Chapter III

Methodology

A methodology is the design process for carrying out research. It is a constructive generic framework for any research. It is a research strategy that translates ontological and epistemological principles into guidelines that show how research is to be conducted (Sarantokos, 2005) and principles, procedures, and practices that govern research (Kazdin 1992, 2003a, as cited in Marczyk, De Matteo, & Festinger, 2005). According to Hagan (2000, p.67), “methodology entails the philosophy of research process which includes assumptions and values that serve as a rationale for research as well as the criteria used for interpreting data”.

Research methodology is a way to systematically solve the research problem. This is a science of studying how research is to be done systematically and solve the research problem. This is a science of studying how research is to be done systematically. The procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology.
Observing the nature of the study the researcher employed “Descriptive survey Research Method” for the present research work. Descriptive survey research method is depiction of all participants (Subjects) in an accurate way by systematic observation. Descriptive research has systematic process of description, interpretation, recording and analysis of conditions that now exist. This presents descriptive analysis of data like mean, median, mode standard deviation from the mean, variation, percentage, and correlations between variables. The research method which deals with the data obtained from survey regarding the current conditions of the variables which are aim of the study.

Survey is an analysis of current conditions of data collected by survey of method. The main purpose of the present research work is to study relation between stress and academic achievement of visual need and general students, achievement motivation and academic achievement of visual need and general students, which prompted the researcher to choose Descriptive survey method for the study. The study employed a descriptive survey method to collect data to find out stress level of visual need and general students and achievement motivation of visual need and general students. Nesbary (2000) stated that survey is a process of collecting representative data from a large population with the intention of generalizing the results to the population of the interest. To gather data from a large sample, especially in order to a draw conclusion from the information given by the respondents; survey is a good method, when other becomes very difficult to follow. Descriptive survey method has been used to know present status of stress and achievement motivation of visual need and general students in relations to their academic achievement.

3.1 POPULATION OF THE STUDY

In words of Fox (1996), “population is the portion of the universe which is accessible to the researcher”. Best and Kahn (2008, p.13) explores population as, “Any group of individual that has one or more characteristics in common and that are off interest of the researcher”.
Population may be defined as the part of the universe, in a shape of the group of those individuals who consists one or more characteristics is common and which is subject of researcher’s interest.

Three domains of population were considered in the study.

a) Population of this study consisted of all visual need students studying in class 9th to 12th in Inclusive educations system of Government school

b) Visual need students studying in special Education system of government school, of class 9th to 12th.

c) General Students in the setting of Inclusive Education of government schools of class 9th to 12th.

Population of the present research work comprises of those students, who were studying in class 9th and 12th of academic sessions 2014-16 in the schools of Varanasi city and central district of New Delhi.

3.2 SAMPLE SELECTION AND SAMPLING TECHNIQUE

Sample is a representative group drawn from a population while Sampling is the process of drawing sample from a population. In the words of Best & Kahn (2008), “sample is a small proportion of a population selected for observation and analysis”. An inference can be made about the characteristics of the populations, in general, on the basis of the characteristics of the sample.

3.2.1 Sampling

Due to the nature and need of the study, the researcher employed two stage of sampling.

a) Purposive Sampling:

At the first stage of sampling purposive sampling was adopted to select sample for the study, due to unavailability of large scale of population of visual need students. During the course of study visual need students of Hanuman Prasad Poddar Andh
vidyalaya, Varanasi and Jivan Jyoti School Sarnath, Varanasi, were selected as sample of the study. Simultaneously, students of Sarvoday Bal Vidyalay, Rani Jhansi Road, New Delhi; Government Boys Senior Secondary School, Bela Road, Daryaganj, Delhi; Sarvodaya Bal Vidyalaya, Lajpat Nagar, New Delhi; and Sarvodaya Kanya Vidyalaya, Mata Sundari Road, New Delhi were selected as sample of the study. All these schools are under inclusive setting.

b) Random Sampling:

In the first stage, Simple random sampling was used to select sample of General students studying in inclusive education setting. Sample size of 258 General students, was selected randomly from 25 schools of central District of New Delhi. Eight schools were randomly selected, from central District of New Delhi. Starting from 3, each third school was selected. Simultaneously, three schools of Varanasi district were also selected for the sample of General students.

3.2.2 Sample

Young (1966. p.27) remarked that, “a statistical sample is a miniature picture or cross section of the entire group or aggregate from which the sample is taken”. Sample is an instrument for deriving inferences about the whole population and the basis of the knowledge of the part which is drawn from whole population. Statisticians suggested that if the sample is properly taken out, the inferences drawn from the sample will be about to equal in the quality to the study and analysis of total population as a whole.

The present study has two types of samples.

3.2.2.1 Sample of visual need students

The sample size of visual need students is 137 from various school of New Delhi, central District and Varanasi city of U.P.
Table 3.1 Showing the sample list of visual need Students

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of school</th>
<th>Name sample no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hanuman Prashad Poddar blind school, Varanasi</td>
<td>14 (Male)</td>
</tr>
<tr>
<td>2.</td>
<td>Jivan Jyoti School for Blind, Varanasi</td>
<td>16 (Girls)</td>
</tr>
<tr>
<td>3.</td>
<td>SBV Rani Jhanshi road, Paharganj, Delhi</td>
<td>23 (Male)</td>
</tr>
<tr>
<td>4.</td>
<td>Government Boys SS School, Bela Road, Daryaganj,</td>
<td>41 (Male)</td>
</tr>
<tr>
<td></td>
<td>Delhi</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Sarvodaya Bal Vidyalaya, Lagpat Nagar, New Delhi</td>
<td>39 (Male)</td>
</tr>
<tr>
<td>6.</td>
<td>Sarvodaya kanya Vidyalaya, Mata Sundari Road, New</td>
<td>04 (Girls)</td>
</tr>
<tr>
<td></td>
<td>Delhi</td>
<td></td>
</tr>
</tbody>
</table>

Total = 137
Boys = 117
Girls = 20

3.2.2.2 Sample of General Students

The sample of general students comprises 258 students

Table 3.2 Showing the sample list of General Students

<table>
<thead>
<tr>
<th>S.N</th>
<th>Name of school</th>
<th>No. of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kamala Pati Tripati Inter college, Varanasi</td>
<td>28 (Boys)</td>
</tr>
<tr>
<td>2.</td>
<td>G.G.I.C. Fatman Road, Varanasi</td>
<td>22 (Girls)</td>
</tr>
<tr>
<td>3.</td>
<td>Queen’s college, Lahurabir, Varanasi</td>
<td>20 (Boys)</td>
</tr>
<tr>
<td>4.</td>
<td>G.B.S.S.S., Bela Road, Daryaganj, Delhi</td>
<td>37 (Boys)</td>
</tr>
<tr>
<td>5.</td>
<td>S.K.V., Jama Masjid, Delhi</td>
<td>13 (Girls)</td>
</tr>
<tr>
<td>6.</td>
<td>S.B.V., Rani Jhansi Road, Paharganj, Delhi</td>
<td>22 (Boys)</td>
</tr>
<tr>
<td>7.</td>
<td>S.K.V., Mata Sundari Road, Delhi</td>
<td>16 (Girls)</td>
</tr>
<tr>
<td>8.</td>
<td>G.G.S.S.S., Bela Road, Daryaganj, Delhi</td>
<td>35 (Girls)</td>
</tr>
<tr>
<td>9.</td>
<td>S.K.V., Dayanand Road, Daryaganj, Delhi</td>
<td>25 (Girls)</td>
</tr>
<tr>
<td>10.</td>
<td>Sarvodaya Bal Vidyalaya, Kondali, New Delhi</td>
<td>28 (Boys)</td>
</tr>
<tr>
<td>11.</td>
<td>S.B.V., Pataudi House, Delhi -06</td>
<td>12 (Boys)</td>
</tr>
</tbody>
</table>

Total = 258, Girls = 111, Boys = 147
3.2 VARIABLES OF THE STUDY

In quantitative research, the phenomenon that can be measured or classified is called a variable. A variable is a property or characteristics of things and people that varies in quantity to be measure.

The present research work incorporates mainly two dependent variables, Stress and Achievement Motivation.

Academic Achievement of Visual Need and General students is considered to be independent variable. The presentation of the variables of study is as following:

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Achievement</td>
<td>Stress</td>
</tr>
<tr>
<td></td>
<td>Achievement Motivation</td>
</tr>
</tbody>
</table>

3.3 DATA GATHERING TOOLS

Tools in data gathering are devices for the purpose of research. Nature of study, objectives of study, availability of test material, researcher’s competence to analyze the administered scores and interpret the test result, determines appropriate selection of a tool. (Fox, 1969).

In the present research work the researcher used three data gathering tools to quantity the variables which have been described of as following:

3.3.1 Achievement Motivation tool

To collect data related with achievement motivation of students the researcher used, “Academic Achievement Motivation Test” Of Dr. T.R. Sharma (2005) Professor & Dean (Retd.). Faculty of education, Panjabi university, Patiala. The reliability of test is as followings

a) Split half reliability

The split help reliability of the tool is 0.679

b) Test- Retest Reliability

The test – retest reliability of the tool is 0.795 of Boys and 0.807 of girls.

In case of visual need students the researcher converted the whole test in form of Braille for students of visual need who had complete absence of sight.

In case of low vision students, who could see with the help of magnifying glass, who were enrolled in government school of inclusive educational setting, the
researcher got the tool printed in large font size of 16 with normal spacing (Appendix–I). The tool was administered as it is, to General Students Studying in government school of Varanasi District as well as central District of New Delhi.

3.3.2 Construction of stress Assessing tool for students


Stress tools constructed for stress assessment of students revolve around stress assessing tool of Ralph Lewis and Associates (1979), but items in the tool are completely based on social circumstance of western countries which have different social structures and social framings. This prompted researcher to construct stress assessing tool for students under Indian perspective. The construction of the tool which involved are given in following stages.

3.3.2.1 Exploratory Stage

The researcher, in this stage of tool construction tried to decide and determine main areas of stressors for students in the age group of 14 years to 18 years. To know areas of stress, the researcher conducted following operations.

a) Interview of students.

b) Inviting suggestions of experts.

c) Compiling responses into questionnaire form.

a) Interview of students

The students are directly associated with cause and effect phenomena of stress. Hence, the researcher conducted systematic verbal cum written interview of students. The researcher supplied sheet to 200 students of Varanasi district as well as central district of New Delhi, containing simple five open ended questions.

Simple five questions (open ended) were given to the students and they were asked to give their concepts regarding the question openly. The students were assured
that their response would not be shared or disclosed to anyone. They were also assured of complete secrecy of their response to the questions. The questions were as followings-

(i) In which activity your find yourself stressful?
(ii) What do you feel when in stressful condition?
(iii) What do you like to do when you are stressful?
(iv) What are the causes of your stress?
(v) What is your behavior pattern, daily routes or diet when you feel stressed?

b) Inviting suggestion of Expert

During the course of construction the researcher took valuable suggestions from many experts of concerned areas on the sources of stress for students. The researcher took verbal suggestions from experts of Faculty of Education, B.H.U and department of Education of M.G.K.V. university of Varanasi.

c) Compiling response into questionnaire

On the basis of responses of students and suggestions of experts the researcher compiled an organized questionnaire and named it as “Student stress Assessing questionnaire”. The researcher identified possible determiner and sources of stress. There were 78 items in the draft questionnaire (Appendix – II).

Enough care was taken to judge the ambiguity of the language of the questionnaire. Special attention was paid regarding modes of communication so that appropriate message could be conveyed while communicating with visual need students and general students during the administration of the test. The questionnaire was prepared in simple communicative Hindi language as students who were subjects of study belonged to Hindi speaking family.

3.3.2.2 Pre Try-out Stage

After determining suitability of language and communicability of items the researcher administered it on 100 students of Varanasi city as well as central district of New Delhi. There were 78 items in the draft questionnaire. The age group of students on whom the test was administered was 14 years to 18 years. They were enrolled in government school of U.P. Board and government schools of Delhi Board. The purpose of administering at this stage was to find out the complexity of language,
communicability of items, ambiguity of language and difficulty in understanding of students.

During the course of administration of the questionnaire, researcher carefully noted and recorded difficulty faced by the children, complexities reported by children regarding understanding of the questions/items and complexities raised by their class teachers.

After pre-try out following modification were done in the questions / items of stress assessing questions.

(i) Some items, where class teachers and students reported ambiguity the language, were improved.

(ii) In the instruction section, there were some words which were difficult to understand by students and class teachers. Such words were either replaced or simplified or its English equivalent was inserted in the bracket.

(iii) In case of those visual need students who had complete absence of sight the tool was converted into Braille for their better communication.

(iv) During course of observation of response pattern of students regarding the tool the researcher found that there were some items which had very low response percentage or items which students did not like to respond because of hesitation, shame or any other reasons. The items related with sex, interest in opposite gender, mannerism, drug addiction, etc., had very poor response pattern. Thus, the researcher deleted these unresponsive items and omitted these in further drafting.

3.3.2.3 Second Draft of the tool

The researcher edited and omitted unresponsive items of first draft and there remained 68 items in the second draft of the tool. The second draft of tool is given in Appendix-III.

The Title of the Tool

A suitable title of the tool was chosen as, “Bhattacharya’s Students’ stress Assessing Questionnaire” with Hindi version. As “HkV~Vkpk;kZ fo|kFkhZ ruko ekid iz'ukoyh”.

Instruction for the administration of Tool
For successful administration of the test to the concerned subjects/respondents, essential instructions were attached on the front page of each and every sheet of the tool. The Brief introduction about the tool was also given on the front page of the tool.

**Activity Description**

After providing essential instruction for the administration of the test, to fulfill objectives of the present investigation, different activities which need to be performed during administration of the test was mentioned systematically on later pages.

**Profile- cum-Response Sheet**

To find out required/necessary personal information and related educational information about the subject under investigation and to record the responses given by each and every subject, a personal profile-cum-Response Sheet was prepared as a part of the tool.

### 3.3.2.4 Try out Stage

The second draft of the tool. “Bhattacharya’s *Students’ stress assessing questionnaire*” was administered on 98 students with the help of their teachers by requesting them to respond honestly as they had regularly observed the behavior pattern in stressful circumstances of their students. The students on whom try-out stage of the tool was administered were from central district of New Delhi. After administration of the questionnaire, Data were collected and items were analyzed. After Pre-try out stage the researcher made following modifications in the tool.

(i) In pre-try out, researcher found some unresponsive items due to complexity of language and concept. The researcher omitted those items that had poor response pattern.

(ii) There were some abstract and direct items which were not responded by the subjects spontaneously and omitted.

(iii) The negative items were also omitted by the researcher to maintain homogeneity of test and these items were not responsive.

**Final Try-out**

In the try-out stage of the tool administration the researcher finalized 61 items for final try-out of the tool. The third draft of the tool (appendix-IV) had the following parts.
Title of the tool

A suitable title was chosen as. “Bhattachary’s students’ stress assessing questionnaire” with Hindi version as “Hk\textsuperscript{\textregistered} Vkpk; kZ f0|kFkhZ ruko ekid iz\textsuperscript{\textregistered} ukoyh”

Instruction for the administration of Tool

For successful administration of the test, essential instructions were attached on the front page for each and every activity mentioned in the test for the tool administration.

Activity Description sheet:

To fulfill objectives of the present investigation, after providing essential instruction for the administration of the test, different activities which needed to be performed during administration of the test, were mentioned systematically on later pages.

Profile-cum-Response sheet

To gather required information related to the subject of investigation, a personal profile Cum-response sheet was prepared as a part of the tool.

After administration of the test, data were collected and items were analyzed further by administering on 98 students.

3.4 ITEM ANALYSIS

For the standardization of any tool, Item analysis is one of the most important steps. It is a statistical technique, which is used for selection and rejection of any items of the test based on their difficulty level and discrimination power. After pilot testing (final try-out stage) the test was subjected for items analysis in order to find out which items were easy or very difficult and which one not functioning properly (Sanely et al., 1978). In order to find out appropriate items in the test, following procedures were followed for items related to the sources of stress for students.

The scores (total) obtained after administration of “Bhattachary’ students’ stress assessing questionnaire” over 98 students, were arranged in descending order with highest score on the top to the lowest at the bottom. The item analysis, in this research, was followed with respect to the principles by Stannely et al. (1978), in which items can be selected by using t- ratio or critical ratio. In this procedure for
selection of items, the responses on all items by every subject are arranged in descending order and item analysis is conducted on basis responses given by subjects.

Top 27% of the cases were selected as upper group and the bottom 27% cases as the lower group. To study whether items were discriminating the high and low group of students; t-test (small sample technique) was applied by the investigator.

The t-value obtained for the items of students stress assessing questionnaire are shown in the following Table 3.3

**Table 3.3 Showing Item Analysis result of Bhattacharya’s Students’ Stress Scale**

<table>
<thead>
<tr>
<th>No. Item</th>
<th>Upper 27%</th>
<th>Lower 27%</th>
<th>t-Value</th>
<th>Level of significance</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.D.</td>
<td>S.D.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>4.97</td>
<td>1.12</td>
<td>7.60</td>
<td>P &lt;0.05</td>
<td>Accepted</td>
</tr>
<tr>
<td>2.</td>
<td>4.43</td>
<td>1.12</td>
<td>1.52</td>
<td>p&gt;0.05</td>
<td>Rejected</td>
</tr>
<tr>
<td>3.</td>
<td>4.590</td>
<td>1.44</td>
<td>6.87</td>
<td>P&lt;0.05</td>
<td>Accepted</td>
</tr>
<tr>
<td>4.</td>
<td>4.33</td>
<td>2.07</td>
<td>2.06</td>
<td>P&lt;0.05</td>
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</tr>
<tr>
<td>5.</td>
<td>4.48</td>
<td>2.29</td>
<td>2.17</td>
<td>P&lt;0.05</td>
<td>Accepted</td>
</tr>
<tr>
<td>6.</td>
<td>3.85</td>
<td>1.56</td>
<td>7.10</td>
<td>P&lt;0.05</td>
<td>Accepted</td>
</tr>
<tr>
<td>7.</td>
<td>4.12</td>
<td>2.37</td>
<td>1.91</td>
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<td>8.</td>
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<td>10.</td>
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<td>1.91</td>
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<td>11.</td>
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<td>1.01</td>
<td>9.01</td>
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<td>12.</td>
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<td>3.89</td>
<td>1.36</td>
<td>p&gt;0.05</td>
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</tr>
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<td>13.</td>
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<td>2.074</td>
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<td>Accepted</td>
</tr>
<tr>
<td>14.</td>
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<td>1.85</td>
<td>7.38</td>
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<td>15.</td>
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<td>p&gt;0.05</td>
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<td>17.</td>
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<td>1.59</td>
<td>2.49</td>
<td>P&lt;0.05</td>
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<td>18.</td>
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<td>2.48</td>
<td>3.14</td>
<td>P&lt;0.05</td>
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<td>19.</td>
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<td>1.52</td>
<td>1.95</td>
<td>p&gt;0.05</td>
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</tr>
</tbody>
</table>

Contd...
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<td>0.50</td>
<td>1.45</td>
</tr>
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<td>0.93</td>
<td>3.57</td>
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<td>26.</td>
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<td>0.38</td>
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</tr>
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<td>1.00</td>
<td>0.00</td>
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</tr>
<tr>
<td>36.</td>
<td>4.52</td>
<td>0.51</td>
<td>1.78</td>
<td>0.81</td>
<td>6.16</td>
</tr>
<tr>
<td>37.</td>
<td>4.12</td>
<td>0.85</td>
<td>1.26</td>
<td>0.44</td>
<td>2.45</td>
</tr>
<tr>
<td>38.</td>
<td>4.51</td>
<td>0.50</td>
<td>1.45</td>
<td>0.50</td>
<td>3.13</td>
</tr>
<tr>
<td>39.</td>
<td>3.51</td>
<td>0.76</td>
<td>2.12</td>
<td>1.15</td>
<td>3.36</td>
</tr>
<tr>
<td>40.</td>
<td>3.62</td>
<td>0.88</td>
<td>1.59</td>
<td>0.57</td>
<td>4.90</td>
</tr>
<tr>
<td>41.</td>
<td>1.25</td>
<td>0.44</td>
<td>1.18</td>
<td>0.39</td>
<td>0.52</td>
</tr>
<tr>
<td>42.</td>
<td>1.25</td>
<td>0.44</td>
<td>1.62</td>
<td>0.56</td>
<td>0.010</td>
</tr>
<tr>
<td>43.</td>
<td>3.78</td>
<td>0.84</td>
<td>1.37</td>
<td>0.49</td>
<td>5.26</td>
</tr>
<tr>
<td>44.</td>
<td>1.740</td>
<td>0.90</td>
<td>1.18</td>
<td>0.38</td>
<td>0.005</td>
</tr>
<tr>
<td>45.</td>
<td>3.96</td>
<td>0.75</td>
<td>1.34</td>
<td>0.55</td>
<td>3.88</td>
</tr>
<tr>
<td>46.</td>
<td>4.66</td>
<td>0.68</td>
<td>1.56</td>
<td>0.50</td>
<td>4.52</td>
</tr>
<tr>
<td>47.</td>
<td>4.78</td>
<td>0.84</td>
<td>1.45</td>
<td>0.51</td>
<td>4.66</td>
</tr>
<tr>
<td>48.</td>
<td>1.81</td>
<td>1.001</td>
<td>1.74</td>
<td>0.82</td>
<td>0.65</td>
</tr>
<tr>
<td>49.</td>
<td>2.03</td>
<td>0.89</td>
<td>1.74</td>
<td>0.90</td>
<td>0.23</td>
</tr>
<tr>
<td>50.</td>
<td>1.33</td>
<td>0.65</td>
<td>1.00</td>
<td>0.00</td>
<td>1.76</td>
</tr>
</tbody>
</table>

Contd...
After conducting systematic procedure of items analysis the researcher found that there were 38 items whose t values were significant. The investigator selected these 38 items in final student stress test. These 38 items in the stress questionnaire were further reduced by observing the length and preciseness of the tool items. The researcher further omitted those items which had low level of significance or low t-value. The items number 4, 5, 17, 21, 27, 29, 33 and 37 were omitted for preciseness of the tool. Hence, there were 30 items in final standard ‘Bhattacharya’ student stress assessing questionnaire’. (Appendix-V)

### 3.4.1 Validity of the test

To standardize any test it is necessary to sustain validity of the test. The researcher employed the face validity to sustain the validity of test. Face validity in the degree to which a test seems measure what it purports to measure.

### 3.4.2 Content validity

The items of the test were selected on the basis of pooled judgment of experts working in the field of testing. The researcher took suggestion of experts working in Education, Special Education and in the field of Psychology. The experts opined these items as valid and according to stressors of students, they categorized the tool. Hence, the researcher sustained content validity of the test.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>4.07</td>
<td>0.83</td>
<td>1.25</td>
<td>0.45</td>
<td>1.58</td>
<td>p&gt;0.05</td>
</tr>
<tr>
<td>52</td>
<td>4.74</td>
<td>0.45</td>
<td>1.34</td>
<td>0.48</td>
<td>8.01</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>53</td>
<td>4.73</td>
<td>0.46</td>
<td>1.59</td>
<td>0.93</td>
<td>3.59</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>54</td>
<td>4.18</td>
<td>0.87</td>
<td>1.29</td>
<td>0.46</td>
<td>5.30</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>55</td>
<td>4.22</td>
<td>0.84</td>
<td>1.45</td>
<td>0.50</td>
<td>3.51</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>56</td>
<td>4.20</td>
<td>0.85</td>
<td>1.25</td>
<td>0.44</td>
<td>6.67</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>57</td>
<td>4.23</td>
<td>0.85</td>
<td>1.59</td>
<td>0.94</td>
<td>6.31</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>58</td>
<td>4.37</td>
<td>0.56</td>
<td>1.40</td>
<td>0.57</td>
<td>3.33</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>59</td>
<td>4.51</td>
<td>0.57</td>
<td>1.55</td>
<td>0.56</td>
<td>7.30</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>60</td>
<td>3.00</td>
<td>0.00</td>
<td>1.62</td>
<td>0.79</td>
<td>1.83</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>61</td>
<td>4.29</td>
<td>0.72</td>
<td>1.62</td>
<td>0.55</td>
<td>4.54</td>
<td>P&lt;0.05</td>
</tr>
</tbody>
</table>
3.4.3 Reliability of the test

The researcher employed two methods to determine the reliability of the test.

3.4.3.1 Test Retest method

The researcher administered the test on 120 General students of central district of New Delhi to ascertain reliability of Bhattacharya’s Students’ Stress Assessing questionnaire, having age group of 14 years to 18 years.

After first test the researcher conducted retest on the same students after 6 weeks with helps of class teachers of the students. The researcher calculated coefficient of correction and it has been found to be 0.82 which seems to be high. Correction formula of coefficient was used.

3.4.3.2 Split Half method

The researcher bifurcated, ‘Bhattacharya’ students’ stress assessing questionnaire’ into two homogeneous groups on the basis of even item numbers and odd item number. The researcher computed stress score of 50 students on even set of items of stress assessing tool and odd set of items of students stress assessing tool. The researcher computed reliability coefficient by applying Cronebach’s coefficient of correlation. The reliability coefficient was found to be 0.84 which seems to be high.

3.5 SCORING PATTERN OF THE STRESS TOOL

There are 30 items in the tool, and in each item there are five options. No option is completely wrong or no option is completely right. These are preferred opinion of the subjects. The scoring pattern for five options is as follow.

1) Always: This option of the tool is indication of most stressful condition and given +5 stress scores to the students.
2) Often: This option of stress scale is attributed + 4 stress scores for the students.
3) Sometimes: This option or response the student is given stress scores +3 as the stress of students
4) Rarely: This response of students is assigned with stress scores of +2 for the stress of the students.
5) Never: This response is given +1 stress score to the students.

The maximum possible score of the “Bhattacharya’s students’ stress assessing questionnaire” is 150 and minimum possible score of the tool is 30.

3.6 NORMS OF THE STRESS TOOL

The norms for the tool “Bhattacharya’s students assessing questionnaire” are as follows:

<table>
<thead>
<tr>
<th>Level of Stress</th>
<th>Number of students(n)</th>
<th>Stress Score (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Level of Stress (UPPER 27%)</td>
<td>106</td>
<td>110-150</td>
</tr>
<tr>
<td>Average Level of Stress (Middle 46%)</td>
<td>183</td>
<td>78-109</td>
</tr>
<tr>
<td>Low Level of Stress (Lower 27%)</td>
<td>106</td>
<td>30-77</td>
</tr>
<tr>
<td>N=395</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.6.1 Establishment of Norm for the Bhattacharya's Students' Stress Scale

There were two groups of the students on whom stress scale was administered, the General Students and Visual Need Students. The Stress tool was administered on 258 General students and 137 Visual Need Students. The researcher computed mean, standard Deviation and t-value of cumulative scores of stress for testing the significance of difference between the groups which are as following.

<table>
<thead>
<tr>
<th>Groups of Students</th>
<th>Number of Students</th>
<th>Means of Stress Score</th>
<th>S.D.</th>
<th>S.E</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Students</td>
<td>258</td>
<td>96.40</td>
<td>23.29</td>
<td>2.58</td>
<td>1.61</td>
</tr>
<tr>
<td>Visual Need Students</td>
<td>137</td>
<td>100.63</td>
<td>25.58</td>
<td>2.58</td>
<td>p&gt;0.05</td>
</tr>
</tbody>
</table>

Descriptive analysis in above mentioned Table 3.5 shows that means scores of stress of general students and Visual need students do not differ significantly at 0.05 level of significance with 393(257+136) degree of freedom. Hence, both the groups were mixed for developing Norm table. To establish Norm for the Stress test the researcher arranged whole data in descending order to determine Standard-ten score.
(sten) for the every stress score as follows. The norm table in the form of “sten scores” are given Table 3.6.

**Table 3.6 Norm table for ‘Bhattacharya’s Students’ Stress Scale**

In Descending Order-Higher Stress to Lower Stress

<table>
<thead>
<tr>
<th>Sten</th>
<th>% Age Cut off</th>
<th>Equivalent Raw Score Cut off</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>97.73-100</td>
<td>143-150</td>
</tr>
<tr>
<td>9</td>
<td>93.33-97.72</td>
<td>135-142</td>
</tr>
<tr>
<td>8</td>
<td>84.14-93.22</td>
<td>124-134</td>
</tr>
<tr>
<td>7</td>
<td>69.16-84.13</td>
<td>111-123</td>
</tr>
<tr>
<td>6</td>
<td>50.09-69.15</td>
<td>99-110</td>
</tr>
<tr>
<td>5</td>
<td>33.86-50.08</td>
<td>90-98</td>
</tr>
<tr>
<td>4</td>
<td>15.88-33.85</td>
<td>73-89</td>
</tr>
<tr>
<td>3</td>
<td>5.69-15.87</td>
<td>66-72</td>
</tr>
<tr>
<td>2</td>
<td>2.29-5.68</td>
<td>55-65</td>
</tr>
<tr>
<td>1</td>
<td>0-2.28</td>
<td>30-54</td>
</tr>
</tbody>
</table>

With this, the procedure for developing stress scale has been completed with reliability, validity and norm. After constructing the stress assessing tool, the researcher, constructed Stress Management Module for students having age group of 14 to 18 years. The researcher investigated various modules for the stress management of student abroad and in India. The researcher after thorough analysis of different tools prepared Stress Management Module for students by implying principles of Yoga as Yoga is globally accepted for wellness of health and mental health and prepared a draft of the module. United Nations also accepted Yoga as global practice for betterment of health and mental health.

**3.7 THE TITLE OF THE MODULE**

The researcher selected suitable title for the module which is “Stress Management Module for students” (Appendix VI).
3.7.1 Introduction about module

For the selection of Yogic practice and procedure, the researcher, studied various Yogic practices and their impact on management of stress and redirection of Negative mental energy of students. The researcher selected that yogic practice which is essential for management of stress; there are three steps/stages in the module which are as follows.

3.7.1.1 First Step: Development of Stress Management Module for Students: Control of Life Style

The researcher conceptually surveyed Yogic concept of ‘Yam & Niyam’ of Patanjali tradition of Yoga propounded by Maharshi Patanjali. These processes are elemental need of Yogic Practice. In this process the first step is associated with daily living styles/skills and diet system of the subjects. The researcher selected necessary information regarding daily life style of students in this step of Module development. This step is based on “Ashtaangic process of Yam and Niyam”.

3.7.1.2 Step Second: Development of Stress Management Module for Students: Body Posture

In this step of stress management module the researcher elaborated those physical activities as ‘Aashanas’ which are essential and recommended by various experts of Yoga like B.K.S.Iyenger (1958), Swami Vishuddanand Saraswati (2002), Patanjali YogPeeth (2013-14), and by various online Websites like www.internationalyoga.com, for the management of stress. These ‘Aashanas’ redirect negative energy which are sources of stress.

“Aashanas are helpful in redirecting, Expressing, utilizing negative energy into creative positivity”, Yogank, (2013). The researcher selected various ‘aashanas’ described by many practitioners of yoga for the module, which are as follows.

I) Sukhashan (Easy pose)

Sukhasan is an easy and comfortable sitting body posture. This comfortable pose in for wellness of life. This in pleasure seeking Aashan, as it has been described and explained in Yogank (2013). In every religion, such as, Bhaudh, Jain, Shikh and
even in Islam, Sukhashan has been given prominent place for removable of Negative energy.

**Time for sukhashana**

The researcher investigated literature regarding yoga and found that there is specific description of time duration for New subjects, which was as found in Patanjali, Yoga Prodeepani By Vishuddanand Sarswati (2002), Geeta Press Gorakhpur, U.P.

*First week:* 60 seconds to 90 seconds

*Second week:* 90 seconds to 180 seconds.

*Third week:* 180 seconds to 300 seconds

2) **Vajrasan (Diamond pose / Thunder bolt pose)**

This is also known as pelvic pose, kneeling pose, and adamantine pose. This Aashan helps in increasing the blood circulation in the body, (Baba Ramdev, in his ‘Book on Yoga’ 2013 – 14). In researches, it has been found that blood circulation has positive correlation with stress and externalization of Negative Mental energy.

**The time – duration for Vajrasan**

*a) first week:* 45 seconds to 60 seconds

*b) second week:* 60 seconds to 90 seconds

*c) third week :* 90 seconds to 180 seconds

(Patanjali Yog Sandipani.I by Vishuddanand Sarwati, 2002)

3) **Padmasana (lotus pose)**

Lotus poses in sitting cross-legged with the spine vertically straight. Making it ideal for mediation and concentrations, Yogank (2012-13), writes that “Lotus pose is helpful to calm the brain, to increase awareness and attentiveness and to restores energy levels”

**Time Duration of Padmashana**

*(a) first week: * 60 seconds to 90 seconds

*(b) seconds week : * 90 seconds to 120 seconds

*(c) third week : * 120 seconds to 180 seconds

(Sources : Patanjali Yog sandipani, (2002), Swami Vishuddanand Sarswati)
(4) Janu Shirsasana (Head to knee pose)

Practicing this aasana calms the mind and also relieves mild depressions. It improves digestion system. This aasana are also for insomnia, sinusitis and high blood pressure.

*Time duration for Janu Shirsasana*

a) first week: 60 second to 90 seconds  
b) second week: 90 seconds to 120 seconds  
c) third week: 120 seconds to 180 seconds

(5) Uddiyan Bandh (the abdominal lock)

The literature suggests that this yoga aashana is very helpful in managing the stress, but the researcher found it to be tougher to get his subject practice it.

*Time durations for Uddiyan Bandh*

a) first week: 30 second to 60 seconds  
b) second week: 60 seconds to 90 seconds  
c) third week: 90 seconds to 120 seconds

(6) Hastapadasana (Forward bend pose)

“This is helpful for stimulation of nervous system and increasing strength of spine muscles. It is also helpful in increasing blood circulation” Swami vishuddanand in his Patanjali Yog sandipani (2002)

*Time durations for Hasttapadasana*

a) first week: 60 second to 90 seconds  
b) second week: 90 seconds to 120 seconds  
c) third week: 120 seconds to 180 seconds

(7) Balasana (Child pose)

“This is helpful to relieve stress and fatigue” (Sources: www.eyogaguru.com; Retrieved on 11/05/ 2016). “It is helpful for releasing tension, fatigue and to reduce stress and anxiety. It promotes blood circulation. It encourages the right way of breathing and calms the body and mind” Swami Vishudda Nand Sarswati (2002), Patanjali yog Pradipani.

*Time durations for Balasana*

a) first week: 60 second to 90 seconds
b) second week: 90 seconds to 120 seconds

c) third week: 120 seconds to 180 seconds

(Source: Patanjali yog Sandipani (2002), Swami Vishuddnand)

(8) Savasana (Dead pose)

“This Aashan relaxes the whole body, releases stress, fatigue depression and tension. This Aashan can improve concentration. It enables mind to be calm. It stimulate blood circulation”, Yogank (2012-13).

Time durations for Savasana

a) first week: 60 second to 90 seconds

b) second week: 90 seconds to 120 seconds

c) Third week: 120 seconds to 180 seconds.

(Sources; Patanjali yog Sandipani (2002), Swami Vishuddanand Sarwati)

This aashan was suggested to the subjects to perform at home because the researcher could not get time to be practiced in school premises.

(9) Shirsasan (Head stand yoga pose)

B.K.S. Iyengar (1958) calls this Aashan as, “king of all Asanas because of its positive effects on mind, body and soul”. “It increases blood circulation to brain with fresh oxygenated blood. It revitalizes brain. It reduces stress insomnia and depression. It improves memory, concentration”.

Time durations for Shirsasan

a) first week: 30 second to 40 seconds

b) second week: 45 seconds to 80 seconds

c) third week: 80 seconds to 120 seconds

3.7.1.3 Third Step for the Development of Stress Management Module : Breath Control

This step of stress module is concerned with control of breathing system. The researcher found following Pranayam techniques which are very helpful in reduction of stress, during the survey of concerned literature.

(1) Pranayam : This has three steps to be performed

a) Purak (Inhale): The breath is inhaled with echoing of ‘om’ or and one according to preference of subject.
b) **Kumbhak (Breath Retention)**

This is breath retention for the four multiple or Purak with sound of ‘Om’ or one as subject prefers.

c) **Rechak (Exhale/breath release)**

In this process the breath concentrated is released with two multiple time of purak

**Time Ratio / Duration**

The time duration of these pranayam is as

**First week:**
- Purak: 2 second
- Kumbhak: 8 seconds
- Rechak: 4 seconds

[Sources: Yogank (2012/13) and Patanjali yog Sandipani (2002)]

(2) **Bhramari Pranayam(Bee Breathing)**

This pranayam is very important in available researches to control stress and negative energy of mind. This is very effective to calm down mind by breathing exercises. It releases agitation, frustration and anxiety.

**Time duration**

Time duration is very important in practice of this pranayam, which is as following:

**First Week:** 60 seconds to 90 seconds.

**Second Week:** 90 seconds to 120 seconds

**Third Week:** 120 seconds to 180 seconds.

(Sources: Patanjali Yog Sndeepani, 2002, Swami Vishuddanand Sarwati).

(3) **Kapalbhati (Skull Shinning Breathing)**

This is powerful breathing exercise to bring entire body system and mechanism in perfect state of wellbeing. According to Dr. Sejal Shah (2013), the Art of living Yoga teacher, 80% of negative energy is released during the practice of Kapalbhati Pranayam.

**Time Duration**

**First week:** 60 seconds to 90 seconds.

**Second Week:** 90 seconds to 120 seconds.
Third Week: 120 seconds to 180 second.

(4) Sheetali Pranayam (Cooling Breath)
This is to remove excess heat of mind and body for the relaxation of whole body.

Time duration
First Week: 90 seconds to 120 seconds.
Second Week: 120 seconds to 180 seconds
Third Week: 180 seconds to 240 seconds. (Patanjali Yog Sndeepani, 2002; Swami Vishuddanand Saraswati).

3.8 STANDARDIZATION OF STRESS MANAGEMENT MODULE

Standardization is an important aspect of any Module for management of Stress. This is a stage of sustenance of applicability or generalization of the module of the stress management. To know effectiveness of the module, the researcher conducted experimental practice on concern students of the age group of 14 years to 18 years.

Standardization of the module has followings steps
a) Standardization of Stress Module for Visual need students
b) Standardization of Stress for General Students.

The researcher elaborated and sustained standard Characteristics of Module for Visual need students and General students separately.

3.8.1 Standardization of Stress Module for Visual need students.

The researcher applied Experimental-control group method to ascertain standard of the Module. The researcher selected two groups of Visual need students from two schools under inclusive Education system of New Delhi as experimental group and as control group. The researcher applied all available and possible measures to match both the groups to control intervening Variable like Intelligence, age, Maturity, etc. To match the both groups the researcher employed following methods.

1) To control influence of gender, as an independent Variable, the researcher selected only male in both groups.
2) Both groups were matched on the basis of age means average age of both groups students was made equal.

3) To match variability of mental ability of the students the researcher took the help of students’ academic achievement of their previous examination.

4) Before classifying the groups the researcher administered Bhattachary’s Students’ Stress Assessing Questionnaire to know stress level of the students. The researcher selected students with same level of stress in control group and in an experimental group.

Administering Stress Management Module to Experimental Group of Visual Need Students

To test effectiveness of Stress Management module the researcher systematically administered it on the experimental group of visual need students. The researcher took all possible measure to maintain this group as homogeneous. There were 26 students in the group.

The researcher with the help of class teacher and physical education teacher of the school got the visual need students practiced related to Yogic Practice of Stress Management Module for Students. The researcher, after morning session of prayer, took students to the sports room of the school, where there was enough space and required resources for practicing the Module of the stress management. The physical Education teacher and Special Education teacher accompanied the researcher for the better performance of the students. The researcher asked the concerning to perform the practices of the module accordingly.

During performance of the Module it was found that there were some Yogic practices which could not be performed by visual need students easily, yet these practices, like Shirsasan and Uddayan Band, are very helpful for management of stress in literature of stress management. The researcher instructed the students to perform these Aasanas at their home with assistance of any person.

There were nine Aasanas in the module of stress management which had fixed period of time for the new practitioner. The second step of the module, which is associated with control of the breathing system of students, the researcher got students
practiced concerning Yogic Practices according to the guidelines of various experts of Yoga.

**Time Duration for the Module**

The researcher took special care and consideration of time during administration of the module. Yet, due to administrative lacunae, the researcher could not get enough time, even then the researcher got students practiced for 25 minutes to 40 minutes daily. The days and time given to the experimental group was 17 days and 26 minutes an average daily.

After giving treatment of the module, the researcher again administered Bhattacharya’s students’ Stress Assessing Questionnaire. The descriptive analysis of the experimental group and control groups of visual need students are given in Chapter IV.

### 3.8.2 Standardization of Stress Management Module for General students

The researcher applied same procedure of matching and sustaining homogeneity of the control group and experimental group of General students.

**Practice, Process and Performance of The Module**

The researcher with the help of class teacher and physical education teacher of the school got the students practiced concerning Yogic Practice of Stress Management Module for Students. There were 33 students in each group, control as well as experimental. The researcher, after morning session of prayer, took students to the sports room of the school, where there was enough space and required resources for practicing the Module of the stress management. The physical Education teacher accompanied the researcher for the better performance of the students. The researcher asked the students to perform the practices of the module accordingly.

**Time Duration for the Module**

The researcher took special care and consideration of time during administration of the module. Yet, due to administrative lacunae, the researcher could not got enough time, even then the researcher got students practiced for 25 minutes to 40 minutes daily. The days and time given to the experimental group was 17 days and 26 minutes an average daily.
After giving treatment of the module the researcher again administered Bhattacharya’s students’ Stress Assessing Questionnaire. The descriptive analysis of the experimental group as well as control groups are given in Chapter IV.

3.9 STATISTICAL TECHNIQUES USED

To achieve the objectives of the study various statistical analyses were employed. The researcher used Descriptive Statistics such as mean, median, mode, SD, kurtosis, skewness, has been employed to check the normality of the Data along with Shapiro-wilk Test and Q-Q Plot technique. Inferential Statistics such as t-test, has been used. Some of calculations were performed manually and some were performed by M S Excel 2007.