INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

OPEN ACCESS JOURNAL

Vol 14, Issue 2, (2025) E-ISSN: 2226-6348

The Role of Psychological Well-Being in Mediating the Impact of Physical Education on Physical Fitness among Vocational University Students in Nanchang, China

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To Link this Article: http://dx.doi.org/10.6007/IJARPED/v14-i2/25643 DOI:10.6007/IJARPED/v14-i2/25643

Published Online: 11 June 2025

Abstract

This study investigates the interconnected roles of physical education, psychological well-being, and physical fitness among vocational university students in Nanchang, China. With increasing concerns about sedentary lifestyles, poor physical health, and psychological distress among students, the research emphasizes a holistic approach to health by exploring how structured physical education programs and psychological wellness contribute to students' physical fitness levels. Utilizing Behavioral Learning Theory and Constructivist Learning Theory as theoretical foundations, the study posits that both environmental structure and individual experiences influence students' engagement in physical activity and perception of health. A quantitative research design will be employed, with data to be collected through structured questionnaires distributed to 400 students from two vocational universities in Nanchang. The study will utilize descriptive analysis, Pearson correlation, regression, and mediation analysis to assess the proposed relationships among the study variables. It is anticipated that the study will conclude with recommendations emphasizing the need for integrating psychological well-being strategies within physical education frameworks to foster holistic student development. Educational institutions will be encouraged to adopt comprehensive wellness policies, invest in physical education infrastructure, train educators in mental health awareness, and cultivate a campus culture that prioritizes physical activity and self-care. By addressing both physical and psychological dimensions of health, institutions will be better positioned to nurture resilient and healthier student communities. Future research should explore longitudinal effects and incorporate objective assessments of physical and psychological health to expand upon these insights.

Keywords: Physical Education, Psychological Well-Being, Physical Fitness, Vocational University Students, China

Introduction

In this context, the study observed the following aspects: Physical form manifests itself in poor weight control. With the improvement of living standards and social development, Vocational university students face the problem of obesity and overweight, which may be partly attributed to poor eating habits and lack of exercise (Wang et al., 2019). Physical functioning is manifested in decreased cardio respiratory fitness and decreased muscle strength. Lack of aerobic exercise workout leads to a decline in cardio respiratory function, and poor lifestyle habits such as staying up late lead to a decline in sleep quality among college students, which affects the overall level of physical fitness. The long time sitting, lack of exercise and excessive reliance on electronic devices and other factors lead to a general decline in the muscle strength of college students (Benden et al., 2021).

The decline in physical fitness among students, particularly Vocational University students in Nanchang, has profound implications for their academic performance and overall well-being. Poor physical fitness may manifest as an inability to concentrate during learning, decreased memory retention, and hindered cognitive abilities (Blodgett et al., 2023). These effects can impede students' learning outcomes and hinder their academic progress.

Poor living habits and poor physical fitness may lead to a range of lifestyle diseases such as obesity and diabetes (Beltrán-Carrillo et al., 2022). Thirdly, in terms of social adaptation, poor physical fitness may affect students' performance in social situations, making them feel low self-esteem and frustrated, thus affecting their communication and interaction with others. Students may lack the motivation and ability to participate in social activities due to physical unfitness, which affects their integration and adaptation in the society. Fourth, on the psychological front, poor physical fitness may lead to mood swings in students, increasing the risk of psychological problems such as anxiety and depression(Wu et al., 2020). Self-perception and self-esteem may be affected, making students doubt their own abilities and values and affecting their psychological well-being and self-confidence.

Therefore, college students' physical fitness problems do not only affect their physical fitness, but may also have multiple negative impacts on learning, life, social adaptation and psychology. At present, the state, society and schools have adopted a series of policies and measures to improve and enhance the physical fitness of college students (Wang et al., 2021). Research identifies shortcomings in the implementation of physical education practices within educational institutions, particularly in Nanchang (Zhong, Zhou & Zhu, 2021).While policies may exist mandating physical education, there are challenges in translating these policies into effective practices. Factors such as insufficient training for physical education teachers, limited access to sports facilities, and competing academic priorities often hinder the delivery of quality physical education programs (Xu et al., 2021). These shortcomings in practice impede efforts to improve student physical fitness levels and underscore the importance of addressing systemic barriers within educational settings.

The purpose of this research is to determine what factors influence the level of physical fitness among students at Nanchang, China's Vocational University. Aiming to promote the overall physical and psychological well-being of college students, this study will use the physical education and psychological well-being scale to understand the current situation of college students' physical education, fitness, and psychological well-being. It will also explore the

correlation between college students' physical education and the dimensions of their fitness and psychological well-being. Lastly, it will guide college students to develop good exercise habits and a lifelong awareness of physical education. The study's overarching goal is to help college students improve their physical and Psychological well-being by laying the groundwork for healthy exercise habits and a lifetime appreciation for sports. The main aim of the research is to study the influence of physical education on physical fitness of vocational university students in Nanchang, China: mediated by psychological well-being.

Literature Review

The intersection between psychological well-being and physical fitness among Vocational University students in China is a subject of considerable importance given its profound impact on student health and overall well-being. Psychological well-being, as defined by. Nishimi et al. (2021), encapsulates an individual's mental state and emotional health, incorporating elements such as emotional stability, resilience, life satisfaction, and positive affect. On the other hand, physical fitness, as outlined by Petersen et al. (2021), encompasses various aspects of bodily health, including Physical form、Physical function、Physical quality. The relationship between psychological well-being and physical fitness is multifaceted and dynamic. Students with higher levels of psychological well-being tend to exhibit better physical fitness outcomes, while those experiencing psychological distress may struggle with maintaining optimal physical fitness levels. This correlation can be attributed to several interconnected factors that influence both psychological and physical well-being.

Firstly, psychological factors such as stress management and resilience play a crucial role in shaping students' engagement in physical activity and exercise. Individuals with higher levels of resilience are better equipped to cope with stressors, both academic and personal, which can positively impact their motivation to participate in physical activities. Conversely, students experiencing high levels of stress or psychological distress may be more prone to sedentary behaviors and physical inactivity, leading to poorer physical fitness outcomes (Tan et al., 2020). Moreover, psychological attributes such as motivation, self-efficacy, and goal orientation contribute significantly to students' attitudes and behaviors towards physical activity. Students with positive psychological well-being are more likely to possess intrinsic motivation, belief in their abilities to succeed (self-efficacy), and goal-directed behaviors that promote regular physical activity participation. These psychological characteristics foster the maintenance of consistent exercise habits and overall physical fitness levels.

Furthermore, the relationship between psychological well-being and physical fitness is mediated by social factors such as social support and sense of belonging. Positive social relationships and a supportive social environment are associated with better psychological well-being and increased participation in physical activity among university students. Conversely, social isolation or lack of social support may contribute to feelings of loneliness, anxiety, or depression, which can hinder students' motivation and engagement in physical fitness activities.

The intricate interplay between psychological well-being and physical fitness underscores the importance of addressing both aspects holistically to promote student health and well-being effectively. Interventions aimed at improving psychological well-being, such as stress management programs and counseling services, can have positive spillover effects on

students' physical fitness outcomes (Luthans & Broad, 2022). Similarly, initiatives focused on promoting physical activity and exercise, including structured physical education programs and access to recreational facilities, can enhance psychological well-being by reducing stress, improving mood, and fostering social connections. By recognizing and addressing the reciprocal relationship between psychological well-being and physical fitness, educational institutions can support the holistic development and overall wellness of Vocational University students in China.

Research indicates a strong correlation between psychological well-being and physical fitness among university students. Students with higher levels of psychological well-being tend to exhibit better physical fitness outcomes, while those experiencing psychological distress or poor psychological well-being may struggle with maintaining optimal physical fitness levels (Herbert et al., 2020). This relationship can be attributed to various interconnected factors that influence both psychological and physical well-being.

One key aspect of the relationship is the role of stress management and resilience in promoting physical fitness. Psychological well-being encompasses emotional resilience, which refers to an individual's ability to adapt and cope with stressors effectively (Herbert et al., 2020). Students with higher levels of resilience are better equipped to handle academic pressures, personal challenges, and other stressors, which can positively impact their engagement in physical activity and adherence to exercise routines. Conversely, students experiencing high levels of stress or psychological distress may be more prone to sedentary behaviors and physical inactivity, leading to poorer physical fitness outcomes.

Moreover, psychological factors such as motivation, self-efficacy, and goal orientation play a crucial role in shaping students' attitudes and behaviors towards physical activity and exercise. Students with positive psychological well-being are more likely to have intrinsic motivation, belief in their abilities to succeed (self-efficacy), and goal-directed behaviors that promote regular physical activity participation (Sabouripour et al., 2021). These psychological attributes contribute to the maintenance of consistent exercise habits and overall physical fitness levels.

Furthermore, the relationship between psychological well-being and physical fitness is mediated by factors such as social support and a sense of belonging. Positive social relationships and a supportive social environment are associated with better psychological well-being and increased participation in physical activity among university students (Sabouripour et al., 2021). Conversely, social isolation or lack of social support may contribute to feelings of loneliness, anxiety, or depression, which can hinder students' motivation and engagement in physical fitness activities.

Additionally, the reciprocal relationship between psychological well-being and physical fitness highlights the importance of holistic approaches to student wellness. Addressing psychological well-being through interventions such as psychological well-being counseling, stress management programs, and mindfulness practices can have positive spillover effects on and students' physical fitness outcomes (Luthans & Broad, 2022). Similarly, promoting physical activity and exercise through structured physical education programs, extracurricular

sports, and access to recreational facilities can enhance students' psychological well-being by reducing stress, improving mood, and fostering social connections.

Thua, the relationship between psychological well-being and physical fitness among Vocational University students in China is multifaceted and interconnected. Positive psychological well-being is associated with better physical fitness outcomes, while psychological distress or poor psychological well-being may negatively impact physical fitness levels. Understanding and addressing the interplay between psychological and physical well-being are essential for promoting holistic student wellness and academic success. Interventions that target both psychological well-being and physical fitness can contribute to the overall health and well-being of Vocational University students in China.

Underpinning Theory

Behavioral Learning Theory

In the context of physical fitness, Behavioral Learning Theory brings attention to observable behaviors shaped by the environment. The structure, intensity, and accessibility of physical education classes, along with extracurricular activities and sports facilities, are vital components. This theory is pertinent to understanding how external factors influence students' behaviors, guiding our exploration of how well-designed classes and conducive environments contribute to improved cardio respiratory fitness and muscular strength. It allows us to pinpoint specific environmental elements that can positively impact student engagement in physical fitness activities.

Constructivist Learning Theory

The relevance of the Constructivist Learning Theory to this study lies in its focus on how students shape knowledge about physical education and fitness in an active manner (Neutzling et al., 2019). Within the realm of physical fitness, this theory highlights that students draw on their previous knowledge and experiences to actively integrate new information into what they already know. In this way, the conceptual framework follows what was designed to study how physical education variables were associated with Vocational University students' level of fitness. Knowing the ways students of construct knowledge in relation to physical well-being, especially through participation in physical education lessons and other extracurricular programs as well sports facilities is essential. This theory takes into consideration the uniqueness of each student's point of view as well as that it should be based on an individual experience. In the study, according to Constructivist Learning Theory students with their own different experience develop attitudes and behaviours about physical fitness which helps look at well-being from more complex approaches.

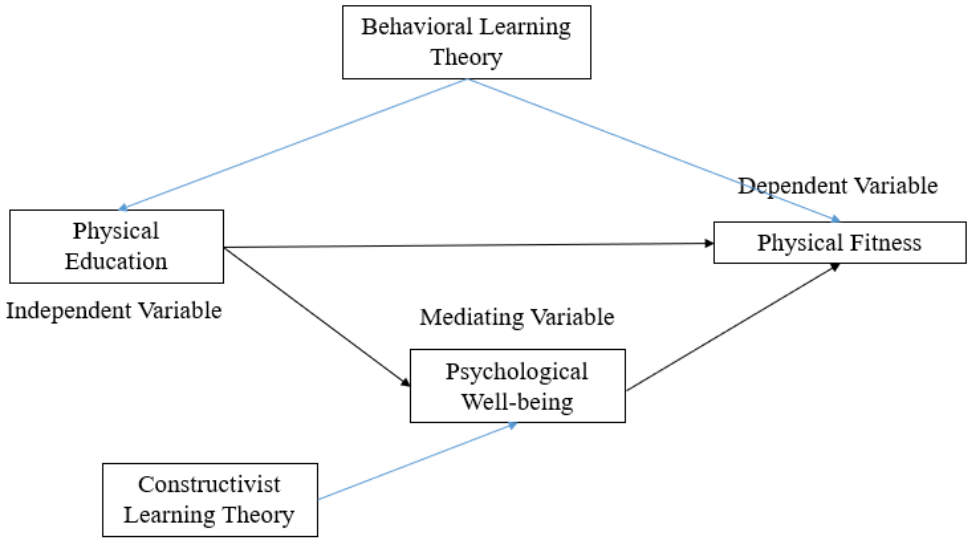

Figure 1: Theoretical Framework

The chosen theories, Behavioral Learning Theory and Constructivist Learning Theory, are highly relevant to this research as they offer complementary perspectives that enhance our understanding of the complex factors influencing physical fitness among Vocational University students in Nanchang, China.

Conceptual Framework

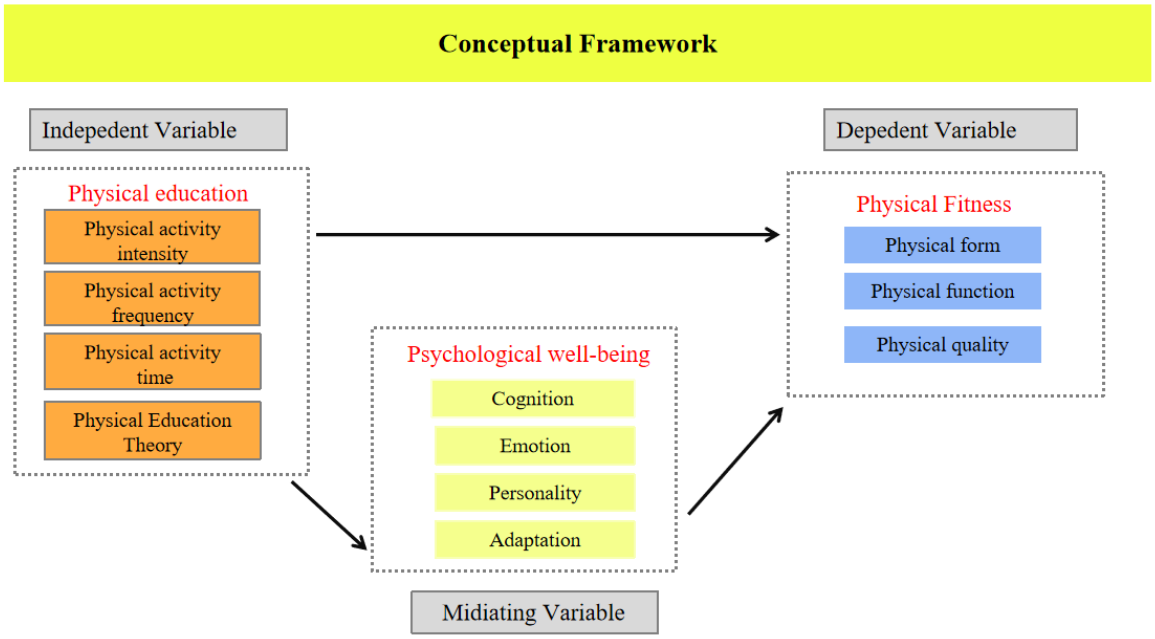

Figure 2: Conceptual Framework

Methodology

The study will utilize a quantitative research approach and survey method to analyze the relationship and influence among three variables: physical education, psychological well-being, and physical quality among students at Nanchang Vocational University. Quantitative research will be chosen for its ability to provide objective, standardized data.

In 2019, the Chinese Ministry of Education approved 15 vocational undergraduate schools (State Council, 2019). In Nanchang, there are two vocational universities: Jiangxi Software Vocational Technical University and Nanchang Vocational University. The student enrollment figures for the two universities will be retrieved from China's National Student Information Network. This study will plan to select 422 respondents from the two schools. The study will utilize simple random sampling with a final sample size of 400 Vocational University students in Nanchang, China. Probability sampling will be chosen for its ability to minimize bias and will ensure that every student has an equal chance of selection.

A survey method using a questionnaire will be selected as the main data collection tool. The questionnaire will provide standardized answers that will allow for easy comparisons and statistical analysis (Harris & Brown, 2019). In the data analysis phase, various statistical methods will be employed to systematically address the research objectives.

Research Objective (RO)	Analysis Method
RO1: To determine the learning of physical education, psychological well-being and physical fitness level of Vocational University students in Nanchang, China	Descriptive Analysis (mean, standard deviation)
RO2: To analysis the relationship among the learning of physical education, psychological well-being and physical fitness level of Vocational University students in Nanchang, China.	Pearson Correlational Analysis
RO3: To investigate the influence of physical education and psychological well-being on Vocational University students' physical fitness in Nanchang, China.	Regression Analysis
RO4: To assess the mediating influence of psychological well-being on the relationship between the learning of physical education and Vocational University students' physical fitness in Nanchang. China.	Mediation Analysis

This comprehensive approach ensures that each research objective is addressed using appropriate statistical methods, providing a robust foundation for drawing meaningful conclusions from the data.

Conclusion

The study is expected to reveal significant interconnections among physical education, psychological well-being, and physical fitness, underscoring the anticipated critical role of psychological well-being in enhancing the benefits of physical education on physical fitness. Psychological well-being is expected to emerge as a strong mediator, suggesting that students who maintain mental health will likely achieve better physical fitness outcomes. These findings will advocate for a holistic approach to student health that integrates psychological well-being services with physical education programs. Recommendations for practice will include developing comprehensive wellness programs, training educators to recognize and address psychological well-being issues, and fostering community partnerships to support student health. Future research should employ longitudinal designs, utilize objective measures, and investigate the specific mechanisms through which psychological well-being influences physical fitness. By addressing both physical and psychological well-being, educational institutions will be able to significantly enhance the overall well-being and

academic success of their students. This chapter will underscore the necessity of integrated health strategies in promoting a supportive and health-conscious educational environment.

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