Chapter III

PROCEDURE

In this chapter the subjects, variables, criterion measures, procedure for administering the tests, collection of data, and statistical models for analysing the data are described.

Subjects

Fifty males and fifty females for each group mentioned below were selected as the subjects for this study.

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Badminton</td>
<td>(Badminton)</td>
</tr>
<tr>
<td>2. Soccer</td>
<td>(Soccer)</td>
</tr>
<tr>
<td>3. Gymnastics</td>
<td>(Gymnastics)</td>
</tr>
<tr>
<td>4. Non Sportsmen</td>
<td>Non Sportswomen</td>
</tr>
</tbody>
</table>

Sportsmen/Sportswomen were one, who had participated minimum at National level competitions (State team/Intervarsity) in Badminton, Soccer and Gymnastics.

Non sportsmen/Non sportswomen were one who had not participated in any competitive game or sport.

The subjects belonged to various parts of the country and also belonged to different socio-economic and ethnic groups.
Procedure for Administering the Test

Research scholar personally visited various national level tournaments/all India Inter varsity tournaments/coaching camps of the three selected sports. There he explained the purposes and significance of the study to the organisers coaches and participants to get their whole hearted cooperation. Then he took the finger prints of the sportsmen/sportswomen of the three selected sports and games.

Finger prints of non sportsmen/non sportswomen had also been taken.

Methods of Taking Finger Prints

Skin of all the subject's palm were cleaned and dried before taking the print. Then a small daub of printer ink was placed on a glass plate and spread with the roller into a thin layer. Then the stretched palm of the subject was placed at once in such a manner so that it could not move. The scholar then pressed the palm eventually with an uniform pressure with a special care on finger tips, mounts and butt of the palm. After assuring that the ink has been uniformly

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1 Method Adopted by Finger Prints Experts at Indian Institute of Criminology, New Delhi.
spread, the palm was placed on another sheet of plain paper with an uniform pressure applied by the investigator. The print was then left to be dried for further investigations of the study. (Fig. - 1,2,3,4)

Variables and Criterion Measures

The following variables of the palm prints were studied.² (The criterion measures for the study are also given) Fig. 5-6

<table>
<thead>
<tr>
<th>Variables</th>
<th>Criterion measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Types of Finger patterns</td>
<td>Loop, whorls &amp; Arches</td>
</tr>
<tr>
<td>2. Ridge counts from trirad-point to point of core in fingers.</td>
<td>Numbers</td>
</tr>
<tr>
<td>3. Metric Analysis of palm</td>
<td>Cms.</td>
</tr>
<tr>
<td>4. Ridge counts in each metric area</td>
<td>Numbers/Sq.cms.</td>
</tr>
<tr>
<td>5. a t d angle</td>
<td>in degress</td>
</tr>
</tbody>
</table>

Statistical Techniques for Analysis

For analysing finger print pattern chi-square were obtained.

Two way analysis of variance (F-ratio) of mean scores of the criterion measures of four groups namely Badminton, Soccer, Gymnastics and Nonsports was done with respect to each of the variable for both the sexes. Which gave the interaction between the two sex groups.

Whenever such analysis proved statistically significant at five percent level of confidence (0.05), the Post Hoc Test was used to compare the mean difference.
Fig. 1  Equipments for taking palm print
(Hand print roller, Marking ink, Smooth plate and paper).
Fig. 2 Method of inking the palm for taking the print.

Fig. 3 Method of taking palm print on plain paper for study.
Fig. 4 (A) Investigating the palm prints under 'Lumag'.

Fig. 4 (b) Palm print and the Enlargement of palm print through 'Lumag', showing a triradial point.
RC = Ridge Count between triradial point to point of core.

SHOWING THE RIDGE PATTERNS AND ANGLE
Fig. 6

POINT OF CORE

TRIRADIAL POINT

SHOWING POINT OF CORE, TRIRADIAL POINT AND RIDGE COUNT /SQ. CM.