

# Study on the Interaction Mechanism of College Students' Physical Exercise Persistence and Psychological Control Source

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**Abstract:** Physical exercise serves as a vital means to promote the physical and mental well-being of college students, with exercise persistence being the key to sustained effects. However, many students face challenges in maintaining exercise consistency. Psychological control source, defined as an individual's sense of control over their behavior, is a significant psychological factor influencing exercise persistence. This study explores the interactive mechanism between exercise persistence and psychological control source among college students, analyzing their impact on exercise continuity. The research indicates that balancing external and internal control sources is crucial for enhancing exercise persistence. By examining the mechanisms of different control sources, this paper proposes strategies to promote exercise persistence, aiming to help students develop healthier exercise habits and behavioral patterns.

**Keywords:** Physical exercise; Persistence; Psychological control source; College students; Behavioral pattern; Self-regulation

**Online publication:** December 20, 2025

## 1. Introduction

Physical exercise plays a vital role in promoting the physical and mental well-being of college students. However, the issue of exercise persistence remains a significant challenge among this demographic. While many students initially engage in physical activities with enthusiasm, their participation often declines over time, sometimes even ceasing entirely. As persistence is a key determinant of exercise effectiveness, maintaining and enhancing this long-term commitment has become a critical focus in physical education research.

Research indicates that psychological control sources are pivotal factors influencing college students' exercise adherence. These sources refer to an individual's sense of control over their behavior, comprising external control sources (e.g., external incentives, peer supervision) and internal control sources (e.g., self-motivation, intrinsic goals). The interplay between these sources and their impact on exercise adherence warrants further investigation. This study aims to analyze the interaction mechanism between exercise adherence and psychological control sources among college students, and to explore effective strategies for enhancing exercise adherence.

## **2. Literature review**

### **2.1. Research on the persistence of physical exercise**

Exercise persistence refers to an individual's sustained willingness and behavior to engage in physical activity over time. Liu Yiting et al. noted that exercise persistence is influenced not only by physiological factors but also by psychological ones. Psychological studies indicate that an individual's cognitive and emotional factors toward physical exercise significantly determine their persistence<sup>[1]</sup>. Therefore, exercise persistence is a multidimensional concept involving various factors such as motivation, behavioral habits, and social support.

### **2.2. The relationship between psychological control source and individual behavior**

Chen Jun posits that psychological control sources play a pivotal role in behavioral persistence<sup>[2]</sup>. External control sources (e.g., peer supervision and rewards) and internal control sources (e.g., self-motivation and self-discipline) interact to jointly determine an individual's behavioral persistence. External control sources provide initial motivation, while internal control sources help maintain behavior in the absence of external incentives. The persistence in physical exercise exemplifies this interaction between internal and external factors.

### **2.3. External control sources and exercise persistence**

Wang Meng found through research that external control sources influence physical exercise primarily through social support from the external environment and others<sup>[3]</sup>. For instance, coaching guidance, family encouragement, and companionship from friends can significantly boost college students' exercise participation. While external control sources provide substantial motivational support in the short term, individuals struggle to maintain exercise consistency in the long run without the support of intrinsic motivation.

### **2.4. Internal control sources and exercise persistence**

Cao Lin demonstrated that internal control mechanisms are pivotal for sustaining long-term physical exercise. Internal factors including self-motivation, self-discipline, and goal-setting enable individuals to maintain exercise motivation even in the absence of external incentives<sup>[4]</sup>. The Self-Determination Theory (SDT) posits that intrinsic motivation and autonomy form the basis of persistent behavior, with exercise adherence being a concrete manifestation of such motivation.

## **3. The interaction mechanism between persistence in physical exercise and psychological control sources among college students**

### **3.1. External control sources and exercise persistence**

External control sources significantly influence college students' exercise persistence. These sources provide essential support during initial phases, particularly when students face external challenges like academic pressure and time management. For example, coaching guidance and family encouragement help them overcome early difficulties and establish regular exercise routines. However, as exercise duration increases, the effectiveness of external control sources diminishes. Without the reinforcement of intrinsic motivation, students often discontinue exercise due to reduced external incentives.

### **3.2. Internal control sources and exercise persistence**

Internal control mechanisms are pivotal to sustaining physical exercise among college students. Establishing self-motivation and intrinsic goals enables them to maintain exercise motivation even without external support. For instance, setting specific fitness targets or deriving positive experiences like improved health and stress relief from exercise can significantly enhance their exercise persistence. Cultivating intrinsic motivation transforms physical activity from a mere

compliance requirement into a process of self-actualization.

### **3.3. Interaction between external and internal control sources**

The interplay between external control sources and internal control sources determines college students' exercise persistence. Initially, external control sources provide essential motivation and support to initiate physical activity. However, over time, their effectiveness diminishes. Without sustained internal control support, maintaining exercise habits becomes challenging. Thus, exercise persistence stems not just from external factors but from the combined influence of both. By enhancing self-motivation, intrinsic goal-setting, and self-discipline, students can sustain exercise momentum and habits even when external support wanes.

## **4. Strategies to enhance the persistence of physical exercise among college students**

### **4.1. Enhancing self-motivation and scientifically setting exercise goals**

Higher education institutions should fully utilize psychological education resources by offering systematic health psychology courses and specialized sports psychology lectures. These initiatives should thoroughly analyze the comprehensive benefits of physical exercise in improving mental states, regulating emotions, and enhancing physical health. This approach helps students develop a holistic understanding of the value of physical activity, thereby stimulating their intrinsic motivation to participate. Additionally, students should be guided to set specific, measurable, achievable, and time-bound short-term and long-term exercise goals tailored to their individual circumstances. Through phased feedback and goal adjustments, students can continuously accumulate a sense of accomplishment during the process of achieving their goals, further solidifying their exercise habits.

### **4.2. Establishing multi-dimensional social support and rational incentive mechanisms**

Universities can actively organize various group sports activities, such as morning exercise groups, sports clubs, and school-level competitions, to foster a positive sports culture and enhance the social and recreational aspects of physical exercise. Families should also play an active role by encouraging members to participate in sports together, thereby cultivating a positive family sports culture. Additionally, universities can implement incentive measures such as recognition systems, point-based rewards, and material and spiritual incentives. These external incentives can guide students to gradually develop stable exercise habits, which will eventually become voluntary actions through sustained participation.

### **4.3. Systematic cultivation of self-discipline and self-management capabilities**

Sustained physical activity requires strong self-discipline and effective self-management strategies. Universities can provide practical support through workshops on time management, self-monitoring techniques, and behavioral commitment agreements. These initiatives help students develop structured exercise routines, overcome laziness, and handle setbacks. By implementing tools like exercise tracking apps, check-in systems, and goal-tracking platforms, students can better track their progress and stay motivated. This approach enables them to maintain consistent exercise habits even without external supervision, ultimately fostering a sustainable healthy lifestyle.

## **5. Conclusion**

This study investigates the interaction mechanism between college students' exercise persistence and psychological control sources, analyzing how external and internal control sources jointly influence their exercise behaviors. The research demonstrates that external and internal control sources exert distinct effects on exercise persistence at different stages, with their equilibrium being crucial for sustaining exercise continuity. To enhance exercise persistence, universities should help students develop healthier exercise habits by strengthening self-motivation, providing social support, and implementing

incentive mechanisms.

## Disclosure statement

The author declares no conflict of interest.

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