Chapter - 3

Research Methodology
Research methodology is the plan structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance plan is the overall scheme. Structure is the outline or paradigm of the operation of the variables and strategy includes the method to be used together and analysis the data. The result of any study may be generalizable when the methodology is to be designed in specified manner:

1. Locale of study
2. Sampling procedure
3. Variable and their measurements
4. Dependent variables
5. Independent variables
6. Collection of data
7. Statistical Analysis

**Locale of Study:** Jhansi city of U.P. State was selected as locale of the study as this city has sufficient number of school going children & also due to easy accessibility.
Localities of Jhansi City

B.I.E.T. College
Veerangana Nagar
Sipri Bazar
Sadar Bazar
Grass Land
Shivaji Nagar

50-C
50-C
50-C
50-C
50-C
50-C

300
Sample Size
Sampling Procedure: A list of different localities was prepared and from that six localities of Jhansi city was selected. Obtain from Jhansi Nagar Nigam House survey was made from 6 localities for making list of school going children between age group 6-12 year from each locality 50 school going children of (6-12 years age group) were selected which comprises 300 school going children for the study.

Variables and their measurement -

Under this section, dependent and independent variables, their operational definitions and measurements used in the present study have been described.

Dependent Variables

Anthropometric and clinical measurements and diet survey were taken as dependent variables.

Independent Variables

The independent variables include socio personal and socio economic variables which are as follows: -

Socio-personal Variables
Sex -

The categories of sex were as:

<table>
<thead>
<tr>
<th>Sex</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
</tr>
</tbody>
</table>

Age -

The categories of age were as:

<table>
<thead>
<tr>
<th>Age (in years)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 8</td>
<td>1</td>
</tr>
<tr>
<td>8 - 10</td>
<td>2</td>
</tr>
<tr>
<td>10 - 12</td>
<td>3</td>
</tr>
</tbody>
</table>

Family Members -

It includes the total members in that family whether it is nuclear family, joint or extended. The scores assigned were as follows:

<table>
<thead>
<tr>
<th>No. of family member</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5 members</td>
<td>1</td>
</tr>
<tr>
<td>Above 5 members</td>
<td>2</td>
</tr>
</tbody>
</table>
Education of parents:

It refers to the classes of formal education attended by the respondent's mother and father and the scores assigned were as follows –

<table>
<thead>
<tr>
<th>Education level</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uneducated</td>
<td>1</td>
</tr>
<tr>
<td>Intermediate</td>
<td>2</td>
</tr>
<tr>
<td>Graduate</td>
<td>3</td>
</tr>
<tr>
<td>Post graduate</td>
<td>4</td>
</tr>
</tbody>
</table>

Occupation of father:

It refers to the means of earning for livelihood by the parents of the respondents. The scores assigned were as follows –

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>1</td>
</tr>
<tr>
<td>Service</td>
<td>2</td>
</tr>
<tr>
<td>Labour</td>
<td>3</td>
</tr>
<tr>
<td>Business</td>
<td>4</td>
</tr>
</tbody>
</table>

Income:

It refers to the monthly earnings of the family from all the sources and the scores assigned were as follows -
<table>
<thead>
<tr>
<th>Total income/month (Rs.)</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Rs.5000/- month</td>
<td>-</td>
</tr>
<tr>
<td>Rs.5000-10000</td>
<td>-</td>
</tr>
<tr>
<td>AboveRs.10000</td>
<td>-</td>
</tr>
</tbody>
</table>

**Collection of data**

The information was obtained from children and also from their parents by interview method. The survey was conducted by seeking help of principals and teachers of the schools. Each subject was contacted individually and was persuaded to answer all the questions in the performa and their responses were recorded.

The questionnaire was divided under four sections.

(a) General information.

(b) Anthropometrics measurements.

(c) Clinical

(d) Diet Survey.

Section (a) included the over-lying subcutaneous fat is measured in the triceps region with skin–fold consisted of general information regarding age, family members, religion, sex etc.

Section (b) consisted of the height and weight measurements. For weighing, weighing balance was used. The scale was adjusted to zero before each measurement. The subjects were having minimum
clothing on and have been asked to stand on the platform of the scale, without touching anything, and looking straight ahead. His/her weight was recorded to the nearest 0.25 kg. For the measurement of height a measuring tape was used. The students were asked to stand as erect as possible without shoes or chappals. A smooth thin ruler was put up on the top of the head in the center crushing the hairs at a right angle to the scale and the height read of from the lower edge of the rules to the nearest 0.5 cm. The mid arm is hanging freely at its mid-point and the other while calipers.

Section (c) includes external examination of the body for changes in superficial epithelial tissues especially skin, eyes hair and buccal mucosa may be carried out. Similarly; organs close to the surface of the body may be examined e.g. the parotid and thyroid glands. It is based on observation of physical signs.

Section (d) consisted the information regarding daily food intake of respondents. The technique used for recording the dietary intake was 24 hour recall method.

STATISTICAL TECHNIQUES APPLIED

The following statistical techniques were applied for analyzing the data:

(a) Arithmetic mean

Arithmetic mean is the average used in the present study symbolically.

[30]
(i) For ungrouped data

\[ X = \frac{\sum X_i}{N} \]

(b) Percentage

The sum of all the responses

\[ \text{Percentage} = \frac{\sum \text{all responses}}{\text{Total number of all the responses}} \times 100 \]

(c) Chi-square (x²) distribution

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

Where, \( O \) and \( E \) denote the observed and expected frequencies respectively, Significance of Chi-square was tested with \((r-1) (c-1)\) d.f. at level of significance, where –

\[ r \quad = \quad \text{number of rows} \]
\[ c \quad = \quad \text{number of columns} \]