Research on the Correlation Between College Student's Living Habits and Physical Health

—Taking Dalian Neusoft University of Information as an example

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Abstract—College students are the hope of the nation and the pillar of the country, and their physical level is directly related to the social development and national stability. College students are the middle force in the future socialist construction in China. The talents in colleges are related to future construction and development in China. Their physical strength directly affects the physical health level of the whole people, and directly related to the future development of the country and the rise and fall of the nation [1]. There is an inseparable relationship between living habits and physical health. Compared with the former, the living habits of college students have changed significantly, and bad living habits will have many adverse effects on the health for college students. In this work, 500 full-time undergraduate students in Dalian Neusoft University of Information were randomly selected as the research objects. Through questionnaire survey and comparative research, the data for four years of body mass index, cardiovascular function, pulse, etc., were selected as the basis. The factors that change their physical health status during the four years of university are investigated, which can offer reference for improving the physical health level of college students in China. The results are as follows: From the beginning of admission, students' physique has been on a downward trend. The main reason for the change in students' physical health is bad living habits. Based on the decline of college students' physical condition, it is suggested that college students should form good living habits, actively participate in physical exercises and constantly improve their physical level.

Keywords—Dalian Neusoft University of Information; college students; physical health; living habits; influencing factors

I. INTRODUCTION

A. The basis of topic selection

With the rapid development of society, Chinese people's perception of the importance of health has been gradually improved, and the desire for health has become more and more strong. Health has become the key word for the development of the times. President Xi Jinping once said, "without the health of the whole people, there will be no comprehensive well-off society". As early as 2015, the *Proposal of the CPC Central Committee on Formulating the Thirteenth Five-Year Plan for National Economic and Social Development*, which was reviewed and approved by the Fifth Plenary Session of the 18th CPC Central Committee, officially promoted "healthy China" as a national strategy [2]. College students are the builders of the country's future, shouldering the glorious task and sacred mission in realizing the Chinese dream and the great rejuvenation of the Chinese nation. The physical quality of college students is very important for future development about individuals, nations and countries. College students should not only have enough intelligence, but also have strong physique.

B. Research significance and purpose

In recent years, some researches on college students' physique show that the physique level of college students in China is declining year by year, which not only affects the development of students' own physique, but also becomes a potential crisis of social development. Therefore, it is of great significance to pay attention to the current situation and changing trend of students' physical health, investigate and analyze the factors that affect college students' physical health, and look for countermeasures and methods to enhance students' physical health.

Since the implementation of the healthy China strategy, health problems have attracted the general attention by the whole society, and the physical health of college students is also a hot topic. In recent years, it is an indisputable fact that college students' physique has been declining year by year. It is an urgent task for college education to explore the problems existing in the healthy development of college students' physique, and find out the strategies to promote the development of college students' physique. Only with the joint efforts by the whole society, this passive situation can be changed, and the physical condition of college students can be effectively improved and enhanced [3].

II. RESEARCH METHOD

A. Questionnaire method

The design of questionnaire and the test of reliability and validity. Referring to the questionnaire form of related research, the *Questionnaire of College Students' Living Habits* was finally designed according to the actual situation. The validity of the questionnaire was tested by logical analysis, and the same questionnaire was distributed to the same object 20 days later. The final reliability coefficient r = 0.86 (P < 0.06). Therefore, the validity and reliability of the questionnaire meet the survey requirements.

Distribution and recovery of questionnaires. A total of 500 questionnaires were distributed and 477 were recovered, of which 456 were valid. The recovery rate and effective rate

were 98.7% and 96.8%, respectively. Students are required to fill in the questionnaire on the spot to ensure the recovery and quality of the questionnaire. Finally, 456 valid questionnaires were confirmed.

B. Tracking investigation method

College students were selected as the object of investigation, and the living habits and physique of the university in the past four years were followed up and investigated.

C. Mathematical statistics

Spss19.0 statistical software was used to make mathematical statistics on the physical health indicators of the subjects in four years. T-test was used for various indicators of the control group and the normal group, so as to explore the impact of network, exercise awareness and bad living habits on the college students' physical health.

III. RESULTS AND ANALYSIS

A. Changes in college students' body shape

Body shape is an explicit index to reflect the level of growth and development. The following tables show changes in body shape over two different periods.

Changes in body weight. BMI is an important index to evaluate the nutritional status and body symmetry. As shown in Table I, the weight of the two periods showed a downward trend, with a weight increase of about 2kg. College life is not only a critical period of learning, but also an important period of growth and development.

TABLE I. CHANGES IN BODY WEIGHT

Grade	n	M±SD(kg)	D-value(kg)	t	p
Freshman	456	72.00±14.75	2.15	5.61	<0.01
Senior	456	74.15±12.77			

Changes in obesity (BMI index). BMI index is the figure obtained by dividing the weight in kilogram by the height in meters squared. It is an international standard to measure the level of the fat and the health of the body.

Chinese body mass index: Light weight: BMI<18.5

Healthy weight: 18.5<=BMI<24

Overweight: 24<=BMI<28

Obesity: 28<=BMI

As shown in Table II, the BMI index changed significantly over the two periods, and most of the students were overweight.

TABLE II. CHANGES IN OBESITY (BMI INDEX)

Grade	n	M±SD	D-value	t	p
Freshman	456	22.44±4.43	1.12	7.47	<0.01
Senior	456	25.56±3.92			

Changes in pulse. The pulse can reflect many aspects of the cardiovascular system, such as the frequency and rhythm of the heartbeat, the contractile force of the heart, the filling degree of the blood vessels, the elasticity of the arterial wall, etc. The

normal pulse rate in adults should be 60 to 100 beats per minute. As shown in Table III, the pulse index did not change much in the two periods.

TABLE III. INDEX CHANGES IN PULSE

Grade	n	< 60 times / min	60-100 times / min	> 100 times / min
Freshman	456	23	401	32
Senior	456	28	389	39

B. Changes in college students' body function

Body function refers to the life activities of the whole human body and its constituent organs and systems.

Changes in college students' cardiovascular function (step Index). Step test index is an important index to reflect the function of human cardiovascular system. The higher the step test index, the higher the functional level of the cardiovascular system. As shown in Table IV, there is a very significant difference between the two periods.

TABLE IV. CHANGES IN COLLEGE STUDENTS' CARDIOVASCULAR FUNCTION (STEP INDEX)

Grade	n	M±SD	D-value	t	p
Freshman	456	83.32±7.79	27.49	55.98	<0.01
Senior	456	55.83±6.38			

C. Changes in college students' body quality

Body quality, usually refers to the basic ability of human muscle activity, is the comprehensive reflection with the function of human organ system in muscle work. The following tables are data selected by the authors for changes in body shape at two different periods.

Changes in college students' speed quality (50m race). 50 meters is a common item to detect the explosive power of male students. Before and after training, the students' subjective feeling is very obvious, and the performance improvement is also quite obvious. As shown in Table V, there is a very significant difference between the two periods.

TABLE V. CHANGES IN COLLEGE STUDENTS' SPEED QUALITY (50M RACE)

Grade	n	M±SD(s)	D-value(s)	t	p
Freshman	456	7.27±0.58	-1.21	-29.37	<0.01
Senior	456	8.48±.54			

Changes in college students' endurance quality (1000m race). Endurance quality refers to the body's ability to overcome fatigue during long hours of work or exercise. It is also an important symbol to reflect the body's health level or physical strength. As shown in Table VI, there is a very significant difference between the two periods.

TABLE VI. CHANGES IN COLLEGE STUDENTS' ENDURANCE QUALITY (1000M RACE)

Grade	n	M±SD(s)	D-value(s)	t	p
Freshman	456	249.66±19.85	-34.68	-30.29	<0.01
Senior	456	284.34±11.05			

Changes in college students' strength quality (standing long jump). Standing long jump is an important item to test bounce

force, and bounce force is closely related to the muscle type and explosive force. As shown in Table VII, there is a very significant difference between the two periods.

TABLE VII.   CHANGES IN STRENGTH QUALITY (STANDING LONG JUMP)

Grade	n	M±SD(m)	D-value(m)	t	p
Freshman	456	2.69±0.19	-0.36	26.51	<0.01
Senior	456	2.33±0.18			

Changes in college students' flexibility (sitting body flexion). Flexibility refers to the range of motion with the body's joints, as well as the elasticity and stretching ability of ligaments, tendons, muscles, skin and other tissues across the joints. The sitting body flexion reflects the flexibility of the joints and muscles. As shown in Table VIII, there is a very significant difference between the two periods.

TABLE VIII.   CHANGES IN FLEXIBILITY (SITTING BODY FLEXION)

Grade	n	M±SD(cm)	D-value(cm)	t	p
Freshman	456	12.05±2.52	-1.89	-7.84	<0.01
Senior	456	13.94±4.25			

D. Analysis on the factors affecting students' physique and health

There are many factors affecting students' physical health, and the factors that affect students' physical health are found out by questionnaire.

Analysis on network utilization. According to the Internet report released by China Internet Network Information Center, the total number of Internet users in mainland China has reached 510 million. Among them, the proportion of student Internet users is the highest, accounting for about 32.3% of the total number, and college students are the main body of student Internet users. Based on the rapid development of Internet, college students have a weak sense of physical exercise due to various reasons, and the ubiquitous "bow headed people" have become "different landscapes" in the current university campus [4].

Investigation and analysis on Internet time

TABLE IX.   INVESTIGATION ON INTERNET TIME(EVERY DAY)

Index	< 1h	1-2h	2-4h	4-6h	> 6h	Total
Population	68	123	97	87	81	456
Percentage (%)	14.9	26.9	21.3	19.1	17.8	100.0

As shown in Table IX, 36.9% of them spent more than 4 hours online every day, and 17.8% of them spent more than 6 hours online every day.

E. The effect of constant computer use on eyesight

TABLE X.   INVESTIGATION ON THE DEGREE OF INFLUENCE ON EYESIGHT

Index	A little bit down, but not obvious	A big drop	No drop	Total
Population	234	155	67	456
Percentage (%)	51.3	33.9	14.8	100.0

As shown in Table X, most of the students who often use computers have reduced their eyesight.

F. Investigation on the situation of physical exercise

Sports can not only promote the development of college students' physical and mental health, but also affect the college students' outlook on life and values, which help them to form the concept and habits of lifelong sports [5]. The participation of physical exercise is a factor that directly affects their physical health. Understanding students' physical exercise is to find out the factors that affect students' physical health.

The number of weekly exercises

TABLE XI.   INVESTIGATION ON THE NUMBER OF WEEKLY EXERCISES

Index	No exercise	1-2times	3times	4-5times	Every day	Total
Population	56	306	47	28	19	456
Percentage (%)	12.2	67.1	10.3	6.3	4.1	100.0

As shown in Table XI, the frequency of weekly exercise is not very high, with most exercises only 1 and 2 times.

The intensity of each exercise

TABLE XII.   INVESTIGATION ON THE INTENSITY OF EACH EXERCISE

Index	Small	Middle	Big	Total
Population	267	158	31	456
Percentage (%)	58.6	34.6	6.8	100.0

As shown in Table XII, half of the students worked out at a small amount each time, which does not play the role of exercise.

G. The effect of sleep quality on physical health

Good sleep quality is the basis of your healthy physique, and good sleep is an important guarantee to maintain abundant energy and healthy and long life. The following is a survey on sleep time and sleep quality.

Average sleep time per day

TABLE XIII.   INVESTIGATION ON SLEEP TIME PER DAY

Index	< 6h	6-7h	8-9h	> 10h	Total
Population	78	273	98	7	456
Percentage (%)	17.1	59.9	21.5	1.5	100.0

As shown in Table XIII, 59.9% of the students' sleep time was guaranteed to be within the normal range. 17.1% of the students did not meet the requirements for sleep.

H. The effect of smoking on physical health

It is well known that smoking is one of the important factors affecting physical health. Smoking status is investigated to obtain relevant data.

Smoking status

TABLE XIV. INVESTIGATION ON SMOKING STATUS

Index	Never smoking	< 10 per day	10-19 per day	> 20 per day	Quit smoking for 1 year	Quit smoking for more than 2 years	Total
Population	166	169	15	8	96	2	456
Percentage (%)	36.4	37.1	3.2	1.7	21.1	0.5	100.0

As shown in Table XIV, 36.4% of the students never smoked and 21.6% of the students had quit smoking. However, some students still smoke.

I. The effect of drinking on physical health

It is well known that drinking is one of the important factors affecting physical health. Drinking status is investigated to obtain relevant data.

Drinking condition

TABLE XV. INVESTIGATION ON DRINKING CONDITION

Index	Never drinking	< 2 bottles per week	3-5 bottles per week	> 5 bottles per week	Total
Population	126	257	67	6	456
Percentage (%)	27.6	56.4	14.7	1.3	100.0

As shown in Table XV, most students have the habit of drinking, only 27.6% of the students never drink.

IV. INVESTIGATION ON DIETARY STATUS

Good eating habits play a key role in health, and the following survey is the dietary status of students.

A. Investigation on breakfast status

TABLE XVI. INVESTIGATION ON BREAKFAST STATUS

Index	Never eat breakfast	Eat 1-3 times per week	Eat 4-5 times per week	Eat per day	Total
Population	56	23	267	110	456
Percentage (%)	12.3	5	58.6	24.1	100.0

As shown in Table XVI, most students can eat breakfast four times a week, and 12.3% never eat breakfast, which is very bad for students.

B. INVESTIGATION on dietary structure

TABLE XVII. INVESTIGATION ON DIETARY STRUCTURE

Index	Meat and vegetarian collocation	Mainly vegetarian	Mainly meat	Total
Population	167	106	183	456
Percentage (%)	36.6	23.2	40.1	100.0

As shown in Table XVII, only a portion of the students is matched with meat and vegetarians per meal. Most of the students are not able to eat normally and reasonably, which will lead to the unreasonable diet of the students and have a great impact on their health.

V. CONCLUSION AND SUGGESTION

A. Conclusion

In the aspect of college students' physical changes, their physical development continues after they enter the university. Weight is on the rise, and BMI index is mostly out of the normal range. The results of vital capacity, 50 meter run and 1000 meter run are all decreased, which existing very significant differences. From the above analysis, it can be seen that college students' physical health has been declining since the beginning of college.

The survey found that college students have a lot of time and frequency to surf the Internet. Long term network activities have a great impact on their own health, including vision, memory, etc. From the above analysis, the main factors that affect the physical health of college students include bad network habits.

College students lack effective exercise time in the process of exercise. The number of exercises is less, and the intensity of exercise is not enough, which is an important factor affecting their physical health.

Most students smoke and drink, which is an important factor affecting their health.

Students also have a lot of deficiencies in the diet link, and not eating breakfast and an unreasonable diet are important aspects of health.

B. Suggestion

It is necessary to improve college students' attention to the physique, cultivate their sports consciousness and interest, and guide them to form correct exercise habits. Through various

channels, schools, departments, and sports departments let students understand and realize the importance of physical health. Paying attention to the organic combination of physical education and health education in colleges is beneficial for college students to establish a sense of lifelong physical education [6].

The school's physical education system has been constantly improved, and its existing evaluation system has been constantly enriched and supplemented. The physical level of college students will be reasonably integrated into the system of school evaluation.

The inspection of bad habits in daily life should be strengthened, such as regular inspection of smoking, drinking, etc. Some food lectures should be held to let students understand the harm of unhealthy eating habits to the body.

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