

Influence of Family Sports Atmosphere on College Students' Exercise Behavior

——The Mediating Role of Self-efficacy

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Abstract: Based on the theoretical model of social ecology, self-determination theory, and field dynamics theory, in order to explore the influence of family sports atmosphere on college students' exercise behavior and the mediating role of self-efficacy in it, 120 college students were investigated by using family sports atmosphere scale, self-efficacy scale and physical exercise behavior scale. Using SPSS and Amos mathematical statistics tools to analyze the reliability, validity and correlation of the survey results, and establish a structural model. The final results show that: (1) family sports atmosphere has a positive impact on college students' exercise behavior and self-efficacy; (2) self-efficacy can't significantly positively affect college students' exercise behavior. The family sports atmosphere can directly affect the exercise behavior of college students, but it cannot affect it through the intermediary mechanism of self-efficacy. This study helps to understand the mechanism of family sports atmosphere on college students' exercise behavior, and provides a new path for strengthening college students' exercise behavior.

Keywords: family sports atmosphere, college student, exercise behavior, self-efficacy

1. Introduction

The poor physical health of college students has become an urgent problem to be solved in our country. As of 2020, the Ministry of Education released physical health sampling data for 1.15 million students at all levels and types of schools, showing that the “failure rate” of college students' physical health is as high as 30%, and the phenomenon of “sudden death in campus sports” among college students sometimes occurs. College students in the new era are the pillars of the country's future, and their physical health is related to the country's century-old plan for prosperity, which has aroused great attention from the country and society [1]. A series of initiatives such as the “National Sunshine Sports for Hundreds of Millions of Students” by the Ministry of Education of China aim to encourage and urge young people to go outdoors to actively participate in physical exercise and form good exercise habits. However, in colleges and universities, there are still some students who are resistant to physical exercise activities. A considerable number of college students tend to gradually reduce the number of exercises under non-mandatory requirements or even give up physical exercise completely [2]. Many researchers have studied the benefits of physical exercise.

At the physical level, studies have shown that physical exercise can prevent and treat cardiovascular diseases, obesity and other diseases. At the psychological level, there are studies. It has shown that physical exercise can improve depression, anxiety and other mental diseases. To sum up, the physical and psychological health problems of contemporary college students have become increasingly serious. At the same time, studies have shown that physical exercise has an important positive effect on promoting physical and mental health. Therefore, cultivating and developing exercise behaviors may become an important way to improve the physical and psychological health of contemporary college students.

In previous studies, researchers have elaborated on the generation of exercise behavior from the individual level and the social level. At the individual level, Sallis [3] pointed out that self-efficacy is a variable most closely related to physical exercise behavior. Studies of exercise interventions by adding a modulating component of self-efficacy have been successful. Self-efficacy refers to the individual's level of belief and confidence in his or her ability to successfully complete a specific task or achieve a specific goal. In his research, Fu pointed out that the attitude towards physical exercise is an essential psychological factor for individuals to persist in participating in sports activities, and the attitude of college students to physical exercise has a positive impact on their physical health [4]. In addition to exercise attitude factors, exercise cognition plays an essential role in the generation of sports behavior, and there are also restrictive factors between exercise cognition and exercise behavior [5]. Zhang pointed out that the cognitive ability of Chinese adolescents is positively correlated with their physical activity level. At the social level, Birchwood et al. explored the family's factors affecting children's exercise behavior from the individual's "career perspective", and pointed out that the imbalance affecting physical activity behavior was formed before the individual was 16 years old, and the differences in exercise behavior were mainly attributed to. Because the individual's environment and experience before the age of 16, especially the influence of the family environment on the tendency to exercise behavior is a crucial factor, and it has a continuous effect. Dowda et al. analyzed the participation of 4,152 American youths in moderate-to-high-intensity physical activity and found that there was a significant positive correlation between peer support and moderate-to-high-intensity physical activity. Keating [6] found in an empirical study that social support has an impact on college students' moderate-to-high-intensity physical exercise and total physical exercise, and that friends' support has a more significant impact on high-intensity physical exercise than family support.

However, some studies have pointed out that intervening in the exercise behavior of college students at the individual level will result in low intervention efficiency and a lack of long-term effects. Therefore, this paper considers what factors will affect college students' exercise behavior from the social level and the impact mechanism. However, it can be found from previous studies that researchers attribute the reduction of adolescents' exercise behaviors too much to school physical education while ignoring the importance of families in cultivating adolescents' exercise behaviors. To sum up, starting from the social level, this study selects the family sports atmosphere as an antecedent variable that affects college students' exercise behavior, and explores the relationship between the two and the mechanism of action, aiming to provide a theoretical basis for promoting college students' physical health and frequency of participation in sports.

2. Research Hypothesis

2.1. The Relationship Between Family Sports Atmosphere and Exercise Behavior

The theoretical model of social ecology proposed by Bronfenbrenner, which takes all environments, such as family, economy, society, and politics, as part of the process of human development. His ecological theory emphasizes the interaction between people and the environment [7]. In this

theoretical model, the family, as one of the very important environments in the growth of children, has a great influence on children. The values, words and deeds, occupations, and educational levels of parents and other family members all have a direct or indirect impact on children's behavior. Therefore, based on this theory, this paper believes that the family sports atmosphere may affect the generation of college students' physical exercise behavior. At the same time, there are also empirical studies in related fields pointing out that the exercise atmosphere can not only directly affect college students' leisure time physical exercise, but also indirectly affect college students' leisure time physical exercise by acting on the individual's subjective experience [8]. In addition to the usual variables, Campus atmosphere is a promoting factor for adolescents to participate in physical exercise, mobile phone dependence is a restrictive factor for adolescents to engage in physical exercise, and campus atmosphere can alleviate adolescents' tendency to rely on mobile phones, thereby promoting their physical exercise [9]. Based on the above theoretical model and empirical research, it is proposed that H1: family sports atmosphere will affect college students' exercise behavior.

2.2. The Relationship Between Family Sports Atmosphere and Self-efficacy

Self-determination theory (SDT) believes that people have three basic psychological needs: autonomy, competence, and relatedness. When these three psychological needs are met, individuals are more likely to experience intrinsic motivation, and when these needs are missing, the individual will feel frustrated and anxious, and lack motivation to strive. At the same time, when an individual is in a relatively good family environment, his three basic psychological needs can be better satisfied. At this time, the individual can perceive inner self-efficacy to the greatest extent. Some researchers have also confirmed this point of view in related fields. In the field of management, some scholars have found that an organizational innovation atmosphere can positively affect employees' innovative self-efficacy. In the field of psychology, in the process of studying the influence of the family environment on the helping behavior of junior high school students, the researchers found that the family environment can affect the generation of helping behavior by affecting self-efficacy. Based on the above theories and empirical research, it is proposed that H2: family sports atmosphere will affect self-efficacy.

2.3. The Relationship Between Self-efficacy and Exercise Behavior

Lewin's field dynamics theory believes that individual behavior and experience are determined by a variety of interacting forces and places, which can be internal psychological factors or external social environmental factors. He believes that the individual is an inseparable whole from the environment, and behavior is determined by the interaction between the individual and the environment. Self-efficacy can be understood as an internal psychological factor of an individual, so according to this theory, self-efficacy may affect individual behavior. Some researchers have found that social support can affect exercise activities by affecting self-efficacy, and studies have shown that self-efficacy can promote the transformation of physical exercise from intention to action. In the case of high self-efficacy, individuals tend to be more inclined to put the exercise of thinking into practice. Based on the above theories and research, H3 is proposed: self-efficacy may affect exercise behavior.

To sum up from the relationship among family sports atmosphere, self-efficacy and exercise behavior, this study proposes the following three hypotheses:

H1: Family sports atmosphere will affect college students' exercise behavior.

H2: Family sports atmosphere will affect self-efficacy.

H3: Self-efficacy will affect exercise behavior.

The research hypothesis model is shown in Figure 1.

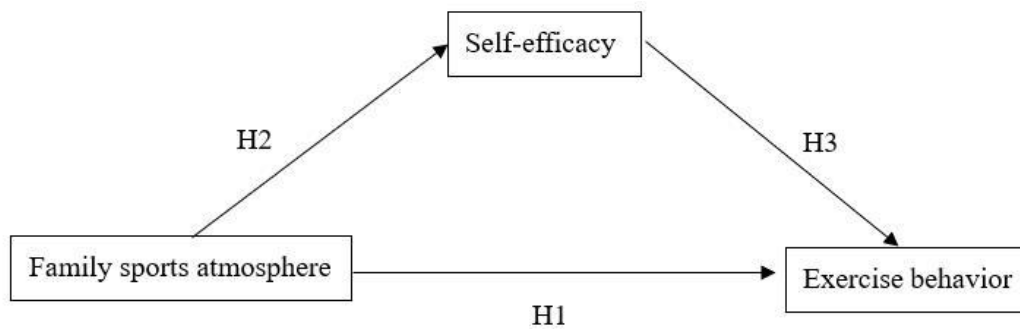


Figure 1: Model Assumption.

3. Objectives and Methods

3.1. Objects

Using the Simple sampling method and the “ Wenjuanxing ”(WJX) platform, 120 questionnaires were distributed to college students nationwide, and 117 valid questionnaires were collected, with a recovery effectiveness rate of 97.5%.

3.2. Methods

3.2.1. Family Sports Atmosphere Scale

The family sports atmosphere scale used in the study refers to the family sports support scale published by Chen in the Report on the Development of Sports and Fitness for Children and Adolescents in China [10]. The scale has undergone strict reliability and validity testing and has been extensively tested in the Chinese environment (Cronbach’s $\alpha=0.82$).

3.2.2. Exercise Behavior Scale

The exercise behavior scale used in the research adopts Chen College Students’ Physical Exercise Questionnaire [11]. There are five questions in the questionnaire, and the questionnaire involves the items, time, frequency, and persistence of training that students participate in every time they participate in exercise (Cronbach’s $\alpha=0.70$).

3.2.3. Self-efficacy Scale

The scale used in the study (Cronbach’s $\alpha=0.88$) was from the Exercise Self-Efficacy Scale developed by Resnick et al.

3.3. Statistical Analysis

Questionnaires are distributed online. The consent of the subjects was obtained before the questionnaire was distributed, and the precautions were explained in advance, and the collected data were analyzed by SPSS and Amos.

4. Results

4.1. Descriptive Analysis of Each Variable and Its Correlation Analysis

Descriptive statistics and correlation analysis were carried out for each variable data. The results showed that the family sports atmosphere was significantly positively correlated with exercise behavior and self-efficacy; self-efficacy was significantly positively correlated with exercise behavior. The results are shown in Table 1.

Table 1: Correlation analysis of family sports atmosphere, exercise behavior, and self-efficacy. (n=117).

	M±SD	1	2	3
1. Family sports atmosphere	3.92±0.55	-		
2. Exercise behavior	7.89±1.54	0.498**	-	
3. Self-Efficacy	3.26±0.60	0.538**	0.338**	-

*p<0.05, **p<0.01, ***p<0.001, the same below.

4.2. The Mediating Role of Self-efficacy

Amos 24.0 is used to analyze and test the mediation effect of self-efficacy in the relationship between family sports atmosphere and exercise behavior based on Bootstrap. The structural equation model of family sports climate, self-efficacy, and exercise behavior is shown in Figure 2. The fitting degree of the measurement model and the actual data is analyzed, and the results show that the fitting index of the model is good, $\chi^2/df=1.149$, CFI=0.968, TLI=0.962, IFI=0.969, RMSEA=0.036, when CFI>0.9, TLI>0.9, RMSEA<0.05 indicates that the model fit is good. all within the acceptable range, indicating a good fit of the model. The model shows that family sports atmosphere has a significant positive predictive effect on self-efficacy and exercise behavior ($\beta=0.63$, $p<0.001$; $\beta=0.74$, $p<0.001$); but self-efficacy has no significant effect on exercise behavior ($p>0.05$). Further, use the Bootstrap method (5000 times of repeated sampling) to test the mediation effect and calculate the 95% confidence interval. If the 95% CI of the standardized path coefficient does not contain 0, the mediation effect is significant; if the 95% CI contains 0, the mediation effect is not significant. The 95% CI of the mediating effect of family sports atmosphere on exercise behavior through self-efficacy is [-0.32, 0.21], including 0, indicating that the mediating effect is not significant. The mediating effect path “family sports atmosphere → self-efficacy → exercise behavior” is not established.

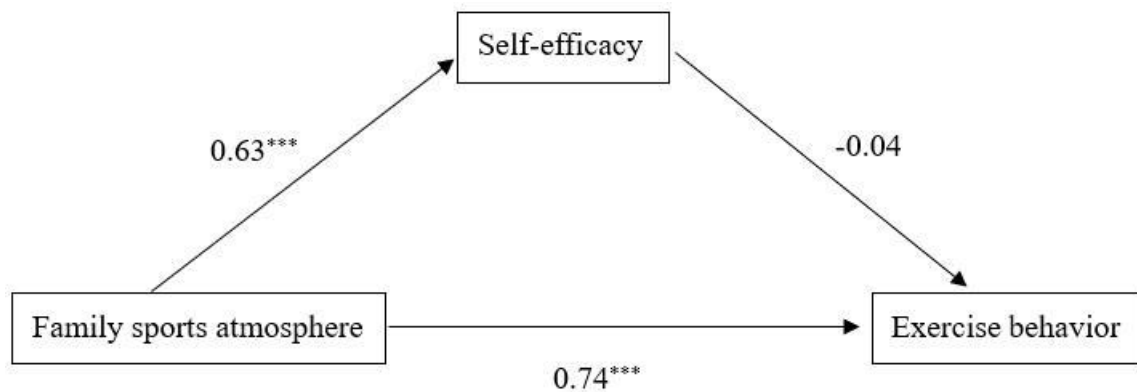


Figure 2: Model Roadmap.

5. Discussions

5.1. Effect of Family Sports Atmosphere on Exercise Behavior

The research results support H1, that is, the family sports atmosphere can positively affect exercise behavior, which confirms the social ecological model. The influence of family sports atmosphere on individuals will last from childhood to adulthood, and this influence will continue to deepen over time and then affect the exercise behavior of college students. From the perspective of the motivation of exercise behavior, parental support as part of the family sports atmosphere can not only enable children to participate in physical activities, but, more importantly, it can stimulate and cultivate children's motivation to participate in exercise. During the socialization process of adolescents, parents are important others who are role models for children to learn from. Parents are not only role models for children's behavioral learning but also interpreters of children's experience in the learning process. From the perspective of the physical conditions of family sports, good sports facilities can enhance the autonomous motivation of adolescents' exercise behavior and positively affect the time to participate in physical activities. When the family environment provides adolescents with optional exercise locations and exercise equipment and meets the needs of adolescents' autonomy, the persistence of exercise behavior will increase.

5.2. The Mediating Role of Exercising Self-efficacy

The research results support H2, but not H3, that is, family sports atmosphere can positively affect self-efficacy, but self-efficacy cannot significantly affect exercise behavior, that is, the mediating effect of self-efficacy is not established. According to the human-situation interaction theory, remote environmental factors can further affect individual behavior through proximal individual factors, that is, the family sports atmosphere as a remote environmental factor will further affect individual behavior through certain individual psychological or other factors. The emergence of exercise behavior. However, the results of this study do not fully support this theory. In the results of this paper, family sports atmosphere can affect self-efficacy, but self-efficacy does not significantly affect exercise behavior. That is to say, it is relatively easy for external environmental factors to affect psychological factors, but from the perspective of psychological factors, the process of transforming from psychological expectations to practice will be hindered by a series of factors, leading to psychological problems. Presuppositions don't work well in practice. Therefore, the family sports atmosphere can enhance the body's confidence in physical exercise, but this

confidence will be difficult to transform into actual exercise behavior due to obstacles such as the environment and weather.

6. Conclusions

Family sports atmosphere can promote the exercise behavior of college students and enhance self-efficacy, but the effect of self-efficacy on exercise behavior is not significant. Specifically, the mediating effect of self-efficacy in the influence of family sports atmosphere on exercise behavior is not significant. Not significant. At the same time, this study has certain limitations. First, due to the small number of samples in this study, the lack of samples may lead to inaccurate experimental data. Secondly, this study is aimed at the study of family sports atmosphere, without a detailed classification of family sports atmosphere, but a rough study of the impact of family sports atmosphere on sports behavior. Finally, the mediating effect of self-efficacy was not significant. In future research, other variables can be added as intermediary variables to continue to explore the mechanism of family sports atmosphere on sports behavior.

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