International Journal of Yoga, Physiotherapy and Physical Education
ISSN: 2456-5067
Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 3; Issue 2; March 2018; Page No. 87-91

A comparative study of physical fitness between adolescent boys of Bangladesh and India

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Abstract
Physical fitness depends on a number of features like health, physical structure of the person, nutrition, rest and sleep, altitude, habit, physical environment of the place of residence and its climate. Though Bangladesh and India are two neighboring independent countries with dissimilarities in physical environment, economical condition, religion and food habits.
Eighty adolescent school boys, forty from Khash Mothurapur High School and Bahirmadi High School in the district of Kushtia in Bangladesh and forty from Akrampur High School and Govt. Basic Cum Multipurpose High School of Banipur in the district of North 24 Parganas, West Bengal in India, were chosen at random for the present study. The age of the subjects ranged from 14 years to 16 years, as per their school records. Aahper Youth Fitness Test' was selected as a tool of investigation. Data was collected in early 2017.
Result of the study shows insignificant difference. This outcome might be due to the fact that the subjects chosen for the study were from Kushtia district in Bangladesh and North 24 Parganas in the state of West Bengal in India, which are adjacent to one another. Thus the climatic condition, altitude, food habits, environmental condition, living style, body structure, social, cultural and psychological conditions of both the districts or the two countries are almost the same.
Adolescents of Bangladesh and India (West Bengal) were not found considerably different in respect of overall Physical Fitness. There was no significant difference among the adolescents of the two countries in any of the fitness components as like as leg strength, abdominal strength, shoulder strength, speed, agility and endurance.

Keywords: physical fitness, adolescent, AAPER fitness test

Introduction
It is proved for ever that the World is for the latest. Any extent from Sky to Earth, we have nowhere to go without proper fitness. Fitness is the key-word in the history of human existence, more specifically of the nature. The concept of Illness is not a new concept in human race. From the very beginning men had to struggle with their surroundings which were not in their favor. Their commitment to life lead them fit for their livelihood. They had to run behind an animal which they wanted to hunt. They had to jump over the fire; they had to throw their arrows to save their life from the claws of many wild beasts. In that process they gained their Strength, Speed, Endurance and Spirit to fight, and all above 'Fitness'. Many mythologies, legends are Holy-witness in those histories of fittest hero. We got 10 of heroes in these myths, who greatly contributed in the defense and development of diet: country by fearless act and physical skill and power. But the situation is not the same nowadays, combined by the whole population can only help in defending and upholding the national interest and prestige. For that reason a country needs a very high level of physically and mentally fit citizens with required skills and resource.
It is therefore the responsibility of every country to promote physical fitness of its citizen because physical fitness is the basic requirement for most of the task to be under taken by an individual in his daily life. An unfit citizen is a burden of the society. Good health and physical fitness is required for all the professions such as the students, doctors, engineers, scientists, politicians as well as sports persons.
Physical fitness depends on several factors like health, physical structure of the person, nutrition, rest and sleep, altitude, habit, physical environment of the place of residence and its climate. The person not possessing sound health, suffering from diseases, having bad posture, having malnutrition, enjoying improper rest and sleep, not pursuing healthy habits and possessing a wrong attitude towards health and exercises are not considered to be as fit person. Above all physical fitness is influenced by physical environment and climatic condition of the particular place, for example - persons residing in high altitude have to live fight against nature which is the cause for becoming hard working, fearless and full of strength while people in the plain are lazy and impatient compared to the hilly people.
Shaikh, Patel and Singh (2013) observed that in girls the blood pressure profile was not significantly affected by the level of physical activity level but the in boys systolic blood pressure and mean arterial pressure were found to be significantly higher in moderate physical activity cohort as compared to low physical activity cohort; in boys PVO2 max was found to have a negative correlation with SBP,PP and MAP; better physical fitness rather than a higher physical activity level could keep the blood pressure in check in the Gujarati Indian adolescents. This study shows that physical fitness of South Indian adolescents was less and a normal BMI and waist

circumference are necessary for achieving a good Vo2max (Padmapriya and Sujaya, 2014).

Bangladesh and India are two separate independent countries having difference in physical environment. That was the reason which encouraged the investigator to take up the present study. The investigator intended to find out and compare the level of fitness of the adolescents of the two countries.

According to Kurshed *et al.*, (2010) [1] the participants consumed rice daily with frequent consumption of vegetables; thouth the research subjects were mostly from rich class of urban dwellers their dietary intake was establish not healthy as evidence by daily rice intake and very small intake of fruits, and minerals specially calcium and iron demonstrating lack of awareness regarding food habit.

The present study was taken up to find out the level of physical fitness of the adolescents of the two countries, which might give a clue to the educationists and coaches to chalk out an effective physical education and sports program.

Delimitations

1. The study was delimited to the adolescent boys of the district of Kushtia in Bangladesh and the district of North 24 Parganas, West Bengal in India only due to want of time and financial stringency.
2. The physical fitness test items were delimited:-

a. Pull-up: To measure arm and shoulder strength.
b. Sit-up: To measure abdominal strength and endurance.
c. Shuttle run: To measure speed and agility.
d. Standing long jump: To measure power.
e. 50 Yard dash: To measure speed.
f. 600 Yard run-walk: To measure endurance.

Limitations

1. Subjects were of different heights and weights, so the effect if any of the two variables could not be controlled.
2. The influence of socio-economic status of the subjects on their physical fitness could not be recorded.
3. Time and money stood in the way of extensive travel to every corner of the two countries to collect data in a large number that might affect generalization of the result up to some extent.

Procedure

In this section the selection of subjects, selection of variable, criterion measures, design of the study, procedure for administering tests and statistical model are presented.

1. Selection of subjects

Eighty adolescent school boys, forty from Khash Mothurapur High School and Bahirmadi High School in the district of Kushtia in Bangladesh and forty from Akrampur High School and Govt. Basic Cum Multipurpose High School of Banipur in the district of North 24 Parganas, West Bengal in India, were chosen at random for the present study. The age of the subjects ranged from 14 years to 16 years, as per their school records. Data was collected in early 2017.

2. Selection of variable

Physical fitness mainly depends upon physical, physiological and environmental factors. But here investigator considered only physical factors. Here AAHPER YOUTH FITNESS TEST' was chosen by the investigator. Current constructed AAHPER Youth fitness test norms are more dependable than original. Newly designated test is more centrally (50%) distributed than the original norms of AAHPER Youth fitness test (Pal S & Dr. Ghosh M. C., 2015).

3. Criterion measures

In this study the following variables were the criterion to measure physical fitness.

a. Arm and shoulder strength was measured by Pull-ups.
b. Abdominal strength and endurance were measured by Sit-ups.
c. Speed and agility were measured by Shuttle Run.
d. Power was measured by Standing Long Jump.
e. Speed was measured by 50 Yard Dash.
f. Endurance was measured by 600 Yard Run Walk.

4. Design

The selected physical fitness test items were administered at their respective play ground. The students of four schools were tested and re-tested on different days. The test items had been administered in two sessions of the day for each school.

For the purpose of collecting data the investigator had to take the help some experienced physical education teachers working in the schools and his classmates.

Reliability

Reliability of a test depends upon various factors, such as — Reliability of instrument, Reliability of data and Reliability of tester etc.

 # Reliability of instruments

The instruments used in this study were all manufactured by reputed concerns and are widely used for measuring purposes in Bangladesh and India. Thus the instruments, Measuring tape, stopwatch etc. were deemed to be suitable and reliable for the purpose.

 # Reliability of data

The reliability of data was censured by test-retest method. The same subjects were tested on same test items on two different days and the observations of two days of the same test items were correlated. The data were found to be highly correlated.

 # Reliability of the tester

The data were collected with the help of qualified Physical Educationists, working competently in this field for years together. Thus the testers were regarded as competent enough for the purpose.

5. Test Administration

Orientation

Researcher lead of the institutions and were contacted for the purpose of the study and ways and means of conducting it were explained to them. After obtaining their consent the students were given the necessary instructions and the help of some of the teachers were sought for.

All the test items were explained and demonstrated before

test got underway. An appropriate amount of warm-up was given to all subjects before test begun.

5.1 Pull-up
Purpose: To measure Arm and Shoulder strength.

Equipment: There was placed a horizontal bar in the football field. A metal bar of inches diameter, was placed on two bamboo poles of convenient height.

Procedure: The subjects were asked to hang from the horizontal bar, shorter, subjects took the help of a sitting tool; a helper was always present there. The subjects grasped the bar with palm facing forward, each subject was asked to raise his body till the chin is over the bar and then again to the full hanging position.

Scoring: For maximum number of completed pull-ups points were awarded, for each omit one point.

5.2. Sit-up
Purpose: To measure abdominal strength and endurance.

Procedure: The subjects were laid flat on the back with knees bent and feet on the floor with the heels no more than 1 foot from the buttock. The knee angle was not less than 90 degrees. The fingers were inter locked and were placed behind the neck with elbows touching the floor. The feet were hold securely by a tester, who also counted the perfect sit-up. The subjects then curled up to a sitting position and touched the elbows to the knees. This exercise was repeated as many times as possible in one minute.

Scoring: One point was scored for each correct sit-up. The score was the maximum number of sit-ups completed in one minutes. At a time five subjects were performed this exercise, five assistants counted the scores and one scorer recorded the scores.

5.3 shuttle run
Purpose: To measure speed and agility.

Facilities & equipments: Two lines parallel to each other were drawn on the play field 30 feet apart. There were several feet more space at the both end of those two lines. Two logs of wood, 2 by 2 by 4 inches and a stopwatch were used.

Procedure: The subject stood at the starting line with the 2 blocks at the other line. On the signal to start, the subject ran to the blocks took one and returned to the starting line, and placed the block behind that line. He then returned to the second block, which was carried across the starting line on the way back. Two trials were permitted, subjects ran bare footed.

Scoring: The score was the elapsed time recorded in seconds and tenths of seconds (1 the better of 2 trials).

5.4 standing long jump
Purpose: To measure power.

Facilities & equipment: Measuring tape and a jumping pit.

Procedure: The subject stood behind takeoff line with his feet several inches apart. Before jumping the subject dipped at the knees and swung the arms backward. He then pumped forward by simultaneously extending the knees and swinging the arms forward. Three trials were permitted. Measurements have taken from the closest heel mark to the takeoff line. **Scoring:** The score was the distance between the takeoff line and nearest point where any part of the subject's body touched the pit. It was measured in feet and inches to the nearest inch. Only the best trial was recorded.

5.5 50 yard dash
Purpose: To measure speed.

Facilities & equipments: An area of a football field with a starting line, a 50 yard course and finish line. Two stopwatches.

Procedure: After a short warm-up period the subjects have taken the position behind the starting line. For best result 2 subjects were made to run at a time. The command was used by the starter 'Ready-Go' at the same time the starter downward sweep of arm as a signal to the timer. The subjects ran across the finish line. One trial was permitted.

Scoring: The score was the elapsed time to the nearest tenth of a second between the starting signal and the moment the subjects crossed the finish line.

5.6. 600 yard run-walk
Purpose: To measure endurance.

Facilities & equipment: A 200 yards track, which was made by the investigator in football field and stopwatch.

Procedure: Subjects stood behind the starting line and they were instructed how to run. After the starter's signal "Ready-Go" subjects started running. For better result 3 subjects were made to run at a time. Rest of the subjects encouraged to pace them.
Scoring: The score was the elapsed time in minutes and seconds.

6. Statistical Model
To compare the Physical Fitness between the adolescent boys of Bangladesh and India in the relation of Physical Fitness the mean difference was computed by employing the statistical technique of ‘t’ ratio.

Presentation of the Data and Analysis of the Results
In this chapter the collecting data on adolescent boys of Bangladesh and India, on I. tied physical fitness test items were presented in tabular form and obtained results were analyzed for coming to an effective conclusion.

Level of significance
For the present study the level of significance of all statistics was set at. 05 which was 'trot-lied to be adequate for the purpose.

Presentation of data

The mean and standard deviation of obtained data on Physical Fitness items of the adolescent boys of Bangladesh and India were presented in table-1

Table 1: Mean and standard deviations of physical fitness test items of Bangladesh and India

Country Items	Pull-ups	Sit-ups	Shuttle Run	Standing Long Jump	50 Yds Dash	600 Yds Run -walk
Bangladesh	Mean=4.875	18.775	10.093 sec.	83.450 inch	7.243 sec.	120.725 sec.
	S.D.=2.891	6.354	0.476 sec.	6.823 inch	0.606 sec.	11.724 sec.
India	Mean=5.125	23.225	9.935 sec	80.025 inch	7.268 sec.	122.400 sec.
	S.D.=2.865	8.878	0.516 sec	7.502 inch	0.602 sec.	11.482 sec.

From table-1 it was evident that Indian adolescents were slightly better than Bangladeshi adolescents in respect of Shoulder strength (Pull-ups), Abdominal muscle strength (Sit-ups), Agility (Shuttle run) where as Bangladeshis were found better in Leg strength (Standing long jump) and Endurance (600 yards Run-walk) and in Speed (50 yards dash) they were found at par.

Table 2: Mean and 't' ratio of the adolescents of Bangladesh and India

Test Items	Mean Difference	Standard Error	't' Ratio
Pull-ups	0.250	4.070	0.061
Sit-ups	4.450	10.918	0.408
Shuttle-Run	0.158	0.702	0.225
Standing Long Jump	3.425	10.141	0.338
50 yds Dash	0.025	0.854	0.029
600 yds Run-Walk	1.675	16.410	0.102
Consolidated	0.182	6.167	0.030

t.05 (78) =1.98

From table-2 it was evident that there was no significant difference in respect of Physical Fitness between adolescents of Bangladesh and India. It was also observed that there was no significant difference between the two groups in any of the Physical Fitness test item.

Analysis of results

From the test results it was found that in respect of Physical Fitness adolescents of Bangladesh and India stood at par. There was no significant difference as obtained from the results.

Physical Fitness depends on many factors such as Physique, Climatic condition, Altitude, Nutrition, internal and external Environment, Living style and Psychological make-up etc. The nonexistence of significant difference between adolescents of two countries might be due to the fact that the subjects chosen for the study were from Kushtia district in Bangladesh and North 24 Parganas in the state of West Bengal in India, which is adjacent to Bangladesh. Thus the climatic condition, altitude, food habits, environmental condition, living style, body structure, social, cultural and psychological conditions of both the districts or the two countries are almost the same.

Summary, conclusions and recommendations

Summary

Physical fitness plays an important role in the life of human beings. From the primitive period to the modern days the world is being dominated by the fittest people. Carrying out daily work successfully, achieving laurel in the field of sports, or running for life requires a good amount of physical fitness. The persons not possessing a fair amount of physical fitness is considered as a burden of the nation. Among many other factors physical environment of the place of residence influences the physical fitness of the person. Keeping that in mind the investigator attempted to find out the level of physical fitness of the adolescents of the two countries.

For the purpose of the study eighty adolescent school boys, forty from Bangladesh and forty from West Bengal in India were chosen at random. The age of the subjects ranged from fourteen years to sixteen years, as per their school records. Here AAHPER YOUTH FITNESS TEST was chosen by the investigator to measure the Physical Fitness. Reliability of data was established through test-retest method. The data were collected taking help of qualified person working in the field for years. The obtained data were then processed and statistically treated. The mean differences of the test scores of the adolescents of two countries were computed by employing the statistics of 't' ratio. The level of significance was set at. 05 level of confidence for all calculations. The results did not indicate any appreciable difference in respect of Physical Fitness between the adolescents.

Conclusions

Within the limitations of the present study, the following conclusions were drawn:-

1. Adolescents of Bangladesh and India (West Bengal) were not found different significantly in respect of overall Physical Fitness.
2. There was no significant difference among the adolescents of the two countries in any of fitness components such as leg strength, abdominal strength, shoulder strength, speed, agility and endurance.

Recommendations

The following recommendations have been derived from this study.

1. To get a reliable result similar study may be taken up with

a very large number of subjects.
2. In a similar study the subjects are not only the adjacent districts of two countries but all the regions such as, plain area, hilly area, coastal area and Table Land might be taken in to consideration. So that a clear idea of the regional, physical and environmental influence on physical fitness be obtained.

References

1. Kurshed AAM, *et al*. Dietary intake, physical activities and nutritional status of adolescent girls in an urban population of Bangladesh (PDF Download Available), Research Gate. Doi, 2010. http://dx.doi.org/10.3329/imcj.v4i2.6502.
2. Microsoft Word-1-8-96.1-1-8-96.pdf'(no date). Available at:http://www.allresearchjournal.com/archives/2015/vol1issue8/PartK/1-8-96.pdf (Accessed: 10 September 2017).
3. Padmapriya K, Sujaya B. 'Physical Fitness in South Indian Adolescents by max', Research & Reviews: Journal of Medical and Health Sciences. 2014; 2(3):77-80.
4. Shaikh W, Patel MC, Singh SK. Association of physical activity and physical fitness with blood pressure profile in Gujarati Indian adolescents (PDF Download Available), ResearchGate. Available at, 2013. https://www.researchgate.net/publication/235383974_Association_of_physical_activity_and_physical_fitness_with_blood_pressure_profile_in_Gujarati_Indian_adolescents (Accessed: 10 September 2017).