CHAPTER - III

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Introduction: -

Psychologists use the scientific methods to gain knowledge about human and animal behavior. The scientific method differs from nonscientific (“everyday”) approaches to gaining knowledge. There is one way in which psychology has not changed in the 100 years or so of its existence: the scientific method is still emphasized as the basis for investigation. The founding of Wundt’s laboratory marked the beginning of the formal application of the scientific method to problems in psychology. This method is not identified with particular kinds of equipment, nor is it associated exclusively with specific research procedures. The scientific method is some thing abstract. It is an approach to knowledge that is best described by distinguishing it from what might be called nonscientific or “everyday” approaches to knowledge.

Psychology’s official beginning is marked by the establishment, in 1879, of a formal psychology laboratory in Leipzig, Germany, under the direction of Wilhelm Wundt. With this beginning came the first applications of the scientific method to problems of psychology. As an approach to knowledge, the scientific method is characterized by a reliance on empirical procedures, rather than intuition, and by an attempt to control the investigation of those factors believed responsible for a phenomenon. Those factors that are systematically controlled in an attempt to determine their effect on behavior are called independent variables. The measures of
behavior used to assess the effect (if any) of the independent variable are called dependent variables.

Scientists seek to report result in an unbiased and objective manner. This goal is enhanced by giving operational meaning to concepts. Scientists also seek to measure phenomena as accurately and precisely as possible. Measurement involves both physical and psychological measurement. Scientists seek both validity and reliability of these measures.

Hypotheses are tentative explanations of events. To be useful to the scientist, however, hypotheses must be testable. Hypotheses that lack adequate definition, that are circular, or that appeal to ideas or forces outside the province of science are not testable. Hypotheses are often derived from theories. More than anything else, scientists are skeptical. A skeptical attitude is not always found among nonscientist, who may rush to accept “new discoveries” and extraordinary claims.

The scientific method is intended to meet three goals: description, predication, and understanding. Both quantitative and qualitative researches are used to describe behavior. Observation is the principal basis of scientific description. When two measures correlate, we can predict the value of one measure by knowing the value of other. Understanding is achieved when the causes of a phenomenon are discovered. This requires that evidence be provided for covariation of events, that a time-order relationship exists, and that alternative causes be eliminated. When two potentially effective variables covary such that the independent effect of each variable on behavior can not be determined, we say that our research is confounded. Confounding must be avoided if we wish to produce a study with internal validity. The external
validity of a study involves the extent to which research results can be generalized to different populations, settings, and conditions.

Scientific theory construction and testing provide the bases for a scientific approach to psychology. Theories have the important function of guiding research and organizing empirical knowledge. Finally, many ethical questions are raised by psychological research; it is important that the science of psychology carried out according to the highest standards of scientific integrity. Getting started doing psychological research requires us to make several important decisions, including those about what topic to investigate, what is the specific question which wish to answer, and is question a good one? Finally, it is must decide exactly how to do the research.

3.1 Statement of the problem: -

To study the impact of the Family Climate, Socio – Economic status on Locus of control, Adjustment and academic achievement among adolescents.

3.2 Objectives of the study: -

1. To see the effect of family climate on locus of control of adolescents and search whether the positive and negative family climate differ from each other significantly or not.

2. To see the effect of family climate on adjustment of adolescents and search whether the positive and negative family climate differ from each other significantly or not.

3. To see the effect of family climate on academic achievement of adolescents and search whether the positive and negative family climate differ from each other significantly or not.
4. To see the effect of socio economic status on locus of control of adolescents and search the difference between high and low socio economic status on locus of control.

5. To see the effect of socio economic status on adjustment of adolescents and to study the difference between high and low socio economic status on adjustment.

6. To see the effect of socio economic status on academic achievement of adolescents and to search whether high and low socio economic status significantly differ from each other or not.

7. To see the effect of area of residence on locus of control of adolescents and search whether the rural urban area adolescents differ from each other significantly or not.

8. To see the effect of area of residence on adjustment of adolescents and to examine whether the rural and urban area adolescents differ from each other significantly or not.

9. To see the effect of area of residence on academic achievement of adolescents and to examine whether the rural and urban area adolescents differ significantly or not.

3.3 Significance of the Problem: -

In our society academic achievement is considered as key criteria to judge one’s total potentialities and capabilities. Therefore, it is becoming more and more pressing for the individuals to have good academic achievement. Academic achievement has become an index of child’s future particularly so in highly competitive world. Research studies have proved that a supportive nurturing environment in home and school could enhance child’s academic achievement. Family being the first and major agency of socialization plays a pivotal role in styling child’s life. It has been shown
that most of children who are successful and well adjusted come from families where wholesome relationships exist between children and their parents.

This study may provide quantitative data on effect of family climate and Socio–Economic status on Locus of control, Adjustment and academic achievement. The study may highlight the importance of the family climate and Socio – Economic status as a field of inquiry for profound our understanding of the nature, prediction Locus of control, Adjustment and academic achievement. The study may bring an impetus for future experimental studies regarding the effect on prediction of Locus of control, Adjustment and academic success on the bases of family climate and Socio – Economic status on Locus of control. Just due to curiosity of view of nurturing environment in home researcher was present purpose of the study i.e. to see Locus of control, Adjustment and academic achievement was influenced by such important variables family climate and Socio – Economic status.

The effective sample of the present study consists of 400 adolescents in Indian context especially from Marathwada region. Thus obtained conclusions are valid only for those persons who are living in Indian culture especially from Maharashtra.

3.4 Hypotheses: -

There is little doubt that hypotheses are important and indispensable tools of scientific research. It is tentative answers to the research problems. It is expressed in the form of relationship between independent and dependent variables. Nearly everyone has proposed hypotheses to explain some human behavior at one time to another. They are tentative conjectures because their veracity can be evaluated only after they have
been tested empirically. When a researcher suggests a hypothesis, researcher has no assurance that it will be verified.

Hypothesis can be derived deductively from theories directly from observations, intuitively or form combination of these. Hypothesis is the most powerful tool man has invented to achieve dependable knowledge. They are the predication and even if they are not conformed, they have a power. Negative findings are sometimes as important as positive ones, since they cut down the total universe of ignorance and sometimes point up fruitful further hypothesis and lines of investigation (Mcguigan 1996).

To find out the expected relationship between variables the following hypotheses are formulated:

1. The adolescents having positive family climate would exhibit more internal locus of control than adolescents having negative family climate.
2. The adolescents having positive family climate would experience more adjustment than adolescents having negative family climate.
3. The adolescents having positive family climate would exhibit higher academic achievement than adolescents having negative family climate.
4. The adolescents coming from high socio economic status would experience more internal locus of control than the adolescents coming from low socio economic status.
5. The adolescents coming from high socio economic status would experience more adjustment than adolescents coming from low socio economic status.
6. The adolescents who possess high socio economic status would exhibit higher academic achievement than the adolescents who possess low socio economic status.

7. The adolescents living in urban area would exhibit more internal locus of control than the adolescents living in rural area.

8. The adolescents living in urban area would exhibit more adjustment than the adolescents living in rural area.

9. The adolescents living in urban area would exhibit higher academic achievement than the adolescents living in rural area.

10. Interaction of Family climate, socio economic status and area of residence would be significant on Locus of control of adolescents.

11. There would be significant interaction effect of Family climate, socio economic status and area of residence on adjustment of adolescents.

12. Interaction of Family climate, socio economic status and area of residence would be significant on academic achievement of adolescents.

3.5 Sample: -

Local of the present investigation was confined to the college going students of XI from the population of the Aurangabad District, Maharashtra State of India. Initially 1000 adolescents were taken for this study from the population finally 400 adolescents was selected for this study. The stratified randomize sample taken into consideration for the study consisted of 400 college going students of XI, in which 200 students were from positive family climate and 200 were from negative family climate. Both adolescents from positive and negative family climate were equally classified on high and low socio economic status. Again positive family climate (high
& low SES) and negative family climate (high & low SES) group were classified equally on urban and rural. The efforts were made to have the sample as representative as possible in terms of area of residence and gender. Here researcher was taken only an average intelligent adolescents, for these selection standard progressive matrices was used. Academic achievement was studied with the help of report cards of students and school records i.e. percentage of marks obtained by the students in S.S.C. examination conducted by S.S.C. Board, Aurangabad. The distribution of total sample is depicted as follows-

<table>
<thead>
<tr>
<th></th>
<th>Positive family climate</th>
<th>Negative family climate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High SES</td>
<td>Low SES</td>
<td>High SES</td>
</tr>
<tr>
<td>Urban</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Rural</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

3.6 Research Design: -

There are several methods of data collection. A systematic and scientific methodology, which is referred to as research design (Festinger and Katz, 1970), determines the correctness and accuracy of the obtained results. The most valid and reliable method of scientific investigation is one characterized by observing the effect of experimentally manipulated variables while the extraneous, systematic or relevant variables are under control and other variables possibly introducing errors are minimized, if not eliminated.
A variable is a symbol to which numerals or values are assigned. It is a property that takes on different values, i.e. something that varies. Variables can be classified into several ways. The most important and useful way to categorized variable is ‘Independent variable’ and ‘Dependent variables’. This categorization is highly useful because of its general applicability, simplicity and special importance in conceptualizing and designing research.

The independent variable as the explanatory variable, it is presumed cause of changes, in the values of the dependent variable, the dependent variable is expected outcome of the independent variables, as predicator variables (Nechimas and Nechimas, 1976). Hence the research design for this study revealed as follows –

2x2x2 factorial design was used for this investigation.

<table>
<thead>
<tr>
<th></th>
<th>A1</th>
<th>A2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B1</td>
<td>B2</td>
</tr>
<tr>
<td>C1</td>
<td>A1B1C1</td>
<td>A1B2C1</td>
</tr>
</tbody>
</table>

- **A = Family Climate:**
  - A1 = Positive Family Climate
  - A2 = Negative Family Climate

- **B = Socio-Economic Status (SES):**
  - B1 = High SES
  - B2 = Low SES

- **C = Area of residence**
  - C1 = Urban
  - C2 = Rural
3.7 Variables: -

1. Family climate, socio economic status, and area of residence were treated as independent variables in this study.

2. Locus of control, adjustment and academic achievement were taken as dependent variables in this study.

3.8 Operational definitions of variables: -

- **Average Intelligence**: Level of intelligence was determined with the help of SPM, constructed by J. Raven, J.C. Raven, & J.H. Court.

- **Academic achievement**: According to Good’s Dictionary (1973), “Academic achievement means knowledge attended or skills developed in the school subjects; usually designated by test scores or marks assigned by teachers or by both.” Academic achievement is the level of proficiency attained in scholastic or academic work. In this study academic achievement refers to the percentage marks obtained by the students in 10th (SSC) examination conducted by Maharashtra State Secondary and Higher Secondary Board.

- **Family climate**: Dr. Beena Shah’s family climate scale was used to determined positive and negative family climate.

- **Adjustment**: Level of adjustment was determined with the help of Indian adaptation of bells adjustment inventory developed by Lalita Sharma.

- **Internal-External Locus of control**: Internal-External Locus of control considered on Rotter’s locus of control scale.

- **SES**: Socio economic status was determined with the help of SES scale by Dr. Janbandhu.
3.9 Measurement Tools: -

1. **Family climate scale**: Dr. Beena Shah’s family climate scale was used to determine positive and negative family climate. Reliability: There were 10 dimension of FCS value of reliability coefficients for different dimensions of FCS shown below

<table>
<thead>
<tr>
<th>SR.NO</th>
<th>DIMENSIONS</th>
<th>COEFFICIENT OF RELIABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Freedom v/s restrictiveness</td>
<td>0.75</td>
</tr>
<tr>
<td>2</td>
<td>Attention v/s negligence</td>
<td>0.72</td>
</tr>
<tr>
<td>3</td>
<td>Acceptance v/s rejection</td>
<td>0.76</td>
</tr>
<tr>
<td>4</td>
<td>Trust v/s distrust</td>
<td>0.79</td>
</tr>
<tr>
<td>5</td>
<td>Warmth v/s coldness</td>
<td>0.79</td>
</tr>
</tbody>
</table>

Scoring: 0,1,2 scores will be for the negative items. This is the three point scale. And 2,1,0 scores for the positive items. There were 90 items in the scale. Items were distributed in 10 dimensions.

2. **Adjustment Inventory**: Indian adaptation of Bells adjustment inventory was used for measuring adjustment in various field. The Indian adaptation of Bells adjustment inventory was developed by Lalita Sharma. The inventory consist of 80 items, which all are designed to measure adjustment in one or the other area. Each items is provided with two alternatives ‘YES’ & ‘NO’. The inventory is useful in measuring adjustment in four areas namely emotional, social, family, & health. The author has given reliability coefficient of .73, validity is not given.

3. **Locus of control scale**: Rotter’s locus of control scale will be used to measure the internal and external locus of control. There are 29 statements.
Reliability: - Internal consistency; The internal consistency coefficient of reliability was determined by odd even procedure (N=50) using spearman-brown prophecy formula. The reliability coefficient thus calculated was found to be 0.55.

Temporal stability: Test-retest [n=50] method for the reliability coefficient of temporal stability after a gap of two weeks was found to be 0.76.

Validity: The validity of the scale was found by calculating the coefficient of correlation (n=50) between the score of subjects on this scale on ramapal’s (1983) scale the coefficient of correlation thus calculated came to be 0.76

4. Socio economic status scale: - Socio economic status scale developed by Dr. Janbandhu was used this scale was constructed by Janbandhu. This is a short scale consisted of 14 questions only. The questions demand only factual information about the social, economic and educational background of the individual.

Reliability: Reliability coefficient was 0.86, validity was 0.79.

5. Standard Progressive Matrices (SPM): - To assess the level of intelligence the SPM, constructed by J. Raven, J.C. Raven, & J.H. Court. SPM test was constructed to measure the educative component of ‘g’ as define in Spearman’s theory of cognitive ability. Educative ability is the ability to forge new insights, the ability to discern meaning in confusion, the ability to perceive, and the ability to identify relationships. Since perception is primarily a conceptual process, the essential feature of educative ability is the ability to generate new, largely non-verbal, concepts which make it possible to think clearly. According to spearmen, ‘g’ has a second component: reproductive ability, this is the ability to recall, and use, a culture’s store of explicit, verbalized concepts.
Reliability: - The majority of the split – half internal consistency, coefficients reports in literature exceed 0.90. Dolke (1976) reports a Kuder-Richardson consistency of 0.67 and Spearman-Brown of 0.73, while Dolke and Sharme (1976) report 0.87 and 0.93.

Validity: - SPM correlated with the Binet and Wechsler scales range from 0.54 to 0.86. Bureau of Psychology (1958) reported validity coefficient of 0.53 with the Terman-Merril scale and 0.53 with General Intelligence Test (Verbal) Jenkins Non-Verbal Test had a correlation with SPM of 0.76.

6. Academic achievement: - In this study academic achievement refers to the percentage marks obtained by the students in 10th (SSC) examination conducted by Maharashtra State Secondary and Higher Secondary Board.

3.10 Procedure: -

After determining sampling technique researcher contacted those adolescents whose passed S.S.C. examination and studying in Class XI those possess similar kind of socio-economic status and explained them purpose of data collection, thus the initially researcher administered the standard progressive matrices to 1000 adolescents and selected 800 average intelligent adolescents as representative sample after that researcher administered the family climate inventory to 600 adolescents and classified them equally on positive and negative family climate. Both adolescents from positive and negative family climate were equally classified on high and low socio economic status. Again positive family climate (high & low SES) and negative family climate (high & low SES) classified equally on urban and rural and recorded their percentage of marks on report card for academic achievement obtained by the
students in Xth examinations conducted by S.S.C. Board, Aurangabad and also recorded the score on tests with the help of individual interview technique.

First of all each time of data collection every participant was asked to fill information form, which included the full name, gender, birth date, age, education, socio-economic status, faculties (i.e. arts, commerce, Science), When participant were completed this work, the researcher, too confirmed that the they had filled all the items of the subject’s information form.

In each test situation subject’s were asked to read carefully the instructions printed on the cover page of the test and asked to write information about them on provided place. When the participant understood the instructions, they were asked to record their responses on the answer sheet of the test. The booklet and answer sheet were collected from the subjects, when they finished their work and checked carefully that they had answered all the items of the test. The researcher was very careful to maintain the standard psychological testing situation, at the time of data collection. Thus the researcher collected necessary records from 400 subjects with the help of individual interview technique.

3.11 Statistical analysis: -

The sample available for statistical analysis consisted of 400 adolescents. For the each subject, initially data of each group were separately scrutinized by employing descriptive statistics. The statistical analysis was mainly consisted of descriptive statistics i.e. mean & S.D. and two way ANOVA on family climate, SES and area of residence with the help of SPSS.