Comparative analysis of the physical fitness status of Chinese and Vietnamese adolescents aged 12–15

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Abstract: This study employs the methods of literature review, mathematical statistics, and logical analysis, using the physical fitness test data of Chinese and Vietnamese adolescents from 2010 as the research subjects. It conducts a comparative analysis of the physical fitness status of adolescents aged 12–15 in the two countries. The findings indicate that Chinese adolescents in all age groups have significantly higher heights and weights compared to their Vietnamese counterparts. Among Chinese adolescents, boys aged 12–15 and girls aged 12–13 have higher lung capacities than Vietnamese students of the same age groups, while Vietnamese girls aged 14–15 have higher lung capacities than Chinese girls of the same age. Additionally, Chinese adolescents aged 12–15 show significantly higher levels in physical fitness indicators such as strength, speed, endurance, and flexibility compared to Vietnamese adolescents. Overall, the physical health level of Chinese adolescents aged 12–15 was higher than that of Vietnamese adolescents in 2010. The study analyzes the reasons for these differences from the perspectives of economic development levels and policies and offers suggestions for Vietnam to improve the physical fitness level of its adolescents.

Keywords: Vietnam, China, Adolescents, Physical Fitness, Body Composition, Physiological Function, Physical Performance

1. Introduction

Adolescents are the future of a nation and the hope of a people. In recent years, the physical fitness and health of adolescents in both China and Vietnam have shown varying degrees of decline. In response, both countries have implemented periodic testing and evaluation of adolescent physical fitness and health, and have issued a series of policy documents aimed at monitoring the development of adolescent physical fitness, curbing the decline trend, and improving their health levels.

In 2010, the Chinese Ministry of Education released the indicators for measuring and evaluating adolescent physical fitness and health, which include three aspects: body composition, physiological function, and physical performance. The specific indicators are as follows: body composition indicators include height, sitting height, weight, chest circumference, upper arm skinfold thickness, scapular skinfold thickness, and abdominal skinfold thickness; physiological function indicators include pulse, blood pressure, and lung capacity; physical performance indicators include the 50m sprint, standing long jump, inclined pull-ups, pull-ups, 1-minute sit-ups, grip strength, 50m×8 shuttle run, 800m run, 1000m run, and sit-and-reach [1].

Similarly, in 2010, Vietnam's adolescent physical fitness and health measurement and evaluation content also mainly included body composition, physiological function, and physical performance. Specifically, body composition indicators included height and weight; physiological function indicators included heart function and lung capacity; physical performance indicators included grip strength, 30-second sit-ups, sit-and-reach, 30m sprint, 4×10 shuttle run, 5-minute endurance run, standing long jump, composite reflex, and single reflex [2].

It can be seen that the indicators for measuring and evaluating adolescent physical fitness and health in both countries are quite similar. This study selects the common indicators for comparison and analysis, namely: body composition indicators include height, weight, and BMI (derived indicator); physiological

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function indicator is lung capacity; physical performance indicators include grip strength, standing long jump, sit-and-reach, and sit-ups. To date, Vietnam has conducted two nationwide physical fitness and health measurements and evaluations for adolescents (in 2001 and 2010). Therefore, this paper only selects data from 2010 for comparative analysis between the two countries.

2. Research subjects and methods

2.1. Research subjects

The research subjects include data from the 2010 China Student Physical Fitness and Health Survey and the 2010 Vietnam Survey on the Physical Fitness and Health of 7- to 18-year-old students. Among them, there were 71,825 Chinese adolescents aged 12–15 (35,921 boys and 35,904 girls) [1]. Due to varying sample sizes for each test item, the effective sample size for each indicator among Chinese adolescents aged 12–15 differs slightly. In Vietnam, there were 6,000 male students and 6,000 female students aged 12–15, totaling 12,000 students [2].

2.2. Research methods

2.2.1. Literature review method

The author obtained scientific and sports-related literature on the physical fitness of Vietnamese adolescents through websites such as the Vietnamese Ministry of Culture, Sports, and Tourism, the General Administration of Sports of Vietnam, and the Vietnam National Library. Additionally, relevant literature was collected via the China National Knowledge Infrastructure (CNKI) and the National Library of China. These collected documents were carefully organized, read, and analyzed to provide a theoretical foundation for this study.

2.2.2. Mathematical statistics method

The obtained data were organized using Microsoft Excel 2003, and the data are presented in the form of mean ± standard deviation. Additionally, SPSS 19.0 was used for statistical analysis of the data.

2.2.3. Logical analysis method

The study conducted a comparative analysis of the connotations of physical fitness and health indicators, the factors influencing physical fitness and health, and the similarities and differences in the economic, political, and cultural aspects of the two countries. This provided a theoretical foundation for the interpretation of relevant concepts.

3. Results and analysis

3.1. Adolescent body composition

Body composition is the most external and direct indicator of health status. It can also be said that good body composition is the foundation of physical health.

3.1.1. Height

As shown in Table 1 and Figure 1, the height of Chinese boys and girls aged 12–15 continues to increase with age, with more pronounced growth in boys. Specifically, the height of Chinese boys increases relatively slowly between ages 12 and 13, but more rapidly between ages 14 and 15. In contrast, girls experience faster height growth between ages 12 and 13, and slower growth between ages 14 and 15. For Vietnamese boys and girls aged 12–15, the trend in height increase with age is generally similar. Vietnamese girls are taller than boys at age 12, but shorter than boys at ages 13–15. Vietnamese boys show faster height growth between ages 13 and 15, while girls experience more rapid growth between ages 12 and 13, which is basically consistent with the situation of Chinese adolescents.

Comparing the height data of adolescents aged 12–15 in the two countries, it is found that Chinese adolescents are taller than their Vietnamese counterparts in all age groups. The differences are 6.39 cm, 6.86 cm, 7.14 cm, and 7.11 cm for boys, and 4.58 cm, 4.94 cm, 4.05 cm, and 2.59 cm for girls,

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respectively. The t-test results show that the height differences between adolescents of the two countries at each age stage are highly significant (P<0.01).

Table 1 Comparison of Height of 12–15-Year-Old Adolescents in the Two Countries in 2010 (cm)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Data	n	Data	n	Data	n	Data
12 岁	8979	152.39±8.86	8983	152.16±7.18	1500	146.00±9.30**	1500	147.58±6.61##
13 岁	8978	159.88±8.66	8969	155.99±6.17	1500	153.02±8.85**	1500	151.05±5.62##
14 岁	8985	165.27±7.81	8975	157.79±5.80	1500	158.13±8.01**	1500	153.74±5.64##
15 岁	8979	168.75±6.96	8977	158.54±5.73	1500	161.64±7.67**	1500	155.95±6.57##

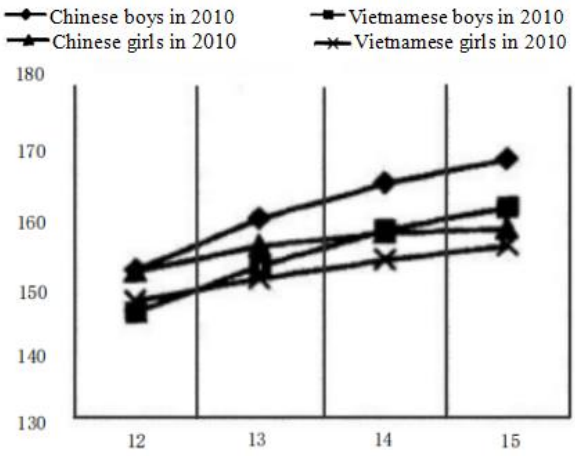

Figure 1 Comparison of Height of 12–15-Year-Old Adolescents in the Two Countries in 2010

3.1.2. Weight

As shown in Table 2 and Figure 2, the body weight of 12–15-year-old boys in both countries gradually increases with age, while the increase in girls' weight is relatively small. In Vietnam, the difference in body weight between boys and girls aged 12–13 is not significant, but by the age of 14–15, the gap in body weight between boys and girls gradually widens. In China, the increase in body weight among boys aged 12–15 is faster than that of girls. The data in Table 2 show that the body weight of Chinese adolescents in all age groups is significantly higher than that of Vietnamese adolescents. Specifically, Chinese boys are 6.88 kg, 7.27 kg, 6.38 kg, and 6.69 kg heavier than their Vietnamese counterparts, respectively, while Chinese girls are 4.61 kg, 4.74 kg, 3.71 kg, and 3.51 kg heavier. The t-test results indicate that the differences in body weight between the two countries at each age stage are highly significant (P<0.01).

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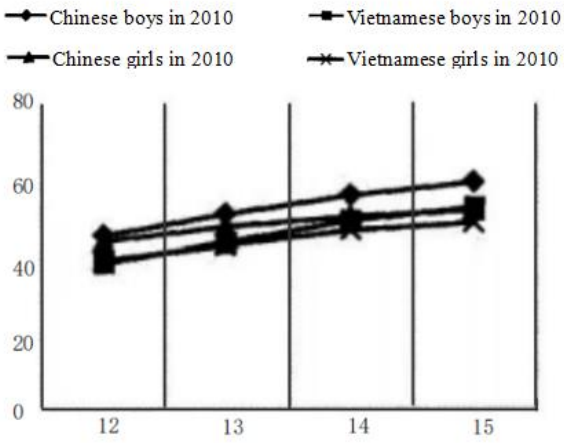

Figure 2 Comparison of Weight of 12–15-Year-Old Adolescents in the Two Countries in 2010

Table 2 Comparison of Weight of 12–15-Year-Old Adolescents in the Two Countries in 2010 (kg)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Data	n	Data	n	Data	n	Data
12 岁	8979	43.98±11.45	8983	42.33±8.88	1500	37.10±8.65**	1500	37.72±6.82##
13 岁	8978	49.37±11.62	8969	46.21±8.56	1500	42.10±9.33**	1500	41.47±6.65##
14 岁	8985	53.84±11.72	8975	48.63±8.10	1500	47.46±9.46**	1500	44.92±7.05##
15 岁	8979	57.22±11.39	8977	50.12±7.85	1500	50.53±7.86**	1500	46.61±6.36##

3.1.3. BMI index

The BMI (Body Mass Index) index, also known as the Body Mass Index, is a commonly used international standard for measuring the degree of human body fatness or thinness and whether it is healthy. Given its importance in the field of physical fitness evaluation, this paper also includes BMI in the scope of investigation.

Table 3: Comparison of BMI Index of 12–15-Year-Old Adolescents in the Two Countries in 2010

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Data	n	Data	n	Data	n	Data
12 岁	8979	18.72±3.51	8983	18.16±2.89	1500	17.40±2.28**	1500	17.32±2.04##
13 岁	8978	19.14±3.36	8969	18.92±2.89	1500	17.98±2.26**	1500	18.18±2.22##
14 岁	8985	19.58±3.34	8975	19.49±2.78	1500	18.98±2.08**	1500	19.00±2.08##
15 岁	8979	20.01±3.32	8977	19.91±2.72	1500	19.34±1.98*	1500	19.16±2.12##

As shown in Table 3, according to the WHO obesity standards, the BMI index of most Chinese boys and girls falls within the normal range. However, the BMI index of Chinese girls at age 12 is less than 18.5, indicating that girls at this age are relatively underweight. In contrast, the BMI index of Vietnamese boys and girls aged 12–13 is also less than 18.5, indicating that adolescents in this age group are generally underweight. On the other hand, the issue of overweight and obesity among Vietnamese children and adolescents should not be overlooked. Survey data from 2010 showed that the prevalence of overweight and obesity among urban Vietnamese children and adolescents was 6.5%, with particularly high rates in Ho Chi Minh City (9.6%), Da Nang (9.9%), and Hanoi (8.8%) [7]. Compared to their Chinese counterparts, the BMI index of Vietnamese boys and girls aged 12–15 shows significant differences across different age groups ($P<0.01$).

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3.2. Adolescent physiological function

The human body is composed of various systems that perform different functions, such as the respiratory system, nervous system, and circulatory system. These systems play distinct roles in human growth and development. For example, enhancing the strength of respiratory muscles can increase the range of thoracic movement, thereby improving respiratory function. Similarly, increasing the size of the heart and thickening the myocardium, as well as enhancing vascular elasticity, can improve cardiovascular function. Different countries may choose different indicators to evaluate the physiological functions of adolescents [5], but both China and Vietnam have selected vital capacity as an indicator. Therefore, this study compares and analyzes the data on vital capacity among adolescents in the two countries.

As shown in Table 4 and Figure 3, the vital capacity of Chinese boys aged 12–15 is higher than that of Vietnamese boys. Specifically, Chinese boys have a higher vital capacity by 286.11 ml, 160.35 ml, 16.12 ml, and 163.46 ml compared to Vietnamese boys in each respective age group. The t-test results show that, except for the non-significant difference in vital capacity among 14-year-old boys ($P>0.05$), there are highly significant differences in vital capacity among boys in other age groups ($P<0.01$). The situation for girls aged 12–15 is different. Among girls aged 12–13, Chinese girls have a higher vital capacity than Vietnamese girls by 194.73 ml and 63.58 ml, respectively, with highly significant differences ($P<0.01$) according to the t-test. However, among girls aged 14–15, Vietnamese girls have a higher vital capacity than Chinese girls by 144.1 ml and 145.39 ml, respectively, with highly significant differences ($P<0.01$) according to the t-test. Overall, the vital capacity of both Vietnamese and Chinese girls aged 12–15 increases with age. However, the increase in vital capacity among Vietnamese girls aged 14–15 is more pronounced than that of Chinese girls in the same age group, indicating that the potential respiratory function of Vietnamese girls in this age group is superior to that of their Chinese counterparts.

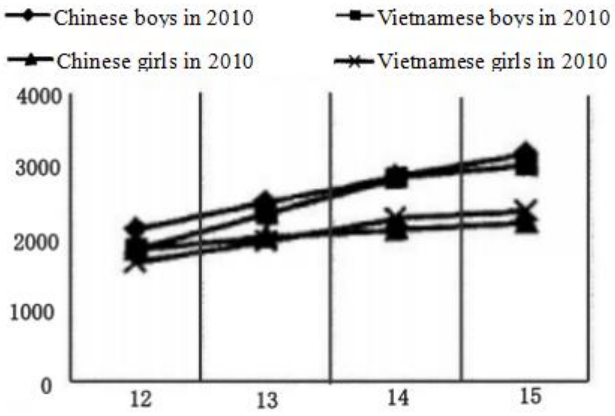

Figure 3 Comparison of Vital Capacity of 12–15-Year-Old Adolescents in the Two Countries in 2010

Table 4 Comparison of Mean Vital Capacity of 12–15-Year-Old Adolescents in the Two Countries in 2010 (ml)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Data	n	Data	n	Data	n	Data
12 岁	8978	2102.11±610.54	8983	1829.93±533.21	1500	1816.00±536.00**	1500	1635.20±390.10##
13 岁	8976	2477.08±700.10	8969	1995.88±544.02	1500	2316.73±645.31**	1500	1932.30±418.65##
14 岁	8984	2830.13±776.04	8975	2108.74±573.59##	1500	2814.01±671.03	1500	2252.84±432.42##
15 岁	8979	3164.06±808.37	8977	2207.75±570.07##	1500	3000.60±598.49**	1500	2353.14±511.47##

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This difference can be more effectively analyzed by examining the growth environments of girls in the two countries. Since the 1980s, China has implemented a family planning policy, and especially in urban areas, the vast majority of families have only one child. With the rapid development of Chinese society, family economic conditions have improved quickly. Only children rarely engage in heavy physical labor and instead focus primarily on studying. Additionally, influenced by the exam-oriented education system in schools, children devote most of their energy to academic learning, lacking physical exercise, which has led to a general and continuous decline in their physiological functions. In contrast, Vietnam's socio-economic development has been relatively slow. Vietnamese adolescents aged 12–15, especially girls, engage in a significant amount of physical labor in addition to their education. To some extent, this physical activity ensures and promotes their physiological functions.

3.3. Adolescent physical fitness

Physical fitness is the most important indicator for evaluating the physical health of adolescents. Adolescent physical fitness includes multiple aspects such as strength, speed, endurance, flexibility, and agility.

3.3.1. Strength fitness

Strength is the foundation for engaging in all sports activities and is a prerequisite for the development of other physical qualities. In physical exercise and sports instruction, good strength fitness is an important factor in ensuring the rapid mastery of movement techniques.

3.3.1.1. Standing long jump

As shown in Table 5 and Figure 4, the standing long jump performance of Chinese boys increases rapidly with age, while the increase for girls is not significant. Similarly, the standing long jump performance of Vietnamese boys also increases steadily with age, while the increase for girls is not significant. The standing long jump performance of Chinese boys is higher than that of Vietnamese boys, with differences of 4.03 cm, 11.70 cm, 19.51 cm, and 23.67 cm across the respective age groups. Chinese girls also generally outperform Vietnamese girls in the standing long jump, with differences of 3.23 cm, 5.29 cm, 6.29 cm, and 5.04 cm across the respective age groups. The t-test results indicate that the differences in standing long jump performance between the two countries are highly significant across all age groups for both boys and girls ($P<0.01$).

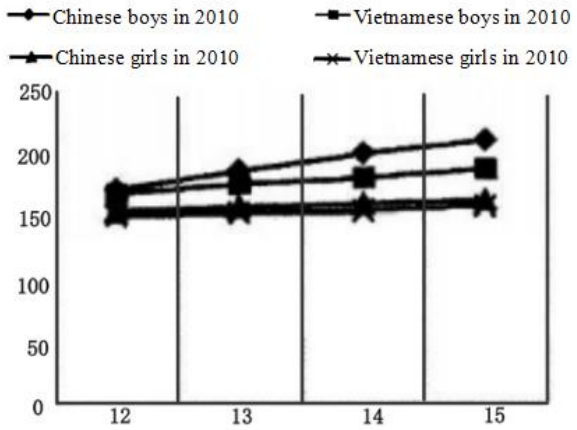

Figure 4 Comparison of Standing Long Jump Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010

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Table 5 Comparison of Mean Standing Long Jump Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010 (cm)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Score	n	Score	n	Score	n	Score
12 岁	8975	173.03±22.89	8973	155.16±19.62	1500	169.00±19.50**	1500	151.93±17.41##
13 岁	8970	188.50±24.87	8949	158.84±19.48	1500	176.80±20.88**	1500	153.55±17.07##
14 岁	8980	201.73±25.18	8963	160.78±19.59	1500	182.22±24.14**	1500	154.49±17.87##
15 岁	8975	213.01±24.17	8969	163.28±19.64	1500	189.34±28.48**	1500	158.24±25.38##

3.3.1.2. Grip strength

As shown in Table 6 and Figure 5, the grip strength of Chinese boys increases rapidly with age, while the increase for girls is not significant. Similarly, the grip strength of Vietnamese boys also steadily increases with age, while the increase for girls is not significant. Overall, the grip strength of Chinese boys is higher than that of Vietnamese boys, with differences of 0.5 kg, 3.96 kg, 5.26 kg, and 4.99 kg across the respective age groups, and these differences are highly significant ($P<0.01$) according to the t-test.

For girls, Vietnamese girls aged 12 and 15 have higher grip strength than their Chinese counterparts, with differences of 1 kg and 1.91 kg, respectively, and these differences are highly significant ($P<0.01$) according to the t-test. However, Vietnamese girls aged 13 have lower grip strength than Chinese girls of the same age, with a highly significant difference ($P<0.01$) according to the t-test. There is no significant difference in grip strength between 14-year-old girls from the two countries ($P>0.05$).

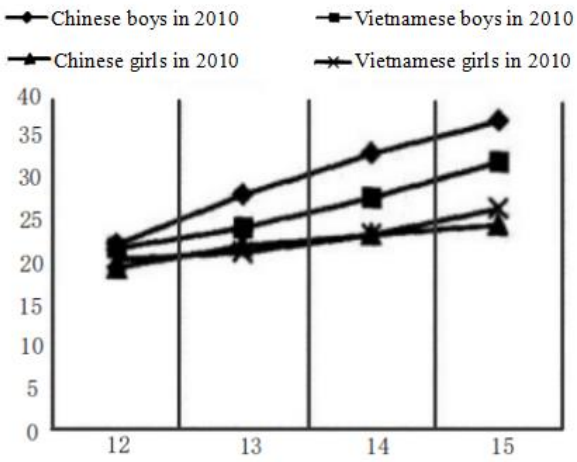

Figure 5 Comparison of Grip Strength Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010

Table 6 Comparison of Mean Grip Strength of 12–15-Year-Old Adolescents in the Two Countries in 2010 (kg)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Score	n	Score	n	Score	n	Score
12 岁	8975	22.40±6.16	8978	19.51±4.74##	1500	21.90±8.29**	1500	20.51±6.91
13 岁	8973	28.32±7.26	8966	22.09±4.64	1500	24.36±5.91**	1500	21.37±4.35##

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14 岁	8971	33.34±7.52	8970	23.47±4.73	1500	28.08±6.72**	1500	23.48±4.43
15 岁	8978	37.40±7.46	8975	24.68±4.88##	1500	32.41±6.37**	1500	26.59±6.03

3.3.2. Speed fitness

Speed fitness includes reaction speed, movement speed, and displacement speed. The author selected short-distance running performance (50m sprint for China and 30m sprint for Vietnam) as the indicator to evaluate the speed fitness of adolescents in the two countries.

As shown in Table 7 and Figure 6, the short-distance running performance of Chinese boys and girls aged 12–15 shows a yearly improvement trend, although the improvement for girls is not significant. The short-distance running performance of Vietnamese girls also shows a yearly improvement trend, while that of Vietnamese boys declines at age 15. Considering the national conditions of the two countries, students aged 12–15 in both countries are in junior high school. In China, physical education is included as a subject in the high school entrance examination, with most tests containing short-distance running items. Therefore, Chinese students generally pay more attention to physical exercise during this stage, resulting in better short-distance running performance. In contrast, physical education is not included in the high school entrance examination in Vietnam, leading to less emphasis on physical exercise among Vietnamese students. Their short-distance running performance is slightly inferior to that of Chinese students and even shows a decline compared to their own previous performance.

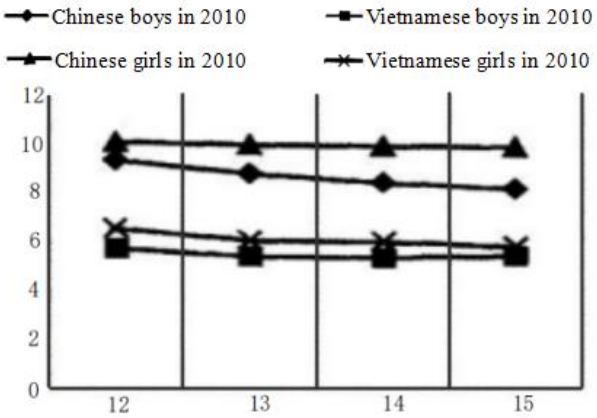

Figure 6 Comparison of Short-Distance Running Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010

Table 7 Comparison of Mean Short-Distance Running Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010 (s)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Score	n	Score	n	Score	n	Score
12 岁	8967	9.14±0.98	8983	9.84±0.99	1500	5.63±0.56	1500	6.40±0.53
13 岁	8972	8.59±0.93	8969	9.73±0.99	1500	5.32±0.78	1500	5.96±0.48
14 岁	8974	8.23±0.91	8975	9.68±1.02	1500	5.27±0.54	1500	5.89±0.68
15 岁	8965	7.97±0.83	8977	9.67±1.02	1500	5.31±0.52	1500	5.67±0.51

3.3.3. Endurance fitness

Endurance refers to a person's ability to withstand prolonged physical activity. It is an indicator that measures how long an individual can sustain a particular activity or maintain a specific movement. For the musculoskeletal system of adolescents, the ages of 12–15 are a sensitive period for developing aerobic endurance.

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Table 8 Comparison of Mean Endurance Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Score/s	n	Score/s	n	Score/s	n	Score/s
12 岁	8788	114.90±18.14	8747	121.09±16.76	1500	712.00±89.93	1500	674.96±92.86
13 岁	8670	297.54±40.25	8908	269.34±34.99	1500	804.65±88.91	1500	765.63±94.38
14 岁	8861	281.90±40.27	8951	263.43±34.45	1500	810.05±87.30	1500	770.00±63.44
15 岁	8906	271.19±36.73	8960	259.95±32.84	1500	825.72±85.88	1500	792.17±72.55

Due to the different testing indicators used by the two countries, this study did not conduct a comparative analysis of the endurance fitness of students from both countries. However, as shown in Table 8, the endurance fitness of boys and girls in both countries increased year by year. Except for the 12-year-old age group, the 1000m run performance of Chinese boys in all age groups was less than 5 minutes, while the distance covered by Vietnamese boys in a 5-minute run was less than 1000m. Similarly, the 800m run performance of Chinese girls in all age groups was less than 5 minutes, while the distance covered by Vietnamese girls in a 5-minute run was less than 800m. It is evident that, overall, the endurance fitness of Chinese boys and girls is better than that of their Vietnamese counterparts, with even 13-year-old Chinese boys outperforming 15-year-old Vietnamese boys in endurance.

3.3.4. Flexibility fitness

Flexibility refers to the range of motion of human joints, as well as the elasticity and extensibility of ligaments, tendons, muscles, skin, and other tissues surrounding the joints, i.e., the range of movement of joints and joint systems. Ages 12–15 are one of the fastest periods for the development of flexibility in adolescents.

Table 9 Comparison of Mean Sit-and-Reach Performance of 12–15-Year-Old Adolescents in the Two Countries in 2010 (cm)

Age Group	Chinese Boys		Chinese Girls		Vietnamese Boys		Vietnamese Girls	
	n	Score/s	n	Score/s	n	Score/s	n	Score/s
12 岁	8965	5.51±6.11	8975	9.67±6.15	1500	3.41±5.29**	1500	5.39±4.98##
13 岁	8967	6.85±6.52	8950	10.51±6.51	1500	4.49±5.21**	1500	5.70±5.64##
14 岁	8976	8.24±6.85	8961	11.30±6.62	1500	5.48±6.37**	1500	7.19±5.70##
15 岁	8973	9.58±6.98	8955	11.98±6.67	1500	6.70±5.76**	1500	8.79±10.60##

In terms of flexibility, both China and Vietnam use the sit-and-reach test as an indicator for assessment. Table 9 shows that the flexibility of boys and girls in both countries increases with age, with a more pronounced increase among Chinese boys. Further comparison reveals that the sit-and-reach performance of Chinese boys in each age group is higher than that of Vietnamese boys by 2.1 cm, 2.36 cm, 2.76 cm, and 2.88 cm, respectively. Similarly, the sit-and-reach performance of Chinese girls in each age group is higher than that of Vietnamese girls by 4.28 cm, 4.81 cm, 4.11 cm, and 3.19 cm, respectively. The t-test results indicate that the differences in flexibility between students of different age groups in the two countries are highly significant ($P<0.01$).

4. Analysis and discussion

The factors influencing the physical fitness and health of adolescents include both innate and acquired aspects. Innate factors refer to the genetic and congenital pathogenic factors that are already latent before birth. Since innate factors are beyond our control, this paper focuses on the discussion of acquired factors. Acquired factors refer to the various influences that an individual receives from the environment after birth. These can be further divided into internal and external factors. Internal factors include academic

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pressure, physical exercise, sleep, nutrition, living habits, etc., while external factors encompass institutional factors, school factors, family factors, cultural environment, economic factors, etc. [9]

In 2010, the physical fitness and health level of Vietnamese adolescents aged 12–15 was significantly lower than that of their Chinese peers. The author believes that there are two main reasons for this difference: first, the disparity in economic development levels; and second, the differences in policies related to public health and physical education.

In terms of economic development, over the past 40 years, China's economy has grown rapidly, and it has now become the world's second-largest economy. This rapid economic growth has enabled the Chinese government to increase investment in sports to promote public health and the development of school sports. Additionally, the standard of living of the people has significantly improved, leading to increased attention to health. Many sports companies and fitness clubs have emerged, creating a growing atmosphere for physical exercise in society and gradually fostering a habit of regular physical activity among the population. Although Vietnam has also experienced relatively fast economic growth over the past 25 years, the government's investment in public health and school sports has been insufficient. The majority of the population has not yet prioritized physical exercise as a primary means of maintaining health. The atmosphere for physical exercise in society is weak, and public participation in sports is limited.

Regarding policies on public health and physical education, the Chinese government has issued a series of documents and measures to improve the health of the entire population and promote the development of school sports. For example, in the area of mass fitness, a variety of sports facilities have been installed in communities and public places. In the realm of school sports, in addition to increased investment in sports facilities, efforts have been intensified in the areas of physical education curricula, teacher training, and extracurricular sports activities. As a result, the quality of physical education teaching has significantly improved, and the effectiveness of students' sports activities has been ensured [10]. The Vietnamese government has also promulgated a series of relevant documents, but the deployment of sports equipment in communities and public places is minimal. Although school sports curriculum reform is ongoing, compared to China, the efforts are less substantial. There is still significant room for improvement in school sports facilities, curricula, and teacher training.

5. Conclusion

The Vietnamese government should further enhance its focus on the physical fitness and health of adolescents. By drawing on the experiences and practices of other countries and integrating them with the national context, it should propose practical measures to improve and enhance the physical fitness of adolescents. The Vietnamese academic community in sports should pay close attention to the issue of adolescent physical fitness and health. It is essential to understand the current state of physical fitness and health among Vietnamese adolescents, conduct in-depth analyses of the causes and deficiencies, and establish and improve a service system for promoting adolescent physical fitness and health. This should cover aspects such as objectives, organizational structures, methods, evaluation and supervision, and safeguard measures, thereby effectively fulfilling the important mission of promoting the physical fitness and health of Vietnamese adolescents.

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