

Physical Fitness Problems and Improvement Strategies of Chinese College Students: A Case Study of Physical Fitness Data from Northeast Normal University

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Abstract. Using Northeast Normal University as a case study, this study aims to identify the root causes of these problems and provide corresponding improvement strategies by analyzing the physical health problems of college students in the university in depth. First, this study will investigate the reasons why college students lack awareness of exercise. With the increasing pressure of social competition, many college students are more concerned about their studies and employment prospects than the importance of their physical health. Secondly, this paper will also explore the effects of prolonged incorrect sitting posture on physical health. In addition, poor diet is also a common problem among Chinese college students. To address the above problems, this study will propose some improvement strategies. Firstly, schools and families should work together to strengthen the publicity and education work on college students' physical health and raise their awareness of exercise. Secondly, schools can increase the number of sports grounds and facilities and encourage students to actively participate in various sports activities. In addition, it is also necessary to introduce the knowledge of correct sitting posture in the classroom as well as regular activities such as stretching exercises.

Keywords: Physical Fitness; Problems and Improvement Strategies; College Students.

1. Introduction

With the rapid development of urbanization and industrialization, people's lifestyles have changed dramatically, affecting college students' physical fitness. In the past, the physical fitness level of Chinese college students was relatively high, and most of them possessed good physical fitness. However, with the fast pace of social life, the popularization of transportation and the advancement of technology, college students' exercise and physical activities have been gradually reduced and replaced by a sedentary lifestyle. Currently, the physical fitness status of Chinese college students is generally declining, and many students perform poorly in physical fitness tests. Health problems such as obesity, myopia, and poor body image are gradually increasing, a trend that has caused widespread concern. Declining physical fitness affects students' physical health, may decrease learning efficiency, and may even affect future career development. Therefore, studying and improving college students' physical fitness problems is crucial. The physical fitness problem of Chinese college students is a serious challenge facing society [1-3].

This study explores the root causes of physical fitness problems among Chinese college students and possible improvement strategies to enhance their physical fitness levels. Using Northeast Normal University (NNU) as a case study, this study will provide an in-depth analysis of college students' physical fitness problems and provide insights on how to improve them. The importance of this study lies in the fact that it is not only about the health of the individual but also about the health and development of society as a whole. By improving the physical fitness level of university students, this study is expected to contribute to the development of healthier and more energetic citizens of society.

2. Methodology

The data for this study were obtained from the student physical assessment data of Northeast Normal University. A random sample of data from the database for a certain grade, totaling 8254, was selected for analysis in this study. These data were collected through regular student physical testing activities conducted by school athletic departments and related organizations. Northeast Normal University, the case school of the study, had physical measurement data that included students' physical indicators such as height, weight, body fat percentage, lung capacity, endurance, flexibility, and speed. Collecting these data is part of the regular physical assessment activities conducted by the school to assess the student's fitness level and physical health. After assessing the physical fitness level of the students of Northeast Normal University, the following results were obtained in this study.

3. Results

After assessing the physical fitness level of the sampled students, the following results were obtained from this study.

3.1. The Physical Fitness Level of Students

The physical fitness level of university students showed some variations. The measurement of physical fitness level included several aspects such as aerobic endurance, muscular strength and flexibility. In these areas, the following trends were observed:

Aerobic endurance: aerobic endurance is an important indicator for assessing how long a person can sustain prolonged, moderately intense aerobic activity [4]. This study found that most students performed well in terms of aerobic endurance (their results are shown in Figure 1). This means they could perform longer running, swimming or other aerobic activities without feeling too tired. This may be related to the sports facilities provided on the university campus and the opportunities for students to participate in sports activities.

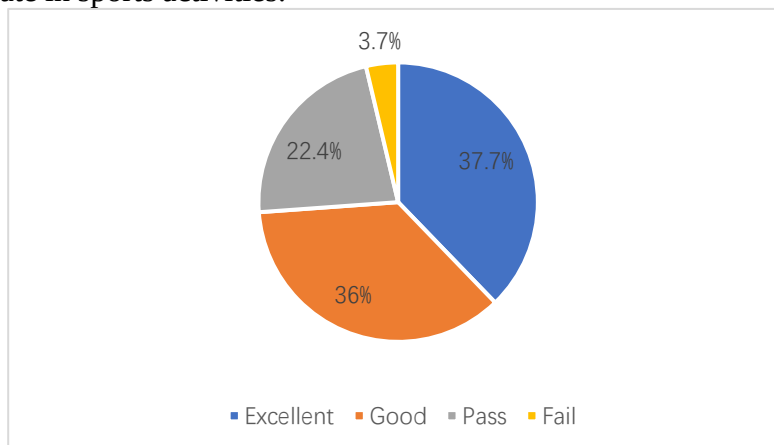


Fig. 1 Aerobic endurance performance distribution ratio

Flexibility and strength categories: flexibility and strength are important factors in assessing muscular strength and endurance [5, 6]. This study showed that there were some differences in flexibility and strength categories. Some students possessed greater muscular strength and may have regularly engaged in physical training or weight-lifting exercises (their distribution is shown in Figure 2). However, other students may need to be stronger because they lack muscle-building or physical training opportunities. This difference may impact daily life and physical activities, such as lifting heavy objects or participating in competitions.

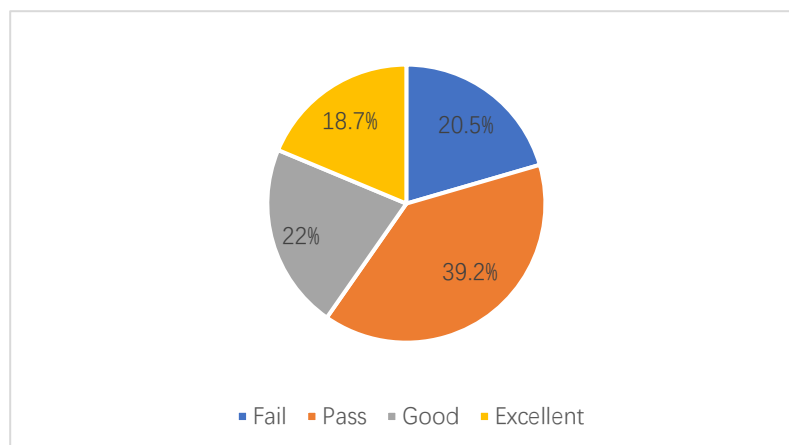


Fig. 2 Results in flexibility and strength

Speed and Dexterity: Speed usually refers to the time it takes to complete a task or activity, while dexterity involves the body's coordination and flexibility in various situations. Speed and dexterity are essential in many sports and everyday activities [7, 8]. Speed can provide a competitive advantage in games and competitions, while dexterity can help with challenges and tasks in everyday life. Therefore, for individuals with room for improvement in speed and agility, related training and practice may positively impact their overall fitness and quality of life. Regarding speed and agility, different performances were observed in the study (the proportions of their distribution are shown in Figure 3). Some students demonstrated excellent speed and could perform a variety of tasks in a short time, such as running races or reactive sports. However, other students may need more speed training to improve their performance in specific tasks. In this program, this study observed several students failing to meet the passing standard, which suggests certain challenges and room for improvement. This may reflect that some students need more support and guidance in these key physical qualities to improve their performance.

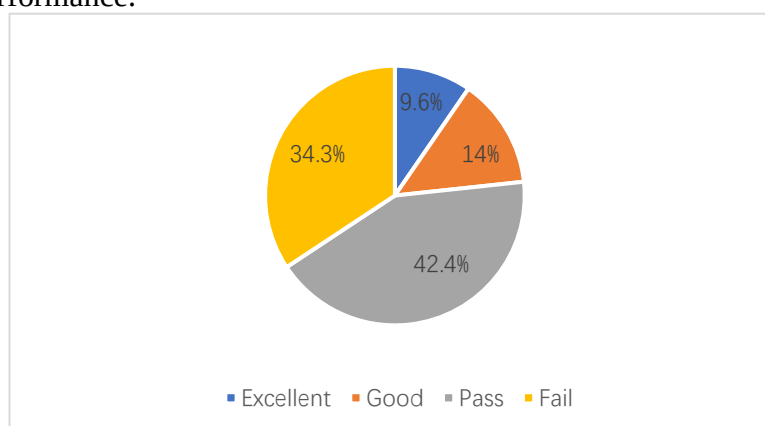


Fig. 3 Results in speed and dexterity results

The physical fitness levels of the case study university students varied in different ways, which may be influenced by their lifestyles, exercise habits and personal preferences. Understanding these differences can help develop targeted physical and health education programs to help students improve their physical fitness, health, and quality of life. In the next section, this study will further explore the causes of physical fitness problems to suggest improvement strategies.

3.2. Analysis of the Problem

The trend of physical fitness declined. First of all, this study noticed that there is a trend of physical fitness decline in some college students. This trend may be related to modern lifestyles, where many students sit in classrooms or offices for long periods and lack sufficient physical activity. In addition, while the popularity of electronic devices such as cell phones, computers, and televisions has made

it easier to fall into a sedentary lifestyle, it has also reduced opportunities for outdoor activities. This has led to a gradual decline in students' aerobic endurance and muscular strength.

Eating habits. Second, this study found that the unhealthy eating habits of some students also negatively impacted their physical fitness. These students may be more inclined to consume fast, high-sugar, high-fat foods at the expense of vegetables, fruits, and balanced nutrition. Poor eating habits may lead to weight gain, energy loss and reduced physical fitness.

Lack of health awareness. Another major finding was that some students needed more health awareness of the importance of physical activity and healthy eating. They may need to realize that physical fitness problems may have long-term effects on their health and life. As a result, they lack motivation to adopt positive health behaviors.

Inadequate health education. Health education may need to be more adequate in universities, and schools may need to enhance health education for students, including dietary guidance, the importance of physical activity, and how to maintain a healthy lifestyle. Increasing students' health awareness and knowledge could help them better manage their physical fitness and health.

These key findings suggest that physical fitness problems are prevalent in the college population and may be influenced by various factors. Understanding the nature of these problems is the first step in developing improvement strategies, and this study will explore possible improvement strategies to enhance students' physical fitness in the next sections [9, 10].

4. Discussion

4.1. Causes of the Problem

Sedentary behavior in modern lifestyles is one of the reasons for the decline in students' physical fitness. In college, students may spend much time sitting in class and then return to their dorm rooms or libraries to continue sitting and studying. Not only does this prolonged sedentary time limit opportunities for physical activity, but it can also lead to muscle atrophy, loss of stamina, and metabolic slowdown. A sedentary lifestyle negatively affects student fitness in several ways. First, prolonged sitting may lead to muscle tension and discomfort, especially in the neck, back, and lumbar region. This discomfort may affect students' learning and quality of life. Second, prolonged sitting reduces the activity of the cardiovascular system, which increases the load on the heart and increases the risk of cardiovascular disease. This is also a potential health threat for young college students. In addition to this, the widespread use of electronic devices encourages students to spend long hours indoors rather than exercising outdoors. With the popularity of smartphones, tablets and televisions, students are more inclined towards indoor entertainment, immersing themselves in social media, video games and online videos. This exacerbates the problem of sedentary behavior and diminishes their interest in outdoor activities.

Unhealthy eating habits, such as high sugar, fat and processed food intake, and insufficiently balanced meals have significantly reduced an individual's fitness level. Some students prefer foods high in sugar, fat and salt at the expense of vegetables, fruits and balanced nutrition. This eating pattern can lead to weight gain, energy loss and health problems such as high blood pressure and diabetes. Poor eating habits can negatively affect students' physical fitness, making them more prone to fatigue and weakness.

4.2. Recommendations

Future improvement of college students' physical fitness requires comprehensive and sustained efforts to ensure that students' health and fitness levels are effectively improved. The following are some future perspectives and specific recommendations: first, the university should strengthen health education and publicity to raise students' awareness of the importance of physical fitness. This can be achieved by introducing health education modules in first-year orientation programs, organizing regular health talks and seminars, and creating health-related social media accounts. In addition,

regular promotional activities such as posters, brochures and digital message boards can effectively communicate the benefits of a healthy lifestyle.

Second, to meet the interests and needs of different students, school athletic departments should offer a diverse range of sports programs and clubs. These include traditional sports such as soccer, basketball and tennis, as well as outdoor activities such as hiking, cycling and yoga. By encouraging students to participate in team sports, schools can promote cooperation, social interaction, and the joy of exercise. In addition, schools can organize interschool competitions and tournaments to increase student participation.

Third, cafeterias can play a key role in improving food choices. An important task is to re-evaluate menus to include more healthy food choices such as fruits, vegetables, whole grain breads, low-fat proteins, and sugar-free beverages. Also, provide nutritional information for each dish to help students make healthier food choices. Encouraging students to consume enough water is also key, and cafeterias can provide easily accessible drinking water stations and regular reminders about water intake.

5. Conclusion

This study noted a general trend of declining physical fitness among Chinese university students, a globally prevalent problem. Long-term sedentary lifestyles and unhealthy eating habits were identified as one of the main causes. This decline in physical fitness threatens students' health and quality of life. Next, the paper discusses the root causes of the physical fitness problem. Sedentary lifestyles lead to a loss of muscle mass, a decline in stamina levels, and a deterioration in metabolic health. At the same time, unhealthy eating habits, such as high sugar and fat food intake, increase the risk of health problems, including obesity, hypertension, and diabetes. These factors contribute to the decline in college students' physical fitness levels. This paper examines strategies to improve the physical fitness of college students. To improve students' physical fitness levels, schools should take several steps, including increasing opportunities for physical activity, providing comprehensive health education, and improving food choices in the cafeteria. These strategies help students develop a healthy lifestyle, including more physical activity and a balanced diet. This not only benefits the physical health of individuals but also improves academic performance and quality of life.

The issue of physical fitness among Chinese university students needs to be given adequate attention and focus. Through education, lifestyle improvement and health support, students can be helped to improve their physical fitness levels and overall health. This effort requires the cooperation of schools, students and the community to ensure a healthier and more active future for the younger generation. Other universities and institutions are encouraged to adopt similar research methods to assess and improve the physical fitness levels of university students to work together to promote students' physical and mental health.

Future research can evaluate the effectiveness of various improvement strategies to determine which methods are most effective in improving physical fitness levels. This will help schools to target their improvement programs better and ensure sustainable long-term results.

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