International Journal of Physical Education, Sports and Health 2021; 8(6): 143-145

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2021; 8(6): 143-145

www.kheljournal.com
Received: 16-09-2021
Accepted: 18-10-2021

Amandeep Singh
Research Scholar, Panjab University, Chandigarh, India

Dr. Neeru Malik
Assistant Professor, Dev Samaj College of Education, Sec.-36, Chandigarh, India

Corresponding Author:
Amandeep Singh
Research Scholar, Panjab University, Chandigarh, India

Comparison of health related physical fitness between urban and rural preadolescents in Punjab

Amandeep Singh and Dr. Neeru Malik

DOI: https://doi.org/10.22271/kheljournal.2021.v8.i6c.2299

Abstract
Aim: The purpose of the present study was to compare anthropometric profile and health related physical fitness between urban and rural preadolescents in Punjab.
Methodology: 500 girls of age group 12 to 14 years were taken, out of which 250 urban students and 250 rural students were randomly selected from government schools situated in various districts of Punjab. The physical fitness tests were conducted under same conditions for urban and rural students. The tests were included cardio-respiratory endurance, abdominal strength and flexibility. Independent 't' test was used for data analysis.
Results: The result of the study shows that rural girls are significantly better on cardiorespiratory endurance and abdominal strength but have lower percentage of fat tissue and a higher percentage of muscle mass compared to their urban peers. Urban girls show better performance on flexibility than rural girls but the difference is insignificant.
Conclusion: Children in the rural environment have more spontaneous physical activity on open space and more use of outer terrains than children living in urban areas, and this is probably the reason why they achieve better results, especially in the abilities in which the energy component diminishes.

Keywords: cardio-respiratory endurance, abdominal strength, flexibility, physical fitness

Introduction
Fitness is an important component of metabolic health and strong independent predictor of premature death (Eisenmann *et al*. 2005, Blair *et al*., 1993, 1995) [9, 2, 3]. To have a physically fit body means having a fit and healthy mind also. Thus, physical education gives us a happy and prosperous life. Every child having fit body gives a positive attitude to the body and mind. Physical education enables a child to achieve a self-awareness of his or her life containing good physical state. The future of any nation depends up on its coming generations, it may be healthy or weak. The prosperous future of the nation is directly depends upon the health of its people. The daily activity of a person depends upon the fitness of his or her body. Daily physical exercise and physical work both helps a person to maintain his good health. Body composition and body flexibility are the characteristics of sound body included cardio-respiratory endurance, muscular strength and muscular endurance (Howley, 2001) [11]. Health related components are associated with disease prevention and health promotion. Daily routine, healthy and unhealthy behavior are performed, became a major factor of future health or throughout the whole life which influence the all life period and healthy state (Dencker *et al*., 2006) [6]. Low physical fitness in early ages in children may become impaired health indicators such as increased body fatness, obesity etc.
Physically fit citizens are the emergent demand of a nation as the fitness of the citizens is an index of the prosperity of the country. Since the dawn of civilization, physical fitness has greatly contributed towards the strength of a nation as history points out that people and communities who cared for their bodies, through vigorous physical activities, remained strong and prosperous, whereas those who neglected it waned and perished. The great Roman Civilization crumbled because its people took to luxury (Zeilgler, 1979) [18].
In sports successful performance in competition depends substantially on the physical characteristics, body composition, muscular performance, neuromuscular capability and

mental ability of the player and it is essential for full and vigorous living. The physically fit child feels more alert and eager to do things. A weak child is a weak brick in the wall of the nation. The wealth of a nation depends entirely upon the health of every citizen of the country. Hence physical fitness of school children is major factor to be considered. So school physical education programmes should include multifarious activities appropriate to each age group.

The growth and development of physical characteristics and motor capacities in youngsters assume an essential job in games and recreations, yet additionally when all is said in done wellbeing and wellness. As per Carter &Yuhasz (1984) [5] the competitors who wish to make progress in games at abnormal state must contrast their body and those of world class competitors. The preparation of youngsters must be founded on the principle of motor development in thought to different parts of development and advancement. In India not many examinations have been made to contemplate the parts of motor abilities of Indian kids (Joon, 1983; Singh, 1986) [12, 16]. Because of the absence of logical examination, a total and clear picture of motor development of Indian offspring of various locales isn't accessible.

Health Related Physical Fitness

The health related physical fitness refers to components of physical fitness those are associated with some aspects of overall good health or disease prevention and affected by habitual physical activity and related to health status. These components of physical fitness are appropriate for health and which will enable them to enter adulthood with the protection that physical fitness affords as a buffer to the natural degeneration that comes with middle age and beyond. Health related fitness refers to the condition of physical and physiological characteristics that identify the risk levels for the premature development of diseases or morbid conditions presenting a relationship with a sedentary mode of life (Bourchard and Shepard, 1983) [4].

Statistical Analysis

After the collection of data on various selected variables, statistical analysis was performed by applying t' test. To examine the significance of mean differences, if any, between urban and rural groups on health related physical fitness variables. Level of confidence was set at 0.05 level of confidence. Computational work of analysis was carried out through 'SPSS' Version 20.0 for Windows software.

Table 1: Comparison of Health Related Physical Fitness between Urban and Rural Pradolescents

Area		N	Mean	Std. Deviation	t-value	p-value
9 min Run/Walk (meter)	Urban	250	1325.18	74.64	2.685	.007**
	Rural	250	1346.02	97.44		
Modified Sit-Ups (No's)	Urban	250	20.13	3.64	2.124	.034*
	Rural	250	20.94	4.75		
Biceps (mm)	Urban	250	6.90	1.41	4.900	.0001**
	Rural	250	6.20	1.76		
Triceps (mm)	Urban	250	7.74	1.50	4.253	.0001**
	Rural	250	7.12	1.77		
Sub-scapular (mm)	Urban	250	9.84	1.56	2.882	.004**
	Rural	250	9.38	1.93		
Suprailiac (mm)	Urban	250	7.07	1.75	2.583	.010**
	Rural	250	6.65	1.89		
Skinfold Measurements(mm)	Urban	250	31.56	5.79	3.816	.0001**
	Rural	250	29.36	7.02		
Sit and Reach (cm)	Urban	250	7.04	2.60	.959	.338
	Rural	250	6.83	2.24		

The examination presented in/perusal of contents of the table 1 pertaining to Urban and Rural Girls of age group of 12-14 years on the different Health Related Physical Fitness variables shows that with regard to sub variables i.e. 9 minute run/walk, Modified sit-ups, Biceps, Triceps, Sub-scapular, Suprailiac, Sum total of skinfold measurements, Sit and Reach was analyzed through 't' test. The mean score of the Urban Girls on these sub variables of Health Related Physical Fitness variables were found to be 1325.18, 20.13, 6.90, 7.74, 9.84, 7.07, 31.56, 7.04 respectively and SD was 74.64, 3.64, 1.41, 1.50, 1.56, 1.75, 5.79 and 2.60. The mean score of the Rural Girls on sub variables of Health related physical fitness variables were found to be 1346.02, 20.94, 6.20, 7.12, 9.38, 6.65, 29.36, 6.83 respectively and the SD was 97.44, 4.75, 1.76, 1.77, 1.93, 1.89, 7.02 and 2.24.

The t-value between Urban and Rural Girls on sub variables of Health Related Physical Fitness variables i.e. 9 minute run/walk, Modified sit-ups, Biceps, Triceps, Sub-scapular, Suprailiac, Sum total of skinfold measurements, Sit and Reach are found to be 2.685, 2.124, 4.900, 4.253, 2.882, 2.583, 3.816 and 0.959 respectively. The 't'-value for 9 minute run/walk (2.685), Modified sit-ups (2.124), Biceps (4.900), Triceps (4.253), Sub-scapular (2.882), Suprailiac (2.583) and Sum total of skinfold measurements (3.816) shows statistically significant difference between Urban and Rural Girls because the obtained 't' value was higher than the table 't' value i.e. 1.96 at 398 degree of freedom, whereas in reference to remaining sub variables of Health related physical fitness i.e. Sit and Reach no significant mean difference was found in between Urban and Rural Girls as the obtained 't' values 0.959 of Sit and Reach was found lesser than the table 't' value i.e. 1.96 required to be significant at .05 level with 398 degree of freedom.

Discussion

The results of the present study show that students living in different areas differ significantly on the level of health related physical fitness. Rural girls were significantly better in cardiorespiratory fitness and muscular fitness than urban girls. But urban girls were having significantly greater values on skinfold measurements than rural girls. There were no significant differences in the flexibility between urban and rural girls. All the fitness tests show significant mean differences among urban and rural girls except flexibility, which shows a difference in fitness.

Recent researches have shown contradictory results with

regard to children and adolescents living in urban and rural areas, but large number of researches are largely in line with the results obtained in these researches (Dollman *et al*., 2002; Kriemler *et al*., 2008; Albarwani *et al*., 2009) [7, 13, 1]. Rural children and adolescents have higher level of fitness compared to their urban peers. The research that was obtained in Australia suggests that rural children had higher level of cardiorespiratory fitness compared to children in urban areas. According to our research, the results obtained on rural Swiss children (Kriemler *et al*., 2008) [13] and Oman adolescents (Albarwani *et al*., 2009) [1], who had a higher level of cardiorespiratory fitness compared to their urban peers. Contrary to these studies, a US based research suggests that urban children have a higher level of cardiorespiratory fitness compared to their peers living in a rural environment (McMurray *et al*., 1999) [15]. These results are not in line with other studies, which determined different results in relation to each fitness test. For example, urban children from Mexico have shown better results in the explosive strength and strength of abdominal muscles, but weaker results in grip strength tests compared to children living in a rural environment. Among the Cypriot urban and rural children (Tinazci *et al*., 2009) [17] were found differences in fitness tests - standing broad jump, sit-ups, 20 m shuttle run, and hand grip; while differences were not found in equilibrium balance tests - flamingo, sit and reach, plate tapping and speed shuttle run. On the other hand, in a study realized in Greece no differences in physical fitness were determined (flexibility, cardiorespiratory, muscular fitness, and speed and agility) between children from and rural areas. A research realized in Croatia showed that children from urban areas show better results in the fitness test - 20 m dash, standing long jump and timed sit-ups. Urban and rural boys and girls do not differ significantly in the flexibility. Also, in the research of Hian *et al*. (2013) [10] and Eiben *et al*. (2005) [8] is determined that children from urban areas achieve better results in certain fitness tests than their peers who live in rural areas. According to Loucaides *et al*. (2004) [14] this is due to equipment availability and transportations were better in urban than rural areas. Schools in urban areas also had better facilities such as field, track and others if compared with rural schools (Hian *et al*., 2013) [10].

Conclusion

Based on the obtained results, it can be concluded that girls from the rural environment show better results in cardiorespiratory fitness, muscular fitness and have less skinfold measurements from their urban peers. Because of significant differences and effect size for all the health indicators, the obtained results suggest that the environment may have influence of many health-related factors, including fitness. Apart from other environmental factors, the place of residence, should be taken into account when framing a state strategy and interventions through which it will promote physical activity and health.

References

1. Albarwani D, Phil S, Al-Hashmi K, Al-Abri M, Jaju D, Hassan MO. “Effects of overweight and leisure-time activities on aerobic fitness in urban and rural adolescents”. Metabolic syndrome and related disorders 2009;7(4):369-74.
2. Blair SN, Kohl HW, Barlow CE. “Physical-activity, physical-fitness, and all-cause mortality in women: Do women need to be active”. Journal of the American College of Nutrition 1993;12(4):368-371.
3. Blair SN, Kohl HW, Barlow CE, Paffenbarger RS, Gibbons LW, Macera CA. “Changes in physical-fitness and all-cause mortality. A prospective-study of healthy and unhealthy men.” Journal of the American Medical Association 1995;273(14):1093-1098.
4. Bourchard C, Shepard RJ. “Physical activity fitness and health: the model and key concept”. Physical activity, fitness, and health: Champaign, IL. Human kinetics publishers, 1983, 11-20.
5. Carter JEL, Yuhasz MS. “Skinfold and body composition of Olympic Athletes. In Physical Structure of Olympic Athletes (Part II)”. Edited by J.E.L. Carter. S. Karger, Basel, 1984.
6. Dencker M, Thorsson O, Karlsson MK, Lindén C, Svensson J, Wollmer P *et al*. “Daily physical activity in Swedish children aged 8-11 years”. Scand J Med Sci Sports (In press) Online Early doi:10.1111/j.1600-0838.2005.00486.x.
7. Dollman J, Norton K, Tucker G. “Anthropometry, fitness and physical activity of urban and rural south Australian children”. Pediatric Exercise Science 2002;14:297-312.
8. Eiben OG, Barabas A, Nemeth A. “Comparison of growth, maturation, and physical fitness of Hungarian urban and rural boys and girls”. Journal of Human Ecology 2005;17(2):93-100
9. Eisenmann JC, Wickel EE, Welk GJ, Blair SN. “Relationship between adolescent fitness and fatness and cardiovascular disease risk factors in adulthood”. the Aerobics Center Longitudinal Study (ACLS). American Heart Journal 2005;149:146-153.
10. Hian TC, Mahmud ZF, Choong TY. “Physical fitness level between urban and rural students-case study”. Procedia-Social and Behavioral Sciences 2013;90:847-52.
11. Howley ET. “Type of activity: resistance, aerobic and leisure versus occupational physical activity.” Med. Sci. Sports Exerc 2001;33(6):S364-S369.
12. Joon DS. “Motor development of Indian male children and youth from nine to sixteen years of age”. Unpublished Master Thesis. Netaji Subhas National Institute of Sports, Patiala, India, 1983.
13. Kriemler S, Manser-Wenger S, Zahner L, Braun-Fahrländer C, Schindler C, Puder JJ. “Reduced cardiorespiratory fitness, low physical activity and an urban environment are independently associated with increased cardiovascular risk in children”. Diabetologia 2008;51(8):1408-15.
14. Loucaides CA, Chedzoy SM, Bennett N. “Differences in physical activity levels between urban and rural school children in Cyprus”. Health education research 2004;19(2):138-47.
15. McMurray RG, Harrell JS, Bangdiwala SI *et al*. “Cardiovascular disease risk factors and obesity of rural and urban elementary school children”. Journal of Rural Health. 1999;15:365-74.
16. Singh H. “Assessment of motor abilities of Indian boys (age groups 10-16 years)”. Unpublished Doctoral Dissertation, Punjab University, Chandigarh, India, 1986.
17. Tinazci C, Emiroglu O. “Physical fitness of rural children compared with urban children in North Cyprus: a normative study”. Journal of physical activity and health 2009;6(1):88-92.
18. Zeilgler, Earle F. “History of Physical Education and Sports.” Englewood Cliff: Prentice Hall Inc 1979;245:46.