identity, locus of control and family cohesion. Inter-variable correlations amongst the three independent variables were also worked out. Comparisons on various areas of psychological problems and ego identity, locus of control and family cohesion of the groups differentiated on the basis of sex and
courses of study (arts and science) were made and high vs. low groups (top 27% and bottom 27%) on psychological problems were compared on all the above variables. Groups differentiated on independent variables (i.e., ego-identity, locus of control and family cohesion on the basis of high vs. low groups) were also compared on the dependent variable i.e., various areas of psychological problems.

**SAMPLING**

In every research project, it is not only difficult, but impossible to include the whole population. Thus, the research worker tries her best to select such a sample which is truely representative of the whole population to be studied. With this end in view, the study was conducted on a sample of 320 adolescents selected from the government senior secondary schools and government model senior secondary schools of Chandigarh, within the age range of 15-17 years. The schools selected for the present study are given in table 3.1. Stratified random sampling technique was used for the selection of the sample. The sub-groups that comprised the sample were boys and girls, derived from the disciplines of arts and science.
### TABLE 3.1

**SCHOOL-WISE DISTRIBUTION OF THE SAMPLE**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the School</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Government Senior Secondary School, Sector 20-D, Chandigarh.</td>
<td>53</td>
</tr>
<tr>
<td>5.</td>
<td>Government Model Senior Secondary School Sector 10, Chandigarh.</td>
<td>54</td>
</tr>
<tr>
<td>6.</td>
<td>Government Model Senior Secondary School Sector 16, Chandigarh.</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>320</strong></td>
</tr>
</tbody>
</table>

**Split-up of the Sample**

For an effective analysis, out of the total sample studied, 30 cases on the basis of their raw scores were considered as the divergent cases and, therefore, discussed separately. The sample of 290 students on the basis of sex and subject of study, in that order is described as under...
Description of the Sample -

(i) On the basis of sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>141</td>
</tr>
<tr>
<td>Girls</td>
<td>149</td>
</tr>
<tr>
<td>Total</td>
<td>290</td>
</tr>
</tbody>
</table>

(ii) On the basis of the subject of study

<table>
<thead>
<tr>
<th>Subject of study</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arts</td>
<td></td>
</tr>
<tr>
<td>1.1 Boys</td>
<td>70</td>
</tr>
<tr>
<td>1.2 Girls</td>
<td>71</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
</tr>
<tr>
<td>2. Science</td>
<td></td>
</tr>
<tr>
<td>1.1 Boys</td>
<td>71</td>
</tr>
<tr>
<td>2.2 Girls</td>
<td>78</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
</tr>
</tbody>
</table>

The sample was restricted to the students of +2 stage of the Senior Secondary Schools of Chandigarh. The total sample consisted of 290 students and it included both boys and girls and arts and science students as has already been described.
TOOLS EMPLOYED

According to Best (1959), like the tools in the carpenter's box, researcher's tools are appropriate in a given situation to accomplish a particular purpose.

The present study is analytical in its approach and in order to obtain the required information the following tools were used:

Mooney Problem Checklist (College Form, 1950)

Designed by Mooney and Gordon (1950), the checklist is not a test. It is self-administering untimed inventory that helps students to express their personal problems. There are three forms of checklist - designed for junior high school students, high school and college level. The items are so organized in these three forms that they can be used appropriately with different groups of students and also help the counsellors to identify problems faced by students in various problematic areas.

The College Form which is also known as 'C' Form used in the present investigation is comprised of 330 items which are divided into eleven areas. Each area thereby tests 30 problems. These areas are:

- Health and Physical Development (HPD).
- Finances, Living Conditions and Employment (FLE).
- Social and Recreational Activities (SRA).
- Social Psychological Relations (SPR)
Out of these eleven areas, the area 'Courtship, Sex and Marriage' (CSE) in the present investigation was deleted because it was not found appropriate to Indian culture. The views of experts were taken regarding this area and they were in favour of excluding it, for using this checklist at the senior secondary level. Reliability of the checklist after deleting this area was found out by the investigator herself and it is reported later in the section.

Further, the words 'Temple/Gurudwara' and 'Holy Hindu Granths/Guru Granth Sahib' were substituted for words like 'Church' and 'Bible' given in the problem statements of the area Morals and Religion (MR).

Validity

The checklists are not built as tests but they are designed to predict definite patterns of behaviour. The process of validation would be simply that of determining the extent to which the predicted behaviour patterns correspond with the actual behaviour as judged by other
criteria. The validity of checklists and their usefulness can be evaluated in terms of assumptions on which they are built and the purposes for which they are intended.

The assumptions on which present checklists were devised are:

1. The great majority of students would be responsive to the items;
2. They would accept the task with a constructive attitude;
3. They would find that the checklists gave a fairly complete picture of their personal problems with which they are concerned;
4. School administrators, teachers and counsellors would find the results usable;
5. Research workers would find the checklists useful in various lines of inquiry.

Reliability

Reliability of M.P.C.L has been determined in two ways i.e.,

(1) On the basis of the frequency with which each of the items was marked.

(2) On the basis of the rank order of the 11 problem areas arranged by the size of mean number of problems checked in the area on its first and second administrations. The correlation coefficients of .93 for the former and
ranging from .90 to .98 for latter was obtained.

After deleting the area CSM, the investigator found out the reliability of the checklist with the test-retest method. The Problem Checklist was readministered at an interval of 12 weeks after the first administration to a group of 80 students. The test-retest rank order correlation coefficient found was .97 for the ten areas of M.P.C.L.

Scoring

For the scoring of the checklist, the circled items in each of the areas are to be counted first and the number entered in the relevant box. Then the items which are only underlined are to be counted and added to the number circled and the sum is to be entered in the box marked 'total'. This constitutes area-wise total of the problems checked. Lastly, the total of all the counts for all the areas is to be recorded at the bottom on the front cover and this is the total number of problems checked.

Rasmussens' Ego-identity Scale (Indian Adaptation by Saran Kumari Sharma, 1983).

Originally this scale was developed by Rasmussen (1964). It contained 72 items and they were in English. The items relate to six developmental stages enunciated by Erikson and their corresponding tasks.
Sharma (1983) for her doctoral work adapted and condensed this scale. The revised adaption of Ego-Identity Scale contain 40 questions. It was also translated by her on the basis of quartiles.

The description of the 40 items of Ego-Identity Scale as related to the six developmental stages and their derivatives are as under.

**TABLE 3.2**

**DIMENSION-WISE DISTRIBUTION OF THE ITEMS OF EGO-IDENTITY SCALE**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Developmental Stage</th>
<th>Components of Developmental Stages</th>
<th>Original Test Item No.</th>
<th>Total</th>
<th>+ve</th>
<th>-ve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Infancy</td>
<td>Basic Trust Vs. Mistrust</td>
<td>1,5,16,33 58,67,72,68</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Early Childhood</td>
<td>Autonomy Vs. Shame</td>
<td>5,42,15</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Pre-school Age</td>
<td>Initiative Vs. Guilt</td>
<td>17,19,39,44 46,54,60</td>
<td>7</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>School Age</td>
<td>Industry Vs. Inferiority</td>
<td>11,25,40,45 52,59,65,66</td>
<td>8</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Adolescence</td>
<td>Ego-Identity Vs. Identity Confusion</td>
<td>2,23,26,28 30,51,48,56 64</td>
<td>9</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Young Adulthood</td>
<td>Intimacy Vs. Isolation</td>
<td>10,14,35,39,40</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Total 40 18 22
The reliability of the original scale yielded Spearman Brown Prophecy formula coefficient of correlation value of .85. The Kuder-Richardson reliability of the adapted form was .77. Item analysis of the original scale was done and the items yielding .18 and more value of correlation were included in the adapted form of the scale.

Scoring

The scoring was done with Ego-Identity Scale Key devised for the purpose of investigation. The total score of all the statements was drawn for each individual and the raw scores were thus ready for tabulation. The answers in the expected direction whether positive or negative were scored as 1 and those in the reverse direction as zero.

Rotter's I-E Locus of Control Scale (1966)

Rotter's definition of the construct deals only with a person's perception of contingency relationships between his own behaviour and events which follow that behaviour. In its present form, it consists of 29 items with 6 fillers and is used to measure the internal-external control. Each item has two statements, one representing the internal direction and the other representing the external direction. The subject is required to check one of the two statements according to his/her own belief. There is no time limit. Items are scored towards externality so that a higher score on the scale indicates a more external direction and a lower score on the scale indicates a
more internal direction. Score 13 and above is considered to be indicative of externality.

Scoring range is from 0-1 for each item. The fillers (1, 8, 14, 19, 24 and 27) are not to be scored. The possible range of scores in the scale is 0 to 23. Responses 2(a), 3(b), 4(b), 5(b), 6(b), 7(a), 9(a), 10(b), 11(b), 12(b), 13(b), 15(b), 16(b), 17(a), 18(a), 20(a), 21(a), 22(b), 23(a), 25(a), 26(b), 28(b) and 29(a) are directed towards externality and carry a score of one each, whereas the remaining responses are directed towards internality and carry a score of zero each. Total score obtained by an individual on 23 significant items in this scale represents his/her locus of control.

The Scale is self administered and has been most frequently used with college students. It also has been used with adolescent and older subjects. No upper or lower age limits have been established.

An internal consistency coefficients (Kerder-Richardson) of .70 was obtained from a sample of 400 college students (Rotter, 1966). For two subgroups of Rotter's (1966) sample, test-retest reliability coefficient was found to be .72 for sixty college students. The literature does indicate that there are individual differences in perception about one's control over one's destiny and that the Rotter Scale is sensitive to these differences.
Family Environment Scale (FES) developed by Moos and Moos (1986) measures the social environmental characteristics of all types of families. It has three forms:

- the Real Form (Form R) measures people's perceptions of their conjugal or nuclear family environments;
- the Ideal Form (Form I) measures people's conceptions of ideal family environments; and
- the Expectations Form (Form E) measures people's expectations about family settings.

Forms I and E of the Scale are parallel to Form R and to create Ideal and Expectations Forms, the Form R items and instructions were reworded (1) (for Form I) to allow family members to answer them in terms of the type of family environment they would ideally like and (2) (for Form E) to enable the individuals to answer them in terms of what they expect a family climate to be like.

The FES comprises of ten subscales that assess three underlying domains or sets of dimensions:

- The Relationship dimensions are measured by cohesion, expressiveness and conflict sub-scales.
- The Personal Growth dimensions are measured by independence, achievement orientation, intellectual
cultural orientation, active recreational orientation and moral religious emphasis.

- The System Maintenance dimensions are measured by the organization and control sub-scales.

The test items are printed in a re-usable booklet designed to be used with a separate answer-sheet.

In the present investigation only the family cohesion sub-scale of the Family Environment Scale was used and that it is given in Appendix IV.

Validity

The scale has constructed validity and the evidence for the validity of the sub-scales of FES is quite comprehensive. The criteria for item selection were empirical such as inter-item correlations, item sub-scale correlations and interconsistency analysis. In addition, the construct validity of the FES subscales was supported by several studies, firstly, on the basis of significant relationships existing between sub-scales (Spiegel and Wissler, 1983) and secondly, on comparing the sub-scale of FES with other scales such as Bowerman and Behr Identification Scale (Russell, 1980); Locke-Wallace Marital Adjustment Scale (Warings, et al. 1981); Family Routine Inventory (Jensen and his colleagues, 1983); Timberlawn Family Assessment Guide (Kosten, Novak and Kleber, 1984) and Spanier Dyadic Adjustment Scale (Abbert and Broady, 1985). All these gave evidence of high validity of the scale.
and its sub-scales.

Reliability

The reliability coefficient for the ten sub-scales was found to be varying from a low of .68 for independence to a high of .86 for cohesion when test-retest method was used on 47 family members in 9 families with a time interval of 8 weeks.

Scoring

For scoring this sub-scale the scorer has to simply count the number of Xs showing through the template in each column and enter the total in the raw score (R/S) box at the bottom.

DATA COLLECTION

The data were collected with the help of above mentioned tools by the investigator herself. All the tools for the study i.e., Mooney Problem Checklist (M.P.C.I), Ego-Identity Scale, Internal-External Locus of Control Scale and Family Cohesion Sub-scale were administered to the student’s individually. For the administration of the tools, the students were informed in advance. They were assured that their responses would be used for research purposes alone and will not be passed on to anyone else. Furthermore, they were asked to give exact and true information about how and what they felt in different stimulus situations.

Before the actual administration of the tools,
standardized instructions from the manual of the tools employed were given to the students. All possible efforts were made to make them feel at ease and respond to the various questionnaires and checklist with full concentration. Students were made to understand difficulty, if any, of the items one by one by the investigator herself. After the collection of the data the scoring was done.

STATISTICAL TECHNIQUES EMPLOYED

The raw scores obtained with the help of above mentioned tools were tabulated and treated statistically to analyse the results and interpret them meaningfully and scientifically. The following techniques were used for the analysis of the data:

(A) Descriptive Statistics
   (i) Means and Standard Deviations
   (ii) Skewness, Kurtosis and Percentiles
   (iii) Graphic presentation.

To determine the normal distribution of independent and dependent variables, skewness and kurtosis were first calculated for the total sample i.e., 290 cases. Then in order to understand the pattern of scores of different variables Means, Standard Deviations and Quartiles for the total sample, boys, girls and arts and science groups were computed separately. The graphic presentation of results in the form of ogives for the boys Vs. girls and arts Vs. science groups were also done for all the fourteen variables.
(B) Bivariate Correlational Analysis

Intervariable correlations between all the 14 variables for the following were computed to determine the relationships -

(i) Total sample of 290 cases;
(ii) Group I - Boys (N = 141);
(iii) Group II - Girls (N = 149);
(iv) Group III - Arts students (N=141);
(v) Group IV - Science students (N=149)

(C) Differential Statistics

(i) 't' ratios for the significance of differences between the mean scores of the respondent groups i.e., boys Vs. girls and arts Vs. science students were got computed for all the 14 variables.

(ii) 't' ratios for the groups high and low derived from the total sample (top and bottom 27%) on independent variables ego-identity, locus of control and family cohesion were also computed on the eleven areas of psychological problems.

(iii) Further, 't' ratios for the groups high and low on each of the problem areas (top and bottom 27%) were computed on the three independent variables under study, i.e., ego-identity, locus of control and family-cohesion.
PROCESSING OF DATA

The raw data were statistically treated and the processing of data was done on IBM 1722 Computer at Computer Centre, Panjab University, Chandigarh.