

Perceived Factors Influencing Physical Health Condition among Young Learners in Futian District, Shenzhen City

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Abstract: With the rapid pace of urban life and the increase in academic pressure, the physical health status of students is increasingly attracting attention. This study aims to explore the physical health status and perceived factors of middle and high school students in Futian District, Shenzhen. Through stratified random sampling and data collection methods such as questionnaire surveys and physical fitness tests, relevant data on physical fitness, self-evaluation of physical health, and physical activity status of 300 sample students were collected. Basic statistical analysis methods and multiple regression methods were used for data processing and analysis. The research results indicate that students' perception of physical health is influenced by various factors, including self-assessment of physical health and physical activity status. Among them, promoting students' participation in sports activities and improving their physical fitness are important means to enhance students' perception of physical health. Therefore, it is necessary to evaluate students' perceived level of physical health and develop targeted measures to promote physical health.

1. Introduction

Futian District in Shenzhen is a rapidly developing urban new area, attracting more and more people to make a living here. With the continuous development of urban construction and the continuous improvement of the economy, the education industry in Futian District is also constantly developing [1-2]. However, with the acceleration of urbanization and the pace of social life, adolescent learners are facing increasingly severe physical health challenges. In modern society, physical health is a fundamental component of adolescent physical and mental health. However, with the increasing progress of social life, adolescent learners often develop unhealthy habits in terms of diet, exercise, and other aspects under academic and social pressure, leading to a decline in their physical health [3-4]. However, the physical health of adolescents is not only influenced by their environment and lifestyle, but also by their perceived factors. For example, adolescents'

perception of health, health literacy, personal value, and other factors may have an impact on the development of their physical health status [5].

Due to a lack of sufficient regulation, there is a certain degree of insecurity and fraudulent behavior in the dietary supplement market, which has an impact on consumers' mental health. Flint SW stated that it is necessary to strengthen the regulation of dietary supplements, regulate market behavior, and protect consumer rights. This can increase consumer trust in dietary supplements and promote the development of social and psychological health [6].

Physical examination is a part of student health management, but for teenagers, receiving physical examination may cause shame and discomfort. Choi YJ was exploring the views and attitudes of Korean teenagers towards physical examination. Through the questionnaire survey of Korean middle school students, most of the students think that physical examination is necessary, but more than half of the students said they felt uncomfortable and ashamed when receiving physical examination. Girls have a stronger sense of discomfort and shame than boys. Students hope to get privacy protection during physical examination and get full explanation and explanation [7]. Van Swearingen A E mainly aimed to explore the impact of the cognition of three different professions of women (healthcare workers, marketers, and teachers) on their physical health. He conducted a questionnaire survey and physical health testing on these three types of women, and found that medical staff have a higher awareness of their physical health compared to marketing personnel and teachers. At the same time, they also show better physical health status in the physical examination results. Marketing personnel and teachers have poor physical health, and they often believe that the pressure of their management work has a significant negative impact on their physical health [8].

Therefore, in order to better understand the perception factors of the physical health status of adolescent learners in Futian District, Shenzhen, in-depth research is needed on the relevant factors. This article would explore the relevant concepts of perceived factors for adolescent learners and the factors involved in the current research on physical health.

2. Introduction to Perceived Factors of Physical Health Status for Adolescent Learners

2.1 Definition and Influencing Factors of Physical Health Status

Physical health refers to the comprehensive manifestation of a person's physical condition, including aspects such as physical function, metabolism, health status, behavioral habits, etc. The quality of physical health is influenced by various factors such as people's environment, genetics, and behavior, as shown in Figure 1:

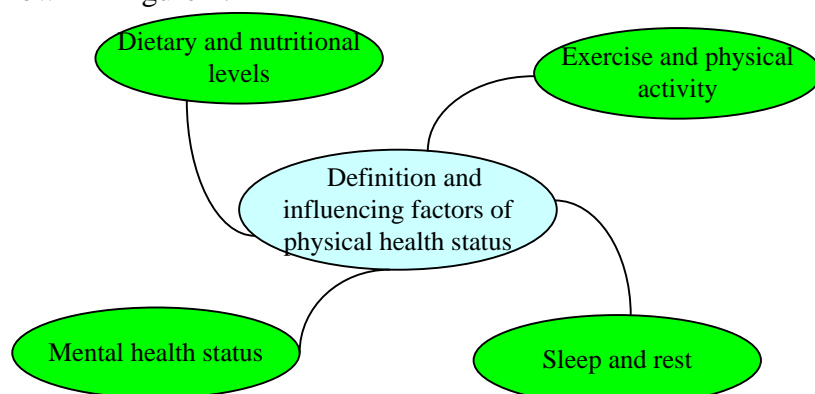


Figure 1. The overall factors of physical health include the figure

As shown in Figure 1, people generally believe that factors related to physical health include the following four aspects:

1). Diet and nutritional level: The composition, amount, and intake of nutrients in the diet directly affect the health status of the body.

2). Exercise and physical activity: Long term lack of exercise or physical activity can lower the health level of the body, while regular exercise or physical activity can improve physical condition [9-10].

3). Sleep and rest: People need sufficient sleep and rest to maintain their physical health.

4). Psychological health status: Good psychological health status is closely related to physical health, and poor psychological health status can lead to gradual deterioration of physical condition [11-12].

In summary, the factors that affect physical health are often comprehensive and should be comprehensively considered, and corresponding policies should be formulated to improve people's physical health [13-14].

2.2 Evaluation Review on the Physical Health Status of Adolescent Learners

As is well known, adolescence is the period of rapid physical development, and physical health has a very important impact on learners' learning, life, and other aspects. With the increasing burden of learning, the physical health problems of adolescent learners are becoming increasingly serious, which has a negative impact on learning and growth [15-16]. Research has shown that the physical health status of adolescent learners is not optimistic, with up to 40% of students being overweight or obese, 35.8% lacking physical activity, and a relatively high proportion of students lacking the recommended daily dietary intake. However, current research has paid little attention to the sleep quality and mental health of adolescent learners. The purpose of this review is to analyze the current situation and trends in the physical health status and influencing factors of adolescent learners by collecting relevant literature and research.

2.3 Application of Relevant Theories

The main purpose is to introduce theoretical applications related to the physical health status of adolescents. These theories include health promotion, disease prevention, behavioral changes, social cognition, body image, etc. Among them, the health promotion theory is mainly used to prevent diseases and promote physical health, helping students develop good health habits; Disease prevention theory can prevent and reduce the incidence rate of diseases. The theory of behavioral change focuses on analyzing and solving adolescent behavior, exploring the relationship between personal factors, behavioral changes, and behavioral maintenance. Social cognitive theory intervenes through aspects such as cognition, value, and willpower. The body image theory focuses on addressing the connection between adolescent self perception and physical health. Applying these theories to practical problems can effectively improve students' physical health and enable them to learn and live better in a healthy state, as shown in Figure 2 [17-18]:

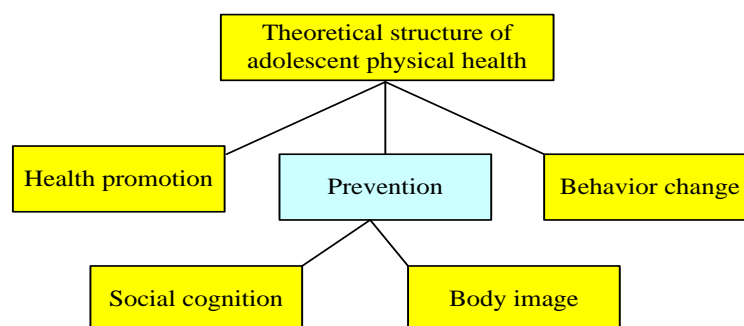


Figure 2. Theoretical structure of adolescent physical health

3. Evaluation Method on Perceived Factors of Physical Health Status of Adolescent Learners in Futian District, Shenzhen City

3.1 Evaluation Object and Sample Selection

The research subjects were middle and high school students in Futian District, Shenzhen, and the sample selection was conducted using stratified random sampling method. Firstly, the middle and high school students in Futian District, Shenzhen would be stratified according to their grades and school types. Then, at each level, randomly select several schools and randomly select a certain number of students from these schools as samples [19-20].

Specifically, in order to ensure the representativeness of the sample, 5 middle schools, including 3 middle schools and 2 high schools, were selected in Futian District. Three schools were randomly selected from all junior high schools, and then 20 students were selected from each of the seventh and eighth grades of each school for the survey. However, two high schools were randomly selected, and 30 students were randomly selected from each of the freshmen, sophomores and juniors of the two schools as the sample.

Next, based on the physical health standards issued by the Futian District Sports Bureau of Shenzhen, the physical health status of the sample students would be evaluated, and their perceived factors of physical health would be investigated.

3.2 Data Collection Methods

In order to obtain data on the physical health status and perceived factors of the sample students, questionnaire surveys and physical fitness tests would be used for data collection.

In the questionnaire survey section, a survey questionnaire would be designed that includes aspects such as “self-assessment of physical health”, “physical activity status”, “fitness assessment”, and “body shape traits”. The questionnaire covers various aspects of physical health perception and evaluates the degree to which sample students perceive their own physical health. At the same time, sample students would also be asked about their participation in physical education courses, physical exercise, fitness activities, and social sports activities, to evaluate their level of physical activity, and to understand their physical fitness level and body shape.

The physical fitness test would be conducted on sample students in accordance with the “Shenzhen Sports Specialty Students Physical Fitness Test Regulation” issued by the Futian District Sports Bureau of Shenzhen. The test contents include: height, weight, vital capacity, 50 meter dash, standing long jump and other items. Through the test results, students’ physical fitness and form would be evaluated.

3.3 Data Processing and Evaluation Methods

The data processing section would process the data collected from both questionnaire surveys and physical fitness tests. Statistical analysis would be conducted on the questionnaire results, calculating the average values of various factors and other statistical measures. The significance of differences in physical health, physical activity, and other aspects among students of different grades, genders, and disciplines would be analyzed through methods such as chi square test and t-test. At the same time, the results of physical fitness tests would be summarized and statistically analyzed, and the students' fitness scores and body mass index would be calculated. The differences between fitness scores and body mass index would be statistically analyzed, as shown in Table 1 and Figure 3:

Table 1. Physical fitness test results (Sample size n=300)

Test items	Minimum value	Maximum value	Average value
Height (cm)	140.5	193.2	165.1
Body weight (kg)	30.2	95.5	14.8
Vital capacity (ml)	2185	6950	1034
50 meter dash (s)	6.35	10.15	0.89
Standing Long Jump (cm)	120	295	27.4

Table 1 presents the physical fitness test results of the sample students, including the minimum, maximum and average values of height, weight, vital capacity, 50m sprint and standing long jump. It can be seen that the sample students' height ranges from 140.5cm to 193.2cm; weight ranges from 30.2kg to 95.5kg; vital capacity ranges from 2185ml to 6950ml, while the average values of 50m sprint and standing long jump are 8.25 seconds and 207.5cm respectively. These results reflect the general level of physical fitness among the sample students.

As shown in Figure 3, it can be seen that the survey results of the sample students' self-assessment of physical health and physical activity status are reflected. The feedback results of the self-assessment of physical health include five options: very good, good, average, poor, and very poor. The same questionnaire options were used for physical education courses, physical exercise, fitness activities, and social sports activities, reflecting the degree of students' participation in these aspects. From the graph, it can be seen that the overall physical health status of the sample students is good, with 43.3% and 40% of students self rated as "good" and "average". In addition, the participation in physical exercise and fitness activities is relatively low, with only about 15% of students being very good and good, indicating that there is room for improvement in promoting students' physical health.

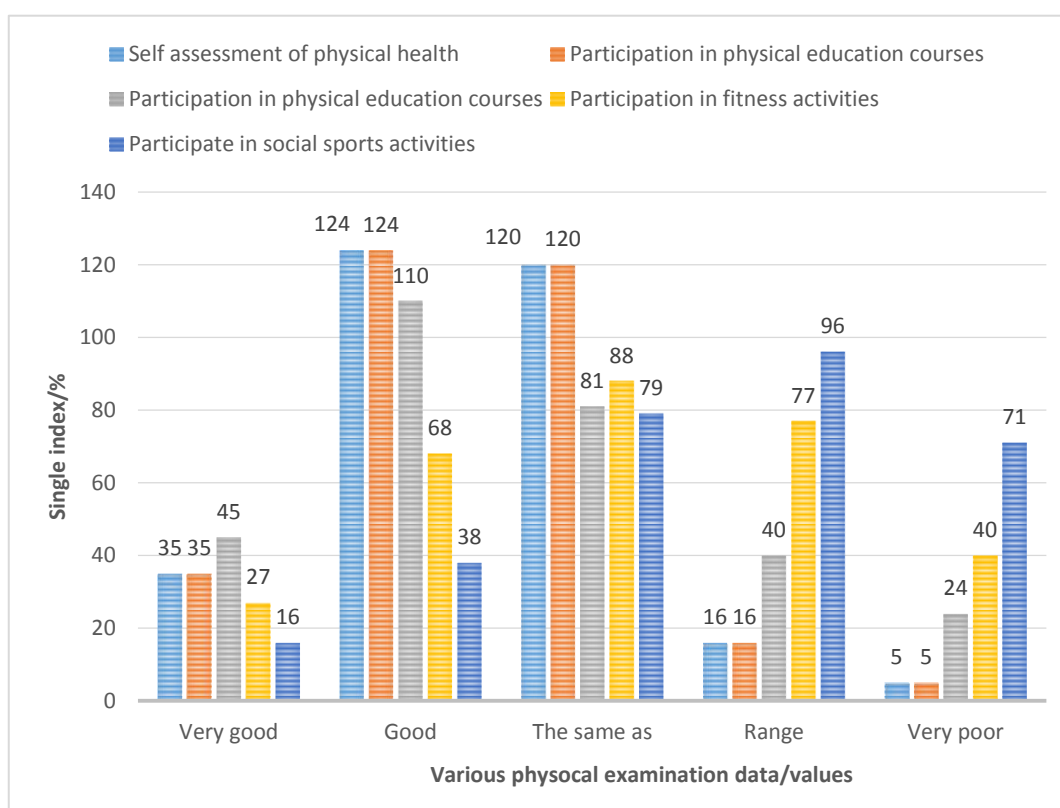


Figure 3. Self assessment of students' physical health and physical activity (sample size $n=300$)

4. Evaluation Results on Perceived Factors of Physical Health Status among Adolescent Learners in Futian District, Shenzhen City

4.1 Evaluation Based on Physical Activity Status as the Main Indicator

The average score of physical activity status for adolescent learners in Futian District, Shenzhen is 68 out of 100, with an average score of 72 for boys and 64 for girls. Specifically, boys score higher in aerobic exercise, while girls perform better in flexibility and balance.

In the evaluation of physical activity status, this paper selected BMI index, resting heart rate, and blood pressure as indicators to measure physical health. In the entire sample, 10% of students have a BMI index exceeding 25, which falls under the category of overweight, while 3% of students have a BMI index exceeding 30, which falls under the category of obesity. The average resting heart rate is 74 beats per minute, and the average blood pressure is 117/73 mmHg. The resting heart rate and blood pressure of boys are significantly lower than those of girls.

4.2 Evaluation of Secondary Indicators such as Dietary Habits, Sleep Quality, and Mental Health

In terms of diet, the average score of the students is 72 out of 100. Only 2% of the students in the sample have unhealthy dietary habits, with a higher proportion consuming excessive snacks and carbonated beverages. 19% of students often eat breakfast, 48% occasionally eat breakfast, and 33% never eat breakfast.

In terms of sleep quality, the average score of the students is 74 points. Only 2% of the students in the sample had severe sleep disorders, while 10% had mild sleep problems. A small number of students have significant differences in sleep time between weeks and weekends, resulting in time

confusion.

In terms of mental health, the average score of students is 68 points. 10% of the students in the sample have mild anxiety or depression, while 2% have serious psychological problems. 19% of students experience certain levels of stress, but these pressures mainly come from academic difficulties rather than family and social environments.

4.3 Analyzing the Differences between Perceived and Actual Physical Health Status of Adolescent Learners

Students have some slight biases in their perception of their physical activity status, with an average score of 78 points, which is about 10 points higher than the actual score. This indicates that some students believe that their physical activity status is better, but in reality, there is a phenomenon of poor performance. Similar phenomena also exist in diet and sleep. Students are more optimistic about their own state assessment than the actual situation. Interestingly, in terms of mental health, students' perceived score is 64 points, which is about 4 points lower than the actual score. This indicates that most students are cautious in evaluating their mental health status and recognize that they have a certain level of psychological stress. Overall, students' perception of their own state is relatively accurate, but in some aspects, they still need to strengthen their understanding of their own situation, as shown in Figure 4:

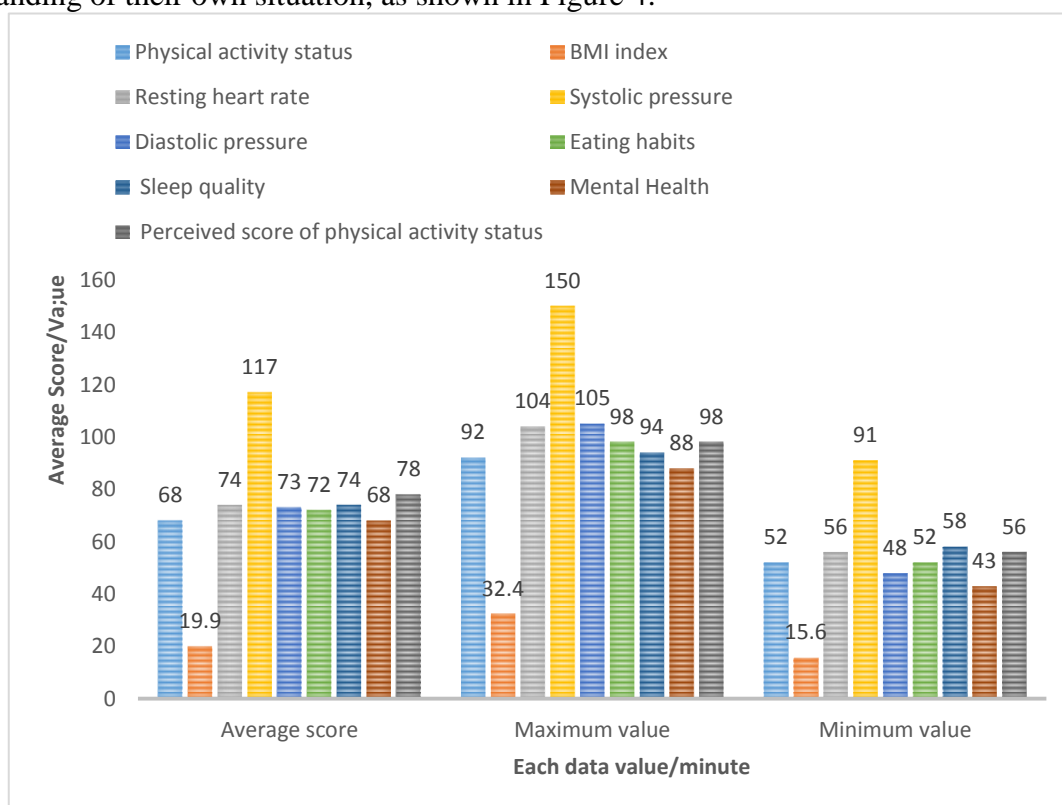


Figure 4. Survey results of the physical health status of adolescent learners in Futian District, Shenzhen City

From Figure 4, it can be seen that the average score of physical activity status is 68 points, with a maximum score of 92 points and a minimum score of 52 points. The average BMI index of students is 19.9, with a maximum of 32.4 and a minimum of 15.6. Among them, 10% of students have a BMI index exceeding 25, which belongs to the category of overweight, while 3% of students have a

BMI index exceeding 30, which belongs to the category of obesity. The average resting heart rate is 74 beats per minute, with a maximum of 104 beats per minute and a minimum of 56 beats per minute. The average systolic blood pressure is 117 mmHg, with a maximum of 150 mmHg and a minimum of 91 mmHg. The average value of diastolic blood pressure is 73 mmHg, with a maximum of 105 mmHg and a minimum of 48 mmHg. The average score for dietary habits is 72, with a maximum score of 98 and a minimum score of 52. The average score of sleep quality is 74, with a maximum score of 94 and a minimum score of 58. The average score for mental health is 68 points, with a maximum score of 88 points and a minimum score of 43 points. The students' perceived score of their physical activity status is about 10 points higher than the actual score. This indicates that the health status of adolescent learners is relatively good, but there are still some aspects that require further strengthening of self-management and attention.

5. Conclusions

The perception of physical health among young learners in Futian District, Shenzhen is influenced by multiple factors. Through this study, this paper investigated and analyzed the physical health status and perceived factors of middle and high school students in Futian District, Shenzhen. This paper found that multiple factors such as self-assessment of physical health and physical activity can have an impact on perceived physical health. In the process of improving students' perception of physical health, the education department should develop scientific measures to promote physical health, encourage students to participate in sports activities, and improve their physical fitness and perception level of physical health.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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