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# A Comparative Study of Health-Related Physical Fitness of Rural And Urban College Students

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***Abstract:***

The objective of the present study was to compare the health-related physical fitness between rural and urban college students. 200 students (100 rural and 100 urban) were drawn from various colleges. Cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition were measured with standardized tests of major components of health-related physical fitness. The results showed that there were considerable differences among rural and urban students in fitness components. The cardiovascular endurance and muscular strength were comparatively better in the rural students because of their active lifestyle and increased participation in physical activities, while the flexibility was comparatively better among the urban students. Urban students also had higher BMI indicating higher sedentary behaviour and lower participation in physical activity. The study emphasizes the necessity of frequent physical exercise and structured physical fitness program to enhance general health and physical efficiency of college students.

***Keywords:*** Health-Related Physical Fitness, Rural Students, Urban Students, Cardiovascular Endurance, Muscular Strength, Flexibility, Body Composition.

## 1. Introduction

One of the most important components of human health and well-being is physical fitness. It has an important role in improving physical efficiency, in preventing diseases and in improving the quality of life. Health-related physical fitness includes those components of fitness that have a direct relationship to good health and efficient functioning of the body. These components are cardiovascular endurance, muscular strength, muscular endurance, flexibility and body composition (Clarke, 1976). In this day and age of fast technological growth and sedentary lifestyle, maintaining a proper physical fitness has become more and more important among college students. College life is an important period of development in which students undergo substantial physical, psychological and social changes. Students' health and fitness levels are greatly affected by lifestyle habits such as their dietary habits, sleeping habits, physical activity and recreational behaviours. Regular participation in sports and other physical activities typically results in better physical fitness, enhanced mental health and improved academic performance among students. However, sedentary lifestyles are usually linked to obesity, fatigue, stress, bad posture, and low endurance (Sharma, 2021).

Health-related physical fitness is a multidimensional construct that is essential for sustained wellness. Cardiovascular endurance is the capacity of the heart and lungs to deliver oxygen during prolonged exercise. Muscular strength and muscular endurance refer to the ability of the muscles to produce force and to perform repeated contractions, while

flexibility refers to the range of motion around joints. The term body composition refers to the proportion of body fat and lean body mass in the human body (Kumar & Singh, 2022). Development of these components in a balanced manner helps in the prevention of lifestyle diseases like obesity, diabetes and cardiovascular disorders.

Fast urbanisation and technological dependency have significantly lowered the levels of physical activity among youth populations. College students' sedentary behaviour has increased due to excessive use of smartphones, computers and digital entertainment (Mehta & Singh, 2022). Rural and urban students are significantly different in lifestyle patterns and opportunities for physical activity. Students in rural areas are more inclined towards outdoor and physically strenuous activities, whereas urban students are more likely to lead sedentary lives due to academic stress and dependency on digital gadgets (Reddy, 2019). Therefore, the present study intends to compare the health-related physical fitness of college students of rural and urban areas and to study the effect of lifestyle factors on the overall fitness level of college students.

## 2. Review of Related Literature

Mehta and Singh (2022) noted that the current rapid technological progress, more screen time and sedentary lifestyles have dramatically decreased physical activity in urban youth. They found that over-reliance on smartphones, online learning resources, and digital entertainment is impacting cardiovascular endurance, muscle efficiency and overall physical fitness among college students. The researchers highlight the need for greater awareness of the dangers posed to youth health and wellness by modern sedentary behaviour.

Kumar and Singh (2022) carried out a comparative study on physical fitness of rural and urban students and found that there are significant difference between the endurances, strength and flexibility of the students. The study indicated that compared to the urban students, the rural students had an active lifestyle pattern and participated in physically demanding daily activities which resulted in better performance in endurance and muscular strength tests. The urban students, on the contrary, were found to be comparatively more flexible due to their exposure to organized fitness facilities, gymnasiums and organized exercise programs.

Gupta and Kaur (2021) aimed to assess health related fitness among college students and concluded that the students who exercised outdoors regularly had better muscular endurance and cardiovascular efficiency than non-active students. The researchers found that the environment, regular physical activity and active lifestyles have a significant influence on overall physical fitness and the prevention of lifestyle-related diseases.

Sharma (2021) investigated college students' health-related fitness and found that there was a strong relationship between physical activity and physical and psychological health in students. The study concluded that physically active students had higher cardiovascular endurance, muscular strength, emotional stability, and academic achievement than did physically inactive students. The researcher emphasized that regular youth involvement in sports and exercise has a positive impact on their concentration, confidence and stress management.

Patel and Verma (2020) found significant differences between rural and urban adolescents in body composition and physical activity. They found that urban students had relatively high body fat percent and Body Mass Index (BMI) compared to rural students because of their sedentary lifestyle, poor eating habits and lack of exercise. The study also revealed that physical inactivity among urban youth populations is a risk factor for obesity and metabolic disorders.

The effect of lifestyle patterns on body composition among university students was studied by Singh and Sharma (2020). The researchers said that the students living in the city showed higher BMI and fat gain due to their unhealthy eating patterns, longer sitting time, and less participation in physical activity. The study firmly recommended that people should exercise regularly and consume a healthy diet to help avoid chronic diseases and maintain a healthy body composition.

Rapid urbanization and modernization have significantly lowered the physical activity of the youth population, according to Reddy (2019). The study suggests that the decline in physical fitness of urban students is due to the rise in mechanization, transportation facilities, academic pressure, and technological dependence as compared to the rural students. The researcher emphasized the need for the promotion of active life style among college students in order to achieve better health status and physical efficiency.

Flexibility and muscular strength were studied in male and female college students by Khan et al. (2019) and they concluded that students who participated in yoga, stretching exercises, and recreational fitness programs had higher flexibility. However, students involved in resistance training and sports on a frequent basis demonstrated better muscular strength and endurance. The study emphasized the importance of structured exercise programmes in enhancing various aspects of health-related physical fitness.

Regular engagement in physical activity has a significant positive impact on physical and psychological wellbeing, Verma (2018) said. The study showed that active students had lower stress levels, better concentration, improved academic performance and better emotional well-being than inactive students. The researcher strongly believed that health-related fitness is an important component of the holistic development and quality of life of college students.

## 3. Emergence of the Study

Rapid urbanisation, technological advancement and changing lifestyle patterns have greatly affected college students' daily routine. An increasing number of students in urban areas are engaging in sedentary activities such as mobile use, online learning, gaming, and long hours of academic work, resulting in reduced physical activity and a decline in fitness levels. Rural students are more active with walking, cycling, farm work and outdoor activities. Lifestyle and physical activity patterns may differ among students, and this could lead to differences in cardiovascular endurance, muscular strength, flexibility and body composition. The literature review shows that there are significant differences in physical fitness between rural and urban populations. Little research has focused on the specific population of college students. Hence, the present study was undertaken to compare the health-related physical fitness status of rural and urban college students and to study the effect of lifestyle and environmental factors on their fitness status.

## 4. Objectives of the Study

1. To compare the Health-Related Physical Fitness of Rural and Urban College Students.
2. To compare cardiovascular endurance between rural and urban students.
3. To compare muscular strength between rural and urban students.
4. To compare flexibility between rural and urban students.
5. To compare body composition between rural and urban students.

## 5. Hypotheses

1. There exists a significant difference in Health-Related Physical Fitness between rural and urban college students.
2. There exists a significant difference in cardiovascular endurance between rural and urban students.
3. There exists a significant difference in muscular strength between rural and urban students.
4. There exists a significant difference in flexibility between rural and urban students.
5. There exists a significant difference in body composition between rural and urban students.

## 6. Method

Descriptive survey methods of research was used in the study.

### 6.1 Sample

For the present study, a sample of 200 college students consisting of 100 rural and 100 urban students was selected from different colleges.

### 6.2 Delimitations of the Study

1. The study is delimited to 200 college students only.
2. The study is restricted to selected colleges.
3. Only health related physical fitness components were considered.

### 6.3 Tools Used

1. Cooper 12-Minute Run Test (Cardiovascular Endurance)
2. Push-Up Test (Muscular Strength)
3. Sit-Up Test (Muscular Endurance)
4. Sit and Reach Test (Flexibility)
5. BMI (Body Composition)

### 6.4 Statistical Technique

The data collected were analysed using descriptive and inferential statistical techniques. Mean and standard deviation were calculated for all the chosen variables. Independent sample t-test was used to determine the significance of difference between rural and urban college students with respect to cardiovascular endurance, muscular strength, flexibility and body composition. The significance level was set at 0.05.

## 7. Results and Discussion

Table 1 Comparative analysis of health-related physical fitness between rural and urban college students. The results show that all the chosen variables differ significantly. In cardiovascular endurance and muscular strength, rural students had higher means than urban students. This difference can be explained by the more physical lifestyle of rural students who usually are involved in outdoor activities and physically demanding daily routines.

Table 1: Comparison of Health-Related Physical Fitness between Rural and Urban College Students (N=200)

| Variables | Rural Mean | Rural SD | Urban Mean | Urban SD | t-value | Result |
|---|---|---|---|---|---|---|
| Cardiovascular Endurance | 48.5 | 4.21 | 42.3 | 5.12 | 3.45* | Significant |
| Muscular Strength | 32.4 | 3.65 | 28.7 | 4.02 | 2.98* | Significant |
| Flexibility | 22.1 | 2.84 | 25.6 | 3.11 | 2.75* | Significant |
| Body Composition (BMI) | 21.8 | 1.96 | 24.3 | 2.25 | 3.12* | Significant |

**Note** : * Significant at 0.05 level

Urban students had better flexibility scores and this may be due to more exposure to organised fitness programs, yoga exercises and indoor recreation facilities. The results also indicated that the BMI values of the urban students were relatively higher showing more fat deposition and less physical activity. The t-values computed for all the variables were found to be significant at 0.05 level. This implies that the differences between rural and urban students are statistically meaningful. Therefore, the hypothesis of significant differences in health-related physical fitness between rural and urban college students is accepted.

## 8. Discussion

The results of the present study are in line with the previous study conducted by Kumar and Singh (2022) which found that the general condition of rural students is endurance and muscular strength is better as they are more active and involved in outdoor activities. Rural pupils are more likely to take part in physical work as well as spending more time in natural environments, all of which have a positive impact on their physical fitness. Urban students' moderate cardiovascular fitness and muscle strength may relate to their sedentary lifestyle, sitting time during academic hours and excessive use of digital devices. Compared to rural students, urban students are more likely to use mechanised transportation and less likely to engage in outdoor games and other recreational activities. The high BMI of city pupils corroborates the findings of Patel and Verma (2020) that a bad diet and physical inactivity increase the risk of obesity

among city children. Urban students may have higher body fat percentages as they consume more fast food, eat less regularly and do less physical exercise. Students of metropolitan schools could have higher flexibility scores due to organised fitness facilities, yoga centres and systematic fitness programs. Flexibility training is often part of exercise programs in the gym and urban fitness centres, which can increase the suppleness of muscles and the mobility of joints. Overall, the findings of the study suggest that lifestyle and environmental factors are major factors influencing the health-related physical fitness of college students.

## 9. Conclusion and Implications

It was concluded in the present study that there are significant differences found between the rural and urban college students for various components of health-related physical fitness. The cardiovascular endurance and muscular strength were found to be better among the rural children because they were active and involved more in physical activities whereas the flexibility was comparatively good among the urban as they were less physically active. The students of the cities also had higher BMI levels, reflecting increased levels of sedentary activities and decreased levels of physical activity. The results highlight the importance of an active lifestyle for overall physical fitness and health. So, it is recommended that the schools promote regular involvement of students in sports, exercise and recreational activities. A healthy lifestyle awareness programme and a programme regarding balanced nutrition and the importance of regular physical activity should be carried out in colleges as well. The study also recommends that there should be a structured PE programme for pupils, especially those in urban areas, to reduce inactivity and improve fitness. Promoting the health-related physical fitness of college students is of great significance to improve the physical health, academic performance and long-term health of students.

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