

Comparative Study of Physical Fitness Components of Rural and Urban Female Students of Punjabi University, Patiala

Manmeet Gill*, Nishan Singh Deol** and Ramanjit Kaur**

*S.G.G.S College, Sector 26, Chandigarh, India

** Department of Physical Education, Punjabi University, Patiala, Punjab, India

KEYWORDS Physical Fitness. Rural. Urban. Explosive Strength. Agility. Flexibility

ABSTRACT In the present study, an attempt has been made to compare physical fitness components namely speed, strength, endurance, agility and flexibility between female students belonging to rural and urban set-ups. The study was carried out on 100 female students, 50 rural and 50 urban of Punjabi University, Patiala. The data was collected by use of measurements of height and weight as well as by application of tests like jumping, stepping, running, flexibility test, etc. The data was analyzed and compared with the help of statistical procedures in which arithmetic mean, standard deviation (S.D.), standard error of mean (SEM), t-test were employed. Rural female students were found to be superior in strength, endurance, speed and agility. Urban female students on the other hand, were found to be heavier and superior in tasks like flexibility.

INTRODUCTION

Concept of physical fitness is as old as humankind. Through out the history of mankind physical fitness has been considered an essential element of every day life. The ancient people were mainly dependent upon their individual strength, vigor and vitality for physical survival. This involved mastery of some basic skill like strength, speed, endurance, agility for running, jumping, climbing and other skills employed in hunting for their livings.

Over the past four decades, there has been an increase in the prevalence of overweight and physical fitness deterioration in adult across all genders, ages and racial/ethnic groups (Ichinohe et al. 2004). The negative effects of degraded physical fitness on both the individual and society are serious and multi-dimensional. It can cause many risk factors to health including coronary heart disease, certain forms of cancer, diabetes, hypertension, stroke, gall bladder diseases, osteoarthritis, respiratory problems, gout and is associated with increases in all cause mortality (Cataldo 1999). In adults, relationship among physical activity, health related fitness, and health are fairly well established (Boucherd and Shepherd 1994). Low levels of physical activity and cardio-respiratory fitness are both associated with higher risk of all cause and disease specific mortality (Thune et al. 1998). Physical fitness is the ability to perform daily activities willingly and actively. Physical fitness includes not only components of sports but those of

health as well. Regular physical activity prevents or limits weight gain, and gain in body mass index (BMI) (Kyle et al. 2001)

The National College Health Risk Behavior Survey reported that 35% of American college students are overweight (Lowry et al. 2000). This is not surprising considering that more than two-thirds of American adult population are classified as overweight (Flegal et al. 2002), making weight gains America's leading health problem (Mokdad et al. 2001).

The expert committee of the World Health Organization (1981) described physical fitness as "the ability to undertake muscular work satisfactorily." Physical fitness is the capacity to early out, reasonably well, various forms of physical activities, without being unduly tired and includes qualities important to the individual's health and well-being.

Every person has a different level of physical fitness which may change with time, place of work, situation and there is also an interaction between the daily activities, and the fitness of an individual, the point if where to put the level of optimum fitness. From the physiological point of view physical fitness may say to be ability at the body to adopt and recover from strenuous exercise. Chaudhary (1998) studied the difference in physical fitness of urban and rural students studying in class IX and X and found that rural students were better in physical fitness than urban students. Uppal and Sareen (2000) conducted a study to find out the comparison on cardiovascular fitness between rural and urban

students and revealed that students with rural background performed better than that of their counterparts in urban area. Charles (2006) conducted a study on the "Differences in health for rural and urban Canadians". His report shows that Canadians living in rural areas generally have higher mortality rates than those living in urban areas.

Human body is a gift by nature. Life in the computer age is not less than the blessings of God. Scientific discoveries have changed the entire face of our planet. It has changed the entire face of our planet. It has changed the thorny life into the bed of roses. Good health provides sound and solid foundation on which fitness rests and at the same time fitness provides one of the most important key to health and living ones life to fullest.

In villages which formed the first habitation of civilized man rural sports grew out of sheer necessity. Joint defense against on slaughts of a common foe and dangerous animals must have given birth to sports like wrestling, running, jumping, weight lifting and such performing arts as measuring strength by holding wrists, twisting hands etc.

Same is the case with games and sports in rural and urban settings. We notice that there is a lot of difference in the interest of children. Like we observe that in rural areas children are indulging in minor, indigenous activities and field games like football, kabaddi, kho-kho, hockey, wrestling, athletics etc. whereas, in urban we find children playing basketball, swimming, badminton, tennis, squash, golf etc. The main cause of difference is the availability of facilities and financial support of parents.

The urban people with the growth of cities has come a great transformation in the living habits of society. The city is the hub of much social life, and it influences its standards. Intellectual growth and habits, moral codes and conditions, behavior patterns and cultural conditions resolve around it. New communities, new group, new ethnic relations and a multitude of classes make of the city an intricate and complex unit of modern society.

The purpose of this study was to compare the rural and urban female students and to find out which of these two categories is more physically fit in response to tests administered so as one can improve the standard and level of physical fitness in rural and urban female students.

MATERIAL AND METHODS

Selection of Subjects: One hundred subjects from various departments of the Punjabi University, Patiala from the session 2006-2007 were selected as subjects for the present study. Fifty rural female students and fifty urban female students were taken as subjects. The subjects were students of various teaching departments of Punjabi University, Patiala these were History, Chemistry, Physics, Botany, Zoology, Pharmacy, Computer Science, Business Administration, Punjabi, Psychology, Library science and Mathematics.

Selection of Variable and Their Criterion Measures: Table 1 presents the components of motor fitness which were selected for the present study and were measured.

Statistical Technique: The data analyzed and compared with the help of statistical procedure in which arithmetic mean, standard deviation and t-test used to compare the data.

RESULTS

Mean and standard deviation of the selected dimensions of rural female students and urban female students were computed. Its results have been depicted in table 2 and table 3.

Table 2 depicts that the mean and standard deviation values of physical fitness of rural female students. These values were recorded as variable wise, Strength 155.64 and 9.11, Endurance 82.94 and 7.06 respectively, Speed 12.65 and 1.26, Agility 21.80 and 1.83, Flexibility 3.06 and 1.82, respectively.

Table 1: Selected variables and their criterion measures

S. No.	Variables	Criterion measures
1	Explosive Strength	Standing Broad Jump
2	Speed	50 Meter Dash
3	Endurance	Harward Step Test
4	Agility	Shuttle Run
5	Flexibility	Sit and Reach Test

Table 2: Mean and standard deviation of rural female students

S. No.	Variable	Units	Rural Female Students	
			Mean	S.D.
1.	Strength	Centimeter	155.64	9.11
2.	Endurance	Pulse Rate	82.94	7.06
3.	Speed	Seconds	12.65	1.26
4.	Agility	Seconds	21.80	1.83
5.	Flexibility	Centimeters	3.06	1.82

Table 3 reveals that the mean and standard deviation values of dimensions of physical fitness of rural female students. These values were recorded as Strength 141.28 and 15.48, Endurance 91.7 and 8.93, Speed 15.22 and 1.34, Agility 22.99 and 1.76, Flexibility 3.46 and 1.43, respectively.

The perusal of table 4 indicates that the mean and standard deviation values for strength variable for rural and urban students were recorded as 155.64, 9.11 and 141.28, 15.48, respectively. It shows that rural students have performed significantly better than their urban counterparts.

Table 3: Mean and Standard Deviation of selected qualities of urban female students

S. No.	Variable	Units	Rural female students	
			Mean	S.D.
1.	Strength	Centimeter	141.28	15.48
2.	Endurance	Pulse Rate	91.7	8.93
3.	Speed	Seconds	15.22	1.34
4.	Agility	Seconds	22.99	1.76
5.	Flexibility	Centimeters	3.46	1.43

The analysis of table 5 shows that the mean and standard deviation value on the endurance variable of the rural and urban female students were recorded as 82.94, 7.06 and 91.7, 8.93, respectively. It depicts that the rural students have performed significantly better as compared to their urban counterparts.

Perusal of the table 6 shows that the mean and standard deviation values on the speed variable for rural and urban female students were recorded as 12.65, 1.26 and 15.22, 1.34, respectively. Therefore, the rural students have performed significantly better than their urban counterparts.

Analysis of the table 7 shows that the mean and standard deviation values on the agility variable for rural and urban female students were recorded as 21.80, 1.83 and 22.99, 1.76, respectively. Therefore, the rural students have performed slightly better than their urban counterparts.

Perusal of the table 8 indicates that the mean

Table 4: Comparative analysis of strength (explosive) between rural and urban female students

Group	Number	Mean	S.D.	SEM	't' Value
Rural Female Students	50	155.64	9.11	1.29	2.41*
Urban Female Students	50	141.28	15.48	2.19	

t 0.05 (98) =1.98 *Significant at 0.05 level

Table 5: Comparative analysis of endurance between rural and urban female students

Group	Number	Mean	S.D.	SEM	't' Value
Rural Female Students	50	82.94	7.06	0.99	4.30*
Urban Female Students	50	91.7	8.93	1.26	

t 0.05 (98) =1.98 *Significant at 0.05 level

Table 6: Comparative analysis of speed between rural and urban female students

Group	Number	Mean	S.D.	SEM	't' Value
Rural Female Students	50	12.65	1.26	0.17	2.64*
Urban Female Students	50	15.22	1.34	0.19	

t 0.05 (98) =1.98 *Significant at 0.05 level

Table 7: Comparative analysis of agility between rural and urban female students

Group	Number	Mean	S.D.	SEM	't' Value
Rural Female Students	50	21.80	1.83	0.18	0.001
Urban Female Students	50	22.99	1.76	0.20	

No Significant Difference: t at 0.05 (98) =1.98

Table 8: Comparative analysis of flexibility between rural and urban female students

Group	Number	Mean	S.D.	SEM	't' Value
Rural Female Students	50	3.06	1.82	0.25	0.22
Urban Female Students	50	3.46	1.43	0.20	

No Significant Difference: t at 0.05 (98) =1.98

and standard deviation values on the flexibility variable for rural and urban female students were recorded as 3.06, 1.82 and 3.46, 1.43, respectively. Therefore, the urban students have performed slightly better than their rural counterparts.

DISCUSSION

Physical fitness is fundamental to public health. This has an influence on the risks of morbidity and mortality, and therefore can reduce these risks. Disease prevention and health promotion should be implemented as early as possible both in childhood and adolescence. Previous studies have focused on specific health behavior (Yen et al. 1997; Chen et al. 2003).

The results of the 't' value showed significant differences in strength, endurance and speed components between rural and urban female students, where rural female students were found superior than their counterparts. With reference to strength component rural female students are much stronger than urban female students. Sandhu (1983) compared rural and urban students of Amritsar district and same results were found. Tsimeas and Tsigilis (2005) conducted a study on Greek rural students to find out "Does living in urban or rural settings effect aspects of physical fitness in children". A similar type of results were obtained in the work of Mehtap and Nihal (2005) who conducted a study on physical fitness in rural children compared with urban children in Turkey and found that children living in the urban areas were more inactive and obese than rural children.

The above results are in agreement with Stavrou and Kakkos (2002) who found that the major reasons for participation of women were to improve their health and mood, while Zervas (1999) indicated the importance of physical activity for people's psychological health.

On the other hand mechanization, automation and computerization have minimized the opportunities for vigorous physical activities to cause physical exertion in urban population. These findings are in agreement with the findings of Uppal and Sareen (2000), Choudhary (1998), and Ray (1979).

CONCLUSION

In conclusion the results of the present study confirm that female rural students are comparatively better than urban female students of Punjabi University, Patiala. Rural female students are

superior to urban female students in Strength, Endurance and Speed whereas urban female students are superior to rural female students in Agility and Flexibility.

This shows that regular energetic activity produces physical fitness improvements. Village life style is more active in nature than the life in urban areas which produced high level of physical and physiological functioning in rural residents.

REFERENCES

- Bouchard C, Shephard RJ 1994. Physical activity, fitness and health: The model and key concepts In: C Bouchard, RJ Shephard, T Stephens (Eds.): *Physical Activity Fitness and Health: International Proceedings and Consensus Statement*, Human Kinetics, Champaign (Ill), pp. 77-88.
- Cataldo C 1999. *Nutrition and Diet Therapy: Principles and Practice*, St.Paul: West Publishing Company, pp. 232-238.
- Charles M 2006. Difference in Health for Rural and Urban Canadians. *Public Health News*, Article Data 21 Sep. 2006-0:00 PST.
- Chen XC, Li G, Unger JB, Liu X, Johnson CA 2003. Secular trends in adolescent never smoking from 1990 to 1999 in California: An age period cohort analysis. *American Journal of Public Health*, 93: 2009-2104.
- Choudhary Anchal 1998. *Physical Fitness of Female Students Studying in High Schools in Rural and Urban Areas*. M.Phil Thesis, Unpublished. Kurukshetra: Kurukshetra University.
- Flegal KM, Carroll MD, Ogden CL, Johnson CL 2002. Prevalence and trends in obesity among U.S. adults. *JAMA*, 288: 1723-1727.
- Ichinohe M, Mita R, Saito K 2004. Physical activity, fitness and health: Obesity and lifestyle in Jamaica. *International Collaboration in Community Health*, 1267: 39-50.
- Koutedakis Y, Bouziotas C 2003. National physical education curriculum: Motor and cardiovascular health related fitness in Greek adolescents. *British Journal of Sports Medicine*, 37: 311-314.
- Kyle U G, Gremion G, Genton L, Slosman DO, Golay A, Pichard C 2001. Physical activity and fat free and fat mass as measured by bioelectrical impedance in 3853 adults. *Med Sci Sports Exerc*, 33: 576-584.
- Lowry r, Galuska D A, Fulton J.E, Wechsler H, Kann L, Collins J L 2000. Physical activity, food choice and weight management goals and practices among U.S college students. *American Journal of Preventive Medicine*, 18: 18-19.
- Mehtap Ozdirenc, Nihal Gelecek 2005. Physical fitness in rural children compared with urban children in Turkey. *Pediatrics International*, 47(1): 26-31.
- Mokdad AH, Bowman BA, Ford ES, Vinicor F, Marks JS, Koplan JP 2001. The continuing epidemics of obesity and overweight in adults in U.S *JAMA*, 286: 1195-2000.
- Ralph HW 1971. *Future Performance of Elementary School Children*. NY: World Sports Library: 22.

- Ray Krishna B 1979. *Comparison of Physical Fitness of Tribal and Urban Students*. Masters Thesis, Unpublished. Gwalior: Jiwaji University.
- Sandhu Surjit Singh 1983. *Physical Fitness of Rural and Urban Middle School Students of Amritsar District*. M.P. Ed Thesis, Unpublished. Amritsar: G.N.D.U.
- Stavrou N, Kakkos V 2002. Evaluation of attitudes and satisfaction of citizens participating in the "Sports for All" Programs. *Movement in Greece*, pp. 23-26.
- Thune I, Njolstad I, Lochen ML, Forde OH 1998. Physical activity improves the metabolic risk profiles in men and women. *Arch Intern Med*, 158: 1633-1645.
- Tsimeas PD, Tsigilis N 2005. Does living in urban or rural settings effect aspects of physical fitness in children? An allometric approach. *British Journal of Sports Medicine*, 39: 671-674.
- Uppal AK, Sareen Rajeev 2000. Cardiovascular endurance of rural and urban school students. *Research Bulletin, Research Division, L.N.I.P.E Gwalior*, 15: 11-13.
- Yen LL, Hung BH, Yang HH, Tung SC, Yen HW 1997. Addictive drug use in vocational high school students. *Journal of Medical Education*, 1: 69-80.
- Zervas Y 1999. Psychological benefits of exercise. *Movement in Greece*, pp. 52-56.