Chapter
Third
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METHOD AND PROCEDURE

The method and procedure of the study have been discussed with regard of the following data.

(a) Population
(b) The sample
(c) Research Design and Variable Involved
(d) The Tools used
(e) Procedure
(f) The Statistical Technique used.

Population

The present study is concern with the effect of achievement-motivation, self-concept and personality of different nutritional status children of Bundelkhand area (Jalaun, Banda, Hamirpur, Lalitpur, Jhansi, Mahoba, Chitrakutdham-Karvi) in Uttar Pradesh. But in present study researcher taken only one district Hamirpur for the study.

The Sample

In the present study 150 boys and 150 girls of high school in the age range of 12-16 years of Hamirpur district is selected in this sample. The subjects war selected through purposive sampling technique.

The subject were selected as a distributing technique 100 each in rich nutritional status children, 100 average nutritional status
children and 100 poor nutritional status children and then further were divided for about 50 each in boys and girls group of both rich, average and poor nutritional status children.

![Tree Diagram]

**Research Design and Variable Involved**

The present study is concerned with the effect of gender (boys & girls) and types of nutritional children (rich, average and poor). 2x3 factorial design is considered suitable with the present study.

The variable of the present study are as follows -

**Independent Variable**

"An Independent variable is that factor manipulated by the experimenter in his attempt to ascertain its relationship on the observed phenomenon" - **Townsend**

"The variable over which the investigator has control are called independent variable". - **Edwards**
There are two types of independent variable involved in the study.

1. Gender (boys & girls)

2. Types of nutritional children (Rich, Average and Poor)

Dependent Variable

"A dependent variable is that factor which appear, disappears, or varies as the experimenter introduces removes as varies the independent variable" - Townsend

"Any measured behavioural variable of interest in a psychological investigation in called a dependent variable .”- D. Amato.

In study there are three dependent variable are-

1. Personality

2. Self-Concept

3. Achievement-Motivation

The tools to be used

In this study there are four types of tools to be used. the tools are-

1. Multi-dinensional Personality Inventory - Manju Agarwal

2. Children's Self-Concept Scale - S.P.Ahluwalia

3. Achievement motivation Scale - D.Gopal Rao

4. Scio-Economic Status Scale - Beena Shah
MULTI-DIMENSIONAL PERSONALITY INVENTORY

(MPI)

The present inventory is developed by Km. Meena Agarwal for measuring the different personality variables of an individual. It's not an easy task, personality not measured through one factor or dimension of personality. The present inventory measured six important variables of an individual.

Variables

These variables are-

(A) Extroversion-Introversion
(B) Self-Concept
(C) Dependence-Independence
(D) Temperament
(E) Adjustment
(F) Anxiety

Extroversion-Introversion

The first area of this inventory is extroversion-introversion, which has been considered as one of the important potential personality variables, by which one can estimate whether one person-orientation is based on objective condition or facts, called Extrovert, or person-orientation is based on self is Introvert.
Self-Concept

The second factor of personality has been included in this inventory is Self-Concept. The Self has also been considered as a central construct of the personality.

Dependence-Independence

This is the third factor of the inventory, which like temperament, is also associated with the personality, which has close relationship to intelligence or uniqueness of personality.

Temperament

The factor of this inventory is temperament which refers to reaction of the person toward emotional situation. By knowing temperament of the person one can estimate personality of the person, because this is related to the consistency or mental imbalance and considered as one of the important factor of personality.

Adjustment

Adjustment is an index of integration between needs and press, which has a close relation to personality. It has been considered as a trait of personality.

Anxiety

Anxiety is last factor of this inventory, which concept occupies a very important place in the study of human personality and multitude activities of mind.
Item Selection

The items of present inventory have been selected on the basis of expert's opinion, concept's definition given by different Psychologists and related tests. The preliminary form of inventory was administered to 100 students (belonging to Higher Secondary School), who know both Hindi and English.

The present inventory has 120 items in all. Each 20 items are related to personality measures- interversion-extroversion, self-concept, independence-dependence, temperament, adjustment, anxiety. Each item have three alternative answers-YES, SOMETIMES and NO which refers to extent of agreement and disagreement of content. There is no time limit for the completion of inventory. Usually it requires 45 to 50 minutes time.

Scoring Procedure

The scoring procedure of this inventory is very simple. The score should be given in following manner-

1- YES - 3

2- INDEFINITE - 2

3- NO - 1

Reliability

For getting the reliability coefficient, it was administered to a sample of 600 students (belonging to High School, Intermediate and College). In this sample, students of all faculties have been randomly
selected. The age range was 15 yrs. to 24 yrs. The average age was 18.5 yrs. Split-half reliability was computed for the six sub-scale as well as total as follows-

<table>
<thead>
<tr>
<th>Sub-Scale</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Extroversion-Introversion</td>
<td>.82</td>
</tr>
<tr>
<td>2- Self-Concept</td>
<td>.84</td>
</tr>
<tr>
<td>3- Dependence-Independence</td>
<td>.78</td>
</tr>
<tr>
<td>4- Temperament</td>
<td>.87</td>
</tr>
<tr>
<td>5- Adjustment</td>
<td>.79</td>
</tr>
<tr>
<td>6- Anxiety</td>
<td>.86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>.74</strong></td>
</tr>
</tbody>
</table>

The test-retest reliability of inventory has also been calculated through the method of test-retest. For this the present inventory was administered twicely on a sample of 100 students of Higher-Secondary School going with an interval of 20 days. The reliability coefficients are follows-

<table>
<thead>
<tr>
<th>Sub-Scale</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Extroversion-Introversion</td>
<td>.72</td>
</tr>
<tr>
<td>2- Self-Concept</td>
<td>.81</td>
</tr>
<tr>
<td>3- Dependence-Independence</td>
<td>.69</td>
</tr>
<tr>
<td>4- Temperament</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----</td>
</tr>
<tr>
<td>5-</td>
<td>Adjustment</td>
</tr>
<tr>
<td>6-</td>
<td>Anxiety</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Validity**

The external validity determines the present test along with the following tests was administered to a group of 100 students (not included in above sample) and the validity-coefficient were calculated-

1- Dr. Rastogi’s Self-Concept Inventory,

2- Dr. Jai Prakash’s Indian Adaptation of Neyman-Kohilstedt Extroversion-Introversion Test,

3- Dr. Srivastava and Tiwari’s Adjustment Inventory,

4- Dr. Srivastava and Tiwari’s Anxiety Scale.

The correlation-coefficient of four sub-scale-Extroversion-Introversion, Self-Concept, Adjustment and Anxiety-are respectively .84, .72, .69 and .84. For rest two sub-scale-Dependence-Independence and Temparament-the correlation-coefficient between the test score and rating scores have been calculated which come to .82 and .76 respectively.

**CHILDREN’S SELF-CONCEPT SCALE**

Self-concept is a central theme around which a large number of the major aspects of personality are oraganized. It has been described differently by different authors. The self-concept is something beneath
one's skin which affected his/her behaviour as an organization of ideas about oneself which is derived from one's experience with others.

Description of the Scale

The test contains 80 items in all with 'YES' or 'NO' responses. It included fourteen lies items to detect whether the children and adolescents have filled it accurately or not. The six sub-scale which are included in the self-concept scale are considered to be important in the psychological world of childhood and adolescence. These are-

(A) Behavior,

(B) Intellectual and School Status,

(C) Physical Appearence and Attributes,

(D) Anxiety,

(E) Popularity and

(F) Happiness and Satisfaction.

Scoring Procedure

The scoring procedure for the self-concept scale is simple. The items are scored in the direction of high self-concept according to the scoring stencil. One score is to be awarded to each statement either for 'YES' or 'NO'. The maximum score for the total self-concept scale can be 78, whereas the minimum score can be Zero. A detailed analysis of possible maximum and minimum scores on different sub-scores has been follows-
<table>
<thead>
<tr>
<th>Area</th>
<th>Possible Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum</td>
</tr>
<tr>
<td>1- Behaviour</td>
<td>16</td>
</tr>
<tr>
<td>2- Intellectual and School Status</td>
<td>18</td>
</tr>
<tr>
<td>3- Physical Appearance and Attributes</td>
<td>12</td>
</tr>
<tr>
<td>4- Anxiety</td>
<td>12</td>
</tr>
<tr>
<td>5- Popularity</td>
<td>12</td>
</tr>
<tr>
<td>6- Happiness and Satisfaction</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td><strong>78</strong></td>
</tr>
</tbody>
</table>

**The Sample**

In this scale various samples have been used for different studies and this scale has widely administered and adequately analyzed. In different studies (Total 2941 students) 1663 students of Uttar Pradesh and 1278 students of Madhya Pradesh were taken as a sample for various studies and standardization. Details of samples are given below:

<table>
<thead>
<tr>
<th>Age</th>
<th>Uttar Pradesh</th>
<th>Madhya Pradesh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>13yrs.</td>
<td>76</td>
<td>116</td>
</tr>
<tr>
<td>14yrs.</td>
<td>149</td>
<td>262</td>
</tr>
<tr>
<td>15yrs.</td>
<td>146</td>
<td>256</td>
</tr>
<tr>
<td>Age</td>
<td>No.</td>
<td>Coefficient</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>Middle School 12yrs.</td>
<td>330</td>
<td>.83</td>
</tr>
<tr>
<td>High School 14yrs.</td>
<td>380</td>
<td>.88</td>
</tr>
<tr>
<td>Higher Sec. School 15yrs.</td>
<td>470</td>
<td>.74</td>
</tr>
<tr>
<td>Higher Sec. School 15yrs.</td>
<td>590</td>
<td>.79</td>
</tr>
</tbody>
</table>

The co-efficient of correlation reported above are significant beyond .01 level of significance.

Validity

The validity of self-concept scale has been determined in three ways-

Face Validity

This measure was taken as an indicator of content validity of scale. Evidently, the instruments has face and content validity of high order.
Concurrent Validity

In order to ascertain concurrent validity of the self-concept scale, the score from each sub-scale were inter-correlated.

Factorial Validity

The structure of the original scale was investigated on the sixth grade level by measured of a multiple factor analysis. For this purpose a sample of 457 sixty graders was used. Response of 80 items of the scale were placed in matrix and were intercorrelate.

ACHIEVEMENT-MOTIVATION SCALE

The Rao Achievement Motivation test has been developed to provide a simple and objective measure of achievement motivation of Secondary School pupils. There are 20 incomplete sentences, each of which followed by two possible alternatives A and B, out of which one is an achievement-related item. Though both the alternatives are achievement-oriented and socially acceptable, yet one of them imply a higher sense of achievement and excellence.

Scoring

The response of the subjects were scored by assigning numerical values or arbitrary weights to the two sets of items. The GAR statements (Statements depicting achievement at a lower level common among people) were assigned a score of ONE, where as the HAR statements (Statement depicting achievement at a higher level indicating
the sense of excellence) were assigned a score of THREE. The cumulative weighted score, if high, was considered to indicate the higher achievement motive of a pupil.

Reliability

The reliability of the test was determined by the test-retest method, after an interval of one month. The coefficient of reliability was found to be 0.79.

Validity

The test has been validated in two ways-

(i) The items for the test were selected in terms of the degree to which they differentiated between the upper and lower 27% of the individuals in a distribution of scores. Only those items which had a discriminating index of 0.25 and above were retained in the present form of the test.

(ii) The test was administered to two groups, ‘very high achievement motive’ and ‘very low achievement motive’. The mean of the total weighted score was compared. The difference between the mean scores of two groups was found to be significant at 0.01 level, which means that there is agreement between the judgement of the teachers and the scores on the achievement motivation test.
Economic status is measured not only with the help of father’s or guardian’s per month income but also it scale total per month income of the family. In SES scale total per month income of family is divided by family size to obtained the actual economic condition of family.

**Variables**

This SES measure is made more improved and detailed with the variables-

(A) Caste

(B) Occupation

(C) Education

(D) Income

(E) Possession

(F) Social Participation

**Caste**

In this SES scale the weighted to different caste groups is given as- Scheduled Castes-1, Scheduled Tribes-2, Backward Castes-3, Kayastha, other non-Hindu groups-4, Vaishyas, Kshatriyas-5 and Brahmins-6
Occupation

The weighted assigned to Gazetted officer-12 score, Non-Gazetted officer-8 score, Clerck etc.-4 score, Skilled works etc.-2 score, unskilled works etc.-1 score. The occupation of the father/guardians/mother and main occupation of the family are taken as the indicators of occupational status. The weightage to the main occupation of the family has to be given in accordance to the above categories of the different occupations.

Education

The weightage assigned to all three indicators- father, mother and sibling- are the same for any given qualification to eight categories- Illiterate-0, Primary Pass-1, High School-2, Intermediate/High School+some post High School diploma-3, Graduate/Post Graduate-4, Graduate/Post Graduate+B.Ed.-5, M.Ed./M.B.B.S./B.E. etc.-6, Ph.D./M.S./M.E. etc.-7 are arranged from illiterate to professional Post-Graduate degree.

Income

Income is index of economic status. For this SES after calculating the per-capite income it was converted into statine scale. I statine showing low income group, II, III staine showing lower-middle income group, IV, V, VI statine showing middle income group, VII, VIII statine showing upper-middle income group and IX statine showing high income group. Its showing follows-
<table>
<thead>
<tr>
<th>Statine</th>
<th>Percentage</th>
<th>Income Group</th>
<th>Weightage (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$I$</td>
<td>0.91</td>
<td>below 24</td>
<td>1</td>
</tr>
<tr>
<td>$II, III$</td>
<td>14.96</td>
<td>24 to 109</td>
<td>2.5</td>
</tr>
<tr>
<td>$IV, V, VI$</td>
<td>68.34</td>
<td>110 to 236</td>
<td>5</td>
</tr>
<tr>
<td>$VII, VIII$</td>
<td>14.96</td>
<td>237 to 413</td>
<td>7.5</td>
</tr>
<tr>
<td>$IX$</td>
<td>0.91</td>
<td>above 413</td>
<td>9</td>
</tr>
</tbody>
</table>

### Possession

In measurement of SES various score for various things. Owneship of house, Numbers of rooms, House-hold materials, Vehicles, Animals, Land-ownership etc. have separete scores from 1 to 7. It covers various things in many parts. These six indicators of possession. Six questions are given on this variable and total scores are given on the basis of the quantity of possessions.

### Social Participation

Being a member of some association, award of honours, titles etc. and involvement in social work, all these things effects the social status of a person. One score for each possitive response. Thus minimum and maximum scores on this variable are 0 and 4 respectivaly.

### Categories

The total possible categories were formed with the help of the score on SES scale, which obtained, after administering this scale,
which converted into statine scale. The SES was classified into five categories- Lower Status (LS), Lower-Middle Status (LMS), Middle Status (MS), Upper-Middle Status (UMS) and Upper Status (US). The percentage of the population contained in each class are given below-

<table>
<thead>
<tr>
<th>Statine</th>
<th>Categories</th>
<th>Percentage</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>LS</td>
<td>0.91</td>
<td>below 21</td>
</tr>
<tr>
<td>II, III</td>
<td>LMS</td>
<td>14.96</td>
<td>21 to 51</td>
</tr>
<tr>
<td>IV, V, VI</td>
<td>MS</td>
<td>68.34</td>
<td>51 to 79</td>
</tr>
<tr>
<td>VII, VIII</td>
<td>UMS</td>
<td>14.96</td>
<td>79 to 109</td>
</tr>
<tr>
<td>IX</td>
<td>US</td>
<td>0.91</td>
<td>above 109</td>
</tr>
</tbody>
</table>

Reliability and Validity

The value of the reliability coefficients were derived with the help of test-retest method, were found to be highly significant. This significance of SES measured in 20 days and 30 days intervals. Correlation coefficient (r) score 0.92 and 0.94 respectively.

To access the validity of this SES scale, correlation coefficient of scores obtained on these six component variable with composite SES score were calculated. The values of correlation coefficient (r) for Caste, Occupation, Education, Income, Possession and Social Participation is 0.72, 0.82, 0.86, 0.83, 0.78 and 0.69 respectively.
Procedure

In the present study researcher took 300 subjects of which 100 rich nutritional status children (50 boys and 50 girls), 100 average nutritional status children (50 girls & 50 boys) & 100 poor nutritional status children (50 boys & 50 girls). These children are in the age range of 12-16 yrs. of High School. The data collected in the Hamirpur district of Uttar Pradesh.

For the data collection of boys & girls researcher went to different schools and through SES test researcher find out their categories of different nutritional status children. What type of his family status, his parents economic sources and other households etc find out through test. After that researcher know about children nutritional status. If they have good family status, researcher assumed that they take good nutritious food. If they have average family status, they take average nutritions food & If they have poor family status means they take poor nutritious food.

For the data collection of the children researcher went to different schools and measure the result of their various test papers (personality, self-concept & achievement-motivation) and we take conclusion about their meals according to performance.

The Statistical Technique used

The first purpose of the present study was to compare the personality, self-concept & achievement-motivation. Mean and
standard deviation of each group were calculated. The comparison between different groups were made on the basis of critical ratio with 0.05 and 0.01 level of confidence considered significant. Hypothesis were tested by applying critical ratio. Than calculate the effect of gender (Boys & Girls) and types of nutritional children (rich, average & poor) on personality, self-concept and achievement-motivation and testing the hypothesis.