International Journal of Academic Research
ISSN: 2348-7666; Vol.9, Issue-2(3), February, 2022
Impact Factor: 6.023; Email: drtvramana@yahoo.co.in

A Study on Rural-Urban Differences in Sports Participation

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Abstract: *The earlier concept of individual as composed of body, mind, and soul was not in vogue today. In the modern philosopher's view, man was a unified whole. Physical education and sports which encompasses wide range of activities bestows a number of benefits to its systematic pursuers. The present study will be delimited to high school girls of Mysore district who participated in various sports activities at school level competitions.*
Keywords: *Sports, Rural-Urban, Physical Fitness.*

Introduction

Physical activity in adolescents requires addressing number of scientific challenges. More physical activity provides greater health benefits and may be required for weight control. School aged youth should accumulate at least 40 minutes of moderate or vigorous intensity physical activity each day (Anderson et al. 1998).

Several studies reveal the varied environmental conditions of socio-economic status of families (Sharma et al 1997) along with nutritional factors (Sohi Singh 1997) that influence all the aspects of growth and development of a child directly or indirectly.

While some data indicated that urban children have more body fat than their rural counterparts, (Mamalakis G. et al. 2000) other data are in strong disagreement (McMurray RG. et al.1999). Contradictory reports have also been published in relation to physical fitness parameters in children living in urban and rural settings (Ewing BG. et. al.1982, Wilczewski A. et al. 1996, Sunnegardh J. et. al.1985,). In some cases, no differences have been identified in a range of fitness and motor skill measures between children from urban and rural areas (Krombholz H. 1997).

However, urban residence is also associated with an increasingly sedentary lifestyle. Rural and urban areas differ in environmental, demographic, and social variables that influence sport participation. Yet despite these differences, comparisons of youth sport participation between rural and urban locales are conflicting, with no consistent indication of greater or lesser sport participation in one locale versus the other. To inform public health policy and eliminate health disparities, investigations into differences in sport participation of rural and urban girls due to locale are warranted.

REVIEW OF LITERATURE

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Hirsch E.D. Jr. et al. (2002) stated that socioeconomic status and health are closely related, and SES can often have profound effects on a person's health due to differences in ability to access health care as well as dietary and other lifestyle choices that are associated with both finances and education.

Tsimeas P. D. et. al.(2005) investigated urban and rural Greek children's physical fitness in relation to fatness in by means of allometric scaling. They selected 189 urban and 171 rural (N=360); age twelve years, boys and 125 urban and 122 rural(N=247); age twelve years girls as sample for the study. The sample was all 12 year old children registered in the prefecture of Trikala, Greece was highly representative. All subjects were assessed for BMI and % body fat, as well as flexibility of trunk, basketball throw (BT), vertical jump (VJ), handgrip strength (HG), 40 m sprint, agility run, and 20 m shuttle run. To correct for possible associations between fatness and fitness, a single cause allometric scaling was employed using the natural logarithms (ln) of fitness parameters that were significantly correlated with the ln body fat. The Independent-samples t tests revealed that VJ (p,0.05) was significantly higher in boys living in urban settings compared to their rural counterparts. Similarly, BT was found to be significantly better (p,0.05) in urban girls, whereas HG was significantly higher (p,0.05) in rural girls. The investigators concluded that

(a) only three out of the 14 possible cases (seven fitness parameters for boys and seven for girls) were significantly different between urban and rural children, and (b) these differences were not uniformly distributed in children living in either urban or rural environments, they also concluded that the place of residence has no clear impact on physical fitness as studied herein.

Singh and Chavan (2011) conducted a study to identify the physical fitness components of rural and urban students. They selected 40 students, 20 rural and 20 urban from various colleges of Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra, India, as subjects for the study. Execution criteria were the presence of chronic medical condition such as asthma, heart disease or any other condition that would put the subject at risk when performing the physical fitness components. The data was collected by use of measurements of height & weight as well as by application of tests like, running, jumping, steeping, setups etc. The data was analysed with the help of statistical procedure in which arithmetic mean, standard deviation and t - test were employed. Significant difference in the agility ($t=3.11$, $p<.05$) was found between rural andurban students, urban students was found to be greater agility as compared to rural students while comparing speed ability ($t= 3.26$, $p<.05$) significant difference was found between rural & urban students. Urban students incur significantly less speed ability as compare to rural students. Meanwhile, significant difference was found in endurance ability ($t=5.96$, $p<.05$) between rural and urban students. Rural students were found to have got more cardio vascular efficiency as compare to urban students. While comparing explosive strength between rural and urban students, significance difference was found ($t=6.53$, $p<0.5$).

Rural students were Strongest as compared to their counterpart. Whilst no significant difference in the muscular strength was found between two groups students.

Reyes, et. al.(2003) compared the physical fitness of school children resident in an urban colonia and in a rural indigenous community in Oaxaca, southern Mexico,. Two measures of performance-related fitness (standing long jump, 35-yard dash [32 m]) and four measures of health-related fitness (grip strength, sit and reach, timed sit-ups, distance run) were taken on 355 rural (175 boys, 184 girls) and 324 urban (163 boys, 161 girls) school children, 6–13 years of age. Urban children were significantly taller and heavier than rural children. Absolute grip strength did not consistently differ between rural and urban children, but when adjusted for age and bodysize, strength was greater in rural children. Explosive power (standing long jump) and abdominal strength and endurance (timed sit-ups) were better in urban than in rural children without and with adjustment for age and body size. Urban–rural differences in running speed (dash) and flexibility (sit and reach) varied by age group and sex. Younger rural children and older urban girls performed better in the distance run, whereas older rural and urban boys did not differ in endurance. They concluded that the size advantage of urban children does not necessarily translate into better levels of performance- and health-related physical fitness. The observed differences may be related to activity habits associated with school physical education and lifestyle in the respective communities.

Shukla N. B. et al. (1991), In the present study 120 sportswomen (60 urban and 60 rural) were included. They hailed from the States of Uttar Pradesh and Punjab. They participated in games like hockey, handball, cricket, kho-kho, athletics and volleyball. Urban, boys participated in mini national, State and national games, while rural boys participated inter-collegiate rural tournament, States and national games. Age group was varied between 13 to 22 years. For comparison, they were divided in three groups A (13 to 16 years), B (17-19 years) and C (above 19 years). Height and weight recorded, A A H P E R test were employed which consisted of the following: Soft Ball Throw (SBT), Situp (SU), Pushup (PU), Shuttle Run (SR), 50 yards dash (50 Y), Standing Board Jump (SBJ), and 600 yards dash (600 Y). The result revealed that in SBT the sportsmen had very poor result indicating very low explosive capacity of the upper limb muscle. Further, the rural sportswomen were poor in shuttle run indicating minimum agility in them. The rural girls of A and B groups were observed to possess poor anaerobic muscle power as had been revealed by 50 yards dash run. The overall performance of the urban sportswomen were higher than the rural counterpart. On further analysis it has been observed that C group of urban sportswomen were comparatively superior in 50 Y, SBJ, SR, SU, than those of lower age groups. Further, in Uttar Pradesh both rural and urban sportswomen were very efficient. The overall superiority of urban sportswomen than their rural counterpart might be attributed to better coaching and other facilities.

Pena Reyes, M. E., Tan, S. K. and Malina, R. M. (2003), compared the physical fitness of school children resident in an urban colonia and in a

rural indigenous community in Oaxaca, southern Mexico. Two measures of performance-related fitness (standing long jump, 35-yard dash [32 m]) and four measures of health-related fitness (grip strength, sit and reach, timed sit-ups, distance run) were taken on 355 rural (175 boys, 184 girls) and 324 urban (163 boys, 161 girls) school children, 6–13 years of age. They found that Urban children were significantly taller and heavier than rural children. Absolute grip strength did not consistently differ between rural and urban children, but when adjusted for age and body size, strength was greater in rural children. Explosive power (standing long jump) and abdominal strength and endurance (timed sit-ups) were better in urban than in rural children without and with adjustment for age and body size. Urban– rural differences in running speed (dash) and flexibility (sit and reach) varied by age group and sex. Younger rural children and older urban girls performed better in the distance run, whereas older rural and urban boys did not differ in endurance. The size advantage of urban children does not necessarily translate into better levels of performance- and health-related physical fitness. The observed differences may be related to activity habits associated with school physical education and lifestyle in the respective communities.

Davis A.M. et. al. (2008) assessed health behaviors and weight status among urban and rural school-age children. They invited fifth-grade children at two urban and two rural schools to participate in their study. The investigators selected 138 children for the study. The study revealed that from fat, children in rural and urban areas consumed same amount of calories per day and calories but urban children were more likely to skip breakfast and rural children ate more junk food. Rural children engaged in less metabolic equivalent tasks and had slightly low total sedentary activity than urban children. The BMI score was same among rural and urban children but urban children were less often overweight and rural children were less often at risk for overweight. Authors concluded that, even though some variables were same among urban and rural children.

Findings show some key health behavior differences between groups. There were demographic differences between urban and rural samples as the sample size was small.

Roberto, Paulo et al. (2007), analysed the level of habitual physical activity (HPA) and nutritional status of children attending selected public schools in Brazil. The sample comprised 1719 participants who ranged in age from 11 to 14 yrs with 861 females (F) aged 12.7±1.0yr and 858 males (M) aged 12.7±1.0yr. The short form of the International Physical Activity Questionnaire (IPAQ) was used to measure HPA. Nutritional status was assessed using the body mass index (BMI). Statistical analyses included ANOVA followed by the post-hoc Tukey-test (P

< 0.05) which showed a statistically significant difference between M and F in time spent in moderate intensity physical activity. F completed more moderate intensity physical activity than M whereas time in vigorous physical activities was higher in M than F. Analyses of BMI and IPAQ categorical score using Pearson product moment correlations with subsequent Fisher Z

transformation showed values of Z = 0.49 for females and Z = 0.44 for males, indicating a low relationship between these variables. HPA levels showed 93.7% of the M and 91.1% of the F were at least minimally active. According to BMI values, 7.3% of the cohort was underweight; 83.0% normal weight; 8.3% overweight and 1.3% obese. These results demand attention, particularly for children at the lower end of nutritional status and HPA levels due to the potential negative impact on their growth and development. At the other end of the nutritional spectrum, one needs to be concerned regarding the levels of excess body weight, mainly considering the poor region in which the children live.

Tinazci, Cevdet and Osman Emiroglu (2009), investigated the effects of environmental factors on physical fitness of rural and urban children. To reveal the differences between physical fitness of children living in urban and rural districts of the Turkish Cypriot population, 3939 nine- to eleven-year-old male primary school children from 90 schools of North Cyprus were tested. Testing procedures were similar to the Eurofit tests. The results showed that body mass index and skinfold thicknesses were higher in the urban children ($P < .05$). Differences in cardiopulmonary and motor fitness were also found between groups. In addition, flexibility and muscle endurance were significantly higher in the rural children. Authors Concluded that the significantly lower flexibility, muscle endurance, and strength of urban children might indicate a lower habitual physical activity level.

Smith, D. T. et al. (2008), examined the changes in mean BMI and the prevalence of at-risk- for overweight in repeated cross-sectional samples of rural first grade schoolchildren between 1999 and 2004. BMI was determined in 479 first graders from a rural Wyoming school district.

BMI and gender-specific BMI-for-age percentiles were determined and evaluated over the 6 years. Children were also classified as normal or at-risk-for overweight according to CDC classification procedures. Result showed that from 1999 to 2004, there was a significant increase in the average BMI of first graders, 15.8 ± 2.2 kg/m^2 versus 16.8 ± 2.2 kg/m^2, respectively ($P < .05$). First grade boys had a progressive increase in BMI from 1999 to 2004 (15.6 ± 2.2 kg/m^2 compared to 17.3 ± 2.2 kg/m^2, respectively), but no change was evident for first grade girls. There was an approximate 4-fold increase in the percentage of rural first grade boys classified as at-risk-for overweight between 1999 and 2004. Authors concluded that a progressive increase in the BMI and the significant increase in prevalence of at-risk-for overweight in rural first grade boys highlight the need for future gender and age group-specific investigations. Focus should be given to primary prevention programs targeting potentially vulnerable time periods when excess weight gain may be occurring.

Matre R.R. et. al. (2008) studied possible rural-urban differences in physical activity profiles to facilitate the development of more targeted physical activity interventions. Participants (1,687 boys; 1,729 girls) were recruited from fourth, fifth, and sixth grade classes in schools from urban areas, small cities, and rural areas. Multilevel modeling analysis was used to examine rural- urban differences in physical activity and prevalence of overweight. Physical activity was assessed by self-report and body mass index was calculated from measured height and weight. They found that prevalence of overweight was higher among rural children (25%; P<.001) than children from urban areas (19%) and small cities (17%). Urban children were the least active overall (Cohens' d=-0.4), particularly around lunchtime while at school (d=-0.9 to -1.1). Children from small cities reported the highest levels of physical activity. They suggest that there are rural-urban differences in children's prevalence of overweight and physical activity even within a fairly homogenous Midwestern state.

Objectives

1. To study the relationship of motor fitness, weight status, and socio-economic status with sports participation of rural and urban high school girls.
2. To find out the difference among sports participation (SP) and non-sports participation (NSP) of rural and urban high school girls in their motor fitness, weight status, and socio- economic status.
3. To assess the regional (Rural & Urban) influence on motor fitness, weight status, and socio- economic status.
4. To know the inter-relationships between the various variables.
5. To identify the best predictors of sports participation among rural and urban high school girls from the selected variables.
6. To suggest improvement in sports participation in rural areas as a mean of enhancing sport performance in Mysore district and so in India.

Methodology of Study

Selection of Subjects

The subjects for the present study were:

- Medically fit high school girls.
- Ranging in age between 14 to 16 Years.
- Sports participating and non sports participating girls.
- Randomly selected from urban and rural high schools of Mysore district.
- The subjects belong to different cultures and socio-economic classes.

Universe

The universe will be the High School Girl Students of Mysore district. The population of the district will be distributed over five areas. The subjects selected randomly from 15 rural (Taluk) high schools and 10 urban (Town) high schools affiliated Govt. of Karnataka.

Sample size

Stratified random sampling will be adopted to collect the sample for the study and also these samples should fulfil the inclusion/exclusion criteria. Given below is a table showing the

sample size.

Sl. No.	Urban		Rural		Total
	Sport Participant	Non-Sport Participant	Sport Participant	Non-Sport Participant	
1.	125	125	125	125	500

Selection of Variable for the Study

After a thorough review of literature related to the study in books, journals, periodicals and research articles besides detailed discussion with the experts and keeping in view of the feasibility of the study in terms of availability of equipment and the relevance of the variables to the present study, the following variables were selected.

Dependent and Independent Variables

Dependent Variable: Sport participation and region (Rural & Urban) will be the dependent variable for this study.

Independent variables: The independent variables are motor fitness components, weight status, health status and socio-economic status.

Table-1 Motor Fitness Variables and Criterion Measures

Sl. No.	Motor Fitness Variables	AAHPER Youth Fitness Test Items	Criterion Measures
1	Arm strength	Flexed Arm Hang	Holding in sec
2	Abdominal strength	Sit-ups	Repetitions/Points
3	Agility	Shuttle-run (40 mts)	Nearest Second
4	Leg Power	Standing Broad Jump	Feet & inches
5	Running Speed	50 mts dash	1/10th of a Second
6	Arm power	Softball throw	In feet
7	Endurance	600 mts run	Minute/sec

Table-2

Other Study Variables, Tools and Criterion Measures

Sl. No.	Study Variables	Tool	Criterion Measures
1	Weight Status	Body Mass Index	Grade/Score
2	Socio-Economic Status	Socio-Economic Status scale developed by Bharadwaj (2001)	Points

The study subjects will be contacted individually in their respective schools and requested to cooperate. Good rapport was established with subjects. Before the administration of the tests all the subjects will be clearly and thoroughly oriented about the test procedure and purpose of the study and they will be convinced that information given by them would be kept confidential and will be used for research purpose only. Subjects were also explained about each test and the method of scoring. Researcher also explained the warming-up procedure needed for the motor fitness tests.

Procedure of collecting data

The investigator will personally visit all the schools. Tests will be administered in three sessions on two consecutive days. Motor fitness tests are administered in the morning and evening between 8am and 10am and between 3.30pm and 5.30pm. The questionnaire scales will be administered in the afternoon session. The investigator himself will administered all the tests and tools selected for the study according to proper procedure and collect the required data for the study.

Discussion

A better understanding of possible

rural-urban differences in sports participation may facilitate the development of more targeted sports activity interventions. Few studies have analysed the rates and correlates of physical activity in economically and geographically diverse populations.

To our knowledge, there is a dearth of such data on Indian girl children. Myself as a rural sports girl from K. R. Nagar Taluk, Mysore district, during my study days I had been overcome lot of hurdles to participate in sports. I was taking initiative in building college teams and was facing lot of problem in involving other girls to participate in sport and games. So I was interested to understand the factors that influence on sports participation of urban and rural girls in Mysore district. Therefore, the aim of this study is to investigate sports participation in relation to motor fitness, weight status, and socio-economic status of urban and rural high school girls in Mysore district. So this investigation is an attempt to concubine these issues to shed more light on this area and to help further the knowledge base. The study will be venturing to make an attempt to identify the factors that are related to sports participation of rural and urban high school girls. The present study may throw light on the unique factors that influence on sports participation of rural and urban high school girls. It may provide clues about the strength and weakness/deficits in sports participation in rural and urban high school girls in respect of selected factors and variables. It may also throw light on the possible differences that exist in sports participation (SP) and non-sports participation (NSP) of rural and urban high school girls. This would further, highlight the dominance of certain factors in relation to sports participation and may also throw light on the reason for low / high sport participation and non-sport participation of girls of different socio-economic classes.

DELIMITATION

1. The present study will be delimited to five hundred students (N=500) of rural and urban high schools girls. (Sports participation 125 girls and non-sports participation 125 girls from both urban and rural high schools).
2. The present study will be delimited to high school girl subjects ranging in age between 14- 16 years only.
3. The present study will be delimited to high school girls of Mysore district who participated in various sports activities at school level competitions.
4. The Taluk schools of Mysore district will be considered as rural schools and town schools are considered as urban schools.
5. The present study will be delimited to the students of schools that have adapted state government syllabus only.
6. The study will be delimited to Motor fitness, Weight status and Socio-economic status with the corresponding sub-variables.
7. The study will be further delimited to AAHPER youth fitness to assess Motor fitness.
8. The Weight status will be assessed by Body Mass Index (BMI).
9. Socio economic status of the subjects of the present study will be estimated

with the help of Socio-economic status scale devised by Bharadwaj (2001).

Findings of the Study

1. Urban and rural high school girls with and without sports participation do not differ in their motor fitness variables.
2. Urban and rural high school girls with and without sports participation do not differ in their weight status.
3. Urban and rural high school girls with and without sports participation do not differ in their socio-economic status.
4. There will be significant inter-relationship among Motor fitness and Weight status.
5. There will be significant association between sports participation and area (rural and urban high school girls).

Conclusion

The results of the study could be used for diagnostic purposes, as sighting devices and for other purposes in relation to enhance rural girls sports participation at high school level and hence performance enhancement in high school sports competition and that may lead to improvement of standard of sport and games at pre-university and university level.

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