

Differential Impact Pathways of Sports Types on College Students' Mental Health

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Abstract: This study employs qualitative research methods to systematically explore the mechanisms through which three types of sports—team competitive, individual competitive, and performance-aesthetic—affect college students' mental health. Based on positive psychology theory, social cognitive theory, and the dynamic model of psychological resilience, a dual-mediation theoretical model was constructed: “sports type → self-efficacy/psychological resilience → mental health.” The findings indicate: (1) team competitive sports exert benefits via social support pathways (“Team cooperation → Belongingness → Psychological resilience”) and role identity pathways (“Positional specialization → Role responsibility → self-efficacy”); (2) individual competitive sports function through skill refinement pathways (“Technical mastery → Competence confidence → self-efficacy”) and independent coping pathways (“Independent coping → Emotion regulation → Psychological resilience”); (3) performance-aesthetic sports impact through body awareness pathways (“Movement precision → Body control → self-efficacy”) and rhythm regulation pathways (“Rhythmic synchronization → Emotion regulation → Psychological resilience”). This study offers a systematic theoretical framework and practical guidance for implementing precision sports psychological interventions in higher education institutions.

1. Introduction

Contemporary college students face multiple challenges including academic competition, employment pressure, and social expectations, leading to a widespread and increasingly younger trend of mental health problems, with frequent psychological crises among this population. Research indicates global prevalence rates of depressive and anxiety symptoms among college students are 33.6% and 39.0%, respectively[1]. In China, the overall prevalence of depression among college students is 28.4%[2], with a suicidal ideation prevalence of 10.72%[3]. Physical exercise, as a multifaceted psychological intervention, has demonstrated considerable benefits[4]. However, existing studies show two major limitations: first, they largely emphasize the overall effects of exercise, neglecting the specificity of sports types; second, they lack integrative theoretical models explaining the mechanisms underlying different forms of exercise.

In response, this study proposes a three-level analytical framework—“exercise characteristics—psychological mechanisms—health benefits”—to investigate: (1) how different sports types influence mental health via differentiated pathways; (2) the mediating roles of self-efficacy and psychological resilience; and (3) the moderating effects of individual characteristics and environmental factors. The findings aim to guide curriculum reform and mental health education in universities.

2. Research Methods

2.1 Theoretical Analysis

This study adopts qualitative research methods, primarily through literature review and theoretical analysis, to explore the influence pathways of various sports activities on college students' mental health. The goal is to synthesize existing theoretical frameworks and empirical findings to construct a conceptual model elucidating the underlying psychological mechanisms.

2.2 Literature Search and Inclusion Criteria

Relevant literature was systematically retrieved from Chinese and international academic databases including CNKI, Web of Science, PubMed, and Google Scholar, focusing on publications from 2005 to 2024. Keywords included “college students,” “sports types,” “self-efficacy,” “psychological resilience,” “mental health,” “positive psychology,” and “sports psychology.” Inclusion criteria were:

- (1) studies primarily involving college student samples;
- (2) research focusing on the relationship between sports participation and mental health or positive psychological traits;
- (3) rigorous methodology with theoretically or practically meaningful conclusions;
- (4) priority given to high-quality empirical studies, theoretical models, and systematic reviews.

2.3 Classification of Sports

Drawing from sports psychology and kinesiology classifications, this study categorizes sports into three types: (1) team competitive sports, such as volleyball, basketball, and soccer; (2) individual competitive sports, including badminton, table tennis, and tennis; (3) performance-aesthetic sports, such as aerobics, martial arts routines, and sports dance. The subsequent analysis is based on these categories.

3. Mediation Model Based on Self-Efficacy and Psychological Resilience

This study constructs a theoretical mediation model elucidating how different sports types influence college students' mental health through the mediators of self-efficacy and psychological resilience, grounded in positive psychology theory, Bandura's social cognitive theory, and the dynamic model of psychological resilience.

3.1 Theoretical Foundations

The model is founded on:

- (1) Positive Psychology Theory, emphasizing cultivation of individual positive psychological traits and strengths to enhance subjective well-being and mental health[5];
- (2) Social Cognitive Theory, highlighting the central role of self-efficacy in behavior regulation

and psychological adaptation[6];

(3) Dynamic Model of Psychological Resilience, revealing the protective mechanisms of resilience under stress[7].

3.2 Model Components

The model comprises three hierarchical variable structures:

(1) Independent variables: sports types—team competitive, individual competitive, and performance-aesthetic—each characterized by distinct exercise features and psychological stimuli;

(2) Mediators: self-efficacy (including beliefs in athletic ability, goal persistence, and confidence in overcoming setbacks) and psychological resilience (covering emotion regulation efficacy, stress adaptation capacity, and benefits gained from adversity);

(3) Dependent variable: mental health level.

3.3 Moderating Variables

The model incorporates moderators such as:

(1) Individual characteristics, including gender and personality traits;

(2) Exercise characteristics, such as intensity and participation frequency;

(3) Environmental factors, including instructor guidance and peer interaction.

3.4 Theoretical Contributions

This model systematically integrates the dual mediating roles of self-efficacy and psychological resilience, clarifies differential influence pathways for different sports types, and provides a comprehensive theoretical framework for future empirical research.

4. Differential Influence Pathways Based on Sports Types and Mediators

4.1 Team Competitive Sports

Using volleyball as an example, team competitive sports promote psychological development through two main pathways, as shown in Figure 1.

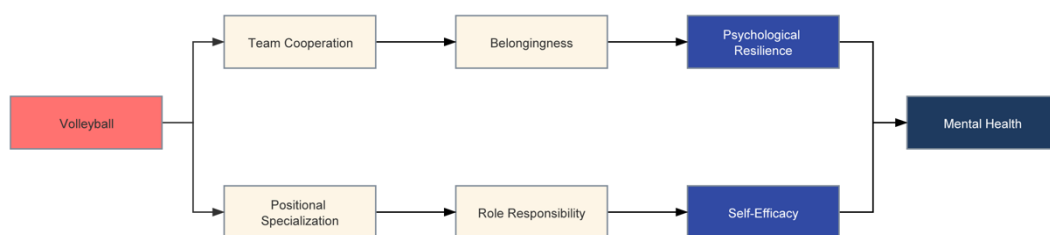


Figure 1. Theoretical Model of Psychological Influence Pathways in Team Competitive Sports (Using Volleyball as an Example)

Social Support Pathway: The unique rules, such as prohibiting consecutive hits by the same player, enforce functional interdependence. During rapid offense-defense transitions, precise coordination is necessary for scoring, fostering strong team belonging and collective identity, thereby systematically enhancing psychological resilience.

Role Identity Pathway: Clear positional divisions—such as attacker, setter, libero—create differentiated responsibility domains. Each position demands specific skills and tactical functions,

internalized through role practice into the self-concept, significantly boosting self-efficacy.

Volleyball’s “high pressure, low risk” characteristic—non-contact confrontation providing sufficient psychological challenge while avoiding violent conflicts that might damage cohesion—makes it an ideal platform for fostering team identity and personal growth.

4.2 Individual Competitive Sports

Taking badminton as an example, individual competitive sports influence psychological development via two core pathways, as shown in Figure 2.

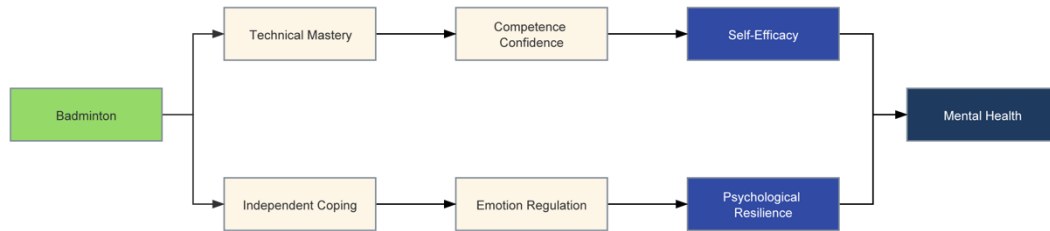


Figure 2. Theoretical Model of Psychological Influence Pathways in Individual Competitive Sports (Using Badminton as an Example)

Skill Refinement Pathway: The sport’s technical and tactical precision demands continual practice, enabling observable skill progression that directly reinforces confidence in athletic ability and thereby self-efficacy.

Independent Coping Pathway: The solo nature of singles badminton requires players to manage all in-game situations independently. Rapid attack-defense shifts necessitate immediate emotional self-regulation after mistakes, with repeated independent decision-making strengthening psychological resilience.

Badminton uniquely combines controllable skill development with challenging competitive scenarios, creating a dual mechanism of capacity building and stress adaptation ideal for cultivating individual psychological qualities.

4.3 Performance-Aesthetic Sports

Using aerobics as an example, performance-aesthetic sports promote psychological growth via two main pathways, as shown in Figure 3.

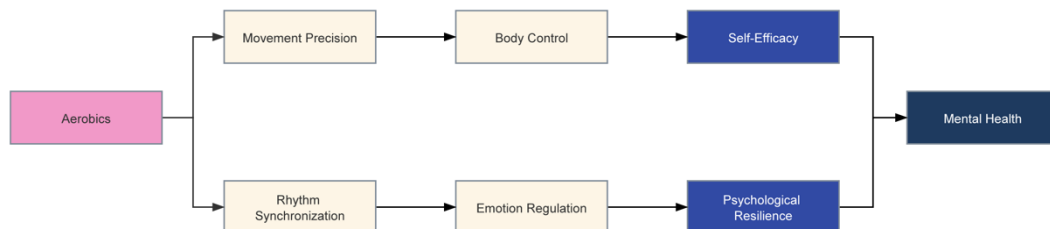


Figure 3. Theoretical Model of Psychological Influence Pathways in Performance-Aesthetic Sports (Using Aerobics as an Example)

Body Awareness Pathway: Precise choreography demands continual enhancement of bodily coordination, with standardized movements fostering a tangible sense of bodily control and thus enhancing self-efficacy.

Rhythm Regulation Pathway: Synchronizing movements with music rhythms facilitates emotion

regulation: fast segments boost energy, slow segments cultivate focus. Prolonged training establishes stable emotional regulation patterns, significantly strengthening psychological resilience.

The integration of body control and artistic expression in aerobics provides measurable skill advancement and rich emotional experiences, serving as an effective medium for holistic physical-psychological development.

5. Conclusion

Different sports types exert positive effects on college students' mental health through distinct pathways. Team competitive sports mainly operate via social support and role identity mechanisms; individual competitive sports emphasize capacity development and independent coping; performance-aesthetic sports rely on body awareness and rhythm regulation pathways. Self-efficacy and psychological resilience serve as key mediators in these processes, with specific mechanisms varying by sports type. The theoretical model proposed herein offers a systematic framework for understanding the psychological benefits of sports and provides a foundation for targeted intervention strategies. Universities are encouraged to design sport-based psychological intervention programs aligned with students' psychological development and needs, thereby promoting the integrated development of physical education and mental health education.

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