Chapter - IV

ANALYSIS OF DATA AND RESULTS OF THE STUDY

In this chapter the research, the analysis of the data collected on subject has been presented and the results of the statistical analysis has been presented too. The study was conducted to compare Body Mass Index and Physical Fitness of players and non-players of tribal school children.

The objectives of the study were to check Body Mass Index of Players of tribal school children, to check Body Mass Index of Non-players of tribal school children, to check Coordination, Muscular Strength, Speed, Explosive Strength, Flexibility and Agility scores of player of tribal school children, to check Coordination, Muscular Strength, Speed, Explosive Strength, Flexibility and Agility scores of Non-player of Tribal school children, to compare Body Mass Index scores of players and Non-player of Tribal school children and to compare Coordination, Muscular Strength, Speed, Explosive Strength, Flexibility and Agility scores of Players and Non-player of Tribal school children.
Boys of age 15 to 17 years from different schools of Dahod District were selected for the purpose of the study. To compare Coordination, Muscular Strength, Speed Explosive Strength, Flexibility and Agility of players and non-players boys of tribal school children, Stick Test of Coordination, Sit-Ups, Standing Broad Jump, 50 Yard Run, Sitting Push-Back and Sit & Reach test were conducted and for Body Composition Variable, Weight, Height and B.M.I. were taken into consideration for the study.

**Statistical Analysis of Data**

To find out the comparison Body Mass Index, Coordination, Muscular Strength, Speed Explosive Strength, Flexibility and Agility scores of Players and Non-Players of tribal school children, ‘t’ test statistical procedure was applied.

**Level of Significance**

The level of significance chosen to study the significance by means of ‘t’ test and the significance standard was set at 0.05 % level of confidence, which is considered adequate for the purpose of the study.
Table - 1

The Difference of the Significance of the Mean of Players and Non-Players in the Performance of Body Composition

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>24.49</td>
<td>0.70</td>
<td>1.26</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>25.19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05 ‘t’0.05(198) = 1.96

From table 1, it was seen that mean score for Body Mass Index of players is 25.19 and Non-Players mean was 24.49. Mean difference between these two groups was 0.70 and ‘t’ ratio is 1.26 which was not significant at 0.05 level. Therefore it can be said that there was a no significant difference between Players and Non-Players in B.M.I. test of Body Composition efficiency. Graphically it is represented in Graph 1.
Figure – 1

The Graphical representation of Comparison of Mean of Players and Non-Players in the Performance of Body Composition
Table - 2

The Difference of the Significance of the Mean of Players and Non-Players in the Performance of Coordination

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>1.77</td>
<td>0.90</td>
<td>4.32*</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>0.87</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05 ‘t’0.05(198) = 1.96

From table 2, it was evidenced that players mean for coordination was 1.77 and Non-Players mean was 0.87. Mean difference between these two groups is 0.90 and ‘t’ ratio was 4.32 which was significant at 0.05 level. Therefore it can be said that there was a significant difference between Players and Non-Players in Stick Test of Coordination efficiency. Graphically it was represented in Graph 2.
Figure 2

The Graphical presentation of Comparison of Mean of Players and Non-Players in the Performance of Coordination

(Scale 1 cm. = 0.20 Score)
Table - 3

The Difference of the Significance of the Mean of Players and Non-Players in the Performance of Muscular Strength

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>32.77</td>
<td>1.63</td>
<td>5.01*</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>31.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05 ‘t’0.05(198) = 1.96

From table 3, it was seen that Players mean is 32.77 and Non-Players mean was 31.14. Mean difference between these two groups is 1.63 and ‘t’ ratio was 5.01 which is significant at 0.05 level. Therefore it can be said that there was a significant difference between Players and Non-Players in Sit-Ups Test of Muscular Strength efficiency. Graphically it was represented in Graph 3.
Figure – 3

The Graphical representation of Comparison of Mean of Players and Non-Players in the Performance of Muscular Strength

(Scale 1 cm. = 5 Score)
Table - 4

The Difference of the Significance of the Mean of Players and Non-Players in the Performance of Explosive Strength

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>1.74</td>
<td>0.23</td>
<td>4.71*</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>1.51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05 ‘t’0.05(198) = 1.96

From table 4, it was seen that Players mean is 1.74 and Non-Players mean is 1.51. Mean difference between these two groups was 0.23 and ‘t’ ratio is 4.71 which was significant at 0.05 level. Therefore it can be said that there was a significant difference between Players and Non-Players in Standing Broad Jump Test of Explosive Strength efficiency. Graphically it was represented in Graph 4.
Figure – 4
The Graphical representation of Comparison of Mean of Players and Non-Players in the Performance of Explosive Strength

(Scale 1 cm. = 0.20 Score)
Table - 5

The Difference of the Significance of the Mean of Players and Non-Players in the Performance of Speed

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>5.28</td>
<td>0.27</td>
<td>6.64*</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>5.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05 ‘t’0.05(198) = 1.96

From table 5, it was seen that Players mean was 5.28 and Non-Players mean was 5.01. Mean difference between this two groups was 0.27 and ‘t’ratio was 6.64 which was significant at 0.05 level. Therefore it can be said that there was a significant difference between Players and Non-Players in 50 Yard Race Test of Speed efficiency. Graphically it was represented in Graph 5.
Figure – 5

The Graphical representation of Comparison of Mean of Players and Non-Players in the Performance of Speed
# Table - 6

The Difference of the Significance of the Mean of Players and Non-Players Person in the Performance of Flexibility

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>39.85</td>
<td>1.91</td>
<td>5.92*</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>37.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05

‘t’0.05(198) = 1.96

From table 6, it was seen that Players mean is 39.85 and Non-Players mean was 37.94. Mean difference between this two groups is 1.91 and ‘t’ ratio was 5.92 which was significant at 0.05 level. Therefore it can be said that there was a significant difference between Players and Non-Players in Sitting Push-Back Test of Flexibility efficiency. Graphically it was represented in Graph 6.
Figure – 6

The Graph showing the Comparison of Mean of Players and Non-Players in the Performance of Flexibility

(Scale 1 cm. = 5 Score)
Table - 7

The Difference of the Significance of the Mean of Players and Non-Players Person in the Performance of Agility

<table>
<thead>
<tr>
<th>No.</th>
<th>Group</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Players</td>
<td>4.74</td>
<td>1.15</td>
<td>5.34*</td>
</tr>
<tr>
<td>2</td>
<td>Non-Players</td>
<td>3.59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Significance at 0.05 ‘t’0.05(198) = 1.96

From table 7, it was seen that Players mean was 4.74 and Non-Players mean was 3.59. Mean difference between this two groups was 1.15 and ‘t’ ratio was 5.34 which was significant at 0.05 level. Therefore it can be said that there was a significant difference between Players and Non-Players in Sit and Reach Test of Agility efficiency. Graphically it was represented in Graph 7.
Figure – 7

The Graphical representation of Comparison of Mean of Players and Non-Players in the Performance of Agility

(Scale 1 cm. = 0.50 Score)
Discussion of Findings

Statistical analysis shows that Body Composition Variable, B.M.I. between Players mean was 25.19 and Non-Players mean was 24.49; received ‘t’ ratio was 1.26 which was not significant at 0.05 level. When means were compared of the two groups it was found that Players Body Composition efficiency was more than Non-Players of Dahod District, School children.

Physical Fitness Variable, Coordination of Stick Test between Players mean was 37.688 and Non-Players mean was 0.87; Calculated ‘t’ ratio was 4.32 which was significant at 0.05 level. When means were compared of the two groups it was found that Players Coordination efficiency was more than Non-Players. The results of higher coordination in players may be due to more exposure to the dynamic situation in sports and games they experience which could have contributed to better coordination than the non players.

The Mean score of Sit Ups test for evaluation of Muscular Strength of Players was 32.77 and Non-Players was 31.14; calculated ‘t’ ratio was 5.01 which was significant at 0.05 level. When means were compared of the two groups it was found that Players Muscular Strength was more than Non-Players. The better muscular strength in
players may be due to experience in sports that help to maintain the general as well as specific fitness.

To observe the Explosive Strength of players and non players Standing Broad Jump Test was conducted and the mean score of players was 1.74 and Non-Players was 1.51; calculated ‘t’ ratio was 4.71 which was significant at 0.05 level. When means were compared of the two groups it was found that Players were more superior in Explosive Strength than Non-Players. The explosive strength in players was found higher that may be due to higher intensity required in movement particularly in lower extremity.

50 Yard Race was conducted to compare the speed between players and non players. The mean of players was 5.28 and Non-Players mean was 5.01; calculated ‘t’ ratio was 6.64 which was significant at 0.05 level. When means were compared of the two groups it was found that Players Speed efficiency was more than Non-Players of Dahod District, School children. Most of the sports and game require fast movements on surface to gain better results and performances. This inherent nature of sports and game allow players to take advantage over the non players.
Flexibility of subjects was measured with Sit & Push Back Test. The mean of Players was 39.85 and Non-Players mean was 37.94; calculated ‘t’ ratio was 5.92 which was significant at 0.05 level. When means were compared of the two groups it was found that Players Flexibility was more than Non-Players.

The results of Sit & Reach Test to evaluate the flexibility between players and non players show significance difference in means of two groups. The mean of players was 4.74 and Non-Players mean was 3.59; where calculated ‘t’ ratio was 5.34 which was significant at 0.05 level. When means were compared of the two groups it was found that Players Agility efficiency was more than Non-Players of Dahod District, School children. The flexibility of trunk in terms of flexion and extension for free movement is much essential for playing and performing in physical activities as well as sports. The active participation in sports activities can attribute to the flexibility of players. The results of the study were similar to the study conducted by Katja¹.

Statistical analysis shows that, there was no significant difference in Body Composition Variables. But there was significant difference Physical Fitness Variables of Players and Non-Players of Dahod District, School children.

**Discussion of Hypotheses**

1. It was hypothesized that there will not be positive difference in Body Mass Index scores of Non-Players of tribal school children which is rejected.

2. It was hypothesized that there will not be positive difference in Coordination, Muscular Strength, Speed, Explosive Strength, upper body strength and Flexibility scores of Players of tribal school children which is rejected.