



## COMPARATIVE ANALYSIS OF PHYSICAL FITNESS COMPONENTS AND GROWTH FACTORS AMONG VARIOUS TRIBES OF JAMMU & KASHMIR AND MADHYA PRADESH

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### ABSTRACT

The main purpose of the study was to compare the Physical Fitness Components and Growth factors among various tribes of Jammu & Kashmir and Madhya Pradesh. Fifty (50) male subjects studying in 6th, 7th, 8th standard classes of different schools and hostels from four different tribes namely Gujjar, Bakarwal, Gaddi & Sappi of Jammu & Kashmir and four different tribes of Madhya Pradesh namely Agariya-Gond, Bhil, Sehera & Munda-Mudas, were randomly selected as subjects for the study. The Physical Fitness Components, namely muscular strength endurance, speed, agility, explosive strength, and cardiovascular endurance was measured by using "AAHPER" Youth Fitness Test. Muscular strength endurance of shoulder and abdominal was measured by pull-ups and sit-ups respectively, speed was measured by 50 meter sprint, agility was measured by shuttle run, explosive strength of legs was measured by standing broad jump, and cardiovascular endurance was measured by 600 meter run/walk test. The Growth Factors which include Height, Weight, Chest girth, shoulder width, Arm length, Leg length, Thigh girth, Calf girth total fat percentage and BMI was measured by specific tools to determine the growth characteristics among the various tribes.

**Keywords:** Physical Fitness components And Growth factors.

### INTRODUCTION

Physical fitness is one's richest possession. It cannot be purchased but has to be earned through a daily routine of physical exercises. Physical fitness is very necessary for a better quality of life. The history of human movements or physical activity is as old as human existence. It can be traced from the struggle for existence to the struggle for excellence. Real comfort and happiness are indeed experienced when we are in sound health. Although modern man has developed many sophisticated machines, medical equipment and potent medicines, he is still struggling to control diseases. Fitness makes a powerful immunity system and saves us from diseases. A fit person can achieve the best goal in life.

Health-related fitness is a measure of a person's ability to perform physical activities that requires endurance, strength and flexibility. Physical fitness is one of the most important determinants of sports performance. This kind of fitness is achieved through a combination of regular exercise and inherent ability.

India is the home to a rich number of indigenous people, who are still untouched by the lifestyle of the modern world. According to Census 2011, the total population of the country is 1,210,854,977 (1210.2 million). The scheduled tribe (S.T.) population in India consists of 10,42,81,034 (104.2 million), 8.6% of India's total population. These tribal people are also known as the Adivasis and are the poorest in the country. They are still dependent on hunting, agriculture and fishing. Some of the major tribal groups in India include Gonds, Santhals, Khasis, Bhils, Bhutias and Great Andamanese.

### METHOD AND MATERIALS

Four Hundred (400) male students within the age group 11 to 14 years belonging to eight different tribes of Jammu & Kashmir and Madhya Pradesh were randomly selected as subjects for the study. The eight tribes selected for the study were randomly selected. Each tribe consists of fifty (50) male subjects within class group 6th to 8th, and were all validated to be qualified for the study and instructed about the purpose of the study. The study selected four tribes each from Jammu & Kashmir and Madhya Pradesh, include Gujjar, Bakarwal, Gaddi and Sippi from Jammu & Kashmir Agariya, Bhil, Sahariya and Munda-mudas from Madhya Pradesh. The Physical Fitness Components, namely muscular strength endurance, speed, agility, explosive strength, and cardiovascular endurance was measured by using "AAHPER" Youth Fitness Test.



Muscular strength endurance of shoulder and abdominal was measured by pull-ups and sit-ups respectively, speed was measured by 50 meter sprint, agility was measured by shuttle run, explosive strength of legs was measured by standing broad jump, and cardiovascular endurance was measured by 600 meter run/walk test. The Growth Factors which include Height, Weight, Chest girth, shoulder width, Arm length, Leg length, Thigh girth, Calf girth total fat percentage and BMI was measured by specific tools to determine the growth characteristics among the various tribes.

In order to compare the means of the eight tribes of Jammu & Kashmir and Madhya Pradesh, normality assumption of data was checked by the Shapiro-Wilk test. The descriptive statistics of various variables was done by using Mean, SD, and Standard Error to show the univariate analysis of the data. The bivariate analysis was carried out to examine the differences in physical fitness and growth factors across the tribes. The analysis of variance (ANOVA) was applied. The level of significance was set at the 0.05. Furthermore, the Tukey post hoc means comparison was also used to find out the actual difference between the means when F value was found significant. Graphical presentation was also made for each criterion test. In addition, the independent t-test was conducted to examine, if there is significant difference between physical fitness component and growth factor between the two states of Jammu & Kashmir and Madhya Pradesh. The data was analyzed with SPSS (20 Version).

## FINDINGS

### INDEPENDENT T-TEST OF MEANS BETWEEN THE TWO STATES JAMMU & KASHMIR AND MADHYA PRADESH.

Variables	T -Test
Pull-Ups	2.005
Bent Knee Sit-Ups	3.142
Shuttle Run.	2.546
Standing broad jump	0.925
Number of seconds taken by Students on 50 meter dash	1.263
Number of Minutes a Students run walk 600 meter	0.061
Height of Students measured in centimeters	2.029
Weight of Students measured in kilogram	1.538
Chest Girth of Students measured in centimeters	1.707
shoulder width of Students measured in centimeters	0.375
Students arm length measured in centimeters	0.129
Students leg length measured in centimeters	1.232
Students thigh girth measured in centimeters	0.618
Students calf girth measured in centimeters	0.982
Fat percentage of biceps in Students	1.397
Fat percentage of Triceps in Students	0.860
Fat percentage of Sub scapular in Students	2.137
Fat percentage of Suprialic in Students	0.879
Total fat percentage of Students	1.608
Body mass index of Students	2.120

\*Significant at 0.05 level of significance

The table above represents the result of the independent sample t-test for the two states of Jammu & Kashmir and Madhya Pradesh. From the result of the p-value (denoted as sig.(2-tailed)) on the table, it was observed that there is statically significant difference between the two states for the means of variables including pull-ups, bent knee sit-up , shuttle run test , height in centimeters, fat percentage of Subscapular, body mass index as their sig value, pull-ups(0.047),sit-up(0.02),



shuttle run test (0.012) , height in centimetres (0.044), fat percentage of Subscapular (0.034), body mass index(0.036) is less than alpha value (0.05).

It was also observed that there is no statistically significant difference between the mean statistics of other variables for the two states Jammu & Kashmir and Madhya Pradesh, as there p-value broad jump test(0.356) , 50-meter dash(0.208) , 600-meter run-walk test (0.951),chest girth(0.90), shoulder-width (0.708), Students arm length (0.898), Students leg length (0.220), Students thigh girth (0.538) , Students calf girth (0.327) , fat percentage of bicep (0.165) ,fat percentage of triceps (0.391) ,fat Perce percentage of Suprialiac (0.381) , total fat percentage (0.110) are greater than alpha value (0.05)

#### Discussion of findings

Generally, this study's motive is to examine the physical fitness components and growth factors of Students of various tribes of two states to determine the capability of a particular tribe and state meant for a particular game and sports to further the development needed among tribal groups for the upliftment of sports and games. As such, it recorded some results and findings related to its objectives and more.

It is evident from the study and the results that the tribes under the Madhya Pradesh have significantly better and superior performance in the shoulder and abdominal strength compared to Jammu & Kashmir, Particularly, the Bhil tribe of Madhya Pradesh had the best performance in the shoulder strength compared to other tribes in the study. The sit-up result showed that the Sahariya tribe of Madhya Pradesh has the best performance in the abdominal strength and endurance ability among the sampled tribes. The findings from the study also revealed that overall, the Jammu & Kashmir performed better in the agility test(shuttle run) and running speed & explosive strength(50-yard dash), and in the Madhya Pradesh state with better performance in the explosive power of leg muscles(broad jump) and cardiovascular endurance(600-yard run-walk test). Individually, The Sippi tribe of Jammu & Kashmir state has the best agility performance among the tribes. The Sahariya tribe of Madhya Pradesh was recorded with the best and superior performance in the running speed & explosive strength, explosive power of leg muscles and in the cardiovascular endurance. This may be attributed to the fact that they live in dense forest on Rajasthan and mother earth's borders for their basic needs. The main occupation of the sahariya tribe is agriculture and their economic conditions are measurable; hence they have to serve as laborers. The tribes' involvement in agriculture and labour activities might have led to improved their genetic endowment over hundred years to enhance the legs' running speed and explosive strength.

The study results about the Growth factor observed of Students among tribes of the two states showed that the Jammu & Kashmir state has the higher mean score for Weight, shoulder length, Leg length, Thigh girth, BMI and Calf girth compared to that of Madhya Pradesh. For other Growth factor variables which include Height, Chest girth, Arm length and total fat percentage. The results showed that Madhya Pradesh has a higher mean score for all the latter variables than the score of Jammu & Kashmir. It is evident that the Sahariya tribe of Madhya Pradesh recorded the highest mean score of Students height and chest circumference, which implies that the Students from this tribe are relative and averagely the tallest among the total tribes sampled. The Agariya tribe of Madhya Pradesh recorded the highest mean score of Students's Weight, shoulder length, thigh girth, total fat percentage and Calf girth compared to other tribes included in the study. The total fat percentage score of the tribes implies the percentage of fat in the Students sampled from this tribe, this may also explain the reason for the highest result of the tribe's mean Weight score. Our result also shows that the Gaddi and the Gujjar tribes have the highest mean score for the Arm length and Leg length respectively. The research findings also show that the Gaddi and the Agariya tribes recorded the highest BMI scores among the tribes of the states.



## CONCLUSIONS

Based on the results from our analysis and considering the limitations of the study, the following conclusion may be drawn:

- i. This research shows that there is a statistically significant difference in the physical fitness component and growth factors between the two States Jammu & Kashmir and Madhya Pradesh
- ii. This research shows a statistically significant difference in the physical fitness component and growth factors among the eight tribes sampled.
- iii. The result has shown that each tribe has a unique component and ability in which it has advantages over others in completing some sports and games easier than others.
- iv. It may be concluded that averagely the Jammu & Kashmir tribes are superior and better compared in the physical fitness component like student agility, speed test and explosive strength to Madhya Pradesh
- v. It may also be concluded that the Madhya Pradesh tribes recorded a superior performance in the shoulder and abdominal strength, explosive power of leg muscles and in the cardiovascular endurance compared to Jammu & Kashmir.
- vi. It may further be concluded that the Sahariya tribe of Madhya Pradesh was the best and superior in the running speed & explosive strength, the explosive power of leg muscles and in the cardiovascular endurance as part of the physical fitness component measured
- vii. It may be concluded that Bhil and Sahariya tribe students are superior in Shoulder strength and abdominal strength than the other tribes of Jammu & Kashmir and Madhya Pradesh.
- viii. It may further be concluded that The Madhya Pradesh state had the highest score on students Height, Chest circumference, Arm length and total fat percentage and the Jammu & Kashmir state with a higher score in students Weight, Shoulder length, Leg length, Thigh girth and Calf girth.
- ix. It may also be concluded that the Sahariya tribe has the highest score on student's height and chest girth.
- x. The Agariya tribe was concluded to has the highest mean score of student's Weight, Shoulder length, Thigh girth Calf girth and fat percentage.
- xi. It was concluded that Gaddi and the Gujjar tribes have the highest mean score for the Arm length and Leg length respectively.

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