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## A Comparative study of physical fitness of rural and urban sports and non-sports Girls

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### Abstract

It is common experience that rural youth are better in physical fitness than urban youth on account of their rigorous lifestyle. However, conflicting results have been reported in the researches that were surveyed. Hence the objective of study was to investigate the physical fitness levels of rural and urban sports and non-sports girls. 20 girls in each of the four categories were selected for the study. Division of Girls' and Women's Athletics Physical Performance Test, developed by Eleanor Metheny (1945) was administered to all girls for the purpose. It was found that both sports and non-sports urban girls to be superior to their counter parts of rural girls except in sit-ups and B.M.I., which were not significant. The results are further discussed.

**Keywords:** Fitness, Physical Fitness, Motor Fitness

### 1. Introduction

The importance of motor fitness, health related physical fitness in particular, is gaining momentum in modern life style. Various ways of enhancing and sustaining the fitness is in vogue. Fitness can only be developed through day to day physical activities.

A person having better motor fitness can run, jump, dodge, climb, carry loads, lift weight and can continue the sustained efforts in a variety of activities much more efficiently and effectively.

Before the industrial revolution people always depended upon their personal strength. This involved mastery of some basic abilities like strength, speed, endurance, agility for running jumping, climbing etc, that were employed in hunting and food gathering for their living. Urbanization has also influenced the physical fitness of the men and women alike. Also the rural and urban environment, their food, their way of living, culture influenced the growth and physical fitness of the girls and boys. Urban girls have all the facilities but no work, except perhaps going to school. On the other hand the rural girls are always in their domestic and field work along with the school education. May be this is one of the reason why the rural girls seem to be more physically fit.

Choudhary (1998) <sup>[4]</sup> studied the difference in physical fitness of rural and urban students in the class IX and X and found that rural students were better in physical fitness than urban students.

Uppal and Sareen (2000) <sup>[5]</sup> investigated cardiovascular fitness of rural and urban students and found that students with rural background performed better than that of their counterparts in urban area.

Above and many similar research along with simple logic one may deduce that rural girls are more physically fit than urban girls. Since unlimited facilities are available in the urban area all needs of girls are met very easily. On other hand the rural girls are always busy in domestic works. In some villages schools and physical education facilities are also not available. The girls are required to go the schools by bus or by walk. Thus these activities purportedly result in better physical fitness of rural girls.

On the other hand, physical fitness of rural and urban sports girls are compared we may find that urban sports-girls are more likely to be more physically fit than rural-sports girls, because of availability of new technology, equipment and good coaching in the urban schools. Additionally urban sports-girls have access to better nutrition on account of parental socio-economic status. The urban girls are encouraged and motivated by their teachers and coaches.

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Additionally, the urban girls are less bound by the social traditions and mores, thus liberating from social restrictions. Tanner (1989) [3] has found “children in urban areas are usually larger and have more rapid tempo of growth than children in villages of the surrounding countryside. It has been found that urban children are taller and heavier than their rural counterparts. Pfaundler (1916) [1] described the phenomenon of secular trends in growth proteroplasy i.e., Urban children are taller, grow faster and mature earlier than their rural counterparts. The roll of the physical activity in the reduction of obesity is becoming increasingly important as obesity has emerged as the most common pediatric chronic illness in our society as much as in western societies. Rural girls are having good food, but then they are busy at domestic work. Hence they are not heavier and taller compared to urban girls.

Advances in information and entertainment technologies like internet, satellite television and video games have led to sedentary activities among urban children. Furthermore, the demand for fast food, high calorie food and fats has raised more concerns about human health (Faith, *et al.* 2001) [6].

The above studies indicate that rural non-sports girls are more physically fit than urban non-sports girls. On other hand the urban sports girls are more physically fit than rural sports girls, Further, the urban sports and non-sports girls are taller and heavier than the rural girls.

Therefore the main purpose of this study was to compare the physical fitness of rural and urban female non-sports girls and the secondary objective was to compare the rural and urban female sports girls and to find out which of these two categories is more physically fit in response to tests administered. Further it was also decided to compare the B.M.I. of rural school girls and urban school girls.

## 2. Materials and Methods

Four urban and four rural schools of Belgaum taluka (total 8 Schools) were selected at random and five sports girls who participated at the taluka level sports (8x5 = 40) and five non sports girls (8x5 = 40) were selected at random from each of the schools. The girls were tested in the Division of Girls and Women’s Athletics (DGWA) physical performance test (Elanor Metheny, 1945) [2] during the P.E. periods with the help of physical education teachers.

1. Standing Broad Jump
2. Basketball Throw
3. Potato Race
4. Sit-ups
5. Push-ups

The body mass index (B.M.I.), the ratio of body weight to height was obtained using the following formula

6.  $B.M.I. = \text{Weight in Kg} / (\text{height in mtrs})^2$

The performance in each of test items of the battery was converted to score provided by the authors of the test. The British system of measurement (feet and inches) were converted to metric system (cm). The scores of each of the test items, total scores and body mass index (B.M.I) were subjected to analysis of variance (ANOVA), using SPSS (ver. 9.0) on computer. Post-hoc analysis was requested following significant omnibus F-ratio.

## 3. Results

Furnished in the table-1 are the means standard deviations of the seven variables mentioned earlier with respect to rural and urban sports and non-sport girls along with the respective F-ratios.

**Table-1.** Means standard deviations of Composite Fitness Scores, Standing Broad Jump, Basketball Throw, Potato Race, Sit-ups, Push-ups and B.M.I. with respect to rural and urban sports and non-sport girls and respective F-ratios.

Variables	Rural Sports girls	Urban sports Girls	Rural Non sports girls	Urban Non Sports girls	F-ratio
Composite Physical Fitness Scores	243.0±38.71	251.50±48.75	149.75±34.77	178.00±33.62	31.698*
Standing Broad Jump in Mtrs	28.00±16.17	35.25±15.26	09.25±15.83	20.00±12.46	11.049*
Basketball Throw in Mtrs	44.75±17.66	53.00±09.09	17.50±12.62	29.00±12.83	28.094*
Potato Race in sec	30.75±17.86	34.50±14.03	08.75±11.22	21.00±15.09	12.171*
Sit-Ups	33.00±08.94	42.75±20.93	30.50±09.72	33.50±10.40	03.202*
Push Ups	57.75±13.52	53.00±18.74	52.25±11.41	47.00±13.32	01.842
B.M.I.	18.68±3.36	20.33±3.46	18.82±03.46	18.13±2.42	01.706

\* $p < \alpha = .05$

From the table above it may be observed that the omnibus F-ratios, except for push-ups and Body Mass Index, are all significant. Therefore, post-hoc analyses were performed for

the variables of which the F-ratios were significant. The results of post-hoc analyses are furnished in the following tables (table 2 to 6).

**Table 2:** Post-hoc Analysis of Composite Fitness Scores (LSD)

	Rural Sports Girls	Urban Sports Girls	Rural Non Sports Girls	Urban non Sports Girls
Rural Sports Girls	—	08.5	93.25*	65.00*
Urban Sports Girls	—	—	101.75*	73.50*
Rural Non Sports Girls	—	—	—	28.25*

\* $P < \alpha = .05$

**Table 3:** Post-hoc Analysis of Standing Broad Jump Scores (LSD)

	Rural Sports Girls	Urban Sports Girls	Rural Non Sports Girls	Urban non Sports Girls
Rural Sports Girls	—	07.25	18.75*	08.00
Urban Sports Girls	—	—	26.00*	15.25*
Rural Non Sports Girls	—	—	—	10.75*

\* $P < \alpha = .05$

**Table 4:** Post-hoc Analysis of Basketball Throw Scores (LSD)

	Rural Sports Girls	Urban Sports Girls	Rural Non Sports Girls	Urban non Sports Girls
Rural Sports Girls	—	08.25	25.25*	15.75*
Urban Sports Girls	—	—	35.50*	24.00*
Rural Non Sports Girls	—	—	—	11.50*

\*P<α=.05

**Table 5:** Post-hoc Analysis of Potato Race Scores (LSD)

	Rural Sports Girls	Urban Sports Girls	Rural Non Sports Girls	Urban non Sports Girls
Rural Sports Girls	—	03.75	22.00*	09.75*
Urban Sports Girls	—	—	25.75*	13.50*
Rural Non Sports Girls	—	—	—	12.25*

\*P<α=.05

**Table 6:** Post-hoc Analysis of Sit-Up Scores (LSD)

	Rural Sports Girls	Urban Sports Girls	Rural Non Sports Girls	Urban non Sports Girls
Rural Sports Girls	—	09.75*	02.50	0.50
Urban Sports Girls	—	—	12.25*	9.25*
Rural Non Sports Girls	—	—	—	3.00

\*P<α=.05

In so far as rural and urban sports girls, the difference on none of the variables except the performance in sit-ups was significant. Urban sport-girls are better than rural sports girls in sit-ups. While the rural sports girls are significantly better on all scores of fitness components than rural non-sports girls, they are no different from rural non-sports girls in abdominal strength. Similarly, while the rural sports-girls are significantly better than urban non-sports girls on composite scores, basketball throw, potato race they are not different on other fitness components viz. standing broad jump and sit ups.

Urban sport-girls are significantly superior to rural non-sports girls on all fitness components except push-ups. Once again the urban sport girls are significantly superior to urban non-sports girls on all fitness components as expected.

The urban non-sports girls are significantly superior to rural non-sports girls on all fitness components including the composite scores, which was opposite to what was hypothesized in the study.

Finally, the omnibus F-ratios for push-ups and BMI were not significant, it was concluded that that all groups are not different from one another on these scores.

**4. Conclusion**

As expected the sports girls, irrespective of whether they are from rural or urban, are equally fit except for the sit-ups, i.e., abdominal strength endurance. However, it may be observed that the urban sports girls appear to be better than the rural sports girls, which partially supported the hypothesis of the study. Once again as expected the rural sports girls are better than the non-sports girls of both urban and rural areas. The reasons offered earlier are therefore asserted. Urban sports

girls are significantly superior to all other three groups.

The idea that the rural non-sports girls are superior to urban non-sports girls was not supported by the data in the study. Perhaps, lifestyle in the rural area is changing. It appears the technology has made its inroads in villages, making their lives easier. But at the same time the traditional practices restrict the girls from participating in physical activities freely, while the girls in urban areas enjoy the new found freedom. This may be due to higher education and liberal attitude of urban parents.

Finally, while the phenomenon is true for girls it may not be true for boys, which may be investigated.

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