

Logical Analysis of the Impact of University Physical Education Courses on the Mental Health of College Students

Bo Shi¹, Yan Yi^{1,*}, Chengwei Feng², Mohammed Abrar³

¹School of Physical Education, North East Normal University, Changchun, 130024, Jilin, China

²School of Engineering, Computer & Mathematical Sciences (ECMS), Auckland University of Technology, Auckland, 1010, New Zealand

³Faculty of Computer Studies, Arab Open University, P.O. Box 1596, Muscat, 122, Oman

*Corresponding author

Abstract: This paper aims to explore the impact of university physical education courses on the mental health of college students through logical analysis. With the intensification of social competition, college students are facing increasing psychological pressure, and mental health issues have become an important topic in higher education. As an important component of university education, physical education courses not only help enhance students' physical fitness, but also promote their mental health in various aspects. This article analyzes the multiple functions of physical education courses and explores how sports activities can help college students alleviate psychological distress and enhance their psychological resilience by regulating emotions, reducing stress, improving self-confidence, and promoting social interaction. At the same time, the paper emphasizes the key role of the scientific design of courses and the professional quality of teachers in promoting mental health, and proposes the necessity of establishing a comprehensive support system to ensure the sustained positive impact of physical education courses on the mental health of college students. Research has shown that university physical education courses not only enhance students' physical health, but also serve as an important pathway for mental health education.

Keywords: University Physical Education Courses, Mental Health, Emotional Regulation, Stress Relief, Course Design

1. Introduction

With the continuous development of society and the improvement of education level, college students have gradually become the backbone of social change and innovation. However, within this group, mental health issues are increasingly attracting attention. The multiple challenges faced by college students, such as academic pressure, employment pressure, and personal development confusion, often lead to psychological distress such as anxiety, depression, and loneliness. According to relevant surveys, an increasing number of college students are exhibiting varying degrees of mental health problems, which have a profound impact on their academic performance, social adaptability, and future development. Therefore, how to effectively alleviate these psychological troubles for college students and promote their mental health has become an urgent problem that educators and psychologists need to solve.

Sports, as an important means of promoting physical health, cannot be ignored in the university education system. More and more research shows that sports activities not only improve physical health, but also have significant positive effects on mental health. Physical education courses can effectively release stress, enhance confidence, and improve emotions through various forms of exercise and physical training, thereby promoting the mental health of college students. Especially among college students, physical education courses have gradually been recognized as an important way to help them regulate their psychological state and enhance their psychological resilience.

This paper aims to analyze in depth the impact of university physical education courses on the mental health of college students, and explore the underlying mechanisms and practical effects. By analyzing the positive effects of physical education courses on the mental health of college students, including reducing psychological pressure, improving emotional regulation, and enhancing social skills,

this study will reveal the unique value of physical education courses in promoting the physical and mental health of college students. Furthermore, this paper will explore the practical significance of physical education courses in college students' mental health education through a combination of theoretical analysis and empirical research, and propose effective course design and implementation suggestions, providing theoretical basis and practical guidance for college students' mental health education.

Therefore, studying the impact of university physical education courses on the mental health of college students has important academic value and practical significance. It not only helps optimize the educational environment for college students, but also promotes the comprehensive development of mental health education and the overall development of the college student population.

2. The current situation and challenges of college students' mental health

2.1 Common mental health problems among college students

There are various types of mental health problems among college students, and their manifestations vary due to individual differences and environmental factors. Common mental health issues include anxiety, depression, inferiority complex and self-identity problems, interpersonal relationship disorders, and sleep disorders. Anxiety disorder is the most common problem among college students, influenced by academic and employment pressures, as well as uncertainty in future development. Many students often feel nervous and anxious, especially during exams and job hunting stages, where anxiety is more severe. Depression is also on the rise among college students, with many experiencing sustained sadness, helplessness, and even extreme behaviors such as suicide due to separation from family and friends, difficulties in interpersonal relationships, or emotional setbacks. Self doubt and self-identity issues are also common, especially in the face of fiercely competitive academic and social environments. Many students doubt their abilities and values, and if not effectively guided, it may lead to a lack of self-identity, affecting their mental health and social adaptability. Interpersonal relationship barriers are also a common problem. After entering a new social environment, college students may face conflicts in culture, personality, and habits, leading to feelings of loneliness, social anxiety, and further exacerbating psychological pressure. Finally, due to the dual pressures of academic and personal life, sleep disorders are more common among college students. Long term sleep deprivation or poor quality can affect emotions, attention, and cognitive function, and even lead to serious physical and mental health problems.

2.2 Analysis of the causes of mental health problems

The formation of mental health problems among college students is closely related to various factors, including individual factors and external environmental influences [1]. Academic pressure is one of the main reasons, as college students often face heavy coursework, intense academic competition, and uncertainty in their future development. Especially during final exams and thesis writing, they are prone to anxiety and depression. The pressure of employment cannot be ignored. With the intensification of competition in the job market, many students feel uncertain about their future career plans and experience anxiety. Family factors also affect mental health, as disharmony in family relationships, economic difficulties, or parental alienation can all lead to psychological problems in students. Interpersonal difficulties are also common factors, and the complex social environment and emotional conflicts in college life may affect the emotions of some students. The pressure of society and environment, especially the value conflicts in the context of informatization and globalization, make college students feel uneasy and confused about the future. Finally, college students are in a transitional stage of life, facing confusion about self-development, goals, and planning, which can also lead to anxiety and psychological distress. Overall, the multiple pressures of academic, employment, family, interpersonal, social, and self-development work together to lead to the emergence of mental health problems among college students.

2.3 The impact of college students' mental health on overall development

The mental health issues of college students have a profound impact on their academic performance, social adaptation, career development, physical and mental health, and personal well-being. Firstly, mental health issues such as anxiety, depression, and stress directly affect learning efficiency and academic performance, which may lead to academic stagnation or dropout. Secondly, psychological

problems affect the social adaptation ability of college students, leading to difficulties in interpersonal relationships, poor emotional management, and weak conflict resolution skills, thereby reducing their sense of social integration and teamwork ability. Psychological health issues can also affect students' career development, reduce self-confidence, impact career goals and planning, and make them lack competitiveness in the job market. Furthermore, long-term psychological distress may lead to physical health problems such as weakened immunity and sleep disorders, forming a vicious cycle of psychological and physiological factors. Finally, the lack of good psychological regulation ability can make college students feel that life lacks meaning, affecting their sense of happiness and life satisfaction. Therefore, the mental health of college students is not only related to their academic performance, but also profoundly affects their overall development and future prospects. Education workers and society should pay attention to and take effective measures to help college students cope with these mental health challenges.

3. The impact mechanism of college physical education courses on the mental health of college students

3.1 Physiological mechanism: The biological basis of exercise on mental health

Sports activities promote physical health, which in turn affects mental health [2]. Exercise can regulate the function of the nervous system, increase the secretion of neurotransmitters such as endorphins, serotonin, and dopamine in the brain, which are closely related to emotion regulation and can effectively alleviate negative emotions such as anxiety and depression. Moderate physical exercise can lower levels of stress hormones such as cortisol, improve sleep quality, and enhance immune system function, thereby increasing the body's ability to cope with stress. In addition, sports activities can improve blood circulation and brain oxygen supply, enhance brain function, promote neuronal repair and regeneration, and provide biological support for mental health.

3.2 Psychological mechanism: The regulation of emotions and cognition by sports activities

Physical exercise can effectively regulate emotions and improve psychological states, especially in coping with stress, anxiety, and depression [3]. Regular exercise can help alleviate tense emotions, improve mood, and enable college students to maintain a relatively stable emotional state when facing academic pressure, life troubles, and other situations. Exercise can also enhance an individual's self-efficacy, increase self-confidence, and help college students develop a more positive self-awareness. In addition, sports activities can improve cognitive functions of the brain, such as attention, memory, and thinking ability, thereby enhancing learning outcomes and academic performance. Through exercise, students can develop the ability to set goals and complete tasks, enhance their confidence in problem-solving, which helps to improve their psychological resilience.

3.3 Social mechanisms: The promoting role of teamwork and interpersonal relationships

The team sports programs in university physical education courses, such as basketball, football, volleyball, etc., provide a good platform for cultivating teamwork spirit and enhancing interpersonal communication. In these activities, students not only need to collaborate with their teammates, but also learn to communicate, support and cooperate with each other. This experience of teamwork can help students develop positive social skills, reduce feelings of isolation, and enhance a sense of social belonging. Sports activities enhance interaction between people, promote friendship building among students, and improve interpersonal relationships. Through teamwork, students can also improve their ability to resolve conflicts and handle interpersonal relationships, cultivate good social adaptability, and further enhance their emotional management skills and mental health level.

In summary, university physical education courses have a positive impact on the mental health of college students through multiple aspects such as physiology, psychology, and society. It not only helps college students reduce stress and regulate emotions, but also enhances their cognitive and social skills, promoting the overall development of mental health. Therefore, college students should actively participate in physical exercise and utilize the multiple mechanisms of sports activities to improve their mental health level.

4. Suggestions for designing physical education courses to improve the mental health of college students

With the increasingly prominent mental health issues among college students, physical education courses have received more and more attention as an effective intervention for mental health. In order to better utilize physical education courses to improve the mental health of college students, course design needs to be tailored to their specific needs and adjusted in terms of course content, implementation methods, and support systems. The following are suggestions for designing physical education courses aimed at improving the mental health of college students.

4.1 Diversification and personalized design of course content

There are significant differences in the diversity of mental health issues and interests among college students. Therefore, the design of physical education courses should avoid singularity and proceduralization, and adopt diverse and personalized design strategies to meet the needs of different students and stimulate their interest in participation.

Diversification of course content. University physical education courses should include various forms of sports such as aerobic exercise, strength training, ball sports, yoga, meditation, etc. By choosing different forms of exercise, students can freely choose according to their interests and physical condition, thereby reducing the psychological burden caused by compulsive participation. In addition, the course content should also take into account the differences in gender, physical condition, and exercise experience among different students, providing corresponding difficulty and training intensity to ensure that each student can exercise and grow in a suitable environment for themselves.

Personalized design. With the development of sports psychology, the psychological benefits of exercise have been proven to have different impacts on individuals. Therefore, curriculum design should focus on personalization. For example, for students with emotional management issues, methods such as meditation and relaxation training can be introduced to help them alleviate anxiety and stress through deep relaxation. For students with social difficulties, team sports such as basketball and football can provide opportunities for social interaction, helping them improve their confidence and sense of belonging through interaction. Providing customized course content based on students' psychological state and needs will help improve their mental health more effectively.

4.2 Strengthen the integration of physical education curriculum and mental health education

The physical education curriculum itself has a strong psychological health effect, but if it can be combined with psychological health education, it will greatly enhance its promoting effect on students' mental health. Specifically, the integration of physical education curriculum and mental health education should be strengthened from the following aspects.

Integrate knowledge of mental health. In physical education courses, some psychological health education content can be added, such as emotion regulation skills, stress management methods, positive psychology principles, etc., to help students not only focus on physical health during exercise, but also improve their psychological quality. Through classroom lectures, video presentations, case studies, and other forms, students can better understand the importance of mental health and receive corresponding psychological support during exercise.

Combining psychological counseling with exercise. Provide students with specialized psychological counseling services and personalized psychological interventions in conjunction with physical education courses. Students can communicate with physical education teachers and psychological counselors to explore the psychological barriers they encounter during the exercise process, and adjust their sports attitudes and methods with the help of psychological counseling. In addition, teachers can help students understand how to improve their emotions and alleviate anxiety through exercise, thereby increasing their sense of identification and engagement in sports.

The improvement of the course evaluation mechanism. After the physical education course, teachers can collect students' psychological health feedback through questionnaire surveys, personal interviews, and other methods. Based on students' feedback, the course content and implementation methods can be adjusted in a timely manner to make the course more in line with students' psychological needs.

4.3 Support system in course implementation

Effective physical education curriculum design not only requires scientifically reasonable course content, but also a strong support system to ensure the implementation and effectiveness of the curriculum. The establishment of a support system can help students achieve long-term improvement in their mental health issues.

In terms of professional competence, physical education teachers should not only possess good sports skills and teaching abilities, but also have certain psychological knowledge, be able to identify students' psychological problems and provide corresponding assistance. During the implementation of the curriculum, teachers should pay attention to students' emotional fluctuations, adjust exercise intensity and course content in a timely manner, and help students regulate their psychological state through exercise. At the same time, teachers should have sufficient patience and communication skills, encourage students to actively seek help when encountering difficulties, and create an open and supportive environment.

Establish a mental health service system. Universities should provide sufficient mental health services in physical education courses, such as regular psychological counseling, lectures, emotional regulation training, etc., to provide students with comprehensive psychological support. Schools can set up specialized psychological counseling stations to provide psychological counseling in conjunction with sports activities, helping students better cope with stress and emotional distress.

In terms of family and social support. The participation of family and social support systems is also crucial. The mental health issues of college students are not only the responsibility of schools, but also require support from families and society. Parents can participate in students' sports activities, provide encouragement and support, and help students establish a positive attitude towards life. In addition, social organizations and communities can provide students with abundant sports activity resources and psychological health support, forming a comprehensive support system.

Regularly evaluate and establish feedback mechanisms. After the implementation of the curriculum, schools should conduct regular evaluations, collect students' feedback on the curriculum, understand their psychological changes, and adjust and optimize the curriculum. This feedback mechanism can help course designers identify problems in a timely manner, improve course content, and ensure that physical education courses can truly meet the psychological health needs of college students.

In summary, the design of physical education courses to improve the mental health of college students not only requires rich and diverse course content and personalized design, but also needs to strengthen the integration with mental health education and establish a strong support system. These measures will help fully leverage the promoting effect of physical education courses on the mental health of college students and provide them with a healthier and more positive college living environment.

5. Conclusion

Through logical analysis of the impact of university physical education courses on the mental health of college students, the following key conclusions can be drawn:

Firstly, as an important way of physical and mental interaction, sports activities not only have a positive impact on the physical health of college students, but also play a crucial role in their mental health. Physical education courses enhance students' physical fitness, help them relieve stress, release anxiety, and improve their emotional regulation abilities, thereby indirectly improving their mental health status. This indicates that college physical education courses are one of the effective means to improve the mental health of college students. Secondly, physical education courses provide effective opportunities for emotional regulation and social interaction for college students by enhancing their confidence, sense of belonging, and sense of achievement. Especially in collective sports and teamwork, it can help students overcome social barriers, establish healthier interpersonal relationships and self-identity, and further enhance their psychological resilience. In addition, the integration of personalized curriculum design and mental health education content enables physical education courses to better meet the needs of different students and address their mental health issues in a targeted manner. Again, the scientific nature of curriculum design and the professional quality of teachers are key factors for the success of physical education courses in promoting the mental health of college students. Personalized and diverse course content can ensure that students can achieve balanced

development both physically and mentally, while teachers' psychological literacy and care can provide timely psychological support for students, helping them identify and cope with psychological distress. Therefore, physical education teachers play a crucial role in curriculum implementation, requiring sufficient professional knowledge and communication skills to effectively guide students. Finally, establishing a comprehensive support system is crucial to ensure the effectiveness of physical education courses in improving the mental health of college students. Schools should conduct regular psychological health assessments and feedback mechanisms in conjunction with physical education courses to ensure that the curriculum content and implementation methods can be continuously optimized. At the same time, the support from families and society cannot be ignored, and the formation of a comprehensive and multi-level mental health support network will be more conducive to students' mental health development.

In summary, college physical education courses are not only a tool to enhance physical fitness, but also an important way to promote the mental health of college students. Through scientific curriculum design, professional guidance from teachers, and a comprehensive support system, university physical education courses can provide students with a positive psychological health promotion platform, thereby helping them maintain physical and mental balance and health in the increasingly stressful modern society.

References

- [1] Zhu X Y, Li L Q. *Research on the Causes and Countermeasures of College Students' Mental Health Problems [J]. Education and Teaching Forum*, 2025, (6): 9-12.
- [2] Guo L Y, Jiang H C. *Effectiveness of Using Sports Apps to Conduct Physical Exercise on the Psychological Health of College Students [J]. Sport Science and Technology*, 2025, (1): 63-65.
- [3] Wang X N, Wan Y, He Y M. *Research on Physical Exercise Engagement of College Students from the Perspective of Positive Psychology [J]. Journal of Nanjing Normal University(Natural Science Edition)*, 2021, (4): 140-148.