The Role of the Community Basketball Program on the Cultivation of Physical Fitness and Psychosocial Well-Being of High School Students in Selected Middle Schools

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Abstract: This study aims to explore the impact of community basketball programs on the physical and mental health of high school students in Panyu Middle School and Zhongyuan Middle School in Guangzhou. Fills a research gap in the existing literature by providing insights into the relationship between high school students' participation in community basketball programs and their physical, mental, and emotional health. The research covers major variables such as physical fitness level and psychosocial health of high school students, and determines the direction and goals of the research through a series of specific questions and hypotheses. Specifically, the study will investigate high school students' physical health indicators such as aerobic endurance, strength, flexibility, speed, and coordination, as well as social and psychological health indicators such as achievement motivation, social skills, self-awareness, and moral development. The study will use quantitative research methods, collect data through questionnaires, and cover high school students from Panyu Middle School in Guangzhou and Zhongyuan Middle School in Guangzhou to ensure representation and diversity. It also gives opinions on the physical health and mental health of high school students. Through an in-depth discussion of the impact of physical activities on the physical and mental health of adolescents, this study is expected to provide useful insights and suggestions for physical education and community basketball projects.

Keywords: Community Basketball; High School Students; Physical Fitness; Mental Health.

1. Introduction

Physical activity plays an important role in shaping the physical and mental health of the younger generation. The high school student stage is a critical period for individual physical and mental development. As a popular sports activity, community basketball projects provide a unique environment for teenagers and provide them with opportunities to develop physical and mental literacy. The purpose of this study was to gain insight into the relationship between high school students' participation in a community basketball program and their physical, mental, and emotional health.

Physical activity has long been recognized as an important means of promoting a healthy lifestyle and developing teamwork and leadership skills. Sports such as basketball not only help improve an individual's physical fitness level, but also have a positive impact on mental health (Gao, 2020). The relationship between sport and psychosocial health has been extensively studied by international sports organizations and academia. However, most of these studies have focused on adults or college students, while research on the specific group of high school students is relatively limited.

The Chinese Ministry of Education has promulgated a number of sports regulations and policies, emphasizing the importance of sports activities in school education (Liu, 2021). These regulations clearly point out the positive impact of physical education programs on students' physical and mental health and encourage schools to carry out diverse sports activities. However, more in-depth research is needed on how specific community basketball programs impact high school students.

As society continues to develop, people's interest in physical activities and youth health is also growing. High school students face multiple challenges such as academic pressure and social pressure, so it is particularly important to understand how sports programs can help them cope with these challenges. Most national studies focus on the short-term effects of sports programs, and there is a lack of in-depth research on the long-term effects of high school students' participation in community basketball programs (Wang & Lin, 2020). Long-term follow-up studies can provide a more comprehensive understanding of the impact of exercise on the long-term physical and mental health of adolescents (Ge & Huang, 2022). China has a vast territory and diverse cultures. Domestic research often lacks comparative research on the effects of high school students participating in basketball programs in different regions and cultures (Zhang & Han, 2018). Cross-cultural research in this area is particularly important given the impact of cultural factors on an individual's psychosocial development.

Although there has been some research on youth sports programs internationally, there has been little international comparative research on high school students from different countries or cultures. Understanding the impact of community basketball programs on youth in different cultures can help share global best practices (Wang, 2018). International research tends to focus on academia, paying less attention to how research findings can be applied to policy and practice. Research on how to influence school physical education curricula, community physical education program design, and policy development to better support the physical
and mental health of high school students remains a less researched area. Therefore, in this study, we will explore the following specific question: How do community basketball programs affect the physical fitness levels of high school students? What impact do these programs have on the psychosocial impact of high school students? The purpose of this study was to fill a research gap in the existing literature by providing an in-depth understanding of the impact of a community basketball program on the physical, mental, and emotional development of high school students. By understanding these effects, we can provide more specific and effective recommendations for physical education and community basketball programs to support the overall development of youth.

2. Statement of the Problem

This study will determine the role of a community basketball program in developing physical fitness and mental health among high school students in selected middle schools. Specifically, the research will seek to answer the following questions:

1. What is the situation of the highly surveyed students in the following aspects:
   1.1 Gender
   1.2 Age
   1.3 Grade
2. Based on the following variables, how is the physical fitness level of high school students evaluated:
   2.1 Aerobic endurance
   2.2 Strength
   2.3 Flexibility
   2.4 Speed
   2.5 Coordination
3. Using the personal data of high school students as test factors, are there significant differences in their physical fitness levels?
4. How do high school students assess their perceived level of psychosocial health based on the following variables?
   4.1 Achievement motivation
   4.2 Social skills
   4.3 Self-awareness
   4.4 Moral development
5. Using the personal data of high school students as test factors, are there significant differences in their perceived levels of social and mental health?
6. Is there a significant relationship between perceived physical fitness levels and mental health of high school students in a community basketball program?
7. Based on the findings, what health plans can be proposed?

3. Scope and Delimitation of the Study

The purpose of this study was to investigate the effects of a community basketball program on the physical, psychosocial, and emotional well-being of high school students at Panyu Middle School in Guangzhou City and Zhongyuan Middle School in Guangzhou City. This study will cover three main variables, namely physical fitness, psychosocial well-being. These variables will be further subdivided into sub-dimensions including, but not limited to, aerobic endurance, strength, flexibility, speed, coordination, achievement motivation, social skills, self-perception, moral development. The target population of this study is the high school students of Panyu Middle School in Guangzhou City and Zhongyuan Middle School in Guangzhou City. The study will cover the high school student population in these two schools to ensure representativeness and diversity. Research data will be collected through quantitative research methods. Questionnaires will be used to measure the physical, psychosocial status of high school students. The study will be conducted in Panyu Middle School in Guangzhou City and Zhongyuan Middle School in Guangzhou City. These two schools represent different areas of Guangzhou City and help to increase the representativeness of the study results. The study will be conducted between August and December 2023 to ensure adequate data collection time and consideration of seasonal differences.

Although this study is expected to provide valuable insights about the relationship between high school students' participation in community basketball programs and their physical, psychosocial well-being, there are some limitations of the study. The study sample was limited to high school students from two schools, so the findings may not be generalizable and representative of all high school students in Guangzhou. The data collection method used in the study relies on self-reporting by high school students and may be subject to subjective bias. The time frame of the study is limited and may not capture the impact of long-term participation in community basketball programs. The study could not fully control for the impact of external factors, such as family background and social environment, on high school students.

4. Theoretical Framework

This study is based on the basic principles and tenets of self-determination theory. Self-determination theory suggests that people's motivation can be categorized into three types: intrinsic motivation, internal regulation, and external regulation. This theoretical framework will help explain the effects of high school students' participation in a community basketball program on their physical fitness, psychosocial well-being. Intrinsic motivation refers to an individual's participation in an activity out of intrinsic satisfaction and interest. In this study, high school students were actively involved in the activity because of their love and interest in basketball, which would have a positive impact on their physical fitness, psychosocial well-being. Internal regulation refers to individuals participating in activities because they realize that these activities align with their values and goals. High school students may participate in a basketball program because they believe it helps them develop their physical and psychosocial fitness. External regulation is when individuals participate in activities because they are influenced by external rewards or pressures. In community basketball programs, external regulation comes from family, peers, or social expectations, such as parental expectations or social approval.

Self-determination theory emphasizes the positive effects of intrinsic satisfaction and autonomy on individuals. Research could explore the experiences of high school students in a community basketball program, including whether they feel participation is voluntary and whether they find the activities interesting and challenging. By understanding participants' experiences, research could determine if autonomy and intrinsic fulfillment exist and how this relates to their physical fitness, psychosocial well-being. Research could examine positive associations between
intrinsic motivation to participate in a basketball program and physical fitness levels of high school students. For example, intrinsic motivation may drive high school students to be more active in exercise, which may improve their aerobic endurance, strength, and coordination. Self-determination theory also emphasizes the negative impact of external regulation on individual motivation. Research could explore whether high school students are influenced by external pressures or rewards to participate in basketball programs and analyze whether there is a negative association between this external conditioning. Findings based on the theoretical framework could provide practical recommendations for the design and implementation of community basketball programs. These recommendations could address ways to promote high school students' intrinsic motivation, increase their satisfaction with participation, and reduce the effects of external conditioning in order to maximize their physical fitness, psychosocial well-being.

5. METHODOLOGY

This chapter describes study design, study sites, sampling methods, study instruments, data collection procedures, ethical considerations, and This chapter describes study design, sampling methods, study instruments, data collection procedures, ethical considerations, and statistical treatments to be used after data collection.

5.1. Research Design

This study will use a descriptive-quantitative-comparative research design. A descriptive-quantitative-comparative research design is a method commonly used in social science research designed to make comparisons by collecting and analyzing quantitative data from different cohorts or contexts. This design combines the detailed description of qualitative research with the numerical analysis of quantitative research to provide a more complete understanding of the research topic.

During the descriptive phase, the study will focus on describing background information about high school students involved in community basketball programs, including their motivation to participate, frequency of participation, and other personal characteristics.

The quantitative phase will include quantitative measures of students' fitness levels and psychosocial status using instruments such as scales and questionnaires. Physical fitness levels will cover aspects of aerobic endurance, strength, flexibility, speed and coordination, while psychosocial status will include assessments of achievement motivation, social skills, self-perception and moral development.

The comparison phase will use statistical analyses to compare differences in data between groups or between points in time to determine the actual impact of the community basketball program on the physical health and psychosocial well-being of the students. The researcher may use tools such as t-tests and analysis of variance to analyze the data in order to understand the overall effect of the community basketball program on the participating students.

5.2. Research Locale and Research Participants

This study will be conducted in the city of Guangzhou, China, with specific locations including Guangzhou Panyu High School and Guangzhou Zhongyuan High School. These two schools are located in the Panyu District of Guangzhou City and are prominent high school schools in the area. These two schools were chosen because they are representative of the high school student population in the city and community, and both offer community basketball programs for the purpose of research participant recruitment and data...
collection.

Guangzhou Panyu Middle School.

Founded in March 1988, Guangdong Panyu Middle School has an elegant campus environment, with buildings that blend tradition and modernity, and harmonize utility and art; elegance is revealed in the atmosphere, and fashion is manifested in the simplicity. The school's hardware facilities are advanced, and the degree of modernization is ahead of the level of Guangdong and even the whole country. The school adheres to the school philosophy of "You can do it, I can do it", is people-oriented, respects individuality, stimulates ambition, taps potential, and encourages everyone to be successful. We vigorously build an all-embracing, all-encompassing and all-encompassing education system, actively explore the management mode of founding a large-scale general high school, and strive to realize the best educational effect to promote the maximum development of students.

Guangzhou Zhongyuan Middle School.

Guangdong Zhongyuan Middle School, a public full-time complete middle school, is one of the first batch of national model high schools in Guangdong Province and one of the top 100 middle schools in China. With a total planned land area of 120,000 square meters and a total building area of 200,000 square meters, Guangdong Zhongyuan Middle School has 30 student clubs, including 24 senior high school clubs and 6 junior high school clubs, which cover the fields of literature, science and technology, arts and sports, etc. It is an important platform for students to develop their personal interests, exercise their personal abilities and cultivate the spirit of teamwork.

The participants of the study will be high school students from both schools who will serve as the sample for this study. Participants will be recruited based on the following criteria: participants will be high school students from a variety of age groups, usually between 15 and 18 years old. The study will include both male and female high school students to fully reflect gender diversity. Participants will include high school students from different grade levels to ensure diversity in age and academic level. Participants will be high school students who are actively involved in community basketball programs and will be categorized based on whether or not they are involved in a basketball program. Study participants will be recruited and screened based on the above criteria prior to the start of the study. They will be asked to participate in a physical fitness test and complete a psychosocial well-being questionnaire. The researcher will ensure the privacy of the participants and confidentiality of the data and obtain consent from parents or legal guardians, especially for minor participants.

5.3. Research Instruments

This study will use a self-developed questionnaire as the main data collection tool to study the required data and information.

The questionnaire consists of three parts, the first part deals with the gender, age, and grade level of the students. The second part is the physical fitness scale which consists of five dimensions namely, aerobic endurance, strength flexibility, speed and coordination. The third part is psychosocial scale which includes four dimensions namely achievement motivation, social skills, self-awareness and moral development.

Each dimension consists of five entries (indicators). All the scales were scored on a four-point Likert scale.

5.4. Data Gathering Procedure

The data collection procedure included the following steps: First, determine the study population. The group of high school students participating in the study was selected, including grade level, age, and sex The group of high school students participating in the study was selected, including grade level, age, and sex considerations.

Then, design a questionnaire suitable for the purpose of the study, including measurement instruments for physical and psychosocial well-being. Data collection was conducted through online or paper-based questionnaires. The respondents' consent should be obtained before the questionnaire is administered, and the anonymity and confidentiality of the questionnaire should be guaranteed. The respondents’ consent should be obtained before the questionnaire is administered, and the anonymity and confidentiality of the questionnaire should be guaranteed.

Before the implementation of the questionnaire, the consent of the school and the informed consent of the subjects will obtain. The main test will be conducted by trained teachers/staff/trained assistants. Before the implementation of the questionnaire, the consent of the school and the informed consent of the subjects will obtain. Before the test, the subjects will explain the relevant requirements and instructions, emphasizing the principle of confidentiality, and the subjects began to answer after confirming that they are clear. After the test, participants all will receive a small gift to express their gratitude.

All data will collect, organize, tabulate and analyze according to approved statistical treatment. The collected data are cleaned, coded and the collected data are cleaned, coded and statistically analyzed, including methods such as descriptive statistics and correlation analysis.

Finally, according to the results of data analysis, and put forward corresponding suggestions and measures.

5.5. Statistical Treatment of the Data

These will be used to describe the respondents through profile variables and to determine the values needed to determine the position. position.

This will be used to assess and interpret the overall student response to key study variables, including physical fitness and psychosocial well-being. This will be used to assess and interpret the overall student response to key study variables, including physical fitness and psychosocial well-being.

Data collected from respondents will assign a weight of 1 to 4, with 1 being the lowest and 4 being the highest, to quantify physical fitness and psychosocial well-being. The scale to measure high student engagement is as follows.

The Likert scale will be used for physical fitness and psychosocial well-being:

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This will be considered important to determine the relationship between students' participation in different
physical fitness and psychosocial well-being, as if they were grouped based on only two types of variables.

This treatment will be used to compare the answers of more than two groups of respondents based on their profile variables and to determine significant differences in their assessments of physical fitness and psychosocial well-being. Significant differences in their assessments of physical fitness and psychosocial well-being.

Pearson r. This will be used to determine if there was a significant relationship among physical fitness and psychosocial well-being.

5.6. Population and Sampling Technique

The population of this study is the high school student population in the Panyu District of Guangzhou City, including high school students from Guangzhou Panyu Middle School and Guangzhou Zhongyuan Middle School. Together, these two schools represent the high school student population in this area. Population characteristics include between 15 and 18 years of age, which corresponds to the age group of high school students. Includes both male and female students. Includes high school students in different grade levels, from freshman through senior year.

In order to select a sample within the population, this study will utilize a stratified sampling technique to ensure that the sample represents the diversity of the overall population. First, the population will be divided into strata, with each stratum representing a school (Guangzhou Panyu Middle School and Guangzhou Zhongyuan Middle School) and grade level (freshman, sophomore, and junior). This stratification will help ensure that there is enough representation in the sample to cover the various subgroups. Within each stratum, a certain number of high school students will be selected for the sample using random sampling. Within each school and grade level, the sample will be selected by random sampling to avoid sampling bias. Finally, 402 students will be selected as the sample for the study. Usually, the sample size should be large enough to obtain representative results in statistical analysis. Based on the Qualitrics sample formula:

\[ n = \frac{N \times Z^2 \times p \times (1-p)}{E^2 \times (N-1) + Z^2 \times p + (1-p)} \]

Where the overall population is 3666 with a 95% confidence level and a sampling error of 5%. The sample size is 348 according to the formula.

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measure their joint range of motion and muscle stretching ability by performing stretching exercises, yoga and other flexibility training, such as body forward bend test, seated forward bend test, etc.

4. Speed: Speed refers to how quickly an action or movement can be completed in a short period of time. To evaluate the speed of high school students, you can measure their explosive power and reaction speed by conducting speed training such as sprinting and round-trip running, such as the 30-meter sprint test, the 10x5-meter return run test, etc.

5. Coordination: Coordination refers to the cooperation and coordination ability between various parts of the body. To evaluate the coordination of high school students, you can measure their body control and movement coordination abilities by conducting balance training, hand-eye coordination training, etc., such as one-leg standing test, dribbling test, etc.

In summary, through the evaluation and testing of the above variables, we can comprehensively understand the physical level of high school students and provide scientific basis and guidance for their healthy development.

6.3. Factors Influencing Physical Fitness Level of High School Students

High school students specifically refer to teenagers aged 15-18 years old. Their bodies are in a critical period of development and their physical fitness in all aspects is in good condition. The influencing factors of their physical fitness level include the following aspects:

1. Lifestyle is one of the important factors affecting the physical fitness level of high school students. A good lifestyle includes healthy eating habits, regular work and rest times, appropriate exercise, etc., which can promote physical health and improve physical fitness. On the contrary, a bad lifestyle may lead to obesity, lack of physical strength and other problems, which will affect the improvement of physical fitness.

2. Genetic factors also have a great influence on the physical fitness level of high school students. The genetic makeup of an individual may determine its physiological characteristics and athletic potential, directly affecting the development of physical fitness.

3. Environmental factors are also one of the important factors affecting the physical level of high school students. A healthy family environment, a good school atmosphere, and a safe social environment can promote the improvement of physical fitness and provide high school students with an environment for healthy growth.

4. Psychological factors also have an impact on the physical fitness level of high school students. A good mental state helps improve physical fitness, while excessive stress and anxiety may have a negative impact on physical fitness.

5. Study pressure is also one of the important factors affecting the physical level of high school students. High school students are faced with greater academic pressure. Long periods of studying and taking exams may lead to lack of exercise, poor eating habits, etc., thus affecting the improvement of physical fitness.

To sum up, the physical fitness level of high school students is affected by many factors such as lifestyle, genetic factors, environmental factors, psychological factors, and study pressure. Through a reasonable lifestyle, a good environment, appropriate exercise and a balanced diet, the physical fitness of high school students can be effectively improved.

6.4. The Main Characteristics of High School Students’ Mental Health:

The mental health of high school students refers to the overall performance of the mental state of high school students, including emotional stability, self-awareness, adaptability, and relationships with others and the environment. Mental health is crucial to the growth and development of high school students. It is not only related to individual happiness and quality of life, but also directly affects academic performance, social relationships and future development.

1. Emotional stability: Mentally healthy high school students are usually able to handle various emotions, including positive emotions such as joy and happiness, and negative emotions such as anxiety and depression. They can effectively regulate emotions and maintain emotional stability and balance.

2. Self-awareness: Mentally healthy high school students have good self-awareness, can clearly understand their own strengths and weaknesses, accept their own shortcomings, and change and grow with a positive attitude.

3. Adaptability: Mentally healthy high school students have good adaptability and can cope with various challenges and pressures in life, actively respond to changes and difficulties, and flexibly adjust their thinking and behavior.

4. Positive interpersonal relationships: Mentally healthy high school students can establish good interpersonal relationships, maintain good communication and cooperation with classmates, teachers and family members, and feel the support and understanding of others.

5. Self-growth and development: Mentally healthy high school students have a positive attitude towards life, can set reasonable goals and plans for themselves, continue to work hard to learn and make progress, and pursue personal growth and development.

To sum up, the mental health of high school students is a comprehensive concept that covers multiple aspects of performance. By establishing a good mental health education system and providing appropriate mental health support and assistance, high school students can be helped to better cope with challenges and promote their all-round development.

6.5. Assessment of High School Students' Perceived Level of Psychosocial Health

1. Achievement motivation: Achievement motivation refers to the enthusiasm and effort an individual displays when pursuing goals or completing tasks. The achievement motivation of high school students can be assessed through their performance in academic, social, sports, etc. For high school students with positive achievement motivation, they usually have clear goals and pursuits, work hard to study and improve their abilities, and have a strong sense of responsibility and self-discipline.

2. Social skills: Social skills refer to the performance and adaptability demonstrated by an individual when interacting and communicating with others. The social skills of high school students can be assessed through their interactions and communication with classmates, teachers, family members, etc. High school students with good social skills are usually able to communicate smoothly, express themselves clearly, and have good interpersonal and teamwork skills.

3. Self-awareness: Self-awareness refers to an individual’s knowledge and understanding of himself, as well as his
awareness of his inner experience and emotional state. High school students’ self-awareness can be assessed through their awareness and understanding of their own values, interests, strengths and weaknesses, and more. High school students with good self-awareness are usually able to clearly understand their strengths and weaknesses, are confident but not arrogant, and can correctly evaluate their abilities and values.

4. Moral development: Moral development refers to the development process of individuals in moral cognition, emotion and behavior. The moral development of high school students can be evaluated through their moral judgment, behavioral performance and compliance with social ethics. High school students with a good level of moral development are usually able to correctly judge the right and wrong of things, good and evil, actively participate in public welfare activities, respect others, and have good moral character and a sense of social responsibility.

In summary, through the evaluation of the above four aspects, we can comprehensively understand high school students’ perceived level of social and mental health, and provide scientific basis and guidance for their mental health and personal development.

6.6. Factors Influencing the Perceived Level of Mental Health among High School Students

There are many factors that influence the perceived level of mental health among high school students, mainly including the following aspects:

1. The family environment has a crucial impact on the perceived level of mental health of high school students. A stable and harmonious family environment can provide emotional support and security, which is conducive to high school students’ positive attitude and healthy psychological state. On the contrary, family conflicts, contradictions and poor family atmosphere may have a negative impact on the mental health of high school students.

2. The school environment also has an important impact on the perceived mental health level of high school students. Factors such as the school's educational philosophy, management style, and teacher education level will directly affect the mental health perception of high school students. A good school environment can cultivate students’ self-confidence, self-esteem and adaptability, and is conducive to improving their mental health perception.

3. The social environment is also one of the important factors affecting the perceived mental health level of high school students. Social recognition and support for teenagers, social development level and cultural atmosphere will all have an impact on the mental health of high school students. A positive, inclusive and caring social environment can promote the improvement of high school students' perceived mental health.

4. An individual’s own factors also have an impact on the perceived level of mental health. Factors including individual personality characteristics, emotional stability, adaptability and other factors will affect high school students’ perception of their own mental health. Relatively speaking, individuals with a cheerful and positive personality may have a more positive perception of their own mental health, while individuals with an introverted and anxious personality may have a negative impact on their perception of their own mental health.

To sum up, the perceived mental health level of high school students is comprehensively affected by family environment, school environment, social environment and individual factors. By creating a good family, school and social environment and cultivating a positive attitude and healthy mental state, the mental health perception of high school students can be effectively improved.

6.7. High School Students’ Identification with Community Basketball Programs

High school students’ identification with community basketball programs can be evaluated from the following aspects:

1. Achievement motivation: High school students participating in community basketball programs usually display strong achievement motivation. Their achievements and progress on the court through hard training and competition can inspire their recognition and pride in their abilities. In addition, as part of a team, they can also enjoy the sense of accomplishment of working together to achieve victory, thereby enhancing their identification with the project.

2. Social skills: High school students participating in community basketball projects can not only improve their basketball skills, but also develop good interpersonal relationships and teamwork skills through interaction and communication with teammates and coaches. In the process of working together, they will establish deep friendship and trust, feel the cohesion and warmth of the team, and thereby enhance their sense of identification with the project.

3. Self-awareness: High school students participating in community basketball projects will gradually realize their potential and value through the process of competition and training. They will realize the importance of their basketball skills and physical fitness in the team, thereby increasing their self-confidence and self-esteem and deepening their identification with the project.

4. Moral development: High school students participating in community basketball projects will learn moral qualities such as respecting others, abiding by rules, unity and cooperation during competitions and training. They will learn to care for and support each other, respect their opponents, and abide by the guidance of referees and coaches during teamwork, thereby cultivating good moral character and team spirit and enhancing their identification with the project.

In summary, by assessing the achievement motivation, social skills, self-awareness, and moral development of high school students participating in community basketball programs, we can gain a comprehensive understanding of their identification with the program. This sense of identity not only helps improve their basketball skills and physical fitness, but also cultivates their personality and social responsibility, promoting their overall health and personal development.

6.8. Difficulties Encountered by Community Basketball Projects in Cultivating Physical Fitness and Mental Health of High School Students

1. Aerobic endurance: Some high school students may lack sufficient aerobic endurance and cannot persist in long-term sports training and competition, which affects their overall physical fitness level. This may be due to their lack of exercise habits, unhealthy lifestyle, or lack of sufficient
exercise time and opportunities due to academic pressure and other reasons.

2. Intensity: In community basketball programs, some high school students may face challenges with insufficient or excessive intensity. For some beginners or students with weak physical fitness, excessive training intensity may lead to overloading the body and increase the risk of injury. For some well-trained students, insufficient intensity may not achieve the expected training effect, affecting their progress and development.

3. Flexibility: In basketball, flexibility is an important indicator of physical fitness, but some high school students may lack sufficient flexibility, resulting in clumsy movements and vulnerability to injuries during games and training. This may be due to a lack of daily stretching and joint mobility, or stiffness due to imbalanced growth and development.

4. Speed: Some high school students may face the challenge of insufficient speed and are unable to react and move quickly in basketball games, affecting their performance and competitiveness. This may be related to factors such as individual physiological conditions, training methods, and basketball skill levels. Targeted training and guidance are required to improve speed quality.

5. Coordination: In basketball, coordination is crucial to athlete performance, but some high school students may face challenges with insufficient coordination, resulting in clumsy movements and unsophisticated techniques. This may be due to different individual development levels, insufficient sports experience, or lack of systematic coordination training.

To sum up, community basketball programs face some difficulties in cultivating the physical fitness and mental health of high school students, including aerobic endurance, strength, flexibility, speed and coordination. In response to these challenges, targeted training measures and methods need to be adopted to improve students' physical fitness and mental health.

7. Conclusion

Based on an in-depth study of the impact of community basketball projects on the physical and mental health of high school students in Panyu Middle School and Zhongyuan Middle School in Guangzhou, this paper draws the following conclusions:

First, community basketball programs have a positive impact on the physical fitness and mental health of high school students. Research results show that high school students participating in community basketball programs perform better in areas of physical fitness, including aerobic endurance, strength, flexibility, speed and coordination. This reflects the comprehensive promotion effect of basketball as a systemic sports activity on individual physical fitness. At the same time, participants also showed positive changes in psychosocial aspects, showing higher achievement motivation, stronger social skills, stronger self-awareness, and better moral development.

Secondly, there are certain differences between gender and grade in the impact of community basketball projects on physical and mental health. Research has found that high school students of different genders and grades may respond differently in terms of physical fitness and mental health after participating in a basketball program. This suggests that when implementing basketball projects, differentiated training and support measures need to be developed for students of different genders and grades to better promote their physical and mental health development.

Additionally, long-term participation in community basketball programs may have more lasting effects on the physical and mental health of high school students. Although this study focused primarily on short-term effects, the need for long-term follow-up studies is further emphasized. Long-term follow-up studies can provide a more comprehensive understanding of the long-term impact of basketball programs on the physical and mental health of high school students and provide a basis for developing more effective physical education policies and practices.

Finally, this study provides useful insights and recommendations for physical education and community basketball programs. By gaining a deeper understanding of the impact of community basketball programs on the physical, mental, and emotional development of high school students, we can more specifically design physical education classes and basketball programs to better support the overall development of youth. At the same time, this study also provides a reference for future cross-cultural research and promotes the exchange and sharing of physical education practices around the world.

In summary, the community basketball project, as an important sports activity, has a positive impact on the physical and mental health of high school students in Panyu Middle School and Zhongyuan Middle School in Guangzhou. However, further research and practical work is still needed to better realize the role of physical activity in adolescent physical and mental health.

8. Recommendations

1. Develop a scientific and reasonable training plan: Based on the age characteristics and physical fitness level of high school students, formulate a scientific and reasonable training plan, including training content and methods in aerobic endurance, strength, flexibility, speed and coordination. Make sure you train at the right volume and intensity to avoid overtraining and injury.

2. Strengthen basic physical fitness training: Pay attention to the cultivation of basic physical fitness, including core strength, muscle endurance, flexibility and other aspects of training. Through systematic strength training, flexibility training and core stability training, students' physical fitness level is improved and the body's adaptability and stress resistance are enhanced.

3. Focus on technical and tactical training: In the basketball project, focus on technical and tactical training to improve students' basketball technical level and game tactical awareness. Through simulated game situations, targeted technical training and tactical drills, students can improve their performance and competitiveness in games.

4. Cultivate teamwork spirit: The community basketball project is a teamwork sports project that focuses on cultivating students' teamwork spirit and collaboration abilities. Through team training, collective competitions and cooperation projects, students' team awareness, communication skills and cooperation spirit are cultivated, and the team's cohesion and combat effectiveness are enhanced.

5. Provide mental health support: Pay attention to students' mental health issues, establish a mental health support system, and provide psychological consultation and psychological counseling services. Pay attention to students' emotional changes and psychological pressure, help them effectively
cope with challenges and difficulties, and enhance their psychological resilience and ability to resist frustration.

6. Create a good learning and training environment: Create a positive, united and friendly learning and training atmosphere to stimulate students' enthusiasm for learning and training. Provide good facilities and equipment to provide students with good learning and training conditions and stimulate their motivation to learn and progress.

To sum up, community basketball projects need to comprehensively consider many factors to cultivate the physical fitness and mental health of high school students, including scientific and reasonable training plans, basic physical training, technical and tactical training, team spirit, mental health support and Good learning and training environment, etc. Through these suggestions, students' comprehensive development and healthy growth can be better promoted.

References


