Chapter III

METHODOLOGY

Based on the objectives laid down in the present the following methods and tools were used to obtain the data,

AREA OF THE STUDY:

Total Six Districts

HYDERABAD KARNATAKA REGION:
DESIGN OF THE STUDY:

Sources of Data and Information:

The different sources and methods used by the researcher to gather data and information about the Anthropometric measurements and performances of high school Kho-Kho and Kabaddi players of Hyderabad Karnataka region.

The researcher visited to district offices of Department of Public Instructions to take the information of scheduled district Kho-Kho and Kabaddi matches for the academic year 2014-15. It is further divided as the collection of data and information for this investigation as both primary and secondary resources.

Primary Resources:

The original data, material and information is collected from the following primary resources,

a) Data Collection on Anthropometric Measurements:

The researcher with the help of trained assistants measured the selected anthropometric variables of body. Before undergoing the test, all the athletes were informed about the testing procedures. Height was measured with a stadiometer to the nearest 1mm. Body weight was measured with a weighing machine. Circumferences and shoulder girth were measured with a non-elastic tape to the nearest 1mm.
**b) Anthropometric Variables:**

All the subjects’ anthropometric measurements were taken: body weight, height, circumferences (relaxed arm, thigh and calf), shoulder girth, total arm length and total leg length.

**c) Data Collection on Performances:**

All the Kho-Kho and Kabaddi matches’ total scores of each winning and losing team during the district matches are taken by collecting the score sheets.

**d) Documents:**

Researcher visited various physical education and sports institutions such as Laxmibai National University of Physical Education, Gwalior, Netaji Subhas National Institute of Sports, Patiala and various universities to get the related data information of the study in the form of Ph.D and M.Phil thesis, Papers, Articles, journals and Books etc.

**e) Archival Records:**

The official score records in the score sheets and name lists, etc. are collected and studied and information and data are retained for the study.

**Secondary Resources**

The total population size of participants and the performances (total scores) of each high school Kho-Kho and Kabaddi team are taken during the district matches for further analysis.

**TOOLS:**

1. Stadiometer.
2. Weighing machine.
Selection of Subjects and Sample Design:

To achieve the purpose of the study total 720 high school Kho-Kho and Kabaddi players studying in 8th to 10th Std. ranging from 14-16 years of age were selected randomly from six districts high schools of Hyderabad Karnataka region and they are presented in the following sample design table.

<table>
<thead>
<tr>
<th>Games</th>
<th>Name of Districts</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kalaburagi</td>
<td>Ballary</td>
</tr>
<tr>
<td>Kho-Kho</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Kabaddi</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Grand Total</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

Criterion Variables:

Each sport demands specific requirement of physical parameters for successful performance, the importance of physical parameters lies in the fact that in majority of the sports, it scores as the basis for good performance. The selected anthropometric measurements like body weight, height, circumferences (relaxed arm, thigh and calf), shoulder girth, total arm length and total leg length were selected.

Selection of Tests:

To measure the selected variables the respective tests are administered and represented in the table 1.

<table>
<thead>
<tr>
<th>S. N</th>
<th>Variables</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Anthropometric Measurements</td>
<td>Height and Weight (Weighing Machine and Stadiometer), Steel measuring tape(relaxed arm, thigh and calf, shoulder girth, total arm length and total leg length).</td>
</tr>
</tbody>
</table>
Instrument Reliability:

In the present study standard equipments such as weighing machine, stadiometer and steel measuring tape which are available in the laboratory, Department of Physical Education Gulbarga University, Kalaburagi were used.

TEST ADMINISTRATION:

The researcher does pilot approach to the places of six districts of Hyderabad Karnataka region where the district level high school Kho-Kho and Kabaddi tournaments are organized. The researcher collected the data related to present study in the following methods,

a) Measurement of Height:

Purpose to measure the maximum height.

Equipment Used: Stadiometer.

Investigator measuring height of Kho-Kho and Kabaddi players
b) Measurement of Weight:

Purpose to measure the maximum weight.


Investigator measuring weight of Kho-Kho and Kabaddi players

c) Measurement of Arm Length:

Purpose to measure the total length of arm.

Equipment Used: Measuring tape.

Investigator measuring arm length of Kho-Kho and Kabaddi players
d) **Measurement of Leg length:**

Purpose to measure the total length of leg.

Equipment Used: Measuring tape.

![Image of investigator measuring arm length of Kho-Kho and Kabaddi players]

Investigator measuring arm length of Kho-Kho and Kabaddi players

e) **Measurement of Shoulder Girth:**

Purpose to measure the shoulder width.

Equipment Used: Measuring tape.

![Image of investigator measuring shoulder girth of Kho-Kho and Kabaddi players]

Investigator measuring shoulder girth of Kho-Kho and Kabaddi players
f) **Measurement of Thigh circumference:**
Purpose to measure the thigh circumference.

Equipment Used: Measuring tape.

![Investigator measuring thigh circumference of Kho-Kho and Kabaddi players](image1)

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**g) Measurement of Calf circumference:**

Purpose to measure the calf circumference.

Equipment Used: Measuring tape.

![Investigator measuring calf circumference of Kho-Kho and Kabaddi players](image2)
f) Measurement of Arm (Biceps) circumference:

Purpose to measure the Biceps circumference.

Equipment Used: Measuring tape.

![Investigator measuring arm (biceps) circumference of Kho-Kho and Kabaddi players]

**Body Mass Index Norms:**

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m²)</th>
<th>Sub-classification</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt; 18.50</td>
<td>Severe thinness</td>
<td>&lt; 16.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate thinness</td>
<td>16.00 - 16.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild thinness</td>
<td>17.00 - 18.49</td>
</tr>
<tr>
<td>Normal range</td>
<td>18.5 - 24.99</td>
<td>Normal</td>
<td>18.5 - 24.99</td>
</tr>
<tr>
<td>Overweight</td>
<td>≥ 25.00</td>
<td>Pre-obese</td>
<td>25.00 - 29.99</td>
</tr>
</tbody>
</table>

**Statistical Techniques:**

Statistical analysis performed with SPSS software, version 19. Descriptive statistics are shown as means and standard deviations. Paired ‘t’ test and ANOVA are used to assess statistically significant differences variation in scores of anthropometric measurements and performances between various district Kho-Kho and Kabaddi players.