Chapter 3

METHODOLOGY

3.0 Overview

Research methodology is heart to the research work, to proceed with systematic research, right methodology is necessary, as it gives right direction to the research. This chapter deals with the method, statement of the problem, definition the key terms of the title, objectives and hypotheses of the study, sample and sampling, tools used, and statistical techniques used for this research.

3.1 Title of the Study

“Mental Health Status of Intermediate Students in Relation to their Hardiness and Academic Achievement”

3.2 Delimitations of the Study

1. The present study was limited to the sample chosen in Guntur district only.

2. The sample of the study was confined to 557 II year intermediate students only.

3. The sample of the study included the Intermediate II year students studying in colleges only; but not Intermediate students of Vocational courses.

3.3 Operational Definitions of the Key Terms

1. Mental Health: Mental health status reflects how one feels, thinks, and does with respect to personal, academic and social aspects.
2. **Hardiness** : Hardiness refers to the commitment to the task at hand welcoming change as natural and challenge as inevitable.

3. **Intermediate Students** : Intermediate students are those who are between 15 -18 years of age studying +2 courses in any institution.

4. **Academic Achievement** : The marks secured by the II year Intermediate students in their recent public examination were taken as a measure of their achievement.

### 3.4 Objectives of the Study

The following are the objectives of the present study.

1. To find out the mental health status of the II year intermediate students and classify them.

2. To find out to mental health status of Intermediate students in

   1. **Academic**
   
   2. **Personal and**
   
   3. **Social aspects.**

3. To find out the mental health status of II year Intermediate students with reference to the following variables.

   a. Gender
   
   b. Residential Vs. Day scholars.

   c. **Medium of study**
   
   d. Rural Vs. Urban

   e. **Order of birth**
   
   f. **Parental Education**

   g. **Economic Status of the family**
4. To find out the association between mental health and hardiness of Intermediate students

5. To find out the association between mental health and academic achievement of Intermediate students.

### 3.5 Hypotheses of the Study

The following null hypotheses were formulated for testing.

1. There would be no significant difference in the mental health status of the male and female intermediate students

2. There would be no significant difference in the mental health status of the male and female intermediate students in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

3. There would be no significant difference in the mental health status of the intermediate students of English Medium and Telugu Medium

4. There would be no significant difference in the mental health status of the intermediate students of English Medium and Telugu Medium in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

5. There would be no significant difference in the mental health status of the Residential and Non-Residential intermediate students.

6. There would be no significant difference in the mental health status of the Residential and Non-Residential intermediate students in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.
7. There would be no significant difference in the mental health status of the Rural and Urban intermediate students.

8. There would be no significant difference in the mental health status of the Rural and Urban intermediate students in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

9. There exists no significant difference between first born and later born intermediate students in their mental health.

10. There exists no significant difference between first born and later born intermediate students in their mental health in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

11. There exists no significant difference in the mental health status between students of different economic groups.

12. There exists no significant difference in the mental health status between students of different economic groups in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

13. There exists no significant difference in the mental health status between students with parents having different educational background.

14. There exists no significant difference in the mental health status between students with parents having different educational background in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

15. There exists no significant association between the mental health status and academic performance of II year Intermediate students.
16. There exists no significant association between the mental health status and academic performance of II year Intermediate students in terms of (a) Academic aspect, (b) Personal aspect, (c) Social aspect.

17. There exists no significant association between the mental health status and hardiness of II year Intermediate students.

18. There exists no significant association between the mental health status and hardiness of II year Intermediate students in terms of (a) Control Component, (b) Commitment Component, (c) Challenge Component.

3.6 Population for the Study

The population for the study consisted of the II Year Intermediate students studying in academic year 2008, in Guntur District.

3.6.1 Sample and Sampling

A random sampling technique was employed for the selection of the sample in the present investigation. After obtaining nominal rolls of the candidates from each of the colleges, a random sample of 700, II year Intermediate students was selected. But 143 Students had to be discarded as their response sheets were incomplete. Hence the sample was confined to 557 only. The distribution of the sample under different categories are given below.
Table 1
Institution wise and Gender wise Distribution

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the College</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sri Chaitanya Junior College, Bapatla</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>G.V.R.&amp; S College, Guntur.</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Vivekananda College, Chilakaluripet.</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>Sarada Junior College, Mangalagiri.</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>S.S.N.College, Narasaraopet.</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>6</td>
<td>Sri Chaitanya Junior College, Tenali.</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Morning Star College, Phirangipuram.</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>8</td>
<td>Sri Veda Junior College, Pedakurapadu.</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>Balaji Junior College, Talluru.</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>Sujatha Junior College, Modukuru.</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>11</td>
<td>Viveka Junior College, Phirangipuram.</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>12</td>
<td>Success Junior College, Amaravathi.</td>
<td>30</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>307</td>
<td>250</td>
</tr>
</tbody>
</table>

Variables of the Study

Table 2
Gender - wise Distribution of the Sample

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>307</td>
<td>55.22</td>
</tr>
<tr>
<td>Female</td>
<td>250</td>
<td>44.88</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>100</td>
</tr>
</tbody>
</table>
The above Table reveals that in the total sample 307 (55.22%) are Male Intermediate students and 250 (44.88%) are female Intermediate students.

![Pie Diagram showing Gender-wise Distribution of the Sample](image)

**Table 3**

**Medium of Instruction – wise Distribution of the Sample**

<table>
<thead>
<tr>
<th>Medium</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Medium</td>
<td>244</td>
<td>43.81</td>
</tr>
<tr>
<td>Telugu Medium</td>
<td>313</td>
<td>56.19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>557</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

It is evident from the above table that the sample consists of 43.81 percent of English Medium students and 56.19 percent of Telugu Medium students.
The above table shows that 72.17 percent Intermediate students are from rural area and 27.83 percent are from the urban area.
Table 5

Residence wise Distribution of the Sample

<table>
<thead>
<tr>
<th>Residence</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>297</td>
<td>53.32</td>
</tr>
<tr>
<td>Day-scholars</td>
<td>260</td>
<td>46.68</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>100</td>
</tr>
</tbody>
</table>

It can be seen in the above table that 53.32 percentage students are residential and 46.68 percent are day scholars.
Table 6

Distribution of the Sample in Terms of Order of Birth

<table>
<thead>
<tr>
<th>Order of Birth</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^{st}) Born</td>
<td>233</td>
<td>41.83</td>
</tr>
<tr>
<td>2(^{nd}) Born</td>
<td>186</td>
<td>33.39</td>
</tr>
<tr>
<td>3(^{rd}) Born</td>
<td>94</td>
<td>16.88</td>
</tr>
<tr>
<td>4(^{th}) Born</td>
<td>44</td>
<td>7.90</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>100</td>
</tr>
</tbody>
</table>

It is clear from the above table that 41.83 percent of the Intermediate students are first born, 33.39 percent are second born, 16.88 percent are third born and 7.90 percent of Intermediate students are fourth born.
Table 7
Distribution of the Sample in Terms of Economic Status of the Family

<table>
<thead>
<tr>
<th>Economic Status of the Family</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>92</td>
<td>16.52</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>116</td>
<td>20.83</td>
</tr>
<tr>
<td>Middle</td>
<td>304</td>
<td>54.58</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>22</td>
<td>3.95</td>
</tr>
<tr>
<td>Rich</td>
<td>23</td>
<td>4.12</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>100</td>
</tr>
</tbody>
</table>

The above table shows that 16.52 percent of Intermediate students are poor, 20.83 percent of the students belong to lower middle class, 54.58 percent of students belong to middle class, 3.95 percent of the students belong to upper middle class and 4.12 percent of the students belong to rich class.
Table 8

Distribution of the Sample in Terms of Parental Education

<table>
<thead>
<tr>
<th>Parental Education</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Education</td>
<td>166</td>
<td>29.80</td>
</tr>
<tr>
<td>School Education</td>
<td>152</td>
<td>27.27</td>
</tr>
<tr>
<td>College Education</td>
<td>215</td>
<td>38.60</td>
</tr>
<tr>
<td>University Education</td>
<td>24</td>
<td>4.31</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 8 shows that 29.80 percent Intermediate students’ parents are having primary education, 27.27 percent are having school education, 38.60 percent are having college education and 4.31 percent of the Intermediate students’ parents are having university education.
3.7 **Method used for the Present Study**

Out of the three major methods, descriptive survey method was used for the present study. Descriptive research describes ‘what is’ or the status of the sample being studied. It involves the description, recording, analysis and interpretation of the present nature, composition or process of phenomena. The focus is on the prevailing conditions or on how persons behave or function in the present. The present study aims at finding out the mental health status of II year Intermediate students under the existing conditions in the Intermediate Colleges of Guntur district.

As John W. Best, (1963) thought, all types of research involve an element of description, but merely describing ‘what is’ does not comprise the entire research process. Although the gathering of data and the description of the prevailing conditions or practices are necessary steps, the research process is not complete until they are organized, analyzed and significant conclusions
are derived. These conclusions are based upon comparisons, contrasts or relationships of one kind or another.

The present study aims at finding out the difference in mental health status between the Intermediate students with regard to gender, chosen group, residents vs. day scholars, medium of learning, parental education, order of birth, rural vs. urban, economic status of the family on one hand and the association between mental health aspects (Academic, Personal and Social) and academic achievement of the II year Intermediate students. The present study also aims to find out association between mental health and hardiness of the Intermediate students.

3.8 Tools Used

For the purpose of gathering data the following tools were employed in the present investigation.

1. Mental health questionnaire developed by the investigator.

2. Hardiness Test (standardized)

3. A personal data schedule constructed by the investigator.

3.8.1 Construction of Mental Health Inventory

The White House Conference (1930) defined Mental Health “as the adjustment of individuals to themselves and the world at large with a maximum of effectiveness and satisfaction, cheerfulness and the ability of facing and accepting the realities of life”. Since the turn of the 21st century adolescents mental and emotional health has become a great issue of concern
for psychologists, counselors and health professionals. In the present day changing scenario, adolescents are adopting adult changing social roles rapidly in their early 20’s. They want to be independent and seek freedom and on the other hand they demand conformity and dependency also. So these conflicting demands of teenagers need to be focused as they influence the mental health and adjustment problems.

Though there are standard tests for Mental Health studies, keeping in view the Indian conditions, social customs, culture and interactions among the youth, the investigator personally conducted interviews with Intermediate students, discussed about their conflicts with their parents, peers and teachers, identified the areas in which they are feeling frustrated, consulted the experts and developed a questionnaire consisting of 100 items; administered to 70 intermediate students of different media; groups; and residential and non residential colleges of Guntur.

Basing on the responses and needed clarifications from the students the items were simplified and refined. Thirty five items were deleted for further development of the tool. It was submitted to judgment of experts which helped in the further refinement of the tool.

### 3.8.2 Tool Description

The final form of the questionnaire consisted of 65 items. The Mental Health Inventory is divided into three aspects viz., (a) Academic (b) Personal
and (c) Social Aspects. 17 items were framed in the Academic Aspect, 28 items in the Personal Aspect and 20 items in the Social Aspect.

Each item in the inventory was in the form of statement followed by 4 alternative responses ranging from Almost Always, Mostly, Rarely and Never.

The four point scale was awarded 1-4 scores.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Always</td>
<td>1</td>
</tr>
<tr>
<td>Mostly</td>
<td>2</td>
</tr>
<tr>
<td>Rarely</td>
<td>3</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
</tr>
</tbody>
</table>

Description of the Tool

The items in the Academic aspect were on the interest and attitude towards the educational choice of the Intermediate students, their emotional outbursts, choice of the group to be studied, ability to interact with teachers, capacity to plan and concentrate on their studies, ability to relax, anxiety about marks and ranks, capacity to express their doubts and views freely, examination anxiety, and worries about future.

The items in the personal aspect were on parental pressure experienced by them, unnecessary fears, perception of change, adolescent infatuations, attractiveness of their physique, dress consciousness, fear of failure, fear of future, phobias, various nervous manifestations, ability to discuss about problems with their parents & handle their criticism, the way they evaluate themselves, unnecessarily disturbing thought patterns, how they view their
life, emotional outbursts, worry over petty issues, indulgence in past experiences, ability to accept change, and their strength to tolerate insult.

The items in the social aspect were on worries about things, dresses and comforts others have, unnecessary thoughts about others, close interpersonal relations, doubts about how others feel about them, ability to interact with others at social gatherings, sense of turmoil when parents compare them with others, ability to talk freely with strangers, ability to interact with opposite gender, and their assertive behaviour.

**Table 9**

**Area wise Distribution of the Items in the Questionnaire**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Area of Mental Health</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Academic aspect</td>
<td>17</td>
</tr>
<tr>
<td>2.</td>
<td>Personal aspect</td>
<td>28</td>
</tr>
<tr>
<td>3.</td>
<td>Social aspect</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>65</td>
</tr>
</tbody>
</table>

*Pie Diagram showing Area wise Distribution of the Items in the Questionnaire*
3.8.3. Reliability and Validity of the Tool

The value of any psychological and educational measuring instrument depends upon the reliability and validity of the instrument. Hence the establishment of reliability and validity of the test constructed in this study was given due importance.

Reliability of the Tool

Reliability of a test is the consistency with which a test measures, a trait, for which it is intended. According to Garrett (Garrett, 1971), “A test score is called reliable when we have reasons for believing the scores to be stable and trustworthy”. A test cannot be valid unless it is reliable according to Guilford (Guilford, 1950) ‘The concept of reliability underlies error of measurement of single score whereby the range of fluctuations likely to occur in a single individual score as a result of irrelevant chance factors can be predicted. Out of the various methods of establishing reliability of the tool the investigator adopted the split-half method of finding the reliability of the test scores by using Spearman-Brown Prophecy formula for estimating reliability from two comparable halves of the test, which is a common approach in research studies.

Split – Half Method

It is also called as co-efficient of equivalence. Many regard split-half method as one of the best methods for measuring test reliability. One of its main advantages is the fact that all the data for computing reliability are
obtained upon one occasion, so that variations brought about by difference between the two testing situations are eliminated.

To find out the reliability co-efficient of the whole test, the investigator also followed odd even sets of scores. The scores on the odd numbers items 1, 3, 5, 7... and so on form the first set, and the scores on the even-numbered items 2, 4, 6, 8... etc. form the second set. Spearman-Brown prophecy formula was used to obtain reliability co-efficient.

\[ r_{11} = 0.87 \]

**Table 10**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Aspect</th>
<th>Reliability Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Academic Aspect</td>
<td>0.746</td>
</tr>
<tr>
<td>2.</td>
<td>Personal Aspect</td>
<td>0.73</td>
</tr>
<tr>
<td>3.</td>
<td>Social Aspect</td>
<td>0.639</td>
</tr>
</tbody>
</table>

As the obtained reliability co-efficient for mental health and its various aspects fall between 0.639 and 0.87 the tool is considered highly reliable. To find out the reliability of the constructed tool, internal consistency formula of Cronbach Alfa was used.

Cronbach Alfa = 0.909. The result shows it’s high reliability.

**Validity**

“Validity refers to the extent to which a test measures what we actually wish to measure” – Thorndike R.N and Elizabeth Hagen
Adequate selection of test items is obviously the first step in assuring the validity of any testing instrument. Validity is one of the indispensable characteristics of a test. It is defined as the accuracy with which a test measures whatever it is supposed to measure. A test is said to be a valid one, if it meets the purpose for which it is designed. To determine the validity of the developed tool, the following types of validity were established.

a) Content validity  
b) Criterion validity  
c) Intrinsic validity

**Content Validity**

Content validity refers to the degree to which a test samples the content area to be measured. Content validity is based upon the judgment of the experts. In the present study the questionnaire was submitted to the experts and content validity was established.

**Criterion Validity**

A test is said to be having criterion validity when the validity of a test is determined experimentally by finding the correlation between the test and some independent criterion. A criterion may be an objective measure of performance, or a qualitative measure such as judgment of the character or excellence of the work done. In the present study, the questionnaire developed by the Researcher and another standard questionnaire “Mental Health Analysis Grade 4 by Louis P.Thorpe Wills W.Clark, Ernest W.Tings
was also administered to the same 70 students and the correlation was found between these two tools.

The value of correlation co-efficient 0.85 evidently shows that the present tool is valid.

**Intrinsic Validity**

Guilford (1950) defined intrinsic validity as “the degree to which a test measures to what it measures”. This can also be stated in terms of how well the obtained scores measure the test. The square root of reliability gives the intrinsic validity.

\[
\sqrt{0.90} = 0.94
\]

The obtained intrinsic validity of the tool is 0.94 which shows high validity.

**3.8.4 Personal Data Schedule**

Personal data regarding the II year Intermediate students name, gender, college where they were studying, Income of the family, Parental education, and order of birth were collected from the students. The final data gathering tool was inclusive of the personal data schedule in the first page followed by mental health and hardiness response sheet.

**3.8.5 The Hardiness Test**

Each item had 4 alternatives which were scored 1, 2, 3 and 4 respectively then the scores were summed up in the following manner to get scores on the three components – control, commitment and challenge. Sum of the scores on the three components gives a score for total hardiness. To
get score on control, score on item 1 is added to the score on item 7, to get sum ‘a’. Then score on item 2 is added to score on item 8 to get sum ‘b’ to get score on control. Similarly scores for commitment and challenge are obtained as shown below.

\[
\begin{align*}
1 + 7 & \quad a \\
2 + 8 & \quad b \quad a - b = \text{control} \\
3 + 9 & \quad c \\
4 + 10 & \quad d \quad c - d = \text{commitment} \\
5 + 11 & \quad e \\
6 + 12 & \quad f \quad e - f = \text{challenge}
\end{align*}
\]

Control + Commitment + Challenge = Total Score on Hardiness.

As presence of a –ve sign could interfere with certain statistical analysis, a uniform score of 6 was added to each component for the whole sample.

### 3.9 Administration of the Tool and Data Collection

A program was charted carefully by the investigator. The investigator visited in person, the selected intermediate colleges in Guntur District approached the heads of the institutions, explained the purpose of research work to them and the students and sought their cooperation. The investigator personally administered the test. The investigator personally took care to motivate the subjects in order to get valid responses from the college students. Separate answer sheets were provided to the mental health and hardiness questionnaires along with personal data. The subjects were asked to record their responses on those separate sheets.
Regarding the dependent variable, the public examination marks of candidates who were in the sample and who answered the test, were collected from the office of the corresponding college. These scores were entered in the tabulation sheets against the candidates concerned.

3.10 Statistical Techniques Employed

The data collected for the study were statistically treated as given below.

Percentages, items means, means, standard deviations were calculated to deal with the first and second objectives.

‘t’ values were calculated to verify the hypotheses under the third objective.

One way analysis of variance (ANOVA) was done and ‘f’ values were calculated to verify hypotheses related to the third objective.

Chi-squares ($\chi^2$) were computed in order to test hypotheses related to the fourth and fifth objectives.