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ANALYSIS OF MOTOR FITNESS AMONG HIGHER SECONDARY SCHOOL CHILDREN OF FOURTEENTO SEVENTEEN YEARS OF AGE

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ABSTRACT

The present study was undertaken to analyze the motor fitness components in tribal children of 14 to 17 years of age. Two hundred and forty students boys with all age groups having equal representation of 60 subjects each, ranging in age between 14 to 17 years, studying in secondary Schools of Allahabad region run by U.P. Board were selected at random as subjects for this study. All the subjects were tested in pull-ups bent knee sit -ups for one minute, standing broad jump, 50 meter dash, shuttle run and 600 yard run/walk to collect data for various motor fitness components in boys. For testing the significance of difference among the mean in different motor fitness components of various age groups an analysis of variance was computed for each test item, separately. The level of significance chosen was .05. The significant improvement was found in case of 50 meter dash between ages fourteen and fifteen and fifteen and sixteen. Significant differences were observed in all the components of motor fitness of higher secondary male students. The pattern of growth and development was also found variation in the obtained findings

Keywords:: Motor fitness, Cross sectional, Analysis, Children, components

1. INTRODUCTION

The human body and its efficiency in different situations is perhaps the most important single factor in the history of mankind. According to Miller and Allen "People are designed for physical activity . In primitive age. Only fittest could survive the rest perhaps. People had to exert, sometime whole day, running after animals for their food, ^hose who could not resist hostile weather died. Often they were closed and attacked by wild animals.

Primitive people had to run, climb and jump in order to meet their day to day needs and escape constant threats to their lives. Those who could not perform these motor fit ness components satisfactorily got finished. There were frequent fight with different groups of people. All these demand ~ a real powerful and agile body. The primitive games were taken from human activities and were means of preparing youths for adult life. Though physical fitness in primitive society was must for survival yet physical activities like games and dances etc. were not so organized. The organized activities started later when people went for settled life.

Nixon and Cozens described early men as physical educators. They developed physical skills involving running, jumping, throwing and climbing etc, in youth for survival components of physical fitness used by primitive men are used even today. Nexon and Jewett stated a " sound mind in a sound body " is a short but full description of a happy state in this word; he , that has these two, has little more to wish for. .

Modern civilization has made life soft and luxurious. The diminished physical efforts and artificial life is responsible for physically weak population people today, lack both strength and endurance. The average man spends more time in attending his automobiles than in attending his body.

Modern age is an age of technology which inhibits physical activity. Machines are used to perform much of our work and we are forced to lead a sedentary life. Our life span is increasing but physical fitness is deteriorating. Most of our leisure time is also passed in a very inactive way sitting before television .

As in primitive society the fitness is very much essential in modern age also. However, the reasons for the two are entirely different. Today fitness is needed for top level performance in sporting activities and maintaining good health Now a days the level of competitions have reached the nerve breaking stage only superbly fit athletes, players or team can think of achieving success at high levels .

School children need optimum physical fitness. In physical education curriculum fitness programme must have its due place and children must be encouraged. Many complexes are easily overcome by success in physical activities. In childhood and adolescence periods, most often physical aptitude creates inferiority complex in an individual. Athletic success can help in getting rid of it and enhances ones self esteem which ultimately depends upon the degree of physical fitness of that individual, including the nature and amount of exercise nutritional practices and health habitués.

The sequence of physical growth and the sequence of development in gross motor performance are concurrent developmental phenomenon. It is, therefore believed that knowledge of these sequences and their relationship would assist the teacher of physical education to provide activities conductive to the pupil various test items but no objective measure was available to makes sure that each child performed to his maximum while under going to test,

The purpose of the present study was undertaken to cross sectionally analyze the motor fitness components in tribal children of 14 to 17 years of age.

2. METHODOLOGY

2.1 Selection of Subjects

Boys studying in various Higher Secondary School of Jabalpur Allahabad District of Uttar Pradesh were selected as the subjects of the study. The subjects were classified into age groups after obtaining the data of birth of each boys from the school records. Sixty Boys in each age group from 14 to 17 years were selected at random.

2.2 Criterion Measures

1. Number of correctly executed push-ups,
2. Maximum number of correctly executed bent -knee sit-ups in one minute.
3. Time taken to shuttle a distance of ten meters four - times recorded to the nearest 1/10 of second.
4. Maximum distance jumped and recorded to the nearest centimeter in standing broad j ump.
5. Time taken to run a distance of 50 meters as fast as possible recorded to the 1/10th of a second.
6. Time taken to run/walk a distance of 600 yards recorded to the nearest 1/10th of a second.

2.3 Procedure

The test were administered to the subjects at the play ground of their schools during morning and evening playing houses. Before administering the test subject were given proper warming up under the supervision of the research scholar. Scoring of Data All the subjects were tested on pull ups. Bent knee sit ups, standing Broad Jump, 50 meter Dash, shuttle run and 600 yard Walk Test and the Scoring of data for each test was done as follows-

Number of correctly executed pull ups, maximum number of correctly executed bent knee sit - ups in one minute, time to shuttle a distance of ten meter four times recorded nearest to 1/10th of a second, maximum distance jumped and recorded to the nearest centimeter, time taken to ran a dist ance of 50 meter as fast as possible recorded 1/10th of a second, time taken to run/walk a distance of 600 yards recorded to nearest 1/10th of a second, were recorded each of the subjects as his score in each test.

2.4 Statistical Analysis

For finding out the significance of difference of means among the various age groups an analysis of variance (F ratio) was used .

3. RESULTS

For testing the significances of difference among the means in different Motor components of various age groups an analysis of variance was computed for each test item separately, as the mean differences in all the criterion variables showed significant F- ratio. and the data pertaining to this is presented in Table 1-6.

TABLE 1
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF DIFFERENT AGE GROUPS ON SPEED

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	102.25	34.08	2.75*
Between Groups	236	17.04	13.84	

*Significant at .05 level,
F.05 (3,236)=2.64

It is evident from Table 1 that the significant difference existed among the means of various age groups children on speed, as the F -ratio of 2.75 was high than the required value F.05 (2,236)=2.64.

TABLE 2
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF DIFFERENT AGE GROUPS ON ABDOMINAL STRENGTH

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	572.14	190.71	12.54*
Between Groups	236	3591.00	15.21	

*Significant at .05 level, F.05 (3,236)=2.64

It is evident from Table 2 that the significant difference existed among the means of various age groups children on abdominal strength, as the F -ratio of 12.54 was high than the required value F.05 (2,236)=2.64.

TABLE 3
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF DIFFERENT AGE GROUPS ON LEG POWER

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	202.80	67.6	5.25*
Between Groups	236	3037.60	12.87	

*Significant at .05 level,
F.05 (3,236)=2.64

It is evident from Table 3 that the significant difference existed among the means of various age groups children on leg power, as the F -ratio of 5.25 was high than the required value F.05 (2,236)=2.64.

TABLE 4
ANALYSIS OF VARIANCE OF T HE MEAN DIFFERENCES OF DIFFERENT AGE GROUPS ON ARM AND SHOULDER STRENGTH

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	249.85	83.28	7.90*
Between Groups	236	2486.75	10.54	

*Significant at .05 level, F.05 (3,236)=2.64

It is evident from Table 4 that the significant difference existed among the means of various age groups children on arm and shoulder strength, as the F -ratio of 7.90 was high than the required value to be significant.

TABLE 5
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF DIFFERENT AGE GROUPS ON AGILITY

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	207.08	69.02	4.51*
Between Groups	236	3610.75	15.30	

*Significant at .05 level, F.05 (3,236)=2.64

It is evident from Table 5 that the significant difference existed among the means of various age groups children on agility , as the F -ratio of 4.51 was high than the required value F.05 (2,236)=2.64

TABLE 6
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF DIFFERENT AGEGROUP ON CARDIOVASCULAR ENDURANCE

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	190.66	163.55	12.40*
Between Groups	236	3110.08	13.18	

*Significant at .05 level,
F.05 (3,236)=2.64

It is evident from Table 6 that the significant difference existed among the means of various age groups children on cardiovascular endurance, as the F -ratio of 12.40 was high than the required value F.05 (2,236)=2.64.

4. DISCUSSION

The analysis of data using analysis of variance (F - ratio) indicated that the significant, difference was observed in 50 meter dash (Speed) among fourteen and fifteen and seventeen years higher secondary school children, In Case of sit ups (abdominal Strength), significant difference was also observed in different age group children. When the school children of different age groups were compared together, F-ratio resulted variation in abdominal strength of all the age groups children. In case of standing broad jump, Arm strength, agility, and endurance of higher school children of different age groups, they found dissimilarity in these motor fitness components This increase in muscle tissue coupled with increase lever length resulting from growth in height should result in greater power and thus increase in motor achievement. Growth in height in school years is apparently reflected adequately by increase in weight. With this constant increase in body size and strength, it is also to be expected that there are also consistent improvement in the basic skills of running, jumping, and throwing as the age increases. Speed with which an individual can run depends upon the length of stride and frequency of stride, steady increase in body size and its components increases in level, leng th and strength provide increase length and tempo to the running stride. it is also in part, a reflection of an increase in ability to run greater distances with increasing age. Agility depends upon number of factors, namely strength, running speed and speed of movement, balance and coordination, since the above motor components increases with age, thing in turn also increase agility.

5. CONCLUSIONS

Within the limitations of the present study following conclusions may be drowns:

1. Boys of fourteen, fifteen and sixteen years can be grouped together in activities requiring, running speed and leg power.
2. In activities retiring change of body position and direction with speed and cardiovascular endurance the boys between age groups of fourteen to six teen can be classified together.
3. In activities requiring abdominal strength in boys of fourteen and fifteen years can participate together.
4. Activities involving holding supporting and pulling of body in hanging situation the boys of fourteen and fifteen and sixteen and seventeen can be grouped together.

RECOMMENDATIONS

In the light of the conclusions drawn above, it may be recommended that Age can be used as an effective basis for classification of tribal boys ranging in age between fourteen to seventeen years for participation in various physical education activities dominated by Motor fitness

components. A longitudinal project on tribal students extended from age fourteen year to 18 years involving both the sexes may be under-taken so that the effect of growth and development on various motor fitness components, within each sex and between the sexes may be identified. A similar study may be undertaken involving different anthropometric measurements, i.e. height, weight and measurements of different parts of the body in addition to the age of the subject.

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