

**A Study of Health Related Physical Fitness of School Children of North India –
With Special Reference to Gurgaon (Haryana)****Sachin Baranwal**Rashtrasant Tukadoji Maharaj, Nagpur University,
Nagpur**Dr. Sanjay Choudhari**Assistant Professor
S.B City College Nagpur**1.0 Introduction**

Sports and games are not only very important for the youngsters but also for all of us. This is because they keep us healthy and fit and offer us a change from the monotony of daily life. Moreover, it is a useful means of entertainment and physical activity. In addition to above, sports and games help in character building and give us energy and strength. Sports and games are means of mental and physical growth. They make us learn how to tackle the difficult situation. Sports develop a sense of friendliness. They develop in us team spirit. They help in developing mental and physical toughness. They shape our body and make it strong and active. They give us energy and strength. They remove tiredness and lethargy. They improve blood circulation. This improves our physical well-being.

The age of adolescents and youths are the most vibrant and dynamic segment as well as potentially most valuable human resource of every country. While the youth population is fast shrinking with higher dependency ratios in the developed world, India is blessed with 70% of her population below the age of 35 years. In the next few decades India will probably have the world's largest number of young people. The population between the age of 10–19 years is approximately 242 million, which is the largest ever cohort of young people to make a transition to adulthood. The time has never been better to invest in our young people, however, India lacs credible data to ascertain new and meaningful policies for development of the youth. Efforts, therefore, need to be made to harness the energy of the youth towards nation-building through their active and responsive participation.

Physical fitness is a general state of health and well-being or specifically the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, physical and rest. It is a set of attributes or characteristic that people have or achieve that relates to the ability to perform physical activity. Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue. However with automation and changes in lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases, and to meet emergency situations. In view of the above, a focused group study of health related physical fitness of school children of North India (with reference to Gurgaon, Haryana) was carried out to know their physical fitness status.

2.0 Research Methodology**2.1 Selection of Subjects**

For the collection of data it was decided that the sample for this study will be between 1000 and 1500. However, in all total 1396 subjects from the different schools of Gurgaon (Haryana) were selected. The age of subjects ranged between 12 and 18 years. The study considered both boys and girls for the collection of data for this research. Specifically, 748 boys and 648 girls provided the data.

2.2 Administration of Tests

Anthropometric measures such as height and weight were determined for computing the Body Mass Index (BMI). The height was measured with the help of medical Equipment Stadiometer and body weight was measured by weighing machine. Health-related physical fitness tests (Cardiovascular fitness, Muscular strength, Muscular endurance, Flexibility) were conducted with these students. Cardiovascular Fitness was measured by using Cooper’s Test, Muscular endurance was measured by bent knee sit up and Flexibility was measured by sit and reach test. The Body Mass Index of each subject was calculated by using the following standard formula (**BMI = Body weight (Kg) / Height in m²**).

2.3: Reliability and Validity of Data

The reliability of data was confirmed by establishing the instruments reliability, tester’s competency and reliability of the test. To ensure that the investigator is well versed with the technique of conducting the test, the investigator along with the assistant had a number of practice sessions in testing procedure under the supervision of supervisor. The tester’s reliability was evaluated together with the reliability of tests. To determine the reliability of the tests the performance of twenty subjects selected at random on selected parameters were recorded twice under identical condition by the research scholar. A person’s product movement co-relation was computed between the two measures of each variable. The results of this test indicated that the correlation coefficients were above 0.840, which indicated adequate level of reliability. All the standard methods as well as instruments were used for data collection in the present study. The reliability and validity of the research instrument was determined prior to actual data collection.

2.4: Statistical Analysis of the Data

Analysis of data was done with the help of suitable statistical tests. The descriptive statistics, such as mode, frequency, percentage, minimum and maximum, etc. were determined from the collected data. The data generated during the study was processed using Statistical Package for Social Sciences (SPSS) 18.0 software.

3.0 Results and Discussion

3.1 Aerobic endurance

3.1.1 Aerobic endurance of Boys

Table 1: Aerobic endurance of the Boys of different schools

Aerobic endurance	No. of Students	Percentage
Excellent	–	–
Above Average	116	15.5
Average	100	13.4
Below Average	404	54.0
Poor	128	17.1
Total	748	100.0

Above **Table 1** presents results pertaining to the aerobic endurance of the boys of different schools in Gurgaon (Haryana). The results indicated that 15.5% boys have above average level of aerobic endurance. In addition, 13.4% boys have average and further 54.0% boys have below average level of aerobic endurance level. Besides, 17.1% boys have low level of aerobic endurance.

3.1.2 Aerobic endurance of Girls

Table 2: Aerobic endurance of the Girls of different schools

Aerobic endurance	No. of Students	Percentage
Excellent	–	–
Above Average	44	6.8
Average	216	33.3
Below Average	180	27.8
Poor	208	32.1
Total	648	100.0

Above **Table 2** presents results pertaining to the aerobic endurance of the boys of different schools in the study area. The results indicated that 6.8% girls have above average level of aerobic endurance. In addition, 33.3% have average and further 27.8% girls have below average level of aerobic endurance level. Besides, 32.1% girls have low level of aerobic endurance.

3.2 Body Mass Index

3.2.1 Body Mass Index of Boys

Table 3: Body Mass Index of boys of different schools

	No. of Students	Percentage
Underweight (BMI < 18.5)	220	29.4
Normal Weight (BMI 18.5 to 24.9)	424	56.7
Overweight (BMI 25 to 29.9)	80	10.7
Obesse (BMI above 30)	24	3.2
Total	748	100.0

Above **Table 3** presents results pertaining to the Body Mass Index of the boys of different schools in the study area. The results indicated that 29.4% boys are underweight (BMI < 18.5) whereas 56.7% boys have normal weight (BMI 18.5 to 24.9). In addition, 10.7% are overweight (BMI 25 to 29.9) and further 3.2% boys are obese (BMI above 30).

3.2.2 Body Mass Index of Girls

Table 4: Body Mass Index of girls of different schools

	No. of Students	Percentage
Underweight (BMI < 18.5)	204	31.5
Normal Weight (BMI 18.5 to 24.9)	332	51.2
Overweight (BMI 25 to 29.9)	112	17.3
Obesse (BMI above 30)	0	0.0
Total	648	100.0

Above **Table 4** presents results pertaining to the Body Mass Index of the girls of different schools in the study area. The results indicated that 31.5% girls are underweight (BMI < 18.5) whereas 51.2% girls have normal weight (BMI 18.5 to 24.9). In addition, 17.3% are overweight (BMI 25 to 29.9).

3.3 Muscular Endurance of the adolescents

Table 5: Muscular endurance of the adolescents of different schools

	N	Mean	±SD	SE	Min	Max	Muscular Endurance
Boys	748	34	±10.8	0.4	7	61	Above average
Girls	648	29	±8.67	0.34	9	53	Below average

N: No. of adolescents; SD: Standard deviation; SE: Standard Error; Min: Minimum; Max: Maximum

Above **Table 5** presents results regarding the assessment of muscular endurance of the adolescents of different schools in Gurgaon (Haryana). The results indicated that the mean no. of sit-ups of the boys is 34 ± 10.8 . However that of girls is 29 ± 8.67 . Overall variation in the muscular endurance as exhibited by the number of sit-ups for boys is from 7 to 61. While, that for the girls is from 9 to 53. With reference to the standard norms for muscular endurance of the adolescents, it is observed that boys exhibit above average muscular endurance while the girls indicated below average muscular endurance.

3.4 Flexibility of the adolescents

Table 6: Flexibility of the adolescents of different schools

	N	Mean	\pm SD	SE	Min	Max	Flexibility
Boys	748	4.8	± 2.84	0.40	-7	6	Average
Girls	648	2.3	± 2.80	0.51	-11	10	Average

N: No. of adolescents; SD: Standard deviation; SE: Standard Error; Min: Minimum; Max: Maximum

Above **Table 6** presents results regarding the assessment of flexibility of the adolescents of different schools in Gurgaon (Haryana). The results indicated that the mean test score for the boys is 4.8 ± 2.84 cm, however, that for the girls is 2.3 ± 2.80 cm. Overall variation in the sit and reach test score of the boys was from -7 to 6. While, that of girls was from -11 to 10. With reference to the norms for determination of flexibility of the adolescents, it is observed that both boys and girls have average level of flexibility.

4.0 Conclusions

4.1 Aerobic endurance of Boys

- From the study results, it is concluded that most of the boys of different schools in Gurgaon (Haryana) have below average level of aerobic endurance.

4.2 Aerobic endurance of Girls

- In view of the study results, it is concluded that most of the girls of different schools in Gurgaon (Haryana) have average level of aerobic endurance.

4.3 Body Mass Index of Boys

- On the basis of the study results, it is concluded that most of the boys of different schools in Gurgaon (Haryana) have normal weight (BMI 18.5 to 24.9).

4.4 Body Mass Index of Girls

- From the study results, it is concluded that most of the girls of different schools in Gurgaon (Haryana) have normal weight (BMI 18.5 to 24.9).

4.5 Muscular Endurance of the adolescents

- With reference to the standard norms for muscular endurance of the adolescents, it is observed that boys exhibit above average muscular endurance while the girls indicated below average muscular endurance.

4.6 Flexibility of the adolescents

- With reference to the norms for determination of flexibility of the adolescents, it is observed that both boys and girls have average level of flexibility.

5.0 Bibliography

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