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Planning and Implementing Health Education and Physical Education Programs in Elementary Schools in The United States



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Introduction

The purpose of this study is to review and reflect upon the current state of health and physical education offered in elementary education curriculum in a Midwestern state in the United States. Currently, physical education and health education are part of the Elementary and Secondary Education Act enhanced by the Every Student Succeed Acts (ESSA) of 2015. The Iowa Department of Education notes that “physical education and health education as part of a well-rounded education that should be offered to all students” and that “physical education and health education have positive associations with academic growth and achievement, attention and concentration, and lifetime healthy habits” (Iowa Department of Education, 2019). Although physical education and health education are separate divisions of study, the ESSA defines the two as separate, but complementary subjects.

The Centers for Disease Control (CDC) in the United States describes physical education as providing “cognitive content and instruction designed to develop motor skills, knowledge, and behaviors for physical activity and physical fitness” (Centers for Disease Control, 2022). The goal of physical education is to

increase activity levels of youth in elementary school to improve their academic and overall health.

Health education is a dynamic state where “the quality of people’s physical psychological, and social functioning that enables them to deal adequately with the self and others in a variety of personal and social situations” (Bedworth & Bedworth, 1991). With elementary students, health education includes the dimensions of health including physical, social, emotional, mental/intellectual, spiritual, and vocational (Pateman, Symons, Seabert, & Telljohann, 2011, p. 10). A health education program offering quality instruction for





to become a healthy, resilient adult. Reviewing health determinants and components of wellness for elementary age youth can offer educational strategies to improve the health of children.

The World Health Organization (WHO) includes the social and economic environment, the physical environment and the person’s individual behaviors and characteristics as factors included in the determinants of health (World Health Organization, 2017). Determining the factors that contribute to the health of youth includes examining where they live, work and play. These elementary age students may have little control over the determinants of health and having a strong model in their elementary teachers may greatly contribute to positive changes in their overall health.

Social determinants of health (SDOH) should also be examined. Social determinants of health include environmental factors such as “where children live, attend daycare or school, play with their peers, and participate in extracurricular activities all affect their overall wellness” (World Health Organization, 2017). Shaping youth to be healthy must include their risk factors or protective factors and their resiliency. Masten (2019) defined resilience as “the capacity of a system to adapt successfully to disturbances that threaten the viability, function, or development of the system” (p. 101). Health determinants are greatly affected by the resiliency where a child has the resources to address any challenges in their relationships including school, family and community. The elementary education teacher has an impact on the health of school age children as elementary age children are a captive audience with teachers having secured a good part of their time during the day.

Wellness of elementary age youth must also be considered when examining health determinants. In the United States, the Child Nutrition Reauthorization Act (CNRA) of 2004 included 5 content areas: (1) goals for nutrition education, physical activity, and other school wellness programs, (2) nutrition guidelines for foods provided at school, (3) assurance that guidelines for school meals meet United States Department of Agriculture (USDA) guidelines, (4) a plan for monitoring the policy, and (5) involvement of parents, students, representatives of the school food authority, the school board, school administrators, and the public in development of school wellness policy content (Metos & Nanney,

elementary age youth will include providing students the ability to determine attitudes, knowledge and skill to make positive health decisions, adopt health enhancement behaviors, achieve health literacy and promote the health of others (Lewalen, 2015).

This qualitative study will review the current research and reflect upon the impact of including health education and physical education in elementary education curriculum. Specifically, areas of study will include defining health determinants for elementary age youth, describing the role of health education in elementary education, and reviewing existing health education programs in the United States. Also addressed is the importance of physical education for elementary education students, and the role of the elementary educator in improving health and physical education among young people.

Defining Health Determinants of Elementary Age Youth

In the United States, school-age child development “describes the expected physical, emotional, and mental abilities of children ages 6 to 12 years” (Mount Sinai, 2023). This age represents a time when children are in school, expected to learn and grow and generally expected to be healthy. However, the research in this study will show that there are many challenges that school-age children are exposed to and must overcome

2007, p. p.368). This program in the United States, has been reorganized and reformed but it coincides with the School Lunch Program (1946) and National School Breakfast Program (1966) which offer free lunch and breakfast to elementary age students. A child who is hungry may not be able to concentrate nor participate in academic endeavors. Food insecurity can be defined as a state where there is not enough food for an active, healthy lifestyle. A child in a home with food insecurity may worry that they do not have enough food at home, stress about insufficient money or resources for food, and/or suffer from hunger-the physiological need for food (Gundersen, Engelhard, & Hake, 2017). Understanding that students may suffer from food insecurity as a health determinant and addressing that need is one way that elementary schools can improve a child’s health.

Health Determinants Pre and Post Covid

The Covid-19 pandemic exposed already existing health inequities in children and families. In 2020, the coronavirus, or Covid-19, began to surface in the United States. Public health measures intended to control the spread of Covid-19 were implemented and this caused increases in unmet social needs. One instance is school closures, which increased food insecurity in children as many children would count on free school breakfast and lunch as part of the nutritional needs for the day. Along with food insecurity, the “immediate negative health effects for vulnerable populations, the pandemic is expected to have long-term socioeconomic impacts on infected families and their communities” (David et al., 2021, p. 2).

Health determinants for school age children before the pandemic included trauma from past events, poverty, food insecurity, family issues, dangerous neighborhoods, and physical abuse. These health risks can cause “difficulty regulating emotions, and reduced social functioning compared to other children their age” (U.S. Department of Health and Human Service, 2023). The pandemic exacerbated these health risks.

Before the pandemic, children who suffered from poverty already faced challenges such as not being prepared for the school day due to lack of resources (computers, parents, high-speed internet) at home. Adding to that, issues such as malnutrition, lack of food and absence of medical care also contributed to the health status of children. Schools also had limited budgets (due to being in a low socioeconomic area with



lower property taxes) to “address a multitude de of issues, including hiring educators, updating resources for students, preparing students for postsecondary education or the workforce, dealing with unsafe infrastructure, and much more” (National Association of Secondary School Principals, 2021).

During the pandemic and post-pandemic, these issues were magnified. And new health risks emerged including an increase in mental and emotional health challenges. (Jones et al., 2022) reported that adolescent mental health during the pandemic suffered due to “increases in depression and anxiety and worries about online learning difficulties, and increased conflict with parents” (p.16).

Students often develop a sense of connectedness with their school. This feeling of well-being among elementary age youth occurs when these students feel that their peers and adults in their school care about them as individuals and support their learning and succeeding (Telljohann, 2019). Children often lean on their peers for emotional and social support.

When youth feel connected to their school, they are less likely to experience poor mental health, substance abuse, violence, sexual health risks, and suicidal thoughts. Schools can reduce health disparities by encouraging school connectedness. For example, students who have been bullied may feel that they are marginalized. The teacher and the school as whole have the opportunity and responsibility to make children feel included.

Because of the need to stay home and disruptions in school activities and operations, students and families reported more stress, trauma, and mental health issues during Covid-19. School connectedness is an important factor in that the youth who felt more connected did not suffer as much from being isolated during the pandemic (Centers for Disease Control, 2022). “Youth who feel



connected at school are significantly less likely to experience health risks related to sexual health, substance use, violence, and mental health in adulthood” (Center for Disease Control, 2022). Covid lead to widespread isolation among youth (Magson et al., 2020)

The stress on elementary school and school age youth during the Covid-19 pandemic in the United States increased exponentially raising the significance of such health concerns as overuse of social media, unhealthy eating, depression/suicide, lack of physical activity and stress and anxiety concerns (C.S. Mott Children’s Hospital National Poll on Children’s Health, 2020). The expectation of having a school nurse handle the new challenges in health education among youth in elementary education seems daunting.

In the United States, Iowa Administrative Code 281-12.4 describes the position of employing a school nurse for each school district and Code 256.11 offers the educational standard the school nurse must provide students with health services (National Association of State Boards of Education, 2021). The goal for the educational standard is to have one school nurse for

every 750 students. The school nurse is responsible for providing health education to school-aged youth in elementary schools. This policy is being reexamined in 2023 due to the increased needs for mental and emotional health resources for students. Senate File 390 is a wide-ranging bill put before the Iowa Senate in the United States. The bill directs “the Department of Education to form a group to review and develop a plan to ensure Iowa educators have the health care training necessary to perform their duties and responsibilities” (Strong, 2023)

The Role of Health Education in Elementary Education

School-based health education added to the curriculum for youth can allow them to gain knowledge and strengthen “attitudes, beliefs, and practice skills needed to adopt and maintain healthy behaviors throughout their lives” (Department of Health and Human Services, 2023). In the elementary schools, teachers have a large amount of time spent with the children and can model good health behavior and include effective health education in their curriculum.



Some of the specific content and skills that can be offered in health education include violence prevention, nutrition, mental and emotional health, sexual health, physical health and spirituality or developing a sense of purpose. The health education curriculum should include “a planned progression of developmentally appropriate lessons or learning experiences that lead to achieving health objectives” (Department of Health and Human Services, 2023). This might mean that kindergartners learn the importance of washing their hands for germs whereas fifth or sixth graders can learn to wash their hands and learn the difference between bacteria and viruses. In Bloom’s Taxonomy, educators “encourage higher-order thought in their students by building up from lower-level cognitive skills” and behavioral and cognitive learning outcomes can be set for different grade levels (University of Central Florida, 2022).

If there is continuity between lessons and learning experiences, youth will learn to adopt health enhancing behaviors at a young age. One component of health is self-efficacy, also described as an “individuals belief in his or her capacity to execute behaviors necessary to produce specific performance attainments” (American Psychological Association, 2023). The child develops confidence to have control over their own social environment, motivation, and behavior. The state of self-efficacy in health education is promoted from teacher’s modeling healthy behaviors, teaching and then encouraging the child, and reinforcement and goal setting.

Improving a child’s self-efficacy can empower the child to develop a knowledge and understanding that adopting and practicing healthy behaviors is good for them and will improve their quality of life. In turn, teachers will feel a sense of success in sharing healthy behaviors with the knowledge that they are truly helping the child. This should enhance the positive environment of the classroom.

Social and emotional learning (SEL) programs provide planned instruction allowing children to regulate and manage emotions, establish socially positive goals, solve problems, adopt interpersonal skills and learn to respect the opinions of others (Payton et al., 2000). Social and emotional learning address “children’s social and emotional skills and competencies by to build children’s social and emotional skills and competencies by: (a) explicitly teaching specific skills through direct instruction, including introducing and modeling SEL skills and

supporting students to use and apply them across diverse settings; (b) improving classroom and school climate, often by targeting teacher practices and school norms and expectations; and/or (c) influencing student mindsets such as their perceptions of themselves, others, and school (Jones & Doolittle, 2017, p. 5)”

Continuity is important when teaching health education and health-enhancing behaviors. Youth experiences and behaviors provide teachable moments that prepare the learner for adulthood. One such program that emphasizes continuity in learning is the Whole School, Whole Community, Whole Child Program (WSCC). This program’s framework shows a model that is “student-centered and emphasizes the role of the community in supporting the school, the connections between health and academic achievement and the importance of evidence-based school policies and practices” (Centers for Disease Control, 2022). When describing the WSCC model, it is important to discuss the significance of having healthy children in order to have healthy families and a healthy community.

A Review of Existing Health Education Programs

The Whole School, Whole Community, Whole Child model (WSCC). The Whole WSCC in the United States examines and emphasizes the “role of the community in supporting the school, the connections between health and academic achievement and the importance of evidence-based school policies and practices” (Whole school, whole community, whole child (WSCC), 2022). The WSCC model reviews 10 components of wellness including physical education and physical activity, nutrition environment and services, health education, social and emotional climate, physical environment, health services, counseling, psychological and social services, employee





wellness, community involvement and family engagement (WSCC, 2022). The WSCC model emphasizes that addressing poor health and wellness is easier in school age youth than in adulthood.

Marmot et al. (2012) noted that in order for young people to develop to their full potential and healthiest version of themselves, they should be surrounded by safe and supportive schools and families and supportive and supportive peers. By addressing health determinants, social determinants, resiliency and health risks, the elementary school, teachers, staff, friends and family can help to build the “whole” child.

Health Education Standards. The health education standards in the United States include 8 health-related skill and knowledge standards and performance indicators for students in K-12. These standards emphasize “what students should know and be able to do by the end of specified grades, serving as a valuable tool for schools in selecting, designing, or revising curricula” (Centers for Disease Control, 2020). The United States education system delivers health promotion broad in scope and influence with many staff who have specialized “knowledge in critical health risk and protective behaviors and have preexisting infrastructure that can support a varied set of helpful interventions” (Szucs et al., 2021, p.224). The health education standards serve to provide guidance for educators in all grade levels. Telljohan discusses the health education standards noting that academics and health education are inextricably intertwined (2019).

Health Education Curriculum Analysis Tool (HECAT). The HECAT is another resource for planning and implementing health programs in the United States, there are Health Education Standards which include “standards-based health education helps ensure curricula and instruction are designed to establish, promote, and support health-enhancing behaviors for students in all grade levels – emphasizing planned, sequential learning from pre-kindergarten through grade 12” (Centers for Disease Control, 2020). The Health Education Curriculum Analysis Tool (HECAT) is a valuable tool for educators to outline age and grade level appropriate curricula to address health behaviors and reduce health risks.

The Role of Physical Education for Elementary Education Students

The first formal physical education activities children experience often occurs in elementary school.

Due to increases in technology and screen time, children may not be very active. There is also an issue of increases in food portion sizes and the marketing of unhealthy, processed food. Physical education helps children to develop respect for their own body and for others, “contributes toward the integrated development of mind and body, develops an understanding of the role of aerobic and anaerobic physical activity in health, positively enhances self-confidence and self-esteem, and enhances social and cognitive development and academic achievement” (Bailey, 2006, p. 397).

Similarly, to health education, physical education modeled in the elementary schools can have a lasting impact on a child’s life and improve their overall health and wellness. In the United States, the Centers for Disease Control (2015) provided practical strategies and resources for enhancing physical education in elementary school. These include: 1) policy and environment, 2) curriculum, 3) appropriate instruction and 4) student assessment. These four strategies increase the consistency in the delivery of physical education while creating an inclusive environment where all students are expected to succeed. Lesson plans are included just as in other classes. The students ages and abilities are also considered in this curriculum planning. Every child should feel successful and included. Student outcomes should also be assessed. Evaluations of any health or physical education program provide educators with an ability to reflect upon the effectiveness of the instruction and offers evidence of success of the program (Centers for Disease Control, 2015).

When a child is stressed or feeling anxious, physical activity can provide relief. Sharma, Madaan, & Petty (2006) describe exercise as improving mental health by “reducing anxiety, depression, and negative mood and by improving self-esteem and cognitive function” (p. 106). The authors also describe exercise as a vehicle to improve self-esteem and increase positive social interactions. Magson et al., (2020) found that physical and chemical changes that occur in the brain from early adolescence increase heightened emotionality in response to real or perceived stressors. The authors also reported a neural mismatch where the “self-regulatory system required to manage these emotions remains largely underdeveloped until early adulthood” (Magson et al., 2020, p. 45).

Research also offers the self-determination theory (STD) as a theoretical foundation for planning physical education programs. The STD is an “empirically



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increasing the risks of developing other chronic diseases. The Body Mass Index or BMI is accepted as measurement of childhood obesity (p. 325). However, the BMI has several limitations including measuring overweight as opposed to over fatness. A high BMI may be due to extra muscle mass rather than extra adipose tissue (Rolland-Cachera, 2011).

The CDC reports “children and adolescents aged 2-19 years in 2017-2020, the prevalence of obesity was 19.7% and affected about 14.7 million

children and adolescents and obesity prevalence was 12.7% among 2- to 5-year-olds, 20.7% among 6- to 11-year-olds, and 22.2% among 12- to 19-year-olds” (Centers for Disease Control, 2022, p. 1). Childhood obesity is a concern because of its relationship to increases in health risks and disease.

In the past 30 years, the prevalence of obesity has increased markedly in U.S. children. This is concerning due to the fact that “obesity-related risk factors and diseases formerly seen only in adults are increasingly being recognized in obese adolescents and even younger children” (Rolland-Cachera, 201, p. 325). Physical education programs such as SHAPE America and others can help to address childhood obesity. Health education programs can also decrease the prevalence of childhood obesity by offering education on proper nutrition.

The SHAPE program used to be referred to as The American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) and was renamed as SHAPE in 2013.

Comprehensive School Physical Activity Program (CSPAP). CSPAP is a framework for planning and organizing activities within the Whole School, Whole Community, Whole Child (WSCC) program. As mentioned earlier, schools and educators play an important role in ensuring that children and adolescents are active every day. The current recommendation for activity for children in the United States is 60 minutes per day (Shape America, 2022). A CSPAP is a “multi-component approach by which school districts and schools use all opportunities for students to be physically active, meet the nationally-

derived theory of human motivation and personality in social contexts that differentiates motivation in terms of being autonomous and controlled” (Deci & Ryan, 2012, p. 416). In other words, individuals can make decisions that are good for them and while doing that, they feel that they are in control. The STD partners a student’s motivation and autonomy with a quality physical education curriculum plan.

A Review of Existing Physical Education Programs

Shape America. The Society of Health and Physical Educators (SHAPE) is a program in the United States that exists as a voice for physical and health education professionals. The SHAPE program is a diverse program of health and physical educators, advocates, and supporters in the United States (SHAPE America, 2022). The SHAPE program offers Americas National Standards for K-12 Physical Education as a “foundation for well-designed physical education programs across the country” (SHAPE America, 2022). The goal of the organization in the United States and other countries is to prepare children to lead physically active, health lives. The mission of the SHAPE America organization is to advance professional research and practice in the are of health and physical education. SHAPE America also helped to develop the Health Education Standards.

SHAPE America and other organizations seek to address the epidemic of childhood obesity which can be defined as “body weight that conveys significant risk for adverse health outcomes” (Caprio et al., 2008, p. 2211). Childhood obesity is a chronic disease

recommended 60 minutes of physical activity each day, and develop the knowledge, skills, and confidence to be physically active for a lifetime” (Shape America, 2022).

A CSPAP was designed to reach two major goals: “first, to educate youth with the knowledge, skills, and confidence to engage in a lifetime of meaningful participation in physical activity (PA), and, second, to ensure youth meet the national guideline of at least 60 min of mostly moderate to vigorous PA each day” (Webster et al., 2020, p. 1). The CSPAP programs are multi-faceted and include physical education during school and at recess, physical activity before and after school, staff involvement, and family and community engagement. Webster (2020) described a CSPAP as any combination of programs used within schools and the community to achieve improved physical activity and health and wellness among youth.

The National Association for Sport and Physical Education (NASPE). NASPE offers a mission of “ensuring equal and complete access to health-benefiting physical activity remains critical and relevant” (Zieff, Lumpkin, Guedes, & Eguaioje, 2009, p. 48). NAPSE has contributed to advancing sports and physical education in the United States and nationally. Professional scholars contribute research to assist physical education instructors in providing the best curriculum programming for youth. NAPSE offers six standards which include: 1) demonstrates competency in motor skills and movement, 2) demonstrates understandings of movement concepts, principles, strategies and tactics as they apply to the learning and performance of physical activities, 3) Participates regularly in physical activity, 4) Achieves and maintains a health-enhancing level of physical fitness, 5) Exhibits responsible personal and social behavior that respects self and others in physical activity settings and patterns needed to perform a variety of physical activities and 6) Values physical activity for health, enjoyment, challenge, self- expression, and/or social interaction (Young, 1997).

The above mentioned programs have the ultimate goal that elementary education students create movement, increase physical activity participation, enhance motor skill acquisition and performance and regularly participate in physical activity. Whether in an individual or group setting, the goals and standards of the mentioned physical education programs as well as other existing programs are to get youth to move, exercise, enhance fitness, reduce stress and exhibit positive social interaction.

The Presidents Challenge. The President’s Challenge program was formerly named the Presidential Physical Fitness Award which began in 1966. In 2013, the Presidential Physical Fitness Test is now replaced by the Presidential Youth Fitness Program (PYFP). The “PFYP makes use of the FITNESSGRAM assessment program which focuses on health and lifelong physical activity” (Wood, 2008). The PYFP test includes body fat and body mass index measurements, sprinting, push-up and pull-ups and instead of focusing on competition, the results focus on rewarding personal gains (Wood, 2018).

Physical Education Curriculum Analysis Tool (PECAT). The PECAT is a self-assessment and planning guide derived by the CDC to help “school districts and schools conduct clear, complete, and consistent analyses of physical education curricula based upon national physical education standards” (Centers for Disease Control and Prevention, 2022). This program reviews how physical education curricula aligns with the national standards for physical education. The PECAT also assists educators develop physical education curricula and review and analyze outcomes and evaluate the effectiveness of physical education programs.

The Role of The Elementary Educator in Improving Health And Physical Education Among Young People

Health and physical education programs included in the curriculum of elementary education allow for academic growth and better health and wellbeing (Iowa Department of Education, 2019). Educators in elementary school are often taxed with many duties and benchmarks for student success. However, including health and physical education in their curriculum can produce positive results that include academic success and student achievement.

In the United States, the University of Northern Iowa teacher education program recognizes the challenges future teachers face and notes that teachers have the opportunity and responsibility to bring joy and discovery, character building, and curiosity to elementary age students (University of Northern Iowa, 2023). The college strives to prepare future educators to face all the challenges that teachers may face while instilling confidence in their students. Health education and physical education have been shown to improve positivity in the classroom and increase students ability and self-assurance to learn (Telljohann, 2019).



Perhaps the most challenging time that teachers have faced was the Covid 19 pandemic. This was a time where adolescents reported a “loss of interpersonal relationships, decrease in personal skills, increasing distrust, procrastination, interruption in physical activities, and a disruption of daily routines” (Hansbrough, Cook, & Widner, 2021, p. 13). Teachers had to learn new technology and new ways to reach their students. Gurung (2021) described it as “very necessary for both teachers and learners to stay fit, physically healthy and brings positive thought in mind” (p. 17).

Teachers may be expected to fill various roles in addition to their academic duties. While teachers are most likely not psychologists, social workers, or nurses, they may have to fill that role. With Covid 19, the role of teachers as counselors increased dramatically. The U.S. Surgeon General’s Advisory (2021) described childhood experiences as both good and bad. Learning new skills, acquiring knowledge, developing close relationship with peers and supportive teachers and finding a sense of purpose are all good and positive skills children can learn. However, children also have negative and challenging experiences such as being bullied, facing academic stress or mental health challenges.

Maslow’s Hierarchy may describe the role of the educator and the needs of students in the most relatable way. Physiological needs are at the base of Maslow’s Hierarchy. Essentially, children need to feel safe and taken care of with the needs of nourishment and clothing and a safe environment being met. When “students are sidetracked by these or any other issues, their own education and accomplishment may be prioritized below their more immediate needs” (Kurt, 2021). A teacher’s role is to help students eliminate distractions and assist them in succeeding academically. Health education and physical education programs can

contribute to this success because they assist the professional educator in creating a positive environment where all basic needs are met and children are allowed to reach their goals.

Conclusion

This paper reviews the current research and programs in health and physical education in the United States. The research shows a need for health education and physical education in elementary schools and the opportunities and responsibilities for the elementary education teacher. Academics and physical education and health education are inextricably intertwined (Telljohann, 2019).

The Covid 19 pandemic presented a challenge and possibly revealed emerging trends and needs among elementary education children. Social and emotional learning and mental health issues were brought to the forefront. During 2020, the “stress of the pandemic, the social isolation, lack of technology for some students, loss of routines, and no access to school meals increased the need for social-emotional programs to be delivered remotely” (Cchiaro, 2022). Cchiaro found that children needed social-emotional learning even before the pandemic due to student reports of anxiety and depression. The social-emotional learning curriculum may have suffered during the pandemic, but the awareness of this encouraged educators to continue and increase efforts post pandemic.

The existing health education and physical education programs and the role of the educators is more important now than ever before. With increases in technology and different challenges students face, educators are taxed with the responsibility to address physical, health and well-being challenges in school age youth. The good news is that adopting and utilizing current programs presents educators with the opportunity to increase the positivity in their classrooms and the success of their students. RMA



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The Interrelationship between Personality and Sports Performance among The Hong Kong University Athletes

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INTRODUCTION

Psychological factors surpass the physiological factors in sports performance for athletes, acting a significant role in sports. In sports performance psychology, Tomar and Dhunna (2017) indicated that psychological factors include motivation, arousal, mental imagery, personality, confidence, concentration, etc. However, according to Miele (2015), a negative personality can directly affect physical sports performance, such as poor focus and preparation, mental blocks, or even cause injuries to athletes. Hence, the athletes' personality is significant in physical performance.

Also, Mirzeai et al. (2013) indicated that personality is the predictor of athletes, influential and recognized in psychology. Piepiora (2021) manifested that personality traits are the decisive winning factor of some athletes with similar sports skills performance. Moreover, the personality traits of athletes will occur when they take part in competitive sports. Furthermore, those athletes behave influenced by their personality traits and inevitably affect their sports performance directly or indirectly. For instance, indignation athletes quickly get mad or out of control when facing an unfair situation or provocative words from opponents to them. When athletes face the challenge, an optimistic athlete tends to be persistent and confident, but a pessimistic athlete tends to be hesitant and doubtful (Gould et al., 2002). The corresponding response will be based on their personality and influence their sporting performance in decision-making. In addition to

decision-making, there are also differences in the physique variation of athletes. Woodman et al.'s (2009) research validated a significant difference in sports performance between introverts and extroverts. The result of the experiment was that extrovert athletes conducted a greater force in physical performance than introvert athletes when under an anger emotion condition. As stated before, it showed that personality traits had an indispensable influence on athletes' performance in different situations.

Furthermore, it contains personality differences between team and individual sports athletes (Nia and Besharat, 2010). Such as some people may think that introverted athletes may not perform well in sports. However, Hong Kong fencing athlete Cheung Ka Long is an introverted athlete, but he was the gold medalist in the Tokyo 2020 Olympic Games. On the other hand, people may think that extrovert athletes in team sports may have a psychological advantage. However, some extrovert team sports athletes in the Hong Kong university will have more emotional behaviors and influence their sports performance due to their personality characteristics. They are willing to take the risk and fulfil their curiosity. Also, the individual athletes conducted a higher score in positive personality-trait-like individual differences (PTLID) than the team sports athletes (Laborde et al., 2016).

Gordon Allport (1937) was a psychologist and the first to indicate personality in terms of common, cardinal, and central traits. Nowadays, with the passage of time, the

“Big Five” theory is widely recognized and acknowledged in most psychology and modern studies. It was developed by D. W. Fiske (1949) and further comprehensive amplified by Norman (1967), Goldberg (1981) and so on. The “Big Five Dimensions of Personality” included openness, agreeableness, conscientiousness, extraversion, and neuroticism. It has been widely researched and used in diverse types of fields. Costa & McCrae (2008) also noted that the Big-five Model was a strictly tested and exhaustively developed personality assessment tool. It presented extensive and researched personality characteristics.

Moreover, sports are required to involve higher positive emotions than other activities. In Khan et al.'s (2016) studies, the result found that extroversion is a vital trait in the positive relationship on sports performance. Indeed, Top and Akil (2018) pointed out that people who participate in sports are more extroverted than those who do not. Videlicet, the extraversion personality may conduct the higher proportion among “Big Five” personality traits in Hong Kong university athletes. Also, Piepiora (2021) mentioned that the champion team's conscientiousness characteristics have the highest proportion. Athletes with conscientious personalities obtain higher levels of goal striving and self-efficacy. In fact, the road for athletes to success exists numerous difficulties. Those athletes were firm and persistent as the personality traits of conscientiousness may lead them to successful achievement. Hence, conscientiousness is an important personality trait with the highest sports achievements in this study.

Psychological Factor in Sports Performance

There is an inverse relationship between sports performance and psychopathology (Scott et al., 2020). It refers to when the athlete's mental health worsens; then their performance will also mitigate. Then Raglin (2001) suggested initially the personality and mood assessments to examine the psychopathology. Until now, there have numerous researchers interested in it (e.g., Lundqvist and Raglin, 2015; Kuettel et al., 2021). Among their studies showed that the general psychological measurement of the athletes' mood state and personality traits could identify around 70 to 85 per cent of successful and unsuccessful athletes. It indicated the significance of the psychological factor, personality, in sports performance. Moreover, anxiety is one of the factors of psychological that influence sports performance. Usually, the anxiety level will increase a few days or hours before the competition. Although the psychological anxiety factor influences their performance, the variable personality of the athletes also



remains crucial to the final sports performance. Losing self-confidence during competition always happens. It will occur when the athletes are executed in poor performance or under disadvantaged environmental conditions. It can directly influence sports performance by the athletes doubtful caused by the unconfident during the competition. During the competition, most of the athletes are required to have high concentration focus Makepeace et al. (2021). Sometimes, some internal and external distractions affect athletes' performance. Such as other important things, they are too nervous to think about what will happen next etc. However, the different personalities of athletes can also influence concentration focus levels. For example, openness is curiosity about new things. So, they are easily distracted by internal or external factors. Thereby, it may influence their actual decision during the competition.

Big Five Personality Traits

The sports requirement involved higher positive emotions, such as optimism, happiness (David et al., 1997; Magnus., 1993) and lower levels of anger, worry, and fear. Moreover, in Nia and Besharat (2010) studies results, the athletes have scored higher in conscientiousness and extraversion personality traits. Also, Top and Akil, (2018) pointed out that people who participate in sports are more extroverted than those who do not. It represented most of the athletes have those personality traits. (Costa & McCrae, 1992; David et al., 1997; Robinson et al., 2007). In fact, Piepiora (2021) pointed out that there is a relatively high level of neuroticism in athletes occurred in the ultimate frisbee. There are various personality characteristics related to sports performance. Some previous studies had researched the relationship between personality and sports performance by using the “Big-Five Factor Markers” developed by Goldberg (1992). The Big Five Personality Traits model (McCrae & John, 1992) has been validated as

a good behavior patterns predictor (McCrae et al., 2003). It classified the personality into five-dimension, extraversion, neuroticism, openness, agreeableness, and conscientiousness. Some research found that basketball athletes are more agreeableness than volleyball athletes by using the big five-factor theory (Piepiora, 2021). In the test, when measuring the openness of the athletes, they would not classify as 100% of extroverted or introverted people. It is just identifying the athletes' level of extraversion. Moreover, in the neuroticism aspect, the athletes are unstable and emotional. Steinbrink et al. (2019) mentioned that there is a negative relationship between resistance to stress and neuroticism. It is just identifying the athletes' level of extraversion.

Allen et al. (2011) summarized the five personality traits in categories. The extraverted athletes are classified as outgoing, active, and friendly in the extraversion aspect. In Khan et al. (2016) research, they explored that openness positively correlated with athletes' sports performance. It is because they are open to accepting the stress of the new environments. At the agreeable high level, the athletes are compliant, gracious, and altruistic compared with the uncooperative and rude (Nia & Besharat, 2010). Lastly, in conscientiousness, athletes are punctual, organized, and diligent. They will pay more attention to the training. For instance, they will have the precise direction to persistently achieve their target (Steinbrink et al., 2019).

Relationship between Personality and Sports Performance

“The association of personality with achievement may result from the direct influence of personality on performance” (Roberts et al., 2007). The interaction behaviours effect of personality were evidenced by the theoretical model of personality-situation interactional (Judge & Zapata, 2015) and cognitive-affective personality system (Mischel & Shoda, 1995). It illustrated that the personality of athletes influenced the performance outcome of sports tasks. The sports task context would impact those behaviours and task performance from personality traits (Wong et al., 2020). Research has proved that athletes' personality is related to sports performance. Moreover, neuroticism is presumed to the negative emotions, such as anger, fear, worry etc. (Robinson et al., 2007). Those emotions in sports performance would affect the effectiveness and efficiency of athletes. In contrast, a low level of neuroticism which refers to emotional stability can assist athletes in keeping calm and confident in their sports performance.

Nia & Besharat (2010) found out that the successful athletes were extroverts, emotionally stable, conscientious,

aggressive, open-minded, affectionate etc. Sindik (2011) evidenced a positive effect on athletes' performance among the extroversion basketball centre player, but non-extroversion basketball guard player does not. It showed that extroversion has a positive effect on athletes' performance. In addition, using the appropriate coping strategies during the games or training can directly influence sports performance. Mirzeai et al. (2013) research invited 229 non-elite futsal and football athletes to participate and determine the relationship between personality traits and sports performance. In the end, they found that only conscientiousness in some football athletes contains positive sports performance. It represented that the athletes with high responsibility, goal orientation, and discipline would perform more elevated in the tournaments. In goal achieving, conscientiousness helps control the impulse and concentrate during tournaments (Khan et al., 2016). Agreeableness athletes mostly occurred in team sports. It is because team sports are required to team spirit, not personal spirit. They are needed to cooperate with each other. Indeed, Nia & Besharat (2010) mentioned that agreeableness athletes are compliant and altruistic. They are prone to be indecisive, easily affected by others and have low egocentric thinking in the tournaments. It may affect the performance by the uncertainties encountered in the tournament.

METHODOLOGY

Participants

In this study, the Hong Kong's university athletes are the target participants. Those participants should study in Hong Kong's university currently and aged from 18 to 25 years old, including females and males. There is no limitation of the athletes' sports branch and sporting levels. We collected 200 questionnaires from all Hong Kong's university athletes who include individual and team sports participants and different sporting levels.

Measuring Instruments

The questionnaires were used in this study. It has two parts, personal information & sporting experience and the “International Personality Item Pool (IPIP) Big-Five Factor Markers”. In the first part, the questions include gender, age, sports branch, sports type, how long they have participated in that sports, recently sporting level and the highest sporting achievement. Then, the second part includes the IPIP Big-Five Factor Markers by Goldberg (1992). It contains 50 questions, and athletes need to rate on the five-point scale; one refers to disagree, three refers to neutral, and five refers to agree. “Big-Five Factor Markers” is for analyzing the personality of the athletes, which personality characteristics they belong to.



Data Collection Procedures

In this part, the online questionnaire from Qualtrics Survey Software was used in this study. Firstly, I created the Qualtrics Survey Software online questionnaire with the personal information and personality analysis sections. The personality analysis sections used the 50 items of IPIP Big Five Marker, which were duplicated into a part of my online questionnaire. This questionnaire took 10 to 15 minutes to complete.

Statistical Analysis

Data analyses was performed by using SPSS Statistics (version 28.01.1). The significant level was set at 0.05. The basic information of the result was presented in the frequency table, such as participants' age, gender, years of experience in those sports, sporting level. Then the proportion comparison of five personalities was presented by the mean, median, mode and standard deviation. After that, the independent t-test was used to analyze the difference between male and female athletes, individuals, and team sports athletes; physical contact and non-physical contact sports-type athletes in "Big Five" traits personality. Moreover, we selected and arrayed the data of participants who had the champion achievement in local and international competitions. Then, the one-way analysis of variance (ANOVA) was used to analyze the means variations of those five personalities in those different sporting achievement athletes.

ANALYSIS OF DATA

(1) Descriptive statistic of participants

Gender distribution of participants

In this study, a total of 200 university athletes (N=200) had participated and responded to the online questionnaire. Among these 200 participants, there were 88 male athletes (44%) and 112 female athletes (56%). (See Table 1.1 and Figure 1.1)

Table 1.1
Gender distribution of participants (N=200)

Gender	Frequency (n)	Percentage (%)
Male	88	44.0
Female	112	56.0
Total	200	100.0

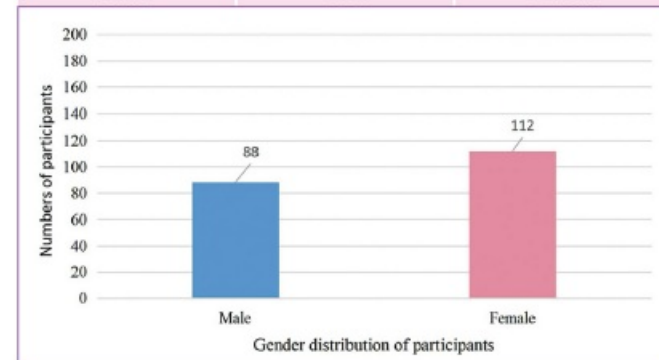


Figure 1.1 Gender distribution of participants

Age distribution of participants

Participants' age was divided into two groups, 18 to 22 years old and 23 to 25 years old. There were 158 athletes (79%) aged 18 to 22 years old and 42 athletes (21%) aged 23 to 25 years old. (See Table 1.2 and Figure 1.2)

Table 1.2
Age group distribution of participants (N=200)

Age groups	Frequency (n)	Percentage (%)
18 - 22 years old	158	79.0
23 - 25 years old	42	21.0
Total	200	100.0

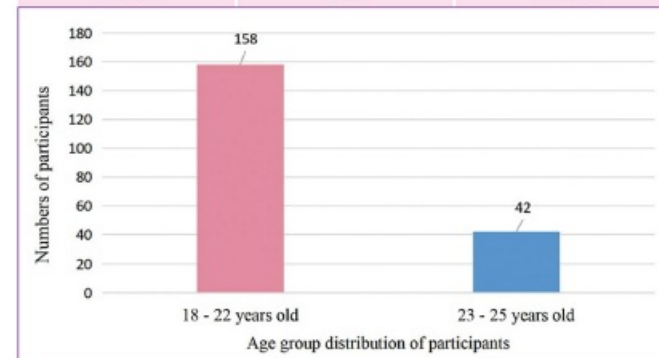


Figure 1.2 Age group distribution of participants

Sports experiences of participants

The sports experiences of participants were asked through the questionnaire. It has divided into four groups. 13 athletes (6.5%) had less than 1-year sports experience, 56 athletes (28%) had 2 to 5 years of sports experience, 72 athletes (36%) had 5 to 10 years of sports experience that accounted the most of participants, and 59 athletes (29.5%) had 10 years or above sports experiences. (See Table 1.3 and Figure 1.3)

Table 1.3
Sports experiences of participants (N=200)

Year(s) in sports experiences	Frequency (n)	Percentage (%)
Less than 1 year	13	6.5
2 to 5 years	56	28.0
5 to 10 years	72	36.0
10 years or above	59	29.5
Total	200	100.0

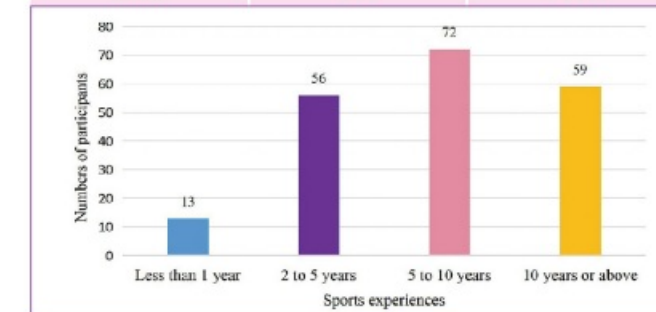


Figure 1.3 Sports experience of participants

Sporting level distribution of participants

It was a multiple-choice question in the questionnaire. Participants could choose more than one answer for this question. For example, a participant is the member of university and Hong Kong team, then they would choose the university and Hong Kong team in this question. At the result, 117 participants (58.5%) were amateur athlete, 93 participants (46.5%) were participated in the university team, 35 participants (17.5%) were participated in the district team and 27 (13.5%) participants were participated in Hong Kong team. (See Table 1.4 and Figure 1.4)

Table 1.4
Sporting level of participants (N=200)

Sporting level (athlete)		Frequency (n)	Percentage (%)
Amateur	Yes	117	58.5
	No	83	41.5
University Team	Yes	93	46.5
	No	107	53.5
District Team	Yes	35	17.5
	No	165	82.5
Hong Kong Team	Yes	27	13.5
	No	173	86.5

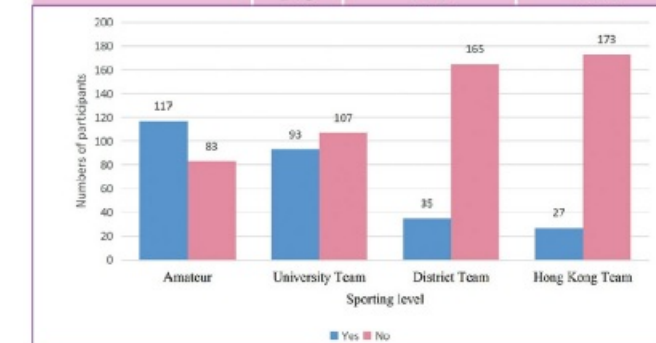


Figure 1.4 Sporting level of participants

Sports branch distribution of participants

The sports branch has been classified as individual and team sports. It has been asked in the questionnaire. 121 participants (60.5%) chose team sports, and 79 participants (39.5%) chose individual sports. (See Table 1.5 and Figure 1.5)

Table 1.5
Sporting branch of participants (N=200)

Sports branch	Frequency (n)	Percentage (%)
Individual sports	79	39.5
Team sports	121	60.5
Total	200	100.0

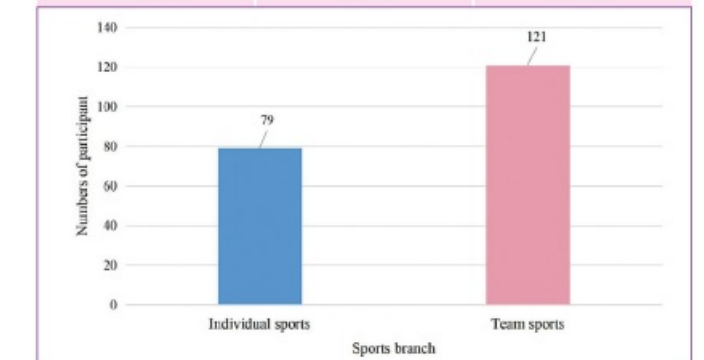


Figure 1.5 Sports branch distribution of participants

Sports type distribution of participants

The sports type has been classified as physical and non-physical contact. There were 138 participants (69%) chose physical contact sports, and 62 participants (31%) chose non-physical contact sports. (See Table 1.6 and Figure 1.6)

Table 1.6
Sports type of distribution participants (N=200)

Sports type	Frequency (n)	Percentage (%)
Physical contact	138	69.0
Non-physical contact	62	31.0
Total	200	100.0

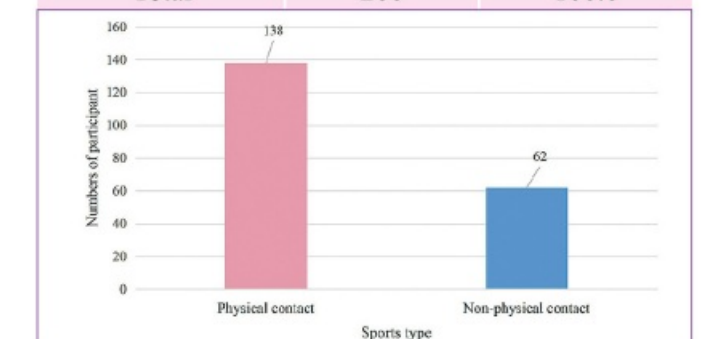


Figure 1.6 Sports type distribution of participants

(2) Mean and Standard Deviation of “Big Five” personalities among Hong Kong’s university athletes

Table 2 showed the mean and standard deviation of “Big Five” personalities among Hong Kong’s university athletes. The personality of extraversion accounted for the highest mean value, 52.42 (SD=17.77). Then, the mean of emotional stability and conscientiousness was 45.47 (SD=18.68) and 44.89 (SD=18.24).

The mean of. Lastly, the mean of agreeableness and openness were 32.69 (SD=18.48) and 18.34 (SD=14.41) respectively.



Table 2
Mean and Standard Deviation of “Big Five” personalities among Hong Kong’s university athletes (N=200)

“Big Five” personalities	N	Mean (M)	Standard Deviation (SD)
Extraversion	200	52.42	17.77477
Agreeableness	200	32.69	18.480
Emotional Stability (Neuroticism)	200	45.47	18.681
Conscientiousness	200	44.89	18.241
Openness	200	18.34	14.413

(3) Independent sample t-test of Big Five” personalities among male and female athletes

From the results of the independent sample t-test of Big Five” personalities among male and female athletes, there was only significant mean difference in agreeableness personality between male and female athletes ($t=-2.11$, $p=0.03 < 0.05$). The mean of male (SD=18.29) and female (SD=18.35) athletes from agreeableness personality were 29.6 and 35.11 respectively and had -5.505 mean difference. Yet, there were no significant mean difference in extraversion ($t=-0.44$, $p=0.66 > 0.05$), emotional stability ($t=0.79$, $p=0.43 > 0.05$), openness ($t=-0.04$, $p=0.97 > 0.05$), and conscientiousness ($t=-0.13$, $p=0.90 > 0.05$) personalities among male and female athletes. (See Table 3)

Table 3
Independent sample t-test of “Big Five” personalities among male and female athletes (N=200)

“Big Five” personalities	Gender	n	Mean (M)	Standard Deviation (SD)	Mean Difference	t	p
Extraversion	Male	88	51.7955	16.86059	-1.10633	-0.436	0.663
	Female	112	52.9018	18.52194			
Emotional Stability (Neuroticism)	Male	88	46.65	17.470	2.103	0.790	0.431
	Female	112	44.54	19.607			
Agreeableness	Male	88	29.60	18.290	-5.505	-2.109	0.036*
	Female	112	35.11	18.347			
Openness	Male	88	18.30	14.059	-0.088	-0.043	0.966
	Female	112	18.38	14.748			
Conscientiousness	Male	88	44.70	17.832	-0.331	-0.127	0.899
	Female	112	45.04	18.635			

*= $p < 0.05$, two tailed

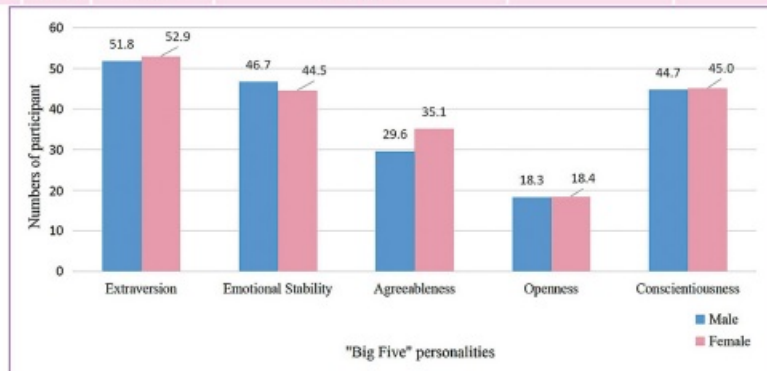


Figure 3. Independent sample t-test of “Big Five” personalities among male and female athletes

(4) Independent Sample t-test of Big Five” personalities among the sports branch of individual sports and team sports athletes

From the results of the independent sample t-test of Big Five” personalities among individual sports and team sports athletes, there was only a significant mean difference in conscientiousness personality between individual sports and team sports athletes ($t=2.01$, $p=0.04 < 0.05$). The mean of individual sports (SD=17.53) and team sports (SD=18.47) athletes from conscientiousness personality were 48.08 and 42.81 respectively and had 5.27 mean differences. Yet, there were no significant mean difference in extraversion ($t=-0.86$, $p=0.39 > 0.05$), emotional stability ($t=0.20$, $p=0.84 > 0.05$), openness ($t=0.24$, $p=0.81 > 0.05$), and agreeableness ($t=-0.31$, $p=0.76 > 0.05$) personalities. (See Table 4 and figure 4)

Table 4
Independent Sample t-test of Big Five” personalities among the sports branch of individual sports and team sports athletes (N=200)

“Big Five” personalities	Sports branch	n	Mean (M)	Standard Deviation (SD)	Mean Difference	t	p
Extraversion	Individual	79	51.0759	16.73992	-2.21331	-0.860	0.391
	Team	121	53.2893	18.43477			
Emotional Stability (Neuroticism)	Individual	79	45.80	18.301	0.541	-0.200	0.842
	Team	121	45.26	18.997			
Agreeableness	Individual	79	32.19	18.018	-0.818	-0.305	0.760
	Team	121	33.01	18.843			
Openness	Individual	79	18.65	14.099	0.497	0.238	0.812
	Team	121	18.15	14.669			
Conscientiousness	Individual	79	48.08	17.527	5.266	2.011	0.046*
	Team	121	42.81	18.468			

*= $p < 0.05$, two tailed

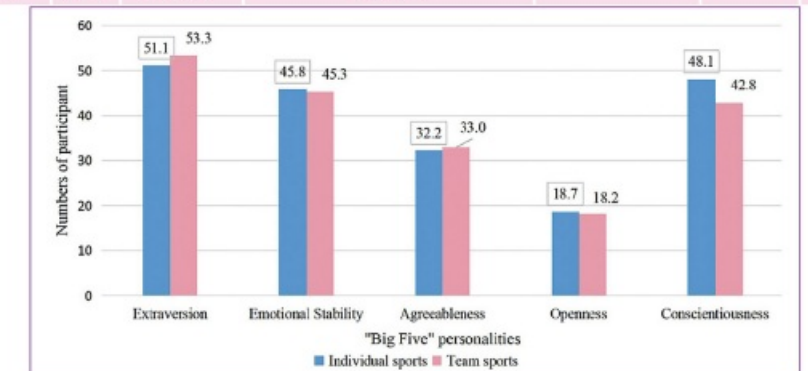


Figure 4. Independent Sample t-test of Big Five” personalities among the sports branch of individual sports and team sports athletes

(5) Independent Sample t-test of Big Five” personalities among the sports type of physical contact and non-physical contact athletes

Table 5 shown the results of the independent sample t-test of Big Five” personalities among physical contact and non-physical contact athletes, there were significant mean difference in conscientiousness ($t=-3.13$, $p=0.002 < 0.05$) and agreeableness ($t=-2.06$, $p=0.04 < 0.05$) personality between physical contact and non-physical contact athletes. The mean of physical contact (SD=16.97) and non-physical contact (SD=19.68) athletes from conscientiousness personality were 42.24 and 50.79 respectively and had -8.551 mean differences. Also, the mean of physical contact (SD=17.64) and non-physical contact (SD=19.8) athletes from agreeableness personality were 30.90 and 36.66 respectively and had -5.763 mean differences. Yet, there were no significant mean difference in extraversion ($t=0.41$, $p=0.68 > 0.05$), emotional stability ($t=0.26$, $p=0.79 > 0.05$) and openness ($t=0.05$, $p=0.96 > 0.05$) personalities.

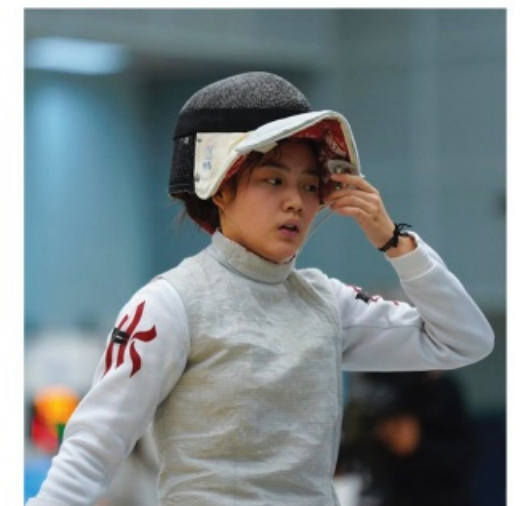




Table 5
Independent Sample t-test of “Big Five” personalities among the sports branch of physical contact and non-physical contact athletes (N=200)

“Big Five” personalities	Sport type	n	Mean (M)	Standard Deviation (SD)	Mean Difference	t	p
Extraversion	Physical contact	138	52.7609	17.53393	1.11571	0.410	0.682
	Non-physical contact	62	51.6452	18.42139			
Emotional Stability (Neuroticism)	Physical contact	138	45.70	18.273	0.751	0.262	0.793
	Non-physical contact	62	44.95	19.700			
Agreeableness	Physical contact	138	30.90	17.641	-5.763	-2.056	0.041 *
	Non-physical contact	62	36.66	19.796			
Openness	Physical contact	138	18.38	14.574	0.103	0.046	0.963
	Non-physical contact	62	18.27	14.165			
Conscientiousness	Physical contact	138	42.24	16.973	-8.551	-3.133	0.002 *
	Non-physical contact	62	50.79	19.678			

*=p<0.05, two tailed

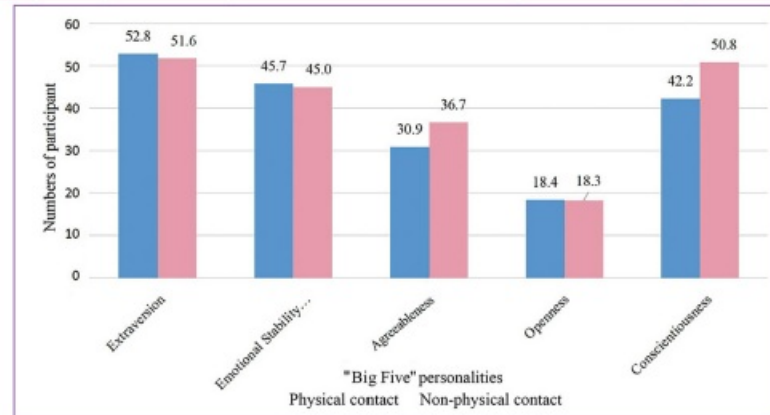


Figure 5. Independent Sample t-test of “Big Five” personalities among the sports type of physical contact and non-physical contact athletes

(6) One-way ANOVA test of “Big Five” personalities between the 1st runner-up, 2nd runner-up, 3rd runner-up athletes and other athletes of local tournaments

There was no significant mean difference in any personalities between the 1st runner-up, 2nd runner-up, 3rd runner-up athletes and other athletes of local tournaments in the one-way ANOVA test of “Big Five” personalities. There was the result of one-way ANOVA of extraversion (F=1.83, p=0.18 > 0.05), emotional stability (F=2.99, p=0.08 > 0.05), agreeableness (F=0.002, p=0.96 > 0.05), conscientiousness (F=0.02, p=0.88 > 0.05) and openness (F=0.67, p=0.41 > 0.05) personalities between the 1st runner-up, 2nd runner-up, 3rd runner-up athletes and other athletes of local tournaments. (See Table 6)

Table 6
One-way ANOVA test of “Big Five” personalities between the 1st runner-up, 2nd runner-up, 3rd runner-up athletes and other athletes of local tournaments (N=200) (n=61)

“Big Five” personalities		Mean (M)	Sum of Squares	df	Mean Square	F	p
Extraversion	Between Groups	53.5396	576.350	1	576.350	1.832	0.177
	Within Groups	49.8525	62296.205	198	314.627		
	Total	52.4150	62872.555	199			
Emotional Stability (Neuroticism)	Between Groups	43.96	1033.590	1	1033.590	2.992	0.085
	Within Groups	48.90	68410.230	198	345.506		
	Total	45.47	69443.820	199			
Agreeableness	Between Groups	32.72	0.540	1	0.540	0.002	0.968
	Within Groups	32.61	67960.615	198	343.235		
	Total	32.69	67961.155	199			

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23







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Conscientiousness	Between Groups	45.02	7.891	1	7.891	0.024	0.878
	Within Groups	44.59	66207.689	198	334.382		
	Total	44.89	66215.580	199			
Openness	Between Groups	18.90	140.015	1	140.015	0.673	0.413
	Within Groups	17.08	41199.180	198	208.077		
	Total	18.35	41339.195	199			

*= $p < 0.05$, two tailed

(7) One-way ANOVA test of “Big Five” personalities between the champion athletes and non-champion athletes of local tournaments

The result from the one-way ANOVA test of “Big Five” personalities between the champion and non-champion athletes in local tournaments, there was only a significant mean difference in extraversion personality between the champion and non-champion athletes ($F=9.45$, $p=0.002 < 0.05$). There was no significant mean difference in personality of emotional stability ($F=0.10$, $p=0.75 > 0.05$), agreeableness ($F=1.29$, $p=0.25 > 0.05$), openness ($F=3.12$, $p=0.07 > 0.05$) and conscientiousness ($F=1.02$, $p=0.31 > 0.05$). (See Table 7)

Table 7
One-way ANOVA test of “Big Five” personalities between the champion athletes and non-champion athletes of local tournaments ($N=200$) ($n=80$)

“Big Five” personalities		Mean (M)	Sum of Squares	df	Mean Square	F	p
Extraversion	Between Groups	49.3250	2864.430	1	2864.430	9.451	0.002*
	Within Groups	57.0500	60008.125	198	303.071		
	Total	52.4150	62872.555	199			
Emotional Stability (Neuroticism)	Between Groups	45.82	36.053	1	36.053	0.103	0.749
	Within Groups	44.95	69407.767	198	350.544		
	Total	45.47	69443.820	199			
Agreeableness	Between Groups	31.48	439.230	1	439.230	1.288	0.258
	Within Groups	34.50	67521.925	198	341.020		
	Total	32.69	67961.155	199			
Openness	Between Groups	16.88	640.941	1	640.941	3.118	0.079
	Within Groups	20.54	40698.254	198	205.547		
	Total	18.35	41339.195	199			
Conscientiousness	Between Groups	43.83	340.267	1	340.267	1.023	0.313
	Within Groups	46.49	65875.313	198	332.704		
	Total	44.89	66215.580	199			

*= $p < 0.05$, two tailed

(8) One-way ANOVA test of “Big Five” personalities between the 1st runner-up, 2nd runner-up and 3rd runner-up and other athletes of international tournaments

There was no significant mean difference in any personalities between the 1st runner-up, 2nd runner-up, 3rd runner-up athletes and other athletes of international tournaments in the one-way ANOVA test of “Big Five” personalities. There was the result of one-way ANOVA of extraversion ($F=1.40$, $p=0.24 > 0.05$), emotional stability ($F=2.34$, $p=0.13 > 0.05$), agreeableness ($F=0.44$, $p=0.51 > 0.05$), conscientiousness ($F=3.89$, $p=0.05 > 0.05$) and openness ($F=1.865$, $p=0.17 > 0.05$) personalities between the 1st runner-up, 2nd runner-up, 3rd runner-up athletes and other athletes of international tournaments. (See Table 8)



Table 8
One-way ANOVA test of “Big Five” personalities between the 1st runner-up, 2nd runner-up and 3rd runner-up and other athletes of international tournaments. ($N=200$) ($n=19$)

“Big Five” personalities		Mean (M)	Sum of Squares	df	Mean Square	F	p
Extraversion	Between Groups	51.9337	441.351	1	441.351	1.400	0.238
	Within Groups	57.0000	62431.204	198	315.309		
	Total	52.4150	62872.555	199			
Emotional Stability (Neuroticism)	Between Groups	44.82	810.731	1	810.731	2.339	0.128
	Within Groups	51.68	68633.089	198	346.632		
	Total	45.47	69443.820	199			
Agreeableness	Between Groups	32.40	151.176	1	151.176	0.441	0.507
	Within Groups	35.37	67809.979	198	342.475		
	Total	32.69	67961.155	199			
Conscientiousness	Between Groups	44.07	1275.408	1	1275.408	3.889	0.050005
	Within Groups	52.68	64940.172	198	327.981		
	Total	44.89	66215.580	199			
Openness	Between Groups	17.90	385.768	1	385.768	1.865	0.174
	Within Groups	22.63	40953.427	198	206.835		
	Total	18.35	41339.195	199			

*= $p < 0.05$, two tailed

(9) One-way ANOVA test of “Big Five” personalities between the champion athletes and non-champion athletes of international tournaments.

The Result from the one-way ANOVA test of “Big Five” personalities among the champion in international tournaments, there was no significant mean difference in any personality between the champion and other sports achievements. There were result of one-way ANOVA of extraversion ($F=0.001$, $p=0.98 > 0.05$), emotional stability ($F=0.17$, $p=0.68 > 0.05$), agreeableness ($F=0.24$, $p=0.62 > 0.05$), conscientiousness ($F=2.99$, $p=0.08 > 0.05$) and openness ($F=0.37$, $p=0.54 > 0.05$) among the champion in international tournaments. (See Table 9)

Table 9
One-way ANOVA test of “Big Five” personalities between the champion athletes and non-champion athletes of international tournaments. ($N=200$) ($n=9$)

“Big Five” personalities		Mean (M)	Sum of Squares	df	Mean Square	F	p
Extraversion	Between Groups	52.4084	0.186	1	0.186	0.001	0.981
	Within Groups	52.5556	62872.369	198	317.537		
	Total	52.4150	62872.555	199			
Emotional Stability (Neuroticism)	Between Groups	45.35	60.323	1	60.323	0.172	0.679
	Within Groups	48.00	69383.497	198	350.422		
	Total	45.47	69443.820	199			
Agreeableness	Between Groups	32.54	83.783	1	83.783	0.244	0.622
	Within Groups	35.67	67877.372	198	342.815		
	Total	32.69	67961.155	199			
Conscientiousness	Between Groups	44.41	984.545	1	984.545	2.988	0.085
	Within Groups	55.11	65231.035	198	329.450		
	Total	44.89	66215.580	199			
Openness	Between Groups	18.21	78.016	1	78.016	0.374	0.541
	Within Groups	21.22	41261.179	198	208.390		
	Total	18.35	41339.195	199			

*= $p < 0.05$, two tailed



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Discussions

This chapter aims to investigate the current proportion of Hong Kong's university athletes with "Big Five" personalities. And figure out the different factors that influence the proportions of "Big Five" personalities on athletes. Then, find out the relationship between the personality of those different achievement level athletes.

Firstly, hypothesis one was accepted; the extraversion personality was significantly higher than openness, agreeableness, conscientiousness, and conscientiousness in Hong Kong's university athletes. From the result of the research, it indicated that the personality of extraversion accounted for the highest mean ($M=52.42$) proportion in those "Big Five" personalities of Hong Kong's university athletes. The elements of extroversion represented that usually, most athletes conducted those personality traits. In Khan et al.'s (2016) studies, the result found that extroversion is a vital trait in the positive relationship on sports performance. The previous studies supported this result from the IPIP "Big Five" Factor marker test among Hong Kong's university athletes.

Secondly, hypothesis two was only accepted on the agreeableness personality significantly differed among male and female athletes. Nia & Besharat (2010) mentioned that agreeableness athletes are compliant and altruistic. They are prone to be indecisive, easily affected by others and have low egocentric thinking in the tournaments. In the studies of Weisberg et al. (2011), they mentioned that females were higher agreeableness than males. Females are often determined to be more agreeableness than males (Costa et al., 2001). The mean of female and male athletes on agreeableness personality were 29.6 and 35.11 respectively ($t=-2.11$, $p=0.036 < 0.05$). It showed that the female athletes were more agreeable than the male athletes.

However, Weisberg et al. (2011) reported that females had a higher score in extraversion and neuroticism than males. Their result, also supported by the previous findings, obtain the same results. In our result of mean score comparison on "Big Five" personalities among gender, the extraversion and neuroticism personality also presented the same pattern as Weisberg et al. (2011) findings. In extraversion personality comparison, female athletes ($M=52.9$) were in higher scores than male athletes ($M=51.8$). And female athletes ($M=44.54$) were in lower scores than male athletes ($M=46.65$) in emotional stability. Female athletes resulted in a higher neuroticism personality than male athletes.

Thirdly, there was a significant difference in conscientiousness personality between individual and

team sports athletes. The mean scores of conscientiousness personality in individual and team sports athletes were 48.08 and 42.81, respectively. It connoted that individual sports athlete were more conscientiously than team sports athletes. Indeed, individual sports athletes had a higher responsibility for sports performance than team sports athletes. It is because they usually take the sole responsibility for the sports performance. They will have the precise direction to persistently achieve their target (Steinbrink et al., 2019). So, hypothesis three was only accepted in conscientiousness personality had a significant difference between individual and team sports athletes.

However, Nia and Besharat (2010) reported that team sports athletes were higher scores in agreeableness personality than individual sports athletes in their findings. At the same time, our result of independent Sample t-test of Big Five" personalities among the sports branch of individual sports and team sports athletes also presented the same pattern. The mean score of team sports athletes ($M=18.84$) was higher than individual sports athletes ($M=18.02$) in agreeableness personality. But the difference was not significant, only occurred slight distinction. In addition, Nia and Besharat (2010) findings also supported our result. Thus, hypothesis three was rejected that extraversion, emotional stability, openness, and agreeableness personality significantly differed between individual and team sports athletes.

Fourthly, our result concluded a significant difference in conscientiousness and agreeableness personality between physical contact and non-physical contact athletes. In our study's result ($t=-3.13$, $p=0.002$), the non-physical contact athletes ($M=50.79$) were higher scores than physical contact athletes ($M=42.24$) which had a significant difference between physical contact and non-physical contact athletes. Therefore, hypothesis four was accepted in conscientiousness and agreeableness personality significantly differed between physical contact and non-physical contact athletes.

However, there was no significant difference in extraversion, emotional stability, and openness personality between physical and non-physical contact athletes. Simultaneously, Rathar & Dachen's (2018) findings also reported no significant difference in extraversion, emotional stability, and openness personality between physical and non-physical contact athletes. Thus, hypothesis four was rejected extraversion, emotional stability, and openness personality between physical contact and non-physical contact athletes.

Fifthly, hypothesis five was accepted. There was no significant mean difference in any personalities between the first runner-up, second runner-up, third runner-up

athletes and other athletes of local tournaments in the one-way ANOVA test of "Big Five" personalities. Top and Akil (2018); Nia and Besharat (2010) supported this result. Therefore, they conducted relatively low emotional stability personality scores than other athletes.

Sixthly, our result only concluded a significant difference in extraversion personality between the local and non-local champion athletes in a one-way ANOVA test of "Big Five" personalities. Many previous studies supported this result. Nia and Besharat (2010) had the same study results; the athletes have scored higher in extraversion personality traits. There had no significant difference between the local champion and non-local champion athletes in agreeableness, conscientiousness, emotional stability, and openness personalities.

Seventhly, the hypotheses seven and eight were rejected; there was no significant difference between the first runner-up, second runner-up, third runner-up athletes and other athletes of international tournaments; there was no significant difference between the international champion athletes and non-international champion athletes in "Big Five" personality traits. The number of participants also might affect the result data. For instance, this study only had a few champion athletes ($n=9$) and the international tournaments' first, second, and third runner-up athletes ($n=19$). Hence, hypotheses seven and eight were rejected.

Lastly, the highest mean among international champion athletes was conscientiousness ($M=55.11$) and extraversion ($M=52.56$) was the second highest in our data result. Moreover, Piepiora's (2021) studies buttressed our result. Therefore, hypothesis nine accepted that conscientiousness was significantly higher than openness, agreeableness, conscientiousness, and extraversion personality in international champion athletes.

Conclusion

The main purpose of this study is to figure out the interrelationship between personality traits and sports performance among Hong Kong's university athletes. It classified athletes' personalities using the "Big Five" personality factors, including conscientiousness, openness, agreeableness, emotional stability, and extraversion.

In conclusion, psychological factors in sports performance are no less than physical factors. Personality in psychological factors plays a vital role in sports performance. Selecting promising athletes and applying the appropriate guides to athletes is essential for enhancing sports achievement in Hong Kong. Focus on the personality of athletes in training can help sports coaches gain more knowledge on suitable adjustments to different personality traits of athletes. It can exert athletes' strength and own expertise functionally. It can be crucial to sports achievements if well-handling personality trait. RMA

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Relationship between Sports Related Anxiety and Use of Listening Music before & after Sports of Hong Kong Athletes

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Introduction

Almost every athlete experiences sports anxiety. As they may feel anxious about their performance, opponents or others' expectations. These pressures will become a burden for the athletes and affects their sports performance. According to the statistics from Athletes for Hope (Pease, 2023), 33% of college students experience anxiety or other mental health problems. About 30% of them need to seek medical help. Many researchers investigated how anxiety closely affects athletes' sport performance in training and competition (Bali, 2015). They found that high levels of anxiety are more likely to cause sport injuries. Moreover, if the athletes do not deal with the stress properly, it may also bring a negative impact on their physical and psychological rehabilitation outcome. They will find it difficult to return to sports. It is necessary to seek professional psychotherapists if the cases are serious.

According to the American Psychological Association, sport and exercise psychologist (SEP) applies psychological knowledge to deal with athletes' physical and mental health problems (Sport, Exercise & Performance Psychology, 2011), including eating disorders and weight management (physical) and emotion management and anxiety (mental). SEP helps athletes to achieve the optimal sports performance. Music therapy is widely used in athletes. It help to enhance athletes' muscle contraction/power and relaxation. As a result, it aids to prevent injuries and improve sports performance (Maffetone, 2005).

There are many ways to relax yourself before competition including switching your focus, visualizing success and listening to music etc. (Cuncic, 2020). Music is a good tool for us to release stress. A hot topic about the banning of music in the 2007 New York Marathon. The organizer of the event wanted to avoid the tactical communications between participants and their coaches. People started to be concerned about the importance of music use in sports. You might see many professional athletes including Michael Phelps and Lebron James listen to their headphones when warming up. "Great composers and things, listening to pianos and different types of instruments can relax my mind." LBJ said. Some studies stated that listening to music can bring positive affect, motivation and enhance performance levels (Laukka, 2003). Music can achieve effective dissociation that help maintaining a possessive mood state, switching attention from sensation of fatigue and alleviating negative mood such as depression and anxiety. However, it is only suitable for low to moderate intensity exercise. As the feeling of fatigue may exceed the function of music. Besides, listening to music during exercise can increase emotional and physiological arousal and become provocative for athletes before doing exercise or competition (Bishop et al., 2007). Therefore, most athletes use upbeat music to psych up.

Different types of music can affect different sports performance. When we create our playlist for exercise, we have to consider the type of mindset we want to have during exercise. As stated in an article, researchers have summed up six criteria to gain benefits on sports



performance when listening to music (The Effect of Music on Sports Performance, 2023). They are:

(1) strong & energizing rhythm. An experiment by Edworthy and Waring (2006) conveyed that the speed of running was affected by music tempo. There is a highest impact on running speed for loud and fast music.

(2) positive lyrics have associations with movement. For example, the swimmer, Michael Phelps would listen to hip-hop music before his races to get focus and psyched up.

(3) Rhythmic pattern matched with the athletes' movement patterns. For instance, James Cracknell uses the persistent rhythms of the Red Hot Chili Peppers during training and pre-event. The choice of music should not have fluctuations in tempo, if your sports' movements are steady and rhythmic. It should parallel the speed of your own movements.

(4) uplifting melodies and harmonies, an experiment by Bishop et al., (2009) mentioned that fast tempo music helps to perform shorter reaction time than moderate-intensity music.

(5) relationships with sport, exercise, or overcoming adversity. Like you may hear "Proud" in the beginning or middle in some competition.

(6) athletes' taste and cultural suit to upbringing musical style or idiom. Choose tracks with different tempos, to coincide with alternate low, medium, and high-intensity training.

Fast tempo and high intensity music can enhance athletes' performance. While the effects are more pronounced for amateur compared to elite athletes (Mohammadzadeh et al., 2008). Since elite athletes focused on the internal stimulus during exercise, they have little response to the music. The amateurs concentrate on the external stimulus. So they are significantly affected by the music. Concerning the gender, there was an improvement in the running performance of women while listening to their preferred music. But the performance of men was not influenced by the music selection (Baldari et al., 2010). Another study also carried out that females have more benefits from the mood-enhancing effects of music than males. Lastly, talking about the impact of music on different age of athletes (Karageorghis et al., 2012). Young athletes (16-26yrs) preferred current music and adults (36-45yrs) preferred non-current music (Priest et al., 2004). Young people love music with a faster tempo. Older people love quieter and slower music. The researchers explain this phenomenon as older individuals do not seek

to be motivated by music as younger people did. Therefore, they see music as less important during exercise.

Anxiety and sports:

According to a journal article about Anxiety disorders in young people, anxiety disorders are the most common psychiatric disorders. Anxiety symptoms diminish one's quality of life, particularly in terms of interpersonal connections and self-awareness. Obsessive compulsive disorder and agoraphobia etc. are all diseases classified as having psychic or somatic symptoms. Young individuals face different physical, cognitive, and psychological changes throughout this period. They're more likely to acquire anxiety disorders (Martin, 2003).

Untreated anxiety can lead to different health issues including depression, sexual dysfunction and ulcers etc., which can contribute to more illness (Fullerton, 2023). There are many causes that lead an athlete to become anxious. It included physical, psychological, others' expectations and pressure to perform to a high standard are all factors that can cause anxiety (Reilly et.al, 2003). Anxiety and sports are closely correlated together. Anxiety is not always negative. It can help athletes to stay focused during exercise (Robinson et al., 2023). According to the research study, young and unskilled athletes became anxious which affected their sports performance (Khan et al., 2017). Anxiety can be divided into cognitive and somatic. Athletes would always feel nervous when there were many people watching during competition. The signs of sports anxiety can be divided into mental and physical types (Kubala, 2022). It included tremors when holding a racket, disrupted focus, reduced self-confidence and so on.

Sport-related anxiety:

Majority of people consider anxiety as a negative emotion. Anxiety has been constantly studied in sport psychology as it affects the athletes deeply. Level of anxiety changes in different situations. Anxiety in high competitive sports is relatively greater than in non-competitive sports. Since people who participate in competitive sports have more desire to win. Athletes can use methods including relaxation, cognitive behavior and positive thinking to handle anxiety (Khan et al, 2007). According to Campos et al.(2015), athletes' performance is affected by a variety of variables, including psychological factors such as how they cope with competition and their attitude etc.

Various research gives information on what psychological variables should be addressed while assessing and improving sports performance. Gimeno et al



Basketball System & Dividing Curtain



Outdoor Table Tennis Tables



Swimming Pool Equipments



Table Tennis Robots



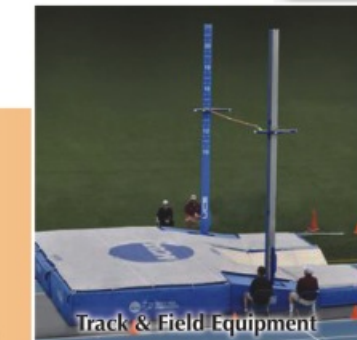
Basketball Stand



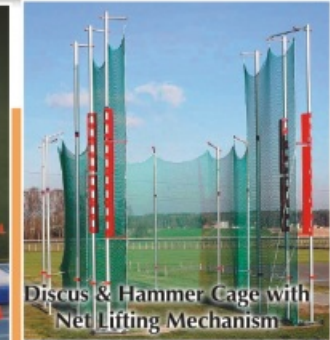
Underwater Window



Foldable Table Tennis Tables



Track & Field Equipment



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(2007), present a study that examines the impact of psychological variables on achieving success. One of the goals of their research is to show how psychological skills training help athletes perform better. They emphasized motivation, anxiety, and self-control etc. are the essential psychological factors in competitive sport. For the psychological effects, anxiety could disturb attention in a competitive situation. It change people's feeling from mild worry to terror. The feeling of anxiety can affect the sympathetic nervous system. The central nervous system makes athletes unable to perform normal mental function. Considering the physical effect, anxiety influence our body function. Apart from muscles shaking and sweating, athletes may also suffer from gastrointestinal illness, frequent urination and dizziness. Concerning the behavioral effect, athletes may vent their anger and displeasure on others due to anxiety. All these will eventually affect their sports performance (Khan et al., 2017).

Sport-related anxiety that cause by injuries were also common. From The Integrated model, anxiety impact on the sport injury rehabilitation and effective recovery outcomes in a variety of ways. It might shift from a pre-injury factor impacting injury incidence to a personal factor affecting athletes' cognitive assessments of the injury and recovery process. Athletes were more likely to suffer anxiety connected to the injury and the healing process following an injury during the response to injury phase. Anxiety is related with the athlete's performance in new rehabilitation activities or utilizing the damaged body part once the athlete has progressed to the recovery phase. Many studies found that the presence of stress and anxiety are one of the most important elements in separating athletes who cope well with their injuries from those who do not (Ford, 2017).

Functions of Listening to Music:

Many studies show listening to music can drive different wellbeing outcomes. Juslin and colleagues (2008) found out that music can promote positive affective experiences. It can regulate negative affective experiences (Radstaak et al., 2014) and increase social functioning (Miranda & Claes, 2009). These are the main reasons people listen to music (Tarrant et al., 2000). People will use music for relaxation and rumination (Saarikallio & Erkkila, 2007). An interesting research result by North et al. (2000) conveyed the use of music in regulation was higher in females than males. Music is widely used in therapy. Music can help to explain anxiety through the medical process and use it as a modulation of communication which helps with people's interpersonal relationships (Koelsch, 2009).

Athletes will use music to relax, psych up or prepare their mindset before competition (Karageorghis, et al., 2018; Laukka & Quick, 2013). People believe that music has certain advantages in physical activity, despite the compelling evidence of those advantages has yet to be objectively summarized. The impacts of music in physical activity are influenced by a variety of musical, personal and situational variables. Age and gender (Karageorghis et al., 2010), familiarity of music (Pereira et al., 2011), music preference (Hutchinson et al., 2018), music tempo (Van Dyck et al., 2015) and physical activity intensity (Tenenbaum et al., 2004) are also the examples of such variables.

Effectiveness of Music in Sports:

The advancement of technology has evolved music into an effective intervention for achieving a variety of desired psychological and performance impacts among athletes. Dr. Costas Karageorghis has investigated the psychological, psychophysical, psychophysiological, and ergogenic effects of music. The impacts of music include the ways in which it affects one's mood, cognition, and behavior. Sensory reactions to physiological processes are part of music's psychophysical impacts. It included heart rate and respiration rate. While in terms of the ergogenic effect, music increases physical performance by postponing exhaustion or boosting work capacity. This results in higher levels of endurance, power, productivity, or strength than expected (Farmer, 2003).

You may see many athletes listen to music in different occasion. For pre-task music, Laukka (2013) stated that athletes use music before competition for raising pre-event activation, positive effect and performance level. The effects of stimulative and sedative music pre-task. Important result has figured out that slow music lowered arousal and fast music raised people's arousal level (Yamamoto et al., 2003). Bishop & Karageorghis (2009) discovered music can regulate pre-competitive emotions. They have done an experiment on two young tennis players. It found that they usually choose songs which they are really familiar with so as to achieve 5 states including mental focus, confidence, positive emotional state, psyched-up and relaxed. In terms of In-task music, much research has been done to show that asynchronous and background music used during exercise is more effective in enhancing mood and distracting attention away from routine and repetitive tasks (Karageorghis & Terry, 2011). Music can effectively enhance athletes' endurance (Crust et al., 2004). The participant's endurance was greater when motivational songs were played. Concerning Post-task Music, Jing et al. (2008) found out that listening to sedative music resulted in the fastest

recovery time when compared with no or stimulative music. Since sedative songs can help to lower heartbeat, blood pressure and perceived exhaustion.

Priest et al., (2004) found that musical rhythm had a stimulating impact on the human organism. In order to stimulate rhythmical movement by activating specific neuronal structures in a periodic way. Music may create a general stimulation of those areas of the brain that control arousal, including limbic and reticular activating systems. According to the arousal-based approach (Berlyne, 1971), when people listen to music informational properties like complexity and familiarity are gatherers. From this theory, music preference is determined by the effect of the collative stimulus properties on activity in the autonomic nervous system.

Method

Participants: 300 Hong Kong male and female athletes were selected. They are aged between 18-26. Convenience sampling method was used.

Questionnaires: There would be an acknowledgement of voluntarily completing the questionnaire and explanation, importance and consent form for conducting the survey in the beginning. The questionnaire was modified based on three published questionnaires including Sport Anxiety Scale-2 (Smith et al., 2006), Survey on the interaction of musical genre and preference with rowing performance (Sudar, 2012) and Use of Music in Sport Questionnaire (Ellingson, 2003). The finalized questionnaire consisted of three parts.

Procedure: Participants should complete a consent form before doing the questionnaire. They should read through information, confidentially, content and acknowledgement of voluntarily completing the questionnaire. It might take 15 minutes to finish the questionnaire.

Statistical analysis: All collected data would be analyzed by the Statistical package for the Social Science. Descriptive statistics would be applied such as SD, frequency, percentage and mean would be used to describe the demographic information. Pearson Product Correlation was used to find the association in the type of music that the respondents listened, anxiety level and the association in use of music and different occasions. Paired T -test would be used to find out the difference in the type of music listened between before and after exercise. Independent sample t-test was used to determine the differences between male & female athletes, contact & non-contact sports athletes, before & after exercise in terms of music preferences. An alpha level of 0.05 was used to determine significance. One-way ANOVA was used to determine whether there were any significant differences between male & female athletes, contact & non-contact sports, before & after exercise.



Analysis of Data

Descriptive Statistics:

Table 1a and 1b has revealed the frequency and percentages of the gender and age of all participants. There were 277 subjects in this study. The data consisted of 35% males and 65% females. 21.3% of the respondents were at the age of 18-20, 41.9% of them were from the age group of 21-23. While the rest 36.8% athletes ranged from 24 to 26 years old.

Table 1.a

Descriptive statistic of Gender all the participants (n=277)

Gender	Frequency	Percentage (%)
Male	97	35.0
Female	180	65.0
Total	277	100.0

Table 1.b

Descriptive statistic of Age all the participants (n=277)

Age	Frequency	Percentage (%)
18-20	59	21.3
21-23	116	41.9
24-26	102	36.8
Total	277	100.0

Table 2a, 2b and 2c showed the frequency and percentages of the sports types, sports seniority and sports performance levels of the subjects. From table 2a, 67.1% of the respondents play contact sports and only 32.9% play non-contact sport. In Table 2b, 9% of them have played their sports for less than 1 year. 23.8% of them have played their sports for 1 to 5 years. About 33.2% of the respondents have played their sports for 5 to 10 years. 33.9% of them played their sports for more than 10 years. Moreover, in table 3c concerning sports performance levels, 34.7% of them were at the recreational sports performance level. 44% of them (n=122) were at the local level. Only 9.6% of them were from the regional level. The remaining 11.9% of the respondents were at the national level.

Table 2a
Descriptive data on Sports Types of the participants (n=277)

Sports Type	Frequency	Percentage (%)
Contact Sports	186	67.1
Non-contact Sports	91	32.9
Total	277	100.0

Table 2b
Descriptive data on the Sports Seniority of the participants (n=277)

Sports Seniority	Frequency	Percentage (%)
< 1 yrs	25	9.0
1-5 yrs	66	23.8
5-10yrs	92	33.2
>10 yrs	94	33.9
Total	277	100.0

Table 2c
Descriptive data on the Sports Performance levels of the participants (n=277)

Sports Performance Level	Frequency	Percentages (%)
Recreational	96	34.7
Local	122	44.0
Regional	26	9.4
National	33	11.9
Total	277	100.0

Sports Anxiety level

Table 3 has conveyed the mean and standard deviation of sports anxiety level. The highest score of each item was 4 and the lowest score was 1. Most of the mean of the statements was more than 2. For example, the mean score of participants' 'feeling nervous during competition' was 2.15 ($\sigma=.770$). While the statements with the highest mean score were 'concerned about performing poorly' ($m=2.52, \sigma=.879$) and 'worried about not reaching goals' ($m=2.52, \sigma=.927$). The item with the lowest mean score was 'feel tense in my stomach' ($m=1.79, \sigma=.806$). The remaining statements were shown below.

Table 3
Description statistic of participants' Sports Anxiety level (n=277)

Statements	M	SD (σ)
Feel nervous	21.5	.770
Feel Self-doubts	2.32	.790
Body feels tense	2.30	.772
Concern about myself unable to do as well as I could	2.51	.907

Stomach feels tense	1.79	.806
Choking	1.84	.825
Heart races	2.32	.799
Stomach sinking	2.01	.862
Concern performing poorly	2.52	.879
Worried about not reaching the goal	2.52	.927
Body feels tight	2.24	.858
Others disappointment	2.44	.918
Stomach gets upset	1.98	.929
Unable to concentrate	2.15	.817
Heart ponds	2.40	.929

Types of music athletes would listen before & after competition/training

Table 4a and 4b revealed frequency and percentages about the type of music participants would listen before and after exercise. Most of them would listen to music before competition/exercise. 48% of the subjects would listen to pop music. The second most popular type of music was R&B with 22% of the respondents listening. 4.7% of them would listen to rock music. 2.5% of the respondents would listen to country music and opera respectively. 4% of athletes chose others. They would listen to their competition music, rap and EDM etc. before competition/exercise. Only 1.8% of the subjects would not listen to music before that.

Table 4b showed more respondents who would listen to pop music after competition/exercise with 55.5%. 19.1% of the respondents would listen to R&B. 9.7% of them chose Hip hop Nobody. Nobody chose rock music. While 8% of the respondents would listen to country music. 3.2% of them chose opera. Both 2.2% of them chose others. They would listen to relaxing, competition, soft, plain and classical music. The remaining 2.2% of the respondents did not listen to music after exercise.

Table 4a
Descriptive statistic of participants' Music Preferences Before exercise (n=277)

Type of music	Frequency	Percentages (%)
Pop	133	48.0
R&B	61	22.0
Hip Hop	40	14.4
Rock	13	4.7
Country	7	2.5
Opera	7	2.5
Others	11	4.0
No	5	1.8
Total	277	100.0

Table 4b
Descriptive statistic of participants' Music Preferences After exercise (n=277)

Type of music	Frequency	Percentages (%)
Pop	154	55.6
R&B	53	19.1
Hip Hop	27	9.7
Rock	0	0.0
Country	22	8.0
Opera	9	3.2
Others	6	2.2
No	6	2.2
Total	277	100.0

Hypotheses testing

There was a high degree of positive correlation between listening to music and helping athletes to relax & stay calm ($r=1, p<0.05$). There was also a moderate positive correlation between music listening and helping athletes to block out thinking about upcoming competitions ($r=1, p<0.05$). There was a positive significant relationship between listening to music and helping athletes to get energized & "psyched up" ($r=0.15^*, p<0.05$) and helping them to prepare for performing the best for the competition ($r=0.12^*, p<0.05$), when the alpha level was set at 0.05. Besides, there was a significant negative relationship between music and helping athletes to visualize and imagine performing well ($r=-0.51, p<0.05$).

Table 5
Pearson Correlation between Important Use of Music and athletes' sports anxiety level

Variables	r	p
Relax & stay calm	1	0.00
Block out	0.499	0.00
Get energized & "psyched up"	0.149*	0.013
Visualize	-0.51	0.401
Prepare for performing the best	0.124*	0.039

Note: *Correlation is significant at the 0.05 level (2-tailed)

Table 6 conveyed the relationship between music used and different occasions during exercise. There was a significant moderate relationship between music use (for relaxing) and before exercise/competition ($r=0.43^{**}, p<0.05$). Another significant moderating association between music use and warm up period ($r=0.44^{**}, p<0.05$). Moreover, there was a significant high association between music use and after exercise/competition ($r=0.56^{**}, p<0.05$). The table also showed a significant

high association between music use and after practice ($r=0.53^{**}, p<0.05$). All alpha levels were set at 0.01.

Table 6
Pearson Correlation between the Use of Music and Different Occasions

Different occasion	r	p
Before exercise/competition	0.431**	0.000
Warm up	0.440*	0.000
After exercise/competition	0.561**	0.000
Practice	0.530**	0.000

Note:**Correlation is significant at the 0.01 level (2-tailed)

Table 7 indicated the difference between the type of music listened before and after exercise. There was no significant difference in the music preferences before exercise ($M=2.24, SD=1.74$) and after exercise ($M=2.14, SD=1.78$), $t(276)=0.847, p=0.398 > 0.05$.

Table 7
Paired T-test between Type of Music Listened Before and After Exercise

Type of Music	Mean	SD	t	df	p
Before	2.2419	1.74330	0.847	276	0.398
After	2.1480	1.78858			

According to Table 8, it showed the difference of type of music between contact and non-contact sports. There was no significant difference between types of music listened before exercise in different sports types. The t-value=-0.05, $p>0.05$. The null hypothesis was accepted. While there was also no significant difference between types of music listened after exercise in different sports types. The t-value=-0.61, $p>0.05$. Hence, the null hypothesis was accepted. It could be presented in Table 8.

Table 8
Independent T-test of Type of music between Contact & Non-contact sports (N=277)

	Sports Type	N	Mean	SD	t	p
Before Exercise	Contact Sports	186	2.1720	1.54656	-.953	0.341
	Non-Contact Sports	91	2.3846	2.09109		
After Exercise	Contact Sports	186	2.1022	1.69109	-.609	0.543
	Non-Contact Sports	91	2.2418	1.97957		

Table 9 indicated there was significant difference between males and females in music preference before and after sports. The t-value =2.25, $p<0.05$. before exercise. While the t-value =2.07, $p<0.05$ after exercise. Hence, the null hypothesis was rejected.



Table 9
Independent t-test of Type of Music between Male and Female (N=277)

	Gender	N	Mean	SD	t	p
Type of Music Before Exercise	Male	97	2.4742	2.02635	2.245	0.026
	Female	180	1.9722	1.62533		
Type of Music After Exercise	Male	97	2.5361	1.84313	2.074	0.039
	Female	180	2.0833	1.67090		

Table 10 showed that there were no significant differences in type of music listened between different age groups before and after exercise. The F ratio of the One way ANOVA was 2.02, $p > 0.05$ between groups before exercise. Hence, the hypothesis was rejected. While the $F = .254$ ($p > 0.05$) after exercise. Thus, the hypothesis was also rejected.

Table 10
One way ANOVA of Type of music between Different Age Groups (N=277)

	Sum of Squares	df	Mean Squares	F	Sig.
Before Exercise	Between Groups	18.205	3	6.068	2.019
	Within Groups	820.587	273	3.006	.112
	Total	838.794	276		
After Exercise	Between Groups	2.457	3	.819	.254
	Within Groups	880.474	273	3.225	.858
	Total	882.931	276		

Discussions

In the present study, it was hypothesized that there was a significant association between important use of music and sports anxiety level.

First of all, there was a significant relationship between listening to music and helping athletes to relax & stay calm ($r = 1$, $p < 0.05$) and thinking about upcoming competitions ($r = 1$, $p < 0.05$). This study result was explained by some researchers. Evidence suggested that music has various effects on helping athletes. For example, pre-task music has been shown to be an effective relaxant (Karageorghis et al., 2018) and divert focus. When we feel stressed, our heart rate and blood pressure go up. Slow and soft genres of music would influence our physiological functions to reduce pulse and heart rate. "Music can help me relax which plays an important role in my competition routine." (Lloyd, 2023). Since music can help to stimulate the parts of the brain that are not easy to reach for example the parietal lobe, occipital and so on (Karageorghis & Priest, 2003). Cortisol which is a stress hormone in the

temporal lobe will be released (Strum, 2016). While music can help to control stress by decreasing cortisol levels (Karageorghis & Priest, 2003). Besides, music can help enhance athletes' sports performance by diverting their attention away from negative thoughts that might hamper their performance. According to recent research, basketball players who usually perform poorly under pressure converted more free-throw attempts when they listen to upbeat music before competition, since the music diverted the players from the pressure of performing in front of people (InnerDrive, 2023). Therefore, the result showed that there was a significant relationship between listening to music and helping athletes to relax & stay calm and thinking about upcoming competitions.

Secondly, there was a positive significant relationship between listening to music and helping athletes to get energized & "psyched up" ($r = 0.15^*$, $p < 0.05$) and helping them to prepare for performing the best for the competition ($r = 0.12^*$, $p < 0.05$). Athletes might utilize music to feel energized or create a certain pre-competition attitude. (Karageorghis, Biglassi, et al., 2018). Some studies showed that fast music can aid athletic performance by boosting distance traveled, tempo or repetitions completed in low to moderate level activities. For instance, a 2006 research about the influence of music on treadmill speed selection discovered that athletes increased their pace and distance traveled when listening to fast music without getting exhausted. Other researchers have also found that listening to music with higher beats per minute can improve physical performance in low- to moderate-intensity exercise (Markell, 2023). According to Karageorghis (2010), music can boost athletic performance in two ways which are to delay fatigue or enhance work capacity. The results showed that "higher-than-expected levels of endurance, power, productivity, or strength." Besides, music can make us feel happy or unhappy, alter thinking processes and trigger behavioral changes. Such psychological effects can be discerned by physical changes in hormone level. For instance, a research in 2012 found out that those who listened to pleasant music had greater levels of serotonin (Markell, 2023). This research conveyed that the joyful experience of music listening might enhance serotonin levels, putting you in a better mood for your workout. Therefore, there was a significant relationship.

Thirdly, there was a significant negative relationship between music and helping athletes to visualize and imagine performing well ($r = -0.51$, $p < 0.05$). From an article 'Music and visualization strike a powerful tune on athletic performance' (I-imagine, 2016), there was an example about some soccer players overlaying music recordings with the I-imagine audio visualization modules. They were bolstering and reinforcing the whole process of preparing for competition on the field.

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Visualization produced the same mental instructions as actions. Indeed, visualization may promote motivation, improve motor performance and increase states of flow etc. Some professional athletes have been known to apply imagery and visualization as an advantage before competition (Ekeocha, 2015). They have been proven to help in improving wellness and non-health issues which allow people to see themselves in facing complicated tasks (Ekeocha, 2015). The use of imagery can improve the athletes' performance endurance, motivation and pain management (Thelwell et al., 2003). Athletes may repeatedly store positive images, strengthening the skill via repetition or rehearsal (Ekeocha, 2015). As the result, mental rehearsal, minds and bodies are taught to accomplish the skill envisioned. Therefore, there was a significant negative relationship.

Relationship between the use of music and different occasions

There was a significant moderate relationship between music use (for relaxing) and before exercise/competition ($r=0.43^{**}$, $p<0.05$). Another significant moderating association between music use and warm up period ($r=0.44^{**}$, $p<0.05$). From journal Perceptual and Motor Skills, discovered that individuals who listened to music for a few minutes before lifting had higher power and endurance than those who did it in silence. Music can help to stabilize people's emotions and enhance our mood (Bishop, 2007). Music acts as an external force that divert attention away from discomfort or exhaustion. Even if only played before exercise, preferred pre-task and warm-up music can improve motivation, which is believed to be a significant underpinning mechanism for preferred music efficacy. Warm-up music has been proven to boost catecholamine levels in the blood which can help to increase athlete's duration and severity of exercise (Ballmann, 2021). So there was a significant relationship between music use and before exercise.

Moreover, there was a significant high association between music use and after exercise/competition ($r=0.56^{**}$, $p<0.05$). The table also showed a significant high association between music use and after practice ($r=0.53^{**}$, $p<0.05$). As mentioned, music could stimulate cortisol which might help us to generate more energy. But having too much cortisol might delay our repair of muscles. Therefore, scientists from Brunel University mentioned that relaxing music can help to alleviate this impact. A cycling test was done. The result showed that high tempo music was worse than no music. But calming music could help to lower the subjects' heart rates and avoid the rise of cortisol and allow muscular development to begin sooner and more efficiently. Therefore, there was a significant.

Difference between music type and before & after exercise

There was no significant difference in the music preferences before exercise ($M=2.24$, $SD=1.74$) and after exercise ($M=2.14$, $SD=1.78$), $t(276)=0.847$, $p=0.398 > 0.05$. Listening to sedative music would lower arousal while fast music would increase arousal (Yamamoto, et al., 2003). It is recommended to listen to slow music to help our body in recovery (Pottratz, 2023). Yet, according to Bishop and Karageorghis (2009), players did not know that the songs were intended to prepare them to perform, which would be more difficult for them to connect with. Therefore, people simply choose the song that they prefer and neglect what type of music can benefit their sports performance and recovery in present study. It could also be explained by an experiment by North and David in 2000. Their study aimed to find out the musical preferences during and after relaxation and exercise. The results showed that participants preferred lower arousal music more than high arousal music in the relaxation condition. But there was no obvious difference between the two forms of music. Therefore, there was no significant difference.

Difference between music type and contact & non-contact sports

There was no significant difference between types of music listened before ($t\text{-value}=-0.05$, $p>0.05$) and after ($t\text{-value}=-0.61$, $p>0.05$) exercise in different sports types. The result was consistent with the studies. According to a qualitative examination by Ryan (2015), collision sport athletes prefer up-tempo music. People linked this music to increasing energy levels before the game. Contact sport athletes preferred upbeat music before competition. Limiting contact sports athletes would also listen to upbeat music. However, they would also listen to other kinds of music including country and techno. For music preferences after sports, relaxing music could help athletes to recover sooner. Music could help us recuperate after a competition or a strenuous workout (Priest & Karageorghis, 2008). Yet, according to the article about Music in sport and exercise, the use of music has not been well-established in the literature. Since every athlete had various demands for recovery after different intensity of exercise.

Difference between music type and genders

There was a significant difference between males and females in music preference before ($t\text{-value}=2.25$, $p<0.05$) and after sports ($t\text{-value}=2.07$, $p<0.05$). This could be explained by the same study as mentioned, males were more likely to pay attention to the lyrics and females were more likely to listen to a variety of music. Moreover, females would pay more attention to the rhythmical qualities than males (Karageorghis, et al., 1999). The key motivating

element of music while exercising was the response to rhythm. These data implied that females pay more attention to and were more motivated by music when exercising than males, resulting in a bigger reaction to the musical stimulus than males (Priest, et al., 2004). Besides, according to Colley (2008), males were linked to the preferences for folk, heavy metal and rock music. Females were linked to a preference for pop music. Furthermore, women's sports performance would be improved when they listen to preferred music than non-preferred music. Men's performance was not influenced by the selection of music (Cole, et al, 2015). Therefore, there was a significant difference between males and females.

Difference between music type and age groups

There was no significant difference in the type of music between different age groups. The F ratio of the One way ANOVA was 2.019, $p>0.05$ between groups before exercise. $F=2.254$ ($p>0.05$) after exercise. According to a study about Selecting Music for Exercise, there was a move towards non-mainstream styles with age. The popularity of R&B and hip-hop among females fell between the younger and middle-aged groups. 70/80s disco music grew in popularity. A significant fall of music preference for pop and dance music between the middle and older aged groups was showed. Rock & roll, classical and country music etc. grew in popularity. Pop, hip hop and heavy metal were less popular among males between the younger and middle aged categories. Dance music was more popular (Elliott, 2020). Classical and 60s Pop were more popular among the middle and older aged categories,

whereas Dance/House was less popular. It seemed that the result was not consistent with the present study. Yet, some data shows that non-mainstream music (Classical, Blues) has a greater affinity across life (Bonneville-Roussy et al., 2013). Many mainstream genres were also popular among the middle and older aged demographics (Elliott, 2020). According to Elliott (2020), the results simply provided partial evidence for the general age-preference. They also imply that previous studies might have underestimated the importance of music preferences when selecting musical accompaniment for older athletes (Ziv & Lidor, 2011). Therefore, there was no significant difference.

Conclusion

The aim of study was to examine the differences between the type of music between athletes of Hong Kong aged 18-26 and the correlation of listening to music before & after sports for dealing with sports anxiety.

Although the present study showed no significant difference in the type of music between contact and non-contact sports. Many studies showed the use of different types of music that can help athletes to achieve different psychological needs.

From the above results, we found a relationship between the use of music and different sports occasions; important use of music and sports anxiety level. We would conclude that music would be beneficial to athletes in different sports. In this study the relationship between sports related anxiety and use of listening music Before & After sports of Hong Kong athletes were investigate. RMA

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校園足球發展背景和意義

校園足球發展背景

校園足球緣起在1985年，中國改革開放的設計師鄧小平指出“中國足球要搞上去，要從娃娃和少年抓起”，真正開始校園足球改革的是在1992年，1992年原國家體委在秦皇島成立了中國足球學校，1996年正式招生，招收5年級至中專的學生，學校堅持文化教育與專業訓練相結合培養模式，於是全國各地掀起舉辦足球學校的熱潮，一時間成立了4000多所足球學校，但是由於機制不健全和中國足球發展不景氣，足球學校開始走下坡，到2009年中國足球學校停止招生。各地的足球學校也名存實亡。2013年，為了進一步貫徹落實《中共中央國務院關於加強青少年體育增強青少年體質的意見》（中發〔2007〕7號）和《國家中長期教育改革和發展規劃綱要（2010-2020年）》，切實提高全國青少年校園足球活動（以下簡稱“校園足球”）的品質和水準，促進青少年學生健康成長。體育總局、教育部於2013年2月下發了“關於加強全國青少年校園足球工作的

意見”，提出了要在全國開展“校園足球”，大力建設國家、省、市（縣）三級校園足球活動培訓基地及青少年足球訓練網點，當年開展校園足球的學校主要以體校和足球學校為主，還有校園足球定點學校約5000所。2014年2月27日中央全面深化改革領導小組第十次會議上，習近平總書記主持審議通過了《中國足球改革總體方案》。會議強調，實現中華民族偉大復興的中國夢與中國體育強國夢息息相關。發展振興足球是建設體育強國的必然要求，也是全國人民的熱切期盼。為了落實《中國足球改革總體方案》，大力推進校園足球建設工作，2014年11月26日，國務院召開全國校園足球工作電視電話會議，時任國務院副總理劉延東出席會議並作重要講話，會議明確由教育部主導開展校園足球工作。2015年7月教育部、國家體育總局、國家發展改革委、財政部、新聞出版廣電總局、體育總局、共青團中央等6部門（下稱“教育等6部門”）發佈“關於加快青少年校園足球實施的意見”（下稱“意見”），提出了到2020年建設2萬所校園足球特色學



校，基本形成了符合人才成長規律、青少年廣泛參與、運動水準持續提升、體制機制充滿活力，基礎條件保障有力、文化氣氛蓬勃向上的中國特色青少年校園足球發展體系。到2025年達到5萬所。重點建設200所高校高水準足球運動隊，正式啟動了全國校園足球的建設工作，校園足球是提高足球普及程度和競技水準、實現足球強國夢的重要支撐，是足球改革發展的奠基工程、教育立德樹人的育人工程和全面推進學校體育綜合改革的探路工程（下稱“三位一體”工程）。

校園足球的意義

2017年6月16日，國家主席習近平在人民大會堂會見國際足聯主席因凡蒂諾時指出：足球運動的真諦不僅在於競技，更在於增強人民體質，培養人們愛國主義、集體主義、頑強拼搏的精神。

黨的十八大以來，以習近平同志為總書記的黨中央把振興足球作為發展體育運動、建設體育強國的重要任務擺上日程。習近平總書記多次指示要下決心把我國足球事業搞上去，李克強總理高度重視足球等體育事業和體育產業工作，國務院多次專題研究部署，我國足球改革發展迎來了前所未有的大好機遇。足球運動具有廣泛的社會影響，深受廣大群眾喜愛。發展和振興足球，對提高國民身體素質、豐富文

化生活、弘揚愛國主義、集體主義精神、培育體育文化、發展體育產業、實現體育強國夢具有重要意義，對經濟、社會、文化建設也具有積極促進作用。開展校園足球正是貫徹落實習總書記講話精神的最好體現。

首先，校園足球是足球改革發展的奠基工程。長期以來，中國的足球人口占全國人口的比例與世界足球強國的足球人口比較相形見拙，開展校園足球為提高足球人口奠定了基礎。一方面在學校開展校園足球，通過每週一節足球課，可以讓更多的學生參與足球運動，擴大足球人口，另一方面參加足球運動的人多了，可以從中選拔更多的有天賦的足球苗子，為各級體育部門發現、培養和輸送優秀足球後備人才。根據“意見”提出的目標，到2025年全國有5萬所校園足球學校，那麼全國的參加足球的人數達在4至5千萬人，有了這個後備人才的支撐，就可以發現更多的足球人才。

其次，教育是立德樹人的育人工程。習總書記在2018年全國教育大會上提出學校體育要幫助學生在體育鍛煉中享受樂趣、增強體質、健全人格、錘煉意志，這是新時代中國學校體育工作的目標。開展校園足球是貫徹落實新時代學校體育工作育人目標的重要抓手，足球是全世界最受歡迎的運動項目，深受青少年的熱愛，足球的規則最完整、參與活動人數最多、活動時間最長，又是育人手段最完整的運動項目，通過參加足球學習和訓練，可以提高學生的足球運動技能和提高運動水準，經常參加足球活動，還可以促進學生的智力發展，更重要的是通過足球學習和競賽，學生在自尊自強、團隊合作、意志頑強、勇於進取、遵守規則、尊重對手、尊重裁判、永不服輸、超越自我、勇於擔當等各方面的健康行為和體育品德都能夠得到培養及提高，從而達到立德樹人的效果，完成了育人的目標。

最後，校園足球是全面推進學校體育綜合改革的探路工程。長期以來，學校體育教學存在一個特別尷尬的事實，就是學生上了12年的體育課，到高中畢業的時候能夠真正掌握運動技能，積極鍛煉身體的學生不到20%。如何使學生掌握運動技能是學校體育改革必須面對的現實。校園足球特色學校的首要條件就是每週一節足球課，通過體育教學讓學生掌握足球基本知識和技能，並通過建構校內外足球聯賽，使學生在課堂學到的技能可以在各級聯賽中得到展示和提高，從而獲得足球運動能力。2021年6月，教育部辦公廳印發了《〈體育與健康〉教學改革指導綱要》指導思想提出要深化體育教學改革，強化“教會、勤練、常賽”幫助學生掌握1-2項運動技能。幾年的校園足球實踐比較有效的達到了這一要求，是體育教學改革的有效形式，也成為學校體育綜合改革探路工程的一種模式。

中國校園足球現狀

開展校園足球的初期面臨許多困難，其中最主要的是場地不足、缺乏足球教師以及經費不足。幾年來從國家到地方各級政府和學校加大校園足球經費投入，舉辦各種層次的教師培訓班，新建或修繕足球場地，校園足球正在沿著計畫健康發展。

經過幾年的努力，到2020年，全國校足辦穩步推進校園足球的示範專案，認定的全國青少年校園足球特色校總數達到了30000所，全國青少年校園足球試點縣（區）總數達到201個，全國青少年校園足球“滿天星”訓練營總數達到110個。同時還遴選認定了6000所全國足球特色幼稚園。



落實機構和制度建設

全國各地從省、市到縣、區均成立由“教育等6部門”組成的校園足球領導小組辦公室（下稱“校足辦”），統領本地區校園足球規則。2020年建立了全國青少年校園足球管理平臺，形成了“全國校足辦—各省級校足辦—地市級校足辦—縣區級校足辦—校園足球特色學校、特色幼稚園”等五級垂直體系。全國“校足辦”著力於制度建設，幾年來頒佈了《教育部等6部門關於加快發展青少年校園足球的實施意見》《教育部關於進一步加強普通高等學校高水準運動隊建設的實施意見》《學校體育美育兼職教師管理辦法》《全國青少年校園足球教學指南》《學生足球運動技能等級評定標準》《關於全國青少年校園足球改革試驗區、試點縣（區）工作的指導意見》《全國青少年校園足球教學訓練競賽體系建設方案》《全國青少年校園足球八大體系建設行動計畫》等一系列檔，為校園足球發展指明了方向。

各地加大校園足球經費投入

建設了一大批能夠開展足球教學、訓練和競賽的各種不同規格的場地。廣東省2015-2020年省財政投入8億元開展校園足球工作；湖南省2016年至2018年年三年間



投入資金3億元，新建和修繕學校足球場地900多快；四川省至2018年累計投入1.26億元，全省各級財政及學校總投入超過20億元；海南省2018年各級初中投入約1.8億元；天津市每年投入校園足球經費約2300萬元；北京市僅2018年就投入1.7億元，高標準改造78塊中小學校園足球場地。到2020年全國校園足球特色學校均達到每所學校均有不同層次的足球場，經費的投入為開展校園足球提供了保障。

基本形成教學和競賽體系

各校園足球特色學校通過每週一節足球課，組織課餘訓練和校內聯賽、組建校隊和參加校際聯賽，基本形成了“普及性與競賽性”相結合的校園足球教學與競賽體系，打造“班班參與、校校組織、地方推動、層層選拔、全國聯賽”的校園足球競賽格局。幾年來，參加小學、初中、高中、大學四級聯賽的學生共計1500多萬人次。全國已經形成了“特色學校+高校高水準足球運動隊+試點縣（區）+改革試驗區+‘滿天星’訓練營”推廣普及和提質增效格局。

不斷完善師資培訓體系

幾年來，全國各地通過開展校園足球骨幹師資培訓、特色學校校長培訓，培訓足球教師、教練員、特色學校校長等35萬人。已建立了29所高校的足球學院，成為了服務中國足球改革和校園足球發展的宣傳中心、智囊中心和實驗中心。

基本形成校園足球宣傳機制

幾年來，各地通過製作教育意義顯著的校園足球教學視頻、專題節目、動畫片和宣傳片，校園足球影像展和校園足球嘉年華等活動，在校內外廣泛宣傳，校園足球得到社會和新聞媒體的大力支持，形成了支持、宣傳、贊助校園足球活動的良好機制。

中國校園足球發展前景

2020年2月“教育部等6部門”和中國足球協會聯合發佈了《全國青少年校園足球八大體系建設行動計畫》（下稱“行動計畫”），為未來校園足球的發展指出了方向。2020年9



月習近平總書記在教育文化衛生體育領域專家座談會上指出，青少年校園足球現在開始推廣和普及起來，還要久久為功（人民日報2021年9月24日）。校園足球已經受到社會的普遍關注、家長的支持和學校的高度重視，普及與提高初現成效，但離實現中國足球騰飛還有相當距離，要落實習近平總書記指示精神，夯實“三位一體”的基礎工程。到2025年要完成5萬所校園足球特色學校的認定工作，必須深化校園足球改革，以高標準、高質量統領校園足球改革發展。

根據“行動計畫”，到2022年，校園足球普及推廣、教學訓練、競賽聯賽、師資條件、教體融合、宣傳引導等體系更加完善，管理體系、制度體系、評價機制、條件保障更加健全。每所校園足球特色學校通過培訓至少有一名具有中國足協D級或同等水準教師或教練員；每所校園足球特色學校爭取有1塊以上足球場地，有條件的高等院校均建有1塊以上標準足球場地；校園足球特色學校學生體質健康合格率達到95%以上，中小學生經常參加足球運動人數超過3000萬。

“行動計畫”構建的八大體系分別為：

1. 精心佈局、夯實校園足球推廣體系

重點堅持普及與提高並重，推動地區、城鄉、男女青少年及幼稚園校園足球優質均衡發

展，形成校園足球制度體系和治理體系並逐漸推廣到校園籃球、排球、冰雪運動、武術、田徑、體操、游泳、機器人運動和網球等專案上，形成完整的學校體育工作制度體系和治理體系。

2. 全面發力、健全校園足球教學體系

通過建立科學高效的教學體系，使學生普遍掌握足球運動技能，運動能力和足球技戰術水準明顯提高，規則意識、愛國主義和集體主義精神顯著增強。同時完善培訓及考核評定機制。

3. 示範引領、打造校園足球樣板體系

推進中國特色青少年足球後備人才培養體系建設，不斷完善校園足球多層次、立體化、科學化的課餘訓練體系，暢通“校園足球特色學校—‘滿天星’訓練營—校園足球精英集訓隊—中國足協精英青少年訓練營—中國足協各年齡段國家隊”運動員的訓練、發展與成長通道。

4. 嚴格管理、做強校園足球競賽體系

這一條是打通各級競賽通道，深化建設校內競賽—校際聯賽—選拔性競賽—國際交流比賽為一體的競賽體系。確保校園足球特色學校班班有球隊，定期組織比賽，通過年級聯賽組建各個年齡組的男女代表隊。

5. 統籌協調、形成校園足球融合體系

重點形成足球人才培養體系。加快推進校園足球與青訓體系“一體化設計、一體化推進”合作格局。合力在國民教育體系中通過足球教學、訓練和競賽探索培養優秀足球競技人才。積極鼓勵有較好足球運動技能和水準學生向職業體育發展，拓寬校園足球學生運動員進入省（區、市）、國家等各級足球後備人才梯隊、國內外職業足球俱樂部的通道，建立健全教育、體育和社會相互銜接的人才輸送機制；



6. 激勵創新、構建校園足球榮譽體系

主要是建立鼓勵和促進各級部門的積極性。進一步調動學校、學生、家長和地方政府、企事業單位及社會各界參與、支持校園足球的積極性。每年舉行校園足球年度工作總結活動；

7. 攻堅克難、搭建校園足球科研體系

通過建立專家智庫，構建政府主導、社會有序參與的高水準科研平臺，逐步形成特色鮮明的中國青少年校園足球科研體系。；

8. 強化導向、完善校園足球輿論宣傳引導體系

加強校園足球政務資訊數據服務平臺和公共服務平臺建設。通過政府、學校、社會共同構建層級分明、職責清晰的全媒體矩陣，積極宣傳弘揚健康向上的價值觀，營造健康的足球文化氛圍。

2020年10月中共中央辦公廳、國務院辦公廳印發的《關於全面加強和改進新時代學校體育工作的意見》，（下稱“意見”），強調體育教學改革的核心是做到教會、勤練、常賽。教會就是讓學生掌握“健康知識+基本運動技能+專項運動技能”；勤練就是除課堂教學之外，還要組織經常性的課餘體育鍛煉和訓練；常賽就是經常性地舉行面向人人的體育競賽。通過校園足球學校的教會、勤練、常賽，參加足球的學生就可以在競賽中獲得專項運動技能，在競賽中逐步形成健康行為和體育品德。通過校園足球的抓手推動學校體育改革，使廣大學生熱愛體育，積極參加體育鍛煉，使部分有足球天賦的學生成為足球運動員，培養熱愛體育文化人和有文化的體育人，最終完成“三位一體”工程的目標。

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從體教結合到體教融合： 中國競技體育後備人才培養之路

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中國學校培養精英運動員的歷史進程

中華人民共和國成立初期，在體育事業方面通過各種途徑學習，尤其是引入蘇聯體育經驗。這既是一條速成之路，也是當時國際形勢下的必然之路。在蘇聯體育模式下（蘇聯體育發展體系是一種在政府體育機構及其政治與體育互動下發展體育的模式。在當時的國際形勢下，學習蘇聯體育發展體制的經驗是一種有效的、必然的選擇，在中國初步構建了競技體育的體系），新中國初步建構了競技體育體系。時任國家體委主任賀龍在1954年指出，“四年來，我們國家，能夠在開展群眾性的體育運動方面，學校體育教育方面，運動技術的提高等方面獲得一些成就，都是和學習蘇聯分不開的”¹。1956年國家體委公佈《青年業餘體育學校章程》（草案）和《少年業餘體育學校章程》（草案），在各級行政區建立體育學校。這從根源上解決了優秀運動員的來源問題，青



少年體育學校成為“國家優秀運動員的主要人才資源培養和儲備基地”²。雖然業餘體校掛以業餘名義，不過多數業餘體校實行集中學習、集中訓練、集中食宿制度，實際上成為一種專門化學校，加之，1952年至1954年，高等教育領域內進行了院校調整運動，成立了6所體育院校，中國基本形成了競技體育後備人才培養的“體校一體院”模式。這一時期，中國競技體育後備人才培養是從“普及與提高”向“在普及基礎上進行提高”發展。

20世紀60年代初期，由於中國所面臨的經濟困難，國家對競技體育人才培養進行了調

整，提出“側重抓提高”。優秀運動隊只在國家和省、市、自治區兩級設立，集中培養運動員體育學院不在兩級之列，不再承擔為國家培養優秀運動員任務。這一時期，逐步形成了“國家隊—省、市、區專業隊—體校”競技體育後備人才的三級訓練網體系。

從中國競技體育後備人才培養的歷史進程來看，建國初期至20世紀70年代末，中國競技體育後備人才培養主要依託“三級訓練網”體系，這一體系資源集中，能夠高效培養運動員，加之計劃經濟下的“工作分配”制度，運動員退役後工作有安排，對接受教育和職業培訓的需求並不迫切，競技訓練與學業/職業之間尚未形成不可調和的矛盾。

改革開放後，中國開始進行社會主義市場經濟發展道路的探索，先前的競技體育後備人才模式面臨挑戰。由於“三級訓練網”過分注重競技層面目標追求，忽視青少年運動員的教

育，加之退役運動員的增多，體育體系內工作崗位分配資源相應減少，使得運動員退役再就業問題顯現，競技訓練與學業/職業之間矛盾變得越來越突出。為此，20世紀80年代中後期，中國開始探索多種途徑的競技體育後備人才培養模式，比如，在大學、工廠試辦高水準運動隊，足球、籃球、排球、網球等運動開啟職業化進程。進入21世紀後，“三級訓練網”的弊端越來越嚴重，尤其是對運動員的教育模式以及退役後職業規劃的缺失，使得競技體育後備人才培養中問題頻發，尤其是運動員的“學訓矛盾”以及“退役再就業”問題。因此，國家體育總局出臺了一系列政策來解決退役運動員就業安置的問題³。例如，2000年出臺的《國家體育總局辦公廳關於退役優秀運動員免試進入高等學校學習有關事宜的通知》，解決優秀運動員的教育需求，2014年針對運動員群體所出臺的《國家體育總局關於進一步做好退役運動員就業安置工作有關問題的通知》等，這些政策指導了“體教結合”以及“體業



結合”的探索。近些年來，社會力量也加入至退役運動員的就業幫扶工作中，不過仍舊無法從根本上改變退役運動員多、工作崗位少的局面。

20世紀80年代末期，中國在大學開始試辦高水準運動隊，培養高水準運動員，提出“體教結合”的思路，豐富競技體育後備人才培養的多元途徑。在競技體育後備人才領域，成為當時中國體育改革最為活躍的試驗田，大量的理論研究成果呈現，先後形成了“南體模式”（南京體育學院在長期的辦學歷程中，通過不斷調整辦學思想和辦學方向，結合國家和江蘇體育教育發展的要求，在實踐中形成的教學、訓練和科研緊密結合、資源共用、優勢互補的運行機制）和“清華模式”（新中國成立後，清華大學在全國高校中率先開展了“創先爭優”活動，積累了許多成功經驗。一是在明確發展主題上創先爭優；二是在創新活動中創先爭優；三是在完善工作制度上創先爭優；四是在發展組織力上創先爭優”）等較為成功的競技體育後備人才培養的大學模式。經過30多年的探索，中國已形成近300所大學、上千支高水準運動

隊規模。然而，由於經費、訓練設施與保障、競賽體系、運動員流動與管理等諸多問題，大多數高校高水準運動隊大都處於“低水準”競技層面，很難成為競技體育後備人才的培養的補充力量，僅僅是解決了部分運動員的教育需求。為此，需要新的思路來解決競技體育後

備人才所面臨的困境。2020年《關於深化體教融合促進青少年健康發展的意見》（下文簡稱《意見》）的出臺，提出了“體教融合”的路徑。可以預見，學校體育培養高水準運動員或將成為中國競技體育後備人才培養的方向。

從體教結合到體教融合： 中國培養精英運動員的探索

競技體育後備人才培養過程中的“學訓矛盾”是一個世界性難題。中國培養精英運動員主要涉及到體育部門和教育部門。體育部門是中國競技體育後備人才培養的主陣地，在緩解運動員“學訓矛盾”方面，其主要做法是對在役或退役的優秀運動員提供工作崗位或免試錄取進入大學繼續深造。這些做法在計劃經濟時代確實起到了不錯的效果。隨著社會主義市場經濟的推進，上述措施緩解運動員的學訓矛盾愈發乏力，“學訓矛盾”的問題凸顯，甚至出現世界冠軍街頭賣藝、賣金牌維持生計、沒有生存技能等現象，引發體育學界的強烈關注。因此，中國的“舉國體制”（全民體育體系是指國家體育管理機構在全國範圍內調動相關資源和力量，由國家出資配置優秀教練員和軟硬



體設施，集中力量選拔、培養和訓練優秀運動員參加奧運會等國際體育賽事，與其他國家競爭，力爭取得優異成績，打破紀錄，獲得金牌）開始面臨經濟社會轉型的挑戰，需要對體育發展進行更深層次的改革⁴。由此可見，體育部門很難從自身來緩解競技體育後備人才培養的“學訓矛盾”，需要教育部門的通力合作。也就是說，緩解“學訓矛盾”是體教融合的重要任務⁵。具體而言：

為了克服體育部門在競技體育後備人才方面所突顯的矛盾及障礙(如：退役運動員規模的進一步擴大，由於缺乏足夠的能力來應對競爭激烈的就業市場，退役運動員的生存和發展困難，對中國體育人才的吸收、職業運動隊的穩定和發展以及優秀人才的儲備都有諸多不利影響)。中國在20世紀80年代提出了以政府部門為主導、以各級各類學校為載體、以體育

部門與教育部門共同合作為實踐方式的競技體育後備人才培養模式，並將此培養模式稱為“體教結合”。可見，體教結合最初便是一種競技體育後備人才培養的思路或模式，主要是解決當時體校體系在競技體育後備人才培養中學習和訓練/競賽相互分離的問題。體教結合的實施困境在於學校部門與體育部門沒有真正結合⁶(即主要體現在教育和體育系統關於體教結合的協同治理不到位；學生運動員培養中體教結合缺乏整體推進；體教結合缺乏理論和操作的“一體化”；體育後備人才培養中“體教分離”現象嚴重)。隨著社會的不斷發展，體教結合的內涵也不斷得以豐富，延伸至行政管理、各級學校、競技體育體制以及運動員個體四個層面，且各層面間相互聯繫與交叉融合構成了體教結合模式的具體內容⁷。截至2014年，國家級、地市級體育後備人才試點學校、體育傳統專案學校(指有效實施素質教

育，學校體育工作成績突出，學生體質明顯提高，嚴格執行國家體育與健康課程標準)將近12000所，高水準運動試點高校(提高體育技術水準，發現和培養優秀體育人才)為272所⁸，但並未解決競技體育後備人才的“學訓矛盾”問題，而且在國際比賽中承擔爭金奪銀任務的運動員大多仍為體育部門所培養。體育部門和教育部門在競技體育後備人才培養方面的各自為政，這一體制性障礙是“體教結合”未能取得較好成效的根本原因。

北京2008奧運會申辦成功後，中國體育界開始探索競技體育後備人才培養多元化途

徑，關於教體結合表述日見增多。所謂“教體結合”是在“體教結合”實踐的基礎上，融合了“學校運動隊”“社會力量辦學”等多種競技體育後備人才培養方式的基礎上所提出的⁹。教體結合的提出反映出讓體育回歸教育的理念，是為了突破體教結合難以調和的體制性問題(例如，許多體育學校也提供文化課程，但由於訓練後的疲勞，大多數學生無法應付基本的家庭作業；許多運動員確實想學習，但由於以前的學習長期中斷，他們的訓練任務和基礎差，使他們不堪重負)。教體結合突出教育在人才培養上的重要性，不過依舊不能從根源上解決競技體育後備人才培養的“學訓矛盾”。



中國體育學界在2013年前後提出體教融合這一說法。體教融合可以初步理解為將人的全面發展作為競技體育的出發點和落腳點，通過融合體育與教育兩個系統的資源，使之相互滲透，提高效能，形成合力，共同培育競技體育後備人才。或者說，體教融合是指競技體育後備人才的培養體系融入到教育培養體系當中。2020年《意見》中提出深化體教融合，解決青少年體育發展的痛點，即學校體育低質量發展和競技體育後備人才數量萎縮，進而把學校體育高質量發展和競技體育後備人才培養統一起來。學術界以政策為導向，對體教融合的概念、內涵、實施途徑進行分析，提出自己的觀點。如體教融合是指通過挖掘體育促進青少年身心健康及其全面教育功能，而在不同類型、層級學校及其高水準運動隊和各級各類體校、



社會體育組織等多元化主體，實施兼顧青少年文化教育和運動訓練的一種全領域、全方位、全視角的培育青少年體育後備人才和促進全體青少年健康發展的治理機制¹⁰。因此，體教融合是新時代背景下，以國家治理體系融合觀（例如，建立學校、家庭和社區的綜合機制，促進兒童和青少年健康促進工作的發展）。以及我國體育深化改革的需求所提出的青少年體育發展的重大議題，是體育強國建設的重要組成部分，從培養全面發展的人出發，堅守“立德樹人”根本任務，遵循“健康第一”教育理念，統一競技體育後備人才培養與學校體育高質量發展訴求。

結語

縱觀中國競技體育後備人才培養歷史進

程，其主要依託“國家隊一省、市、區專業隊一體校”的三級訓練網，並取得世界矚目的競技體育成績。但與此同時，競技體育後備人才的“學訓矛盾”問題開始顯現並日益加劇。中國開始探索體教結合、教體結合、體教融合的學校培養精英運動員模式，從而實現學校體育高質量發展和競技體育後備人才高質量發展。新時代中國體育界和教育界開始合力推進深化體教融合，整個國民教育體系將成為培養高水準運動員的重要通道。當然，中國走向體教融合以學校培養精英運動員的同時，也需要向世界體育強國培養精英運動員的模式學習，尤其是美國的學校培養精英運動員的成功模式，具有極強的借鑒意義。需要說明的是，中國學校培養精英運動員主要依託中國特色競技體育後備人才“體教融合”培養模式，具有中國的本土性和特色性。

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