DOI: https://doi.org/10.54393/pjhs.v3i07.372

PAKISTAN JOURNAL OF HEALTH SCIENCES
https://thejas.com.pk/index.php/pjhs
Volume 3, Issue 7 (December 2022)

Original Article

Physical Activity as an Element of Health Life Style among High School Children's: an Analytical Approach

Ausaf Chaudhary[1], Sana Mahmood[2], Muhammad Jamil[3*], Alamgir Khan[4] and Muhammad Zafar Iqbal Butt[4]

[1]International Islamic University, Islamabad, Pakistan.
[2]Sarhad University of Science & information Technology, KPK, Pakistan
[3]Center of Physical Education, Health & Sports Sciences, University of Sindh, Jamshoro, Pakistan
[4]Department of Sports Sciences & Physical Education, University of the Punjab, Lahore, Pakistan

ARTICLE INFO

Key Words:
Physical Activity, Physical Fitness, Fitness Tests, Acceleration

How to Cite:
Chaudhary, A. ., Mahmood, S. ., Jamil, M. ., Khan, A. ., & Zafar Iqbal Butt, M. . (2022). Physical Activity as an Element of Health Life Style among High School Children's: an Analytical Approach: Physical Activity among High School Children's. Pakistan Journal of Health Sciences, 3(07). https://doi.org/10.54393/pjhs.v3i07.372

***Corresponding Author:**
Muhammad Jamil
Center of Physical Education, Health & Sports Sciences, University of Sindh, Jamshoro, Pakistan
meharjamil88@gmail.com

Received Date: 21st November, 2022
Acceptance Date: 24th December, 2022
Published Date: 31st December, 2022

ABSTRACT

Physical inactivity is one of the most alarming health indicators in the world. Physical activity and fitness levels decline worldwide among children and adolescents. The use of electronic entertainment in Pakistan affects the activity levels of students. **Objectives:** To compare physical activity levels of urban and rural high school children using analytical study. **Methods:** A cross-section study was conducted on 200 government high school children (ages 12-16 years) in Rawalpindi city, Pakistan. Data on physical fitness were collected through different physical fitness tests and BMI by measuring height and weight. Physical activity was assessed through physical activity questionnaire (PAQ-A) and a youth physical activity questionnaire (Y-PAQ). **Results:** Analysis of study in term of different fitness shows that the mean score of pushups was 14.9050±8.91704, and the mean for standing vertical jump was 28.3700±5.35035. The mean of the 30-meter sprint was 4.3667±.34039, and the mean of sit and reach test was 27.7700±4.09401. The mean of the handstand was 3.8600±9.02038. **Conclusions:** Based on the findings, the researcher concluded that physical activity and physical fitness levels are low in rural and urban high school children. Still, there is no significant difference in physical activity and physical fitness levels between rural and urban high school children. The rural students were better in height and weight, but the BMI rate was higher in urban students.

INTRODUCTION

Physical inactivity is the main reason for obesity, overweight, heart and chronic diseases worldwide. Being overweight and obese starting from children-hood carried health-related problems, mainly non-communicable disorders in adults such as cardiovascular diseases, diabetes, hypertension etc. [1]. World Health Organization (WHO) reported that about 1.5 billion adults are overweighed, and astonishingly above and over 200 million men and 300 million women are obese worldwide. Obesity is higher in the South Asian population [2]. In the United States, it has been found that overweighting between 4-5 years of children groups increased from 5.8% in 1971-1974 to 10% in 1988-1994. Among all preschool-aged children, 10.1% are overweight, and 10.7% are at risk of becoming overweight [3]. The rates of psychological problems have increased in overweight or obese children who also remained obese in adulthood [4]. Data from National Health and Nutrition Examination Survey 2014-2015 and 2016-2017 indicates that significantly urban town children were more obsessed than those in rural and semi-rural areas. In the light of the study, children in rural and semi-rural regions were engaged in more physical activities than urban ones. As the urban towns have more facilities related to technology and have closed relations with up-to-date

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technology, the urban children were used to electronic entertainment rather than physical events. On the other hand, in rural areas, children are deprived of technology and have only one option to engage in some daily physical errands [5-7]. According to a survey conducted in America, about 26% of children watch four or more hours to watch television in a day. Conversely, the study showed that 67% were observed at least 2 hours daily. Further, the study explained that boys and girls who watch television more than four hours a day have more fat in their bodies than those who watch television less than two hours a day [8]. The origin of chronic diseases lies in early childhood, and physical activity levels decline after 12 years. Promoting physical activity in the early years is necessary to reduce the incidence of lifestyle diseases in later life [9]. Pakistani Primary school children's lifestyle showed that they had had less information from their parents about their diet and the positive effects of participating in sports. That caused high Body Mass Index and gaining weight day by day, such independent factors leading our societies right now. A study from Allama Iqbal Medical College Lahore, Pakistan, indicates that 17% of children were overweight and 7.5% were obese among the sample of 1860 primary school children aged 5-12 years [10, 11].

METHODS

The researcher adopted the following procedures for reaching specific findings and conclusions. The population of the study was comprised of government high school children of Rawalpindi city, Pakistan. Multistage sampling techniques were used for selecting a sample for the analysis. At stage 1st, four rural and four urban schools were chosen randomly. In the 2nd stage, 100 students were selected as samples using available sampling techniques. In addition, during the selection process of sampling, age factors, socioeconomic and health factors were considered. Ethical consent was taken from all the participants of the study. For the calculation of body mass index, the researcher measured the height and weight of the students. Children were attired in their usual uniforms and without shoes for this calculation. Body mass index (BMI) was calculated from measured height and weight. Physical activity level was assessed through the physical activity questionnaire for adolescents (PAQ-A) and youth physical activity questionnaire (Y-PAQ). The calculation of physical activity questionnaire (PAQ-A) and and youth physical activity questionnaire (Y-PAQ) was calculated as; to calculate MET minutes a week, multiply the MET value given (remember walking = 3.3, moderate activity = 4, vigorous activity = 8) by the minutes the activity was carried out and again by the number of days that activity was undertaken. Physical fitness standards were accessed through various physical fitness tests (30-meter sprint, standing vertical jump, sit and reach test, handstand, and pushups). The collected data were tabulated and analyzed using a statistical package for social sciences (SPSS, Version-26.0); thus, mean, median, mode and standard deviation were used as a statistical tools.

RESULTS

The table 1 shows the age, height, weight and body mass index (BMI). Result of all the demographic attributes were calculated through means and standard deviation. Therefore mean age of children was 15.27±0.73 from 13 to 16 years, and the mean height was 1.67±.06. The participants' mean weight was 51.20±8.002, and the mean BMI was 18.43±2.114.

Testing Variables	Mean±SD
Age	15.27±0.73
Height	1.67±0.06
Weight	51.20±8.002
BMI	18.43±2.114

Table 1: Demographic detail of the students (number=200)

The table 2 shows the physical fitness level. Physical fitness was measured by push-ups, standing vertical jump, 30 meter sprinit, sit and reach test and hand stand. Result of all the all the physical fitness parameters were calculated through means and standard deviation. Therefore the mean score of Push Ups was 14.91±8.92, and the mean for standing vertical jump was 28.37±5.35. The mean of the 30-meter sprint was 4.37±.34, and the mean of sit and reach test was 27.77±4.09. The mean of the handstand was 3.86±9.02.

Testing Variables	Mean±SD
Push ups	14.91±8.92
Standing Vertical Jump	28.37±5.35
30 Meter Sprint	4.37±.34
Sit and Reach Test	27.77±4.09
Hand Stand	3.86±9.02

Table 2: Physical Fitness Tests detail of Children

Table 3 shows the youth physical activity questionnaire (Y-PAQ. youth physical activity questionnaire (Y-PAQ) was calculated through eight different items i.e Y-PAQ.2, Y-PAQ.2, Y-PAQ.3, Y-PAQ.4, Y-PAQ.4, Y-PAQ.5, Y-PAQ.6 Y-PAQ.7 Result of all the items of Y-PAQ. the physical fitness parameters were calculated through means and standard deviation. Therefore the mean of different activities in the past 7 days, like cricket, football, hockey etc., was 372.55±261.02 and the mean of activities like running, swimming etc., was 92.9750±96.94. The mean of leisure time activities in the past 7 days was 254.12±226.38, and the mean of activities like skipping, walking for exercise etc., was 65.65±114.69. The mean of activities done in school time was 184.30±136.38, and the mean of activities

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done in free time was1383.45±642.204. The mean of any other activities in the past 7 days was 36.97±79.288.

Testing Variables	Mean±SD
Youth Physical Activity Questionnaire (Y-PAQ.1)	372.55±261.02
Youth Physical Activity Questionnaire (Y-PAQ.2)	92.97±96.94
Youth Physical Activity Questionnaire (Y-PAQ.3)	254.12±226.38
Youth Physical Activity Questionnaire (Y-PAQ.4)	65.65±114.69
Youth Physical Activity Questionnaire (Y-PAQ.5)	184.3±136.38
Youth Physical Activity Questionnaire (Y-PAQ.6)	1383.45±642.204
Youth Physical Activity Questionnaire (Y-PAQ.7)	36.97±79.288

Table 3: Item-wise Results of Youth Physical Activity Questionnaire(Y-PAQ)

The mean of physical activities like dance, football, running etc. in the last 7 days was 12.21±.424 and the mean of activity during physical education classes was 1.52±.913. The mean of activity besides eating lunch was 1.72±.88 while the mean of activity right after school during past 7 days was 1.79±2.43. The mean of activity in evening time in the last 7 days was 2.38±1.408 and the mean of physical activity on the weekend was 2.05±1.02. The mean of best activity in the last 7 days was 2.34±1.313 while the mean of physical activity for each day of the last week was 2.52±1.103. The mean of sickness in the last 7days was 1.90±.29(table 4).

Variables	Mean±SD
PAQ-A 1	1.21±0.424
PAQ-A 2	1.52±0.912
PAQ-A 3	1.72±0.88
PAQ-A 4	1.79±2.43
PAQ-A 5	2.38±1.41
PAQ-A 6	2.05±1.021
PAQ-A 7	2.34±1.313
PAQ-A 8	2.51±1.103
PAQ-A 9	1.91±0.29

Table 4: Results of physical activity level through physical activity Questionnaire(PAQ-A)

DISCUSSION

This study's results suggested no significant difference in physical activity levels between rural and urban high school children. However, the rural students were better in height and weight, but the BMI rate was higher in urban students. The urban students are better in strength (handstand), and the rural students are better in upper body strength (pushups), power and athletic ability (standing vertical jump), speed and acceleration (30-meter sprint) and flexibility (sit and reach test). Mean score of Push Ups was 14.9050±8.91704, and the mean for standing vertical jump was 28.3700±5.35035. The mean of the 30-meter sprint was 4.3667±.34039, and the mean of sit and reach test was 27.7700±4.09401. The mean of the handstand was 3.8600±9.02038. Such emerging concept is supported by the study conducted by [12] by showing that In India, children's physical fitness in rural areas is better than in urban residences. The rural children in India were better in speed, endurance and strength than urban children, and there was no difference in performance or flexibility between the rural and urban children. Life in rural areas in India is more complex and active, which benefits physical fitness. On the other hand, in urban areas, different variables may cause lower levels of physical fitness among children. In addition, the acute effect of pre-event lower limb massage and static stretching vertical jump, 30-m sprint and agility in college athletes' students was compared. And thus, it was concluded that both static stretching and Swiss massage methods significantly degrade the performance of the vertical jump, 10, 20 and 30-m sprint and agility T-test. In contrast, static-stretching and massage significantly increased the flexibility of the hip joint (sit & reach test) [13]. Youth physical activity questionnaire (Y-PAQ) was calculated through eight different items i.e Y-PAQ.2, Y-PAQ.2, Y-PAQ.3, Y-PAQ.4, Y-PAQ.4, Y-PAQ.5, Y-PAQ.6 Y-PAQ.7. Result of all the items of Y-PAQ. the physical fitness parameters were calculated through means and standard deviation. Therefore the mean of different activities in the past 7 days, like cricket, football, hockey etc., was 372.5500±261.01801 and the mean of activities like running, swimming etc., was 92.9750±96.94077. The mean of leisure time activities in the past 7 days was 254.1150±226.38299, and the mean of activities like skipping, walking for exercise etc., was 65.6500±114.69460. The mean of activities done in school time was 184.3000±136.38001, and the mean of activities done in free time was1383.4550±642.20374. The mean of any other activities in the past 7 days was 36.9750±79.28845. In line of this study previous studies showing that physical education supplies only 12%, teacher-led conditions 22% and specialist-led states supply 27% of the recommended 150 minutes of physical activity per school week [14-17]. The gap between rural and urban areas has been reduced gradually. This situation has provided a better environment for the growing up and development of children and adolescents [15]. Physical activity also affects lower or higher socioeconomic status. Similarly, to develop physical activity levels, it is essential to understand all features which affect the different populations. Parents, players, physical education teachers and society can play a crucial role in increasing physical activity. They should provide individual sports, playgrounds, sports equipment, healthy diet, facilities, gyms, community health care centers, etc [18]. Inline of this finding, the study conducted by [19] by finding out that the government of Pakistan should consider it and play a vital role in increasing physical activity at all levels. They

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should develop awareness in public through print and electronic media. Furthermore, physical education teachers, athletes, coaches and trainers should motivate societies to be involved in physical activities for better mental and physical health growth. We should create a trend to focus on physical activities so that our children can positively adopt a healthy and physically active lifestyle [20-22]. Similarly study was conducted by [23] and concluded that urban school girls had higher skin folds and girths, indicating high body fat than rural school girls. As a result, urban school girls were lower in fitness capacity than rural because higher body fat reduces fitness performance.

CONCLUSIONS

Based on the findings, the researcher concluded that physical activity and physical fitness levels are low in rural and urban high school children. Still, there is no significant difference in physical activity and physical fitness levels between rural and urban high school children. The rural students were better in height and weight, but the BMI rate was higher in urban students.

Conflicts of Interest

The authors declare no conflict of interest

Source of Funding

The author(s) received no financial support for the research, authorship and/or publication of this article

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