Research Methodology
Chapter 3

RESEARCH METHODOLOGY

‘Methodology’ implies the methods you intend to use to collect data. It is often necessary to include a consideration of the concepts and theories which underlie the methods.

The most fundamental step in research therefore is to develop a systematic planning for investigation. Needless to say without a proper planning a scientific study cannot be feasibly undertaken.

Research Methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps are studied that are generally adopted by a researcher for studying be gender sensitive research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particular research techniques, but they also need to know which of these methods or techniques are relevant and which are not and what would they mean and indicate and why. Researchers also need to understand the assumptions underlying the various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not. All this means that it is necessary for the researcher to design the methodology for the problem as the same may differ from problem to problem. This chapter is divided into following sub-headings.

- Hypotheses
- Research design
- Method used
- Locale of the study
- Sampling technique
3.1 Hypotheses

**Ho** - There is no significant association between demographic variables (class, gender, type of family, birth order, father education, father occupation, father income, mother education, mother occupation, and mother income) and adolescents’ stress levels.

**Ho** - There is no association between levels of stress and adjustment pattern.

3.2 Research Design

The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring one will effectively address the research problem; it constitutes the blueprint for the collection, measurement and analysis of data. The study was descriptive in nature which refers to the description of social situation, social events, social systems and social structures, etc. The description is made on the basis of scientific observation; hence it is expected to be more accurate and precise than casual.

3.3 Method used

Survey method was used to examine the research. It is the method which involves a systematic and comprehensive study of a particular community, organization, group etc. with a view to analyze social problem and the presentation of recommendations for its solution.
3.4 Locale of the study

The study was conducted in Newai tehsil of Tonk district in Rajasthan. The Tonk district is located where in the north is Jaipur district, in the east Sawimadhopur district, in the southeast by Kota district, in the south Bundi district, in the southwest by Bhilwara district and in the west by Ajmer district. Jaipur, capital of Rajasthan the closest city to Newai.

Tonk district comprised of 7 tehsil and 3 sub-tehsil and 208 villages having the area of 50,000 Sq. Kilometer.

As per 2011 India census, Newai has a population of 2, 45, 787 males constitute 50.30% of the population and females 49.70%.

The town is bordered by scenic Rantanchal Parvat on one side. There are sand dunes and plain desert on the opposite side of this hill which attracts people during raining season. Newai is also known as "Dharma Nagar".

The area was purposively selected due to the following reasons, Firstly; earlier no authentic and systematic effects had been made to study this problem with reference to Newai Tehsil. Secondly, investigator researcher belongs to the Newai Tehsil and was therefore able to use local resources in collecting reliable data and was also able to get easily involved with the subjects due to the knowledge of regional language and rural village back ground.
3.5 Sampling technique (selection of respondents)

The researcher used simple random sampling technique for selection of schools for this lottery method was used for the final selection of school.

Lottery method-this method involves three steps first step is constructing the sampling frame, i.e., a list of the units of the target population, e.g., students’ list, the electoral role in alphabetical order and numbered accordingly. Second step in writing numbers listed in the sampling from on small pieces of paper and placing these papers in same vessel/drum/jar, etc. Third step is mixing all papers well and taking out one piece of paper from the jar. This process is continued until the required number of respondents is reached.

3.5.1 Selection of Schools:

The researcher randomly selected ten different schools. The base of selection school was covering the villages near by Newai. The tehsil was divided in four major zones selecting at least two schools each Zone so in this way researcher tried her best to cover up whole area.
The above mentioned schools were selected by using lottery method which is summarized into the following steps:

1. The researcher made a list of zone wise schools belonging to the Newai Tehsil with the help of school directory.

2. From each zone the names of the various schools were written on the piece of paper and folded.

3. These chits were put in a jar.

4. The researcher took out one chit at one time and by adopting this process two schools from each zones were selected.

5. Interview was conducted over telephone with each selected school for finding students in particular classes i.e. (9th to 12th) in some of the schools number of students were not adequate so same process of selection of schools were further adopted from that particular zone the final name of selected schools are given as below -

<table>
<thead>
<tr>
<th>Name of Schools</th>
<th>Name of Schools</th>
<th>Name of Schools</th>
<th>Name of Schools</th>
<th>Total No. of School (10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.S.S.Sidhda</td>
<td>M.M.K.M.N.</td>
<td>H.V.M.D.J.</td>
<td>R.S.S.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jodhpuriya</td>
<td></td>
</tr>
<tr>
<td>Mundiya</td>
<td></td>
<td></td>
<td>Raholi</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>R.B.A.S.S.S.</td>
<td>R.S.S.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D.K.D.</td>
<td>Khandewat</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2

<table>
<thead>
<tr>
<th>Boards abbreviations</th>
<th>Full forms Rajasthan Board of Sec. Edu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RBSE</td>
<td>-</td>
</tr>
<tr>
<td>Schools (abbreviations)</td>
<td></td>
</tr>
<tr>
<td>1. D.D.S.S.N</td>
<td>Dadu dayal sikha sansthan Newai</td>
</tr>
</tbody>
</table>
3.6 Process of data collection

As many as 1100 students were taken as a sample in the study of various schools. Researcher had selected ten schools. For the study on the basis of covering entire area of Newai tehsil and the selected village located in remote area where availability of resources were scarce. After selecting the schools researcher included all students of 9th, 10th, 11th and 12th of the selected school.

Table 3.3 Total distribution of Sample

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1100</td>
<td></td>
</tr>
<tr>
<td>9th Class</td>
<td>10th Class</td>
</tr>
</tbody>
</table>

3.6 Process of data collection

The researcher took the permission from the principals of the ten different schools.

A bunch of questionnaires was given to each selected students.
3.7 Variables undertaken in the study

A concept which takes different quantitative values is called a variable. A detailed account of selected independent and dependent variable have been presented in table 3.2.

Table 3.2 Variables and their measurements

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tolls used</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Demographic</td>
<td>General information blank it contains items: selected class, gender, birth order, types of family, father’s education, father’s occupation, mother’s education, mother’s occupation, monthly income.</td>
</tr>
<tr>
<td>B. Adolescents stress</td>
<td>Student Stress Scale</td>
</tr>
<tr>
<td>C. Adolescents adjustment</td>
<td>Adjustment Inventory for School Students (AISS)</td>
</tr>
</tbody>
</table>

3.7.1 Demographic Variable:

It is also called x variable in statistics it is the one which can change results of another variables.

3.7.1.1 Class

Class was it refers to as the number of standards in which they study at the time of data collection. Students underlying 9th, 10th, 11th, 12th standards were taken for the study.

3.7.1.2 Gender

It refers to whether the student is male or female.

3.7.1.3 Type of family

It refers to whether family is nuclear or joint. A nuclear family is unit of members of only one parent and includes minors and independents. A joint family is that which is constituted by two or more brother's families or include parents and other members.
3.7.1.4 Birth Order

Birth order was operationalized as the birth position of the target child among his/her siblings. It ranged from first born to third born and above.

3.7.1.5 Parental Education

It refers to the education of mother and fathers. Education is operationalized as the maximum number of year of formal education acquired by the respondents.

3.7.1.6 Parental Occupation

It refers to the means of livelihood and qualification of occupation in the respondent's family. It affects life style behaviour and ones role in society.

3.7.1.7 Monthly Income

Measure of the combined incomes of all people sharing a particular household or place of residence. It includes every form of income, e.g. Salaries and wages, retirement income etc.

B. Adolescents' Stress

Adolescents' stress refers to the experience of distress in all spheres of life to which causes them to feel overwhelmed, their life become out of control with too much pressure, fear, panic and concern about how terrible they are feeling due to exposure challenging. Situation, adjusting to new social setting, studying for exams, work overload etc. The amount of material to learn and the need to do well, respectively.

C. Adolescents' Adjustment

The process in which individual is motivated by the desire to complete many activities. These include being successful, experiencing a happy home life, marryng, rearing children and earning success in a chosen vocation. If in these pursuits the relationship between individuals wants and environmental factors predisposes toward wholesome and constructive attitudes and behavior, the individual is said to have achieved good adjustment to life experiences.
3.8 Tools used in the study:

Researcher used the following questionnaires

1. General information blank
2. Students stress scale by Dr. Zakhi Akhtar (SSS-A2, 2011)
3. Adjustment inventory for school students (AISS) by Dr. A.K.P. Sinha and R.P. Singh

3.8.1 Student Stress Scale by Dr. Zakhi Akhtar (SSS-AZ, 2011):

The detailed description of the areas had not been given in the tool but after analyzing the questionnaire the major areas could be environmental, personal & social and academic. The levels of student stress were very high stress, high stress, moderate stress, low stress and very low stress.

3.8.1.1 Reliability

Two types of reliability are important for evaluating scale. First internal consistency or coefficient alpha reliability was estimated. This refers to how well items of the scale are related to one-another. High internal consistency reflects the assessment of the same. Internal consistency or coefficient alphas from a sample of six hundred students who completed the questionnaire. This coefficient alpha was established 0.78 and is significant at 0.01 level of significance. The second test-retest reliability reflects stability over time. The test-retest reliability of the scale over an interval of four weeks was 0.71.

3.8.1.2 Validity

The scale had Construct Validity of 0.72. Validity was established by using test developed in India to measure life stress scale for students by Agarwal and Naidu

3.8.1.3 Scoring

There are 51 items in the Student Stress Scale and each has been provided with 5 options, which are always, often, sometimes, rarely and never. These five options have been scored in order to get a mathematical result from the test. The five point rating scale has been followed and hence starting from Never to always score is given from 1-5. So that the strength of the indicator i.e. its high occurrence is shown
by large sum and vice-versa. There are some negative items which have been scored from Never up to Always which is given 5-1.

The maximum score on Student Stress Scale would be 255 and minimum 51. Therefore, the range of Student Stress Scale is 51-255.

**Interpretation of stress levels**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Very High Stress</th>
<th>High Stress</th>
<th>Moderate Stress</th>
<th>Low Stress</th>
<th>Very Low Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>178 and above</td>
<td>165-177</td>
<td>153-164</td>
<td>141-152</td>
<td>140 and below</td>
</tr>
<tr>
<td>Girls</td>
<td>195 and above</td>
<td>189-194</td>
<td>175-188</td>
<td>161-174</td>
<td>160 and below</td>
</tr>
</tbody>
</table>

The norms of the students stress scale have been developed on 690 students from private and government schools of Jamshedpur. A very high raw score above 177 for boys and 194 for girls is found to be very high level of stress. Such conditions may lead to total emotional and physical exhaustion which may further cause burnout. Raw score above in the range between 153-164 for boys and 175-188 for girls indicated moderate stress level and need immediate attention. Raw score in the range between 141-152 for boys and 161-174 for girls found to be low level of stress which has cause for some concern.

**3.8.1.4 How to interpret the results**

1. **Very High Stress:** If the stress level is more than 178 and above for boys and 195 and above for girls this means there are some major concerns and the subject is in need of some professional help to sort out the causes of stress, and counseling to overcome the stress and solve the problems causing stress.

2. **High Stress:** Boys (165-177) and girls (189-194)-This stress level needs immediate attention towards the problems causing stress. Help from some professional will prove useful.

3. **Moderate Stress:** Boys (153-164) and girls (175-188) - In moderate stress level the subject needs to resolve some of the issues causing stress.

4. **Low Stress:** Boys (141-152) and girls (161-174) -They may have some issues to be resolved.
5. **Very Low Stress:** Boys (115 and below) and girls (141 and below) -
There is nothing serious issues causing stress.

3.8.2 **Adjustment Inventory for School Students (AISS):**

The inventory seeks to segregate well adjusted secondary school students (age group 14 to 18 years) from poorly adjusted students in the three areas of adjustment: emotional, social and educational.

**Sample**

The 60 item inventory, in its final form, was administered to a randomly selected representative sample of 1950 (1200 boys and 750 girls) form class IX to XI grade pupils of 40 schools of Bihar of the age to of 14-18 years. The distributions of scores tested for normality by applying Chi-square technique. The distributions did not depart significantly from normality.

**Reliability**

Coefficient of reliability was determined by (i) Spilt-half method, (ii) Test retest method, and (iii) K-R formula-20. Table 1 gives the reliability coefficients of the total test and of sub-test by different methods.

**Validity**

In item-analysis validity coefficients were determined for each item by biserial correlation method and only such items were retained which yielded biserial correlation with both the criteria (i) total score and (ii) area score, significant level being .001.

**Norms**

Percentile norms were computed for both males and females of all the three areas (Emotional, Social and Educational) of adjustment separately as also for the whole inventor.

**Table - 1**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Range of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>A</td>
<td>Excellent</td>
<td>5 and below</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>6 – 12</td>
</tr>
<tr>
<td>Adjustment</td>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>EMOTIONAL</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Very Unsatisfactory</td>
</tr>
<tr>
<td>EMOTIONAL</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td></td>
<td>E</td>
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</tr>
<tr>
<td>EMOTIONAL</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td></td>
<td>B</td>
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<td></td>
<td>C</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Very Unsatisfactory</td>
</tr>
</tbody>
</table>

Table - 2
Classification of Adjustment in terms of Categories in the Three Areas
Meaning of the symbols and explanation of the areas.

(i) **Emotional Adjustment:** High scores indicate unstable emotion. Students with low scores tend to be emotionally stable.

(ii) **Social Adjustment:** Individuals scoring high are submissive and retiring. Low scores indicate aggressive behaviour.

(iii) **Educational Adjustment:** Individuals scoring high are poorly adjusted with their curricular and co-curricular programmes. Persons with low scores are interested in school programmes.

### 3.9 Statistics used for data analysis

Keeping in mind the objectives of the study the data obtained were edited, coded, tabulated and analyzed through statistical techniques:

- Frequency
- Percentage
- Chi-Square
- Correlation

#### 3.9.1 Statistics employed

##### 3.9.1.1 Frequency:

A frequency distribution or frequency table is simply a table in which the data are grouped into classes and the numbers of cases, which fall in each class, recorded.

##### 3.9.1.2 Percentage

Percentage = \( \frac{n}{N} \times 100 \)

Where, \( n \) = Frequency of respondent

\( N \) = total number

##### 3.9.1.3 Chi-Square

Also known as the chi-square goodness-of-fit test or chi-square test for independence. It was developed in the year 1900. When the chi-square test is mentioned without any modifiers or other precluding contexts.
Formula :

\[ x^2 = \sum \frac{(O - E)^2}{E} \]

Where

- O = Observed Frequencies
- E = Expected Frequencies

Where

\[ E = \frac{RT \times CT}{N} \]

RT = Row Total

CT = Column Total

N = Number of Samples

3.9.1.4 Correlation

Correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. A positive correlation indicates the extent to which those variables increase or decrease in parallel; a negative correlation indicates the extent to which one variable increases as the other decreases.