

Analysis of the Effects of Different Ball Sports on Improving Psychological Disorders in Adolescents

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Abstract: Adolescents are physically and physiologically close to adults, with gradually improving bodily functions. However, their psychological development tends to lag behind, making them more prone to anxiety, depression, and other psychological disorders when facing stress. Ball sports have a significant positive impact on adolescent mental health, with different types of ball sports exerting varying psychological effects. Individual ball sports, characterized by independence and low social interaction, can effectively enhance adolescents' focus and mental strength. In contrast, team ball sports, with their diversity, complexity, and greater social engagement, provide more enjoyment and stress relief. This paper aims to analyze the impact of different ball sports on alleviating adolescent psychological disorders, offering a theoretical basis for promoting the broader application of ball sports in adolescent mental health interventions.

1. Introduction

Adolescence is a critical period filled with both opportunities and challenges. However, with the rapid development of society and an increasingly fast-paced lifestyle, adolescents are facing growing pressures, leading to a rising prevalence of mental health issues. Research has shown that from adolescence to around the age of 25, the incidence of psychological disorders such as depression exhibits a linear growth trend ^[1]. Negative emotions not only weaken the immune system but, over time, can also cause severe harm to the physical and mental well-being of adolescents. As a result, psychological disorders have become a significant factor affecting adolescent health. Meanwhile, studies utilizing exercise as an intervention method have demonstrated that appropriate physical activity can help reduce the risk of depression and anxiety in adolescents, thereby promoting mental well-being ^[2]. Among various physical activities, ball sports stand out as one of the most popular types. By using a ball as the fundamental element of play and engaging in competition through different rules and techniques, these sports not only provide adolescents with enjoyment, a sense of achievement, and increased self-confidence but also enhance metabolism, strengthen the immune system, and improve overall physical fitness, contributing to both physical and mental health. Therefore, analyzing the impact of different ball sports on alleviating adolescent psychological disorders can offer valuable insights for designing exercise-based intervention programs for adolescent depression. This, in turn, plays a significant

role in promoting the healthy development of adolescents' physical and mental well-being.

2. Causes of Adolescent Psychological Disorders

Adolescence is a critical transitional period into adulthood, during which teenagers gradually begin to face pressures similar to those experienced by adults. Various aspects such as academic performance, family environment, and interpersonal relationships can create significant distress, leading to the accumulation of negative emotions. However, compared to adults, adolescents have a weaker ability to cope with psychological burdens and often lack the maturity to manage their emotions effectively or seek professional help. When negative emotions continuously build up without proper resolution, psychological disorders may develop over time. In severe cases, these issues can escalate into mental illnesses, psychological disorders, or even lead to self-harm and violence against others.

2.1 Academic Pressure

Academic pressure can trigger anxiety, depression, emotional imbalance, and maladaptive behaviors in adolescents. Prolonged exposure to intense academic stress may result in constant tension, sleep difficulties, and even physical discomfort, all of which negatively impact students' learning performance and mental well-being. This, in turn, exacerbates academic pressure, creating a vicious cycle. Research indicates that students experiencing high levels of academic stress (42.43%) are more than twice as likely to be diagnosed with depression compared to those with moderate or low levels of stress (20.37%) ^[3]. Academic stress is closely linked to mental health issues such as anxiety and depression. Excessive pressure can lead to feelings of hopelessness and frustration, contributing to depressive symptoms. To achieve better academic performance, competition among students continues to intensify, sometimes leading to unethical behaviors such as plagiarism and cheating. Such practices can have a detrimental effect on adolescents' character development and psychological well-being. Moreover, in today's competitive job market, many parents have increasingly high expectations for their children, hoping that academic success will secure a brighter future. This mindset often results in relentless pressure on students, turning education into a psychological burden. Studies on parental education-related anxiety reveal that 87% of parents experience anxiety over their children's education, with 20% exhibiting moderate levels of anxiety ^[4]. When children fail to meet their academic goals, highly anxious parents may resort to negative and punitive measures, further intensifying their children's stress and emotional struggles.

2.2 Family Environment

The family is the first environment that adolescents encounter and communicate with, serving as their initial classroom for entering society. It plays a crucial role in their personal growth, absorption of social information, and understanding of social norms. When adolescents grow up in low-warmth or unstable families, witnessing parental conflicts, physical fights, or even divorce, they may gradually develop unstable emotions, impulsive and irritable temperaments, and a lack of security. They are also more prone to experiencing negative emotions such as fear, anxiety, and depression. If these negative emotions continue to accumulate without proper resolution, some adolescents may go astray and even resort to extreme measures to express their distress. Research has shown that compared to adolescents from low-warmth and unstable families, those from high-warmth and stable families exhibit significantly lower levels of anxiety ^[5]. Furthermore, the educational background and structure of a family also impact adolescent mental health. Parents with

higher educational attainment are generally more capable of recognizing and guiding their children's emotions in a timely manner, fostering positive psychological development. In contrast, parents with lower educational levels may struggle to provide proper guidance and may resort to scolding, blaming, or even domestic violence when their children face psychological difficulties, further exacerbating emotional problems. Additionally, compared to adolescents from incomplete family structures, those from intact families tend to cope better with emotional distress, interpersonal sensitivity, and depression.

2.3 Interpersonal Relationship Issues

In today's society, interactions between people are becoming increasingly frequent, and the level of life stress is rising. Consequently, competition, conflicts, and contradictions are intensifying, which can add to the psychological burden of adolescents and affect their mental and physical development. Factors such as customs, moral values, and cultural backgrounds exert an invisible influence on adolescents from birth, gradually shaping their ideals, beliefs, outlook on life, and worldview. Although adolescents are in a period of rapid physiological development, their psychological maturity lags behind. They are often emotionally unstable, immature in social interactions, easily influenced by others, and prone to feelings of loneliness, which leads to a strong desire for communication and understanding. Research has shown that adolescents who experience prolonged high levels of interpersonal stress may suffer serious negative impacts on their mental health and social adaptation ^[6]. Moreover, peer relationship issues also play a significant role in adolescent psychological well-being. Positive peer relationships help establish a sense of security and compensate for deficiencies in family and academic life. Mutual trust and support among peers enhance adolescents' self-worth and social skills while reducing the occurrence of negative emotions such as depression and anxiety. Conversely, poor peer relationships can have adverse effects on mental health, leading to feelings of rejection, isolation, stress, and indifference, and in extreme cases, may even trigger suicidal thoughts.

Additionally, adolescent romantic relationships have become increasingly common. In reality, early romantic involvement not only affects students' academic performance and personal growth but also poses a series of psychological and physical risks. First, adolescents experience emotional instability, and entering a romantic relationship too early can intensify mood swings, making emotional regulation difficult and hindering normal development. Lacking experience in handling complex emotions, they may struggle with breakups, rejection, or feelings of embarrassment, which can deal a significant blow to their psychological well-being. Second, early romantic relationships may exacerbate feelings of inferiority, leading to psychological dependence and reluctance to live independently or think critically, thereby affecting future interpersonal relationships and emotional well-being. Finally, premature exposure to sexual issues may result in psychological distress, worsening negative mental states, and even leading to depression or other mental health disorders.

3. The Psychological Impact of Different Ball Sports on Adolescents

3.1 Team Sports

One of the most significant characteristics of team sports is the necessity of teamwork. Whether in soccer, basketball, or volleyball, players must cooperate closely and work in harmony during matches. When adolescents participate in team sports, they need to communicate and interact constantly with their teammates. This interaction not only enhances their social skills but also helps develop leadership abilities. Additionally, the engaging and dynamic nature of team sports effectively helps adolescents alleviate anxiety and relieve stress. Compared to individual sports,

team sports are associated with a lower risk of depression and other mental health issues. Positive experiences such as collective learning, skill training, and peer support foster a sense of social acceptance among adolescents, reducing stress and dissatisfaction, and ultimately decreasing symptoms of depression.

3.1.1 Basketball

Basketball is a highly competitive sport that requires young players to maintain focus in order to score points and achieve victory. This not only plays a positive role in cultivating their independent personality and enhancing self-awareness but also helps them develop independent, determined, and clear thinking habits and character traits. While participating in basketball, young athletes must execute a series of technical actions such as dribbling, shooting, breaking through defenders, and coordinating tactics. Additionally, they engage in intense physical confrontations with opponents on the same court. They must achieve set goals while also meeting audience expectations, all while enduring injuries and psychological pressure from failures. High-intensity exercise promotes the secretion of endorphins, which help relieve stress and regulate negative emotions. It is precisely through repeated setbacks and pressures—stemming from physical endurance, technical and tactical challenges, and mental strain—that young players develop strong psychological resilience and the ability to cope with adversity. A study has shown that after a six-week basketball intervention, adolescents exhibited significant improvements in psychological symptoms such as interpersonal sensitivity, depression, and anxiety, along with enhanced mental toughness ^[7]. Under the dual pressures of physical and psychological competition, basketball, with its intense competitiveness and high level of physical confrontation, not only enhances young players' physical fitness but also improves their mental well-being, leading to reduced anxiety and depressive emotions.

3.1.2 Football

Football is a sport that emphasizes teamwork, where each player on the field has a clear role. During matches, players communicate through body movements, eye contact, and other nonverbal cues, fostering a strong sense of coordination and mutual understanding. This high level of team collaboration helps young people develop a strong awareness of teamwork. Working together as a team enhances self-control, fosters a sense of belonging, and contributes to better mental well-being. However, while many parents strive to provide their children with excellent material conditions, they often overlook psychological education. As a result, some young individuals develop selfish and self-centered habits, leading to poor teamwork skills ^[8]. On the football field, every pass and movement embodies the concept of interdependence. To achieve victory, players must engage in constant communication and cooperation, reinforcing the importance of teamwork. This not only shapes their approach to collaboration but also positively influences their social interactions. By learning to work with others on the field, young people improve their interpersonal relationships, ease psychological pressure, and develop essential social skills for everyday life and academics. Additionally, the physical exertion involved in football—running at full speed, shouting, and engaging with teammates—can encourage individuals suffering from depression to participate in sports more frequently, enhancing the effectiveness of exercise in alleviating depressive symptoms. With its unique combination of unity and competition, football provides young people with valuable opportunities for psychological growth. It serves not only as a means of physical training but also as a crucial pathway for cultivating a healthy and resilient mindset.

3.1.3 Volleyball

Volleyball is a sport that integrates technical skills, teamwork, and rhythmic coordination. It

requires participants to closely collaborate with teammates, conveying information through both verbal and non-verbal means. This frequent communication effectively enhances adolescents' ability to express themselves. Communication plays a crucial role in the prevention and treatment of mental health issues. Through effective verbal and non-verbal interactions, individuals can express their inner feelings, receive emotional support, and improve their psychological well-being. During volleyball games, adolescents must communicate precisely with teammates about passing positions and offensive strategies while also reminding them of defensive positioning. This frequent interaction helps young players learn how to articulate their thoughts clearly and better understand others' intentions. Additionally, communication in volleyball can assist in alleviating psychological stress. In high-intensity, fast-paced matches, players encourage each other through communication, reducing mental burdens. By engaging in social interactions, adolescents gain emotional support, which helps ease psychological stress and mitigate the severity of mental health issues. Studies have shown that after a 10-week volleyball intervention, adolescents exhibited significant improvements in their overall psychological well-being ^[9]. Regular participation in volleyball not only enhances adolescents' physical fitness but also fosters social interaction, relieves negative emotions, and meets both their physical and psychological developmental needs.

3.2 Individual Ball Sports

Individual ball sports, such as badminton and table tennis, are forms of exercise that combine skills, strategy, and physical training, and have a significant positive impact on the psychological health of adolescents. Through engaging in individual ball sports, adolescents are able to continually challenge and push themselves. Achieving success through skill improvement and competition victories fosters a sense of accomplishment, thereby boosting their self-confidence and self-efficacy. This positive psychological experience not only helps adolescents make progress in their sports activities but can also transfer to other daily life situations, helping them better cope with challenges. Although individual ball sports primarily focus on personal skills, they offer adolescents the opportunity to independently face challenges, and this sense of achievement helps enhance their self-esteem and confidence. Additionally, while participating in these sports, adolescents can make like-minded friends, which not only contributes to their psychological well-being but also improves their social adaptability.

3.2.1 Badminton

Badminton is loved by the public for its unique features and charm. It has a low exercise load, high entertainment value, simple equipment and venue requirements, and does not require physical confrontation with opponents. This makes it highly attractive to teenagers, who are at a critical stage of physical development and psychological sensitivity. It is a sport suitable for people of all ages. Teenagers, being in their puberty, often face various psychological health issues such as anxiety, irritability, difficulty in socializing, and depression. Low-load exercise not only allows teenagers to feel relaxed and happy during physical activity but also helps improve the muscle health of those who are untrained. While engaging in badminton, teenagers can vent their frustrations and relieve negative emotions with each movement, swing, and hit. Particularly, after an intense and exciting badminton match, teenagers can release stress, cultivate their emotions, and experience the relaxation and joy brought by exercise, which promotes both physical and mental well-being. Furthermore, the process of participating in the sport requires concentration, which helps teenagers temporarily set aside academic pressures and other worries, thus achieving a relaxing effect. Research shows that teenagers who engage in badminton demonstrate lower levels of anxiety under academic stress, and the emotional regulation skills they develop through exercise

extend to their daily lives ^[10].

3.2.2 Table Tennis

Table tennis is a sport that combines skill and intelligence, and it is also one of the important ways to cultivate the comprehensive personality qualities of young people. It requires participants to have good physical fitness and technical skills, while also needing strong psychological resilience. Psychological resilience refers to the mental abilities related to "stress resistance," "strength," and "overcoming difficulties," which are psychological advantages that significantly impact training outcomes and competition results. Table tennis is a sport that demands high psychological resilience. Compared to other types of sports, table tennis does not involve physical conflict with teammates or opponents, nor does it provide a direct outlet for psychological pressure and dissatisfaction. At the same time, athletes must relieve various psychological pressures through self-regulation to ensure stable performance of their skills and techniques. During a match, players must make quick decisions, accurately control the racket and ball positions, and move swiftly. This demand for immediate responses and precise control greatly improves the concentration and reaction ability of young people, teaching them how to stay calm under pressure and how to face failure and setbacks. These are crucial for cultivating young people's stress resistance and psychological resilience. In addition, by regularly participating in table tennis, young people can make new friends. This social interaction helps reduce feelings of loneliness and fosters good interpersonal relationships, thus maintaining psychological well-being.[11]

4. Conclusion

Various common ball games play a positive role in cultivating the competitive spirit, teamwork awareness, communication skills, physical fitness, mental resilience, and personal development of young people. Whether it is a team-based or individual ball sport, participation in these activities can accelerate the secretion of endorphins in the body. The release of endorphins promotes feelings of happiness, which helps adolescents release negative emotions and significantly reduces symptoms of depression and anxiety, thereby improving their mental state and lowering the risk of psychological disorders.

The independence and low social interaction of individual ball sports help adolescents improve their focus and mental strength during solitary practice, contributing to the development of important psychological skills. In contrast, team-based ball sports, with their richness, complexity, and higher social interaction, provide more fun and stress relief, which better prevent and treat psychological disorders in adolescents. Therefore, in practice, it is important to select appropriate ball sports based on the individual differences and mental health needs of adolescents, or combine both types of sports, to more effectively improve their mental state. Additionally, the integration of sports and mental health education should be strengthened to raise awareness of the role of physical activity in promoting adolescent mental health, thus promoting the widespread application of ball sports in mental health interventions for young people.

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References

- [1] Hu Detong, Liu Jianjun. A Study on the Effects of Physical Exercise on Depression and Anxiety in College Students
- [J]. Journal of Shandong University of Education, 2011, 26 (01): 36-38

- [2] Wen Yang, Du Liping. The role of sports clubs in extracurricular sports activities [J]. *Journal of Southwest Jiaotong University (Social Sciences Edition)*, 2004, (02):38-40.
- [3] Zhao Qingxia. Reasons and educational strategies for adolescent psychological disorders [J]. *Educational Practice and Research (B)*, 2015, (05): 12-14. DOI: 10.14160/j.cnki. 13-1259/g4-b. 2015.05.004
- [4] Sun Liwei, Gao Zhiqiang. Research on the influencing factors of juvenile delinquency: from the perspective of parental upbringing and family environment [J]. *Law and Society*, 2018, (29):247-248. DOI:10.19387/j.cnki.1009-0592.2018.10.240.
- [5] Meng Qingpeng, Zhou Dana, Yang Lijuan, etc. The relationship between self-injury suicide behavior and family factors in adolescent patients with mood disorders [J]. *Neurological Disorders and Mental Health*, 2025, 25 (02): 116-122
- [6] He Yunling, Wang Dongxue, Zhang Yaowen, etc. The impact of peer relationships on loneliness in adolescents with mixed anxiety and depression disorders: a chain mediation effect analysis of sleep quality and psychological resilience [J]. *Neurological Disorders and Mental Health*, 2023, 23 (07): 497-503
- [7] Feng Qinghua. Research on the Impact of Basketball on the Psychological Health of Adolescents [J]. *Martial Arts Research*, 2022,7 (02): 154-156. DOI: 10.13293/j.cnki. wskx. 009417
- [8] Yuan Mingquan. Research on the Impact of Football on the Psychological Health of Adolescents [J]. *Sports Science and Technology Literature Bulletin*, 2019, 27 (07): 120-122. DOI: 10.19379/j.cnki. issn. 1005-0256.2019.07.051
- [9] Gu Wen. Research on the Impact of Volleyball on the Health, Physical Fitness, and Mental Health of Adolescents [J]. *Innovative Research on Ice and Snow Sports*, 2023, (08):179-181.
- [10] Wang Jun, Xie Xiang. Analysis of the intervention effect of different online sports programs on anxiety and depression in college students [J]. *Chinese School Health*, 2016, 37 (01): 93-95. DOI: 10.16835/j.cnki. 1000-9817.2016.01.028
- [11] Zhang Jiaqi, Zhang Shenda. Research on the Impact of Table Tennis on the Psychological Health Development of Adolescents under the Background of Sports Education Integration [C]//*Sports Social Sciences Branch of the Chinese Society of Sports Sciences. Proceedings of the 2024 National Sports Social Sciences Annual Conference (III) Henan University*; 2024:357-359.DOI:10.26914/c.cnkihy.2024.01094