Correlation Study of Sports Lifestyle and Physical Health about College Students

—Take Lvliang College as an Example

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Abstract

This thesis mainly studies the relationship between sports lifestyle and physical health of college students. Taking 300 students in Lvliang College as subjects, by the way of the literature review, questionnaire surveys, physical tests, mathematical statistics and so on, this paper analyzes students' body quality and physical health. In this paper, constituent elements of sports lifestyle include: sports behavior subject, behavior characteristics, behavior benefit (the article names the four different kinds of lifestyle excellent-grade, good-grade, middle-grade and bad-grade); physical health include: body shape, body function and body quality. This article analyzes and compares some factors of body shape, body function and body quality, such as weight, vital capacity, BMI, lung index, 50-meter, 800-meters (girls), 1000-meters (boys), sit and reach, one-minute sit-up (girls), and pull-up (boys). The results show that students with good sports lifestyle have better physical health than students with bad sports lifestyle. It is quite visible that a good sports lifestyle is a vital factor of students' physical level. Setting a good sports lifestyle can improve body quality, promote the development of flexibility, speed and stamina, which eventually promote the all-round development of students' physique. At the end of this thesis, the author suggests that college students should form a positive and healthy life behavior.

1. Introduction

In order to implement the guiding ideology that the health comes first, strengthen school sports, the Education

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Ministry put forward the National Student Physical Health Standard. College Sports mainly aims at improving students' healthy level, and physique plays an important part of measuring physical health. Physical health becomes a measurement of students' physical health, meanwhile, the lifestyle of university will have a great effect on physical health. Chen Huawei investigated and found that the establishment of a good sports lifestyle can improve the quality of physical function, promote the development of flexibility, speed, and endurance, as well as promote the comprehensive development college students' physique. Chen Yuzhong thought that the physical health of adolescent is a comprehensive social issues including education. The main factors that affect the physical health of adolescents include traditional education concepts, changes of modern lifestyles and social structure, value judgments of school physical education. Jiang Qinhua proved that lifestyles, like exercising, diet, smoking and so on, are positively correlated to the human physique. Therefore, the unhealthy lifestyles definitely lead to the risk of physical decline. According to testing study, this paper takes Lvliang College as an example, compares the relationship between students' different lifestyles and their physique [1]-[3].

2. Study Subjects and Methods

2.1. Subjects

This paper randomly selects two classes that are attending selective PE classes in Lvliang College and gives away questionnaire survey to students.

2.2. Research Methods

2.2.1. Literature Method
Based on the need of this project, the author searches material and literature about physical lifestyle, physical health of college students by reading books from bookstores, reading articles on CNKI etc., which provides a solid theoretical foundation.

2.2.2. Questionnaire Method
The author uses the self-made questionnaire to investigate subjects' training purpose, motivation, exercise amount, exercise items, exercise habits, exercise time as well as other aspects. Subjects are required to complete the questionnaire and hand them in on the spot. The result is that 300 questionnaires are handed out, and 248 questionnaires are returned, of which 236 questionnaires are valid, the recovery rate is 82.67%, and the effective rate is 95%, which meets the requirements of questionnaire survey.

2.2.3. Measurement Method
According to the National College Students' Physical requirements, subjects are tested from some physical indicators. Details are as follows: [4]
    1) Body shape includes: height, weight and BMI.
    2) Body function includes: vital capacity, lung index calculated according to weight.
    3) Physical fitness includes grip strength (power quality), Sit and Reach (flexibility), pull-up, standing long jump (explosive power of lower limb), girls' 800-meter (Endurance Quality), boys' 1000-meter (Endurance Quality).

2.2.4. Mathematical Statistics
This paper uses SPSS to analyze the indicator's all indices and questionnaire data. Details are as follows:
    1) Organizing and calculating three sports lifestyle factors. Questions from No. 3 to 15 are integrated into the efficient factor of sports behavior, questions from NO. 20 to 23 are integrated into the characteristic factor of Sports Behavior, and questions from 24 to 33 are integrated into the main factor of Sports Behavior.
    2) Scoring questionnaire questions, processing common factors of sports lifestyle in detail, calculating the average value of each common factor, dividing all the common factors and then synthesizing scores of the three common factors, finally dividing them into different sports lifestyle levels. Calculation results are expressed in the form of Mean ± SD and $P < 0.05$ indicates that there is a significant difference between groups [5].

2.3. The Grade Classification of Sport Life Style

Grading the classifications of different sports lifestyles needs to understand different sports lifestyles. According

to sports lifestyle factors, this paper divides them into four different grades:

Sports life with three elements at the same time is regarded to be the excellent-grade (excellent-grade in following content), Sports life with two elements randomly is regarded to be the good-grade (good-grade in following content), Sports life with one element is regarded to be the middle-grade (middle-grade in following content), Sports life without any element is regarded to be the bad-grade (bad-grade in following content). The excellent-grade ratio is 8.47%, the good-grade ratio is 37.29%, the middle-grade ratio is 37.28%, and the bad-grade ratio is 16.96%. Boys' ratios of the four grades are respectively 6.06%, 30.30%, 40.90%, 22.74%; and girls' ratios of the four grades are respectively 9.41%, 40.00%, 35.88%, 14.71%.

3. Results and Analysis

3.1. The Result Analysis of the Boys' Survey

3.1.1. Healthy Quality Comparison about Boys' Sports Lifestyle between the Excellent Grade and the Bad One

As we can see from **Table 1**, there is still a lager gap between excellent-grade boys and bad-grade boys in most aspects. Differences in Height, weight, BMI are little, that is to say, boys who regularly exercise generally have a good body shape and a lower percentage of body fat, this phenomenon is caused by many reasons. Due to bad eating and living habits, people take in excessive nutrients. Because of study and work, no energy to participate in physical exercise leads to a lot of fat on accumulation. So PE teacher can popularize sports and health knowledge, teach students a healthy lifestyle and let them develop good habits [6].

From the test results of pull-up, we can see that the difference between the two grades is still very evident. This shows that from the muscle endurance test data, we can easily discern whether the subject has good sports habits and whether they regularly get involved in physical exercise or not. At the same time, we must know it clearly that the pull-up level of our college is relatively low, and in the future, the PE classes should focus on the development of students' upper body strength and muscular endurance [7].

Statistics of standing long jump show that the test results of most students are far away from the standard test results, except for a few students who have better physical fitness and good sports lifestyle. It can be predicted that some subjects have incorrect attitude, while most students are lack of exercise, and their lower limbs have explosive development space. Thus they should be encouraged to participate in sports activities.

3.1.2. Healthy Quality Comparison about Boys' Sports Lifestyle between the Good Grade and the Bad One

As can be seen from **Table 2**, the differences between good-grade boys and bad-grade boys are not significant.

Table 1. Boys' Sports lifestyle between the excellent grade and the bad onedata list.

Project	The boy sports lifestyle excellent-grade (N = 4)	The boy sports lifestyle bad-grade (N = 15)	P (0.05)
Height (cm)	175.00 ± 6.98	167.29 ± 8.41	1
Weight (kg)	63.38 ± 5.94	66.33 ± 10.43	1
BMI	20.67 ± 0.97	23.2 ± 12.34	0.74
Weight score	100.00 ± 0.00	86.67 ± 12.34	0.09
Lung capacity (ml)	4375.00 ± 977.67	3420.00 ± 878.43	0.50
Lung volume index (ml/kg)	68.68 ± 11.42	52.02 ± 12.90	0.10
Lung capacity rating	79.00 ± 15.20	56.93 ± 26.70	0.93
50 M race (sec)	7.88 ± 0.52	8.79 ± 1.30	1
Standing long jump (cm)	215.50 ± 23.95	188.47 ± 28.24	1
Sit and reach (cm)	15.67 ± 2.70	14.11 ± 3.90	1
Pull-ups (beats)	6.00 ± 3.16	4.53 ± 3.67	1
Constitution norm	71.00 ± 3.64	56.77 ± 12.74	0.22

Table 2. Boys' sports lifestyle between the good grade and the bad one data list.

Project	The boy sports lifestyle good-grade (N = 20)	The boy sports lifestyle bad-grade (N = 15)	P (0.05)
Height (cm)	169.20 ± 9.07	167.29 ± 8.41	1
Weight (kg)	61.75 ± 11.44	66.33 ± 10.43	1
BMI	21.46 ± 2.77	23.2 ± 12.34	0.48
Weight score	95.00 ± 8.88	86.67 ± 12.34	0.08
Lung capacity (ml)	3695.00 ± 1180.7	3420.00 ± 878.43	1
Lung volume index (ml/kg)	59.01 ± 12.82	52.02 ± 12.90	0.57
Lung capacity rating	59.55 ± 33.49	56.93 ± 26.70	1
50 M race (sec)	8.70 ± 1.45	8.79 ± 1.30	0.45
Standing long jump (cm)	188.55 ± 38.38	188.47 ± 28.24	1
Sit and reach (cm)	11.24 ± 7.38	14.11 ± 3.90	0.89
Pull-ups (beats)	3.20 ± 2.86	4.53 ± 3.67	1.1
Constitution norm	57.28 ± 12.79	56.77 ± 12.74	1

The test results of the latter are higher than those of the former in the following aspects: height, BMI, vital capacity, lung body index, vital capacity scores, sit and reach as well as pull-up. This may due to the worse fatigue abilities of the former. Fatigue is a basic physiological phenomenon, which results from the long and high-intensify physical activities or labor, and then which leads to the reduction of working ability. Therefore, when setting the goal of physical activities, the college sports teachers ought to consider the realistic facts, and set proper teaching goals that fit students [8].

However, from the aspect of the test results of pull-up, the gap between the two is obvious. This shows that from the muscular endurance test data, we cannot easily distinguish whether the two has good sports habits. It becomes completely obvious that whether they have participated in physical exercises. Statistics of standing long jump show that the test results of most students are far away from the standard test results, except for a few students who have better physical fitness and good sports lifestyle. It can be predicted that some subjects have incorrect attitude, while most students are lack of exercise, and their lower limbs have explosive development space. Thus they should be encouraged to participate in sports activities.

3.1.3. Healthy Quality Comparison about Boys' Sports Lifestyle between the Middle Grade and the Bad One

As can be seen from Table 3, the test results between middle grade boys and bad grade boys are almost the same, and the obvious differences are shown in these aspects, weight ratings, vital capacity, lung body index, physical fitness standard score. BMI is a basic content of body shape, which is also an important reflection of the growth development and physical health level. In addition to genetics, ethnicity, natural environment, people's body shape is also closely related to physical exercises and nutritional status after birth. What is more, the lung capacity is a vital indicator of evaluating the function of human respiratory system. People with low lung capacity cannot possess high longevity just as people with high lung capacity do. FVC size directly affects the run of body parts. Therefore, when evaluating, people have to take these factors into consideration.

From the test result of pull-up, the gap between the two is still very evident. This shows that we can easily know whether the subject has good sports habits, whether he regularly gets involved in physical exercises. At the same time, we must clearly see that the pull-up level of our school is relatively low, and in the future, physical education should focus on developing students' upper body strength and muscular endurance.

Statistics of standing long jump show that the test results of most students are far away from the standard test results, except for a few students who have better physical fitness and good sports lifestyle. It can be predicted that some subjects have incorrect attitude, while most students are lack of exercise, and their lower limbs have explosive development space. Thus school should organize colorful activities to encourage them to participate in sports activities.

Table 3. Boys' sports lifestyle between the middle grade and the bad onedata list.

Project	The boy sports lifestyle Middle-grade (N = 27)	The boy sports lifestyle bad-grade (N = 15)	P (0.05)
Height (cm)	166.70 ± 7.40	169.27 ± 8.41	1
Weight (kg)	59.19 ± 10.02	66.33 ± 10.43	0.22
BMI	21.21 ± 2.7	23.2 ± 12.34	0.21
Weight score	94.81 ± 8.93	86.67 ± 12.34	0.06
Lung capacity (ml)	3692.59 ± 826.92	3420.00 ± 878.43	1
Lung volume index (ml/kg)	62.83 ± 11.10	52.02 ± 12.90	0.05
Lung capacity rating	63.59 ± 23.41	56.93 ± 26.70	1
50 M race (sec)	8.44 ± 1.25	8.79 ± 1.30	1
Standing long jump (cm)	188.47 ± 28.24	188.47 ± 28.24	1
Sit and reach (cm)	14.11 ± 3.90	14.11 ± 3.90	1
Pull-ups (beats)	4.53 ± 3.67	4.53 ± 3.67	1
Constitution norm	57.28 ± 12.79	56.77 ± 12.74	1

3.2. The Result Analysis of the Girls' Survey

3.2.1. Healthy Quality Comparison about Girls' Sports Lifestyle between the Excellent Grade and the Bad One

From **Table 4**, the excellent-grade girls are better than the bad-grade girls in the lung body index, 50 meters, physical fitness standard score, which is the predicted result. Statistics of standing long jump show that the test results of most students are far away from the standard test results, except for a few students who have better physical fitness and good sports lifestyle. It can be predicted that some subjects have incorrect attitude, while most students are lack of exercise, and their lower limbs have explosive development space, and they don't have the initiative for physical exercise. Among the girl subjects, girls whose sports lifestyles are excellent-grade are generally in a healthy weight category from 18.5 to 23.9. Nevertheless, girls whose sports lifestyles are bad-grade are generally much thinner [9] (≤18.5) or overweight (≥24), which is especially evident among girls in term of this indicator. This reflects that the regular physical exercise has an effect on body shape and body fat ratio, girls who regularly exercise have a good body and a lower percentage of fat ratio. The reasons for this phenomenon are many-sided, such as poor eating diet and living habits, the limitations of studying and working, no energy to participate in physical exercise, etc. Thus it causes fat accumulation and then overweight [9] [10].

According to statistics, difference in the endurance quality is the obvious between the two girl groups. The test results analysis of 50 meters shows that the gap is still large. Therefore, the cardio respiratory endurance level of excellent-girls is significantly higher than that of bad-grade girls, which also tells us that good exercise habits are extremely important to shape the body function [11].

It can also be seen from the statistical data that there are some differences about the power quality between the two groups. From one-minute sit-ups, the number gap between the two groups is large, which indicates that we can easily know whether girls have good sports habits.

3.2.2. Healthy Quality Comparison about Girls' Sports Lifestyle between the Middle Grade and the Bad One

As can be seen from **Table 5**, middle-grade girls are much better than bad-grade girls in 50 meters and fitness standard score. Research shows that the abdomen stores the most fat among all body parts, followed by the thigh. If people lack effective exercise, abdominal fat accumulation is quite easy. Fat content and human health are closely related, and an appropriate amount of body fat and lean body mass will be conducive to health. Except that variables are not significantly different in 50 meters and one-minute sit-ups, gaps are larger in other factors. This may result from different university living environment, personal exercising will, spare time, eating diet, class period arrangement of physical education [12]-[14].

Table 4. Girls'sports lifestyle between the excellent grade and the bad onedata list.

Project	The girl sports lifestyle excellent-grade (N = 16)	The girl sports lifestyle bad-grade (N = 25)	P (0.05)
Height (cm)	168.50 ± 6.98	170.60 ± 10.09	1
Weight (kg)	60.06 ± 9.31	69.06 ± 15.03	0.20
BMI	21.21 ± 2.79	23.62 ± 4.21	0.25
Lung capacity (ml)	3450.00 ± 708.10	3736.00 ± 1014.84	1
Lung volume index (ml/kg)	58.09 ± 11.99	54.66 ± 12.02	1
50 M race (sec)	8.64 ± 1.22	8.94 ± 1.36	1
Standing long jump (cm)	193.56 ± 31.68	194.96 ± 28.24	1
Sit and reach (cm)	13.44 ± 5.22	13.43 ± 4.57	1
One-minute sit-ups (beats)	32.69 ± 5.42	33.16 ± 5.20	1
Constitution norm	76.72 ± 7.49	72.58 ± 10.09	0.52

Table 5. Girls' sports lifestyle between the middle grade and the bad one data list.

Project	The girl sports lifestyle middle-grade (N = 61)	The girl sports lifestyl bad-grade (N = 25)	P (0.05)
Height (cm)	167.62 ± 7.93	170.60 ± 10.09	0.76
Weight (kg)	61.43 ± 12.54	69.06 ± 15.03	0.09
BMI	21.76 ± 3.54	23.62 ± 4.21	0.25
Lung capacity (ml)	3454.10 ± 863.82	3736.00 ± 1014.84	1
Lung volume index (ml/kg)	57.02 ± 13.23	54.66 ± 12.02	1
50 M race (sec)	8.85 ± 1.09	8.94 ± 1.36	1
Standing long jump (cm)	193.98 ± 32.76	194.96 ± 28.24	1
Sit and reach (cm)	14.34 ± 5.93	13.43 ± 4.57	1
One-minute sit-ups (beats)	33.67 ± 7.98	33.16 ± 5.20	1
Constitution norm	75.72 ± 6.07	72.58 ± 10.09	0.48

4. Conclusion and Discussion

After the cooperation of author and faculty and students in Lvliang College, this paper makes a conclusion: Students' sports lifestyle has a positive correlation to their physical health, that is to say, the better sports lifestyle means better exercise habits, healthier fitness, the higher index of fitness health, the higher the physical health index. On the contrary, bad sports lifestyle may lead to more negative factors for college students. This paper puts forward some recommendations, such as stimulating students' interest to participate in sports, making the habit of exercising, commanding the concept of lifelong sports, further improving and expanding physical education curriculum, making students develop good lifestyle, encouraging teachers to arrange certain physical training.

Funding

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