

The Impact of Coach Leadership Behavior on Secondary School Volleyball Players' Social-Emotional Competence - The Mediating Role of Team Cohesion

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Abstract: Using the methods of literature review, questionnaire survey, and mathematical statistics, this study takes secondary school volleyball players as the research object to explore the relationship between coach leadership behavior and social-emotional competence, and to test the mediating role of team cohesion between them. The results show that: coach leadership behavior is significantly positively correlated with both social-emotional competence and team cohesion, among which democratic leadership behavior has a particularly obvious promoting effect on social-emotional competence; there is also a significant positive correlation between team cohesion and social-emotional competence. Mediation effect analysis shows that team cohesion plays a complete mediating role between coach leadership behavior and social-emotional competence, that is, coach leadership behavior mainly enhances athletes' social-emotional competence indirectly by improving team cohesion. Based on this, it is suggested that coaches should attach importance to the application of democratic leadership in training and strive to cultivate team cohesion to promote the comprehensive improvement of athletes' social-emotional competence.

Keywords: Coach Leadership Behavior; Team Cohesion; Social-Emotional Competence; Mediating Role

1. Introduction

In 2020, China issued the "Opinions on Deepening the Integration of Sports and Education to Promote the Healthy Development of Adolescents", which clearly proposed that sports should return to the essence of education, emphasizing the realization of the goal of

"educating people through sports" by optimizing resource allocation, strengthening teachers' strength, and innovating the curriculum system [1]. This marks the transformation of China's education policy, emphasizing the equal importance of quality education and students' mental health.

However, in the current educational environment, especially in the secondary school stage, the subject-centered educational model and the pressure of further education lead students to pay more attention to academic performance, and the cultivation of social-emotional competence is often neglected. The "Opinions on Deepening the Reform of Education and Teaching to Comprehensively Improve the Quality of Compulsory Education" points out that China's education development should "adhere to the simultaneous development of moral, intellectual, physical, aesthetic, and labor education, and comprehensively develop quality education" [2]. But in practice, many schools and parents do not attach enough importance to physical education, and the cultivation of social-emotional competence has not been included in educational goals. This cognitive bias has led to a single educational evaluation system that overemphasizes students' academic performance while ignoring the cultivation of non-cognitive abilities, especially the development of social-emotional competence [3].

In recent years, the number of adolescents with mental health problems has increased significantly worldwide, mainly manifested in cognitive, emotional, and behavioral aspects, such as cognitive distortion, emotional instability, insufficient pressure resistance, and social withdrawal [3]. This reflects the lack of cultivation of adolescents' social-emotional competence, especially the cultivation of social-emotional competence in sports activities is still in its initial stage. Schools and parents generally

regard physical education as a "secondary subject", ignoring its important role in cultivating students' emotional and social skills. At the same time, existing sports training mainly focuses on techniques and tactics, lacking systematic training for athletes' social-emotional competence.

Team cohesion is a key factor affecting athletes' social-emotional competence. Teams with high cohesion can effectively alleviate external pressure, promote emotional communication and cooperation among team members, and thus improve athletes' social-emotional competence [4]. This study focuses on volleyball, exploring the relationship between coach leadership behavior, team cohesion, and social-emotional competence, and investigating the mediating role of team cohesion between coach leadership behavior and social-emotional competence.

Based on the aforementioned theoretical background and the research results of relevant literature, this study puts forward the following hypotheses:

Hypothesis H1: Coach leadership behavior can significantly predict the social-emotional competence of secondary school volleyball players.

This hypothesis is based on the positive impact of coach leadership behavior on athletes' emotional regulation, social skills, and decision-making abilities. Especially under democratic leadership behavior, athletes' social-emotional competence can be significantly improved.

Hypothesis H2: Team cohesion plays a mediating role between coach leadership behavior and social-emotional competence.

This hypothesis is derived from the view that team cohesion is an important influencing factor of athletes' social-emotional competence. Team cohesion can indirectly improve athletes' social-emotional competence by enhancing trust and cooperation among team members.

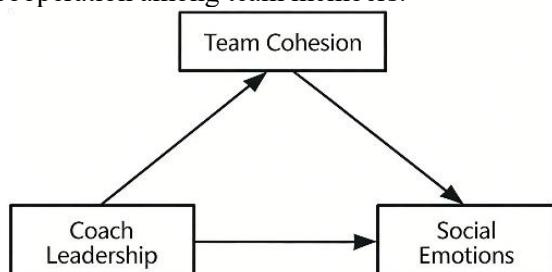


Figure 1. The Mediating Effect Model of Team Cohesion between Coach Leadership Behavior and Social-Emotional Competence

2. Research Objects and Methods

2.1 Research Objects

The research objects of this study are members of secondary school volleyball teams. To ensure the representativeness and comprehensiveness of the sample, a convenient sampling method was adopted, and 332 athletes were selected from secondary school volleyball teams in Hubei Province, Henan Province, Jiangxi Province, and other places as the research objects. All subjects obtained informed consent before participating in the study, and the questionnaire filling process ensured voluntariness and anonymity, in line with ethical requirements.

2.2 Research Methods

2.2.1 Questionnaire Survey Method

The questionnaire designed in this study includes three parts: the Coach Leadership Behavior Scale, the Team Cohesion Scale, and the Social-Emotional Competence Scale, which are used to measure coach leadership behavior, team cohesion, and athletes' social-emotional competence.

2.2.1.1 Coach Leadership Behavior Scale

This study adopts the "Coach Leadership Style Scale" revised by Yang Yong (2010) based on the Leadership Scale for Sports (LSS) compiled by Chelladurai et al. [5]. The scale is convenient and quick to use, consisting of 10 items divided into two dimensions: democratic leadership style and autocratic leadership style, with 5 items in each dimension. A 5-point Likert scale is used to measure athletes. The results of Confirmatory Factor Analysis (CFA) show that the model fit indices are: $\chi^2=14.691$, $df=3$, $\chi^2/df=4.897$, $CFI=0.993$, $TLI=0.977$, $SRMR=0.009$, and the Cronbach's α coefficient of the total scale is 0.953.

2.2.1.2 Team Cohesion Scale

This study uses the Group Environment Questionnaire (RGEQ) revised by Ma Hongyu (2010) to measure athletes' cohesion. The RGEQ consists of 15 items and 4 subscales, measuring Attraction to Group - Social (ATG-S), Attraction to Group - Task (ATG-T), Group Integration - Task (GI-T), and Group Integration - Social (GI-S) respectively. A 5-point Likert scale is adopted. The results of CFA show that the model fit indices are: $\chi^2=238.674$, $df=61$, $\chi^2/df=3.912$, $CFI=0.940$, $TLI=0.910$, $SRMR=0.047$, and the Cronbach's α coefficient of the total scale is 0.855.

2.2.1.3 Social-Emotional Competence Scale

Table 1. Distribution of Demographic Variables of Secondary School Volleyball Players

Variables	Levels	Number (Percentage %)	Variables	Levels	Number (Percentage %)
Grade	Grade 7	62 (19.4%)	Training Years	Less than 1 year	100 (31.3%)
	Grade 8	52 (16.3%)		1-2 years	91 (25.4%)
	Grade 9	69 (21.6%)		3-4 years	116 (36.4%)
	Grade 10	40 (12.5%)		5 years and above	22 (6.9%)
	Grade 11	54 (16.9%)	Competition Experience	None	54 (16.9%)
	Grade 12	42 (13.2%)		School-level	14 (4.4%)
Only Child	Yes	135 (42.3%)		County-level	55 (17.2%)
	No	184 (57.7%)		Provincial-level	149 (46.7%)
Parental Support	Support	314 (99.4%)		National-level	47 (14.7%)
	Do not support	4 (1.3%)			

This study uses the student self-report version of the "Chinese Students' Social-Emotional Competence Questionnaire" [6]. The questionnaire adopts a 5-point scoring system, ranging from 1 "completely inconsistent" to 5 "completely consistent", with higher scores indicating better social-emotional competence of students. The "Chinese Students' Social-Emotional Competence Questionnaire" includes 6 dimensions, with 5 items in each dimension, totaling 30 items to assess students' social-emotional competence. The results of CFA show that the model fit indices are: $\chi^2=920.423$, $df=374$, $\chi^2/df=2.461$, $CFI=0.919$, $TLI=0.906$, $SRMR=0.046$, and the Cronbach's α coefficient of the total scale is 0.964.

The demographic variables in the questionnaire include grade, training years, and whether they are only children, providing rich background information for subsequent analysis. The distribution of other demographic variables is shown in Table 1.

2.2.2 Mathematical Statistics Method

Pearson correlation analysis was used to explore the correlation between coach leadership behavior, team cohesion, and social-emotional competence. This analysis helps to reveal the linear relationship between variables and evaluate the degree and direction of their influence.

To further analyze the relationship and mechanism between coach leadership behavior and social-emotional competence, Structural Equation Modeling (SEM) was used for path analysis. The SEM method can simultaneously handle the relationships between multiple

variables, evaluate the model fit, and provide reliable statistical support for verifying research hypotheses.

To test the significance of the mediating effect, this study adopted the bias-corrected percentile Bootstrap method, calculating the 95% confidence interval through 2000 sample samplings. This method can effectively control the uncertainty in the data and provide more robust results of the mediating effect test.

CFA (Confirmatory Factor Analysis) was conducted on the Coach Leadership Behavior Scale, Team Cohesion Scale, and Social-Emotional Competence Scale to verify the construct validity of each scale. Confirmatory Factor Analysis can help determine whether the scale can accurately reflect the potential variables set in the study, thereby ensuring the validity and reliability of the data.

3. Research Results and Analysis

3.1 The Relationship between Coach Leadership Behavior and Social-Emotional Competence

This study explored the relationship between coach leadership behavior and athletes' social-emotional competence through correlation analysis. The results show that all dimensions of coach leadership behavior (such as democratic leadership and autocratic leadership) are significantly correlated with athletes' social-emotional competence, indicating that the coach's leadership style has a certain impact on athletes' social-emotional competence.

Table 2. Correlation Analysis between Variables

Variables	M	SD	Coach Leadership Behavior	Social-Emotional Competence	Team Cohesion
Coach Leadership Behavior	3.28	0.95	1.000		
Social-Emotional Competence	4.46	0.52	0.189**	1.000	
Team Cohesion	4.28	0.53	0.235**	0.735**	1.000

Note: * indicates $P<0.05$, ** indicates $P<0.01$, *** indicates $P<0.001$.

3.2 The Mediating Role of Team Cohesion between Coach Leadership Behavior and Social-Emotional Competence

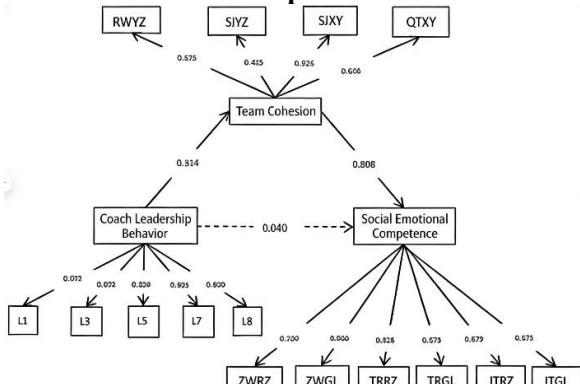


Figure 2. The Mediating Model of the Impact of Coach Leadership Behavior on Social-Emotional Competence

Note: ZWRZ (Self-Cognition), ZWGL (Self-Management), TRRZ (Others' Cognition), TRGL (Others' Management), JTRZ (Collective Cognition), JTGL (Collective Management); RWYZ (Group Task Cohesion), SJYZ (Group Social Cohesion), SJXY (Attraction to Group - Social), QTXY (Attraction to Group - Task).

To effectively control measurement errors, the structural equation modeling method was used to

test the mediating effect. Taking coach leadership behavior as the independent variable, social-emotional competence as the dependent variable, and team cohesion as the mediating variable, a path analysis was conducted to establish a mediating model (Figure 2). The fit indices are: $\chi^2/df=4.026$, CFI=0.945, TLI=0.933, RMSEA=0.089, SRMR=0.058. The Bootstrap test results (Table 3) show that the mediating effect of team cohesion between coach leadership behavior and social-emotional competence is significant (95% CI: 0.160, 0.348), and Hypothesis H2 is verified; the direct effect of coach leadership behavior on social-emotional competence is not significant (95% CI: -0.031, 0.125), and Hypothesis H1 is not verified. As shown in Figure 2, team cohesion plays a mediating role between coach leadership behavior and social-emotional competence. The mediating path is that democratic coach leadership behavior affects the social-emotional competence of secondary school volleyball teams by influencing team cohesion. The Bootstrap test results (Table 3) show that the mediating effect of team cohesion between coach leadership behavior and social-emotional competence is significant (95% CI: 0.160, 0.348), and Hypothesis H2 is verified.

Table 3. Mediating Effect Path Data Table

Paths	Standardized Effect	95% Confidence Interval	p-value
Coach Leadership Behavior → Team Cohesion → Social-Emotional Competence	0.253	[0.160, 0.348]	<0.01
Coach Leadership Behavior → Social-Emotional Competence	0.04	[-0.031, 0.125]	0.315
Total Effect	0.294	[0.171, 0.418]	<0.01
Total Indirect Effect	0.253	[0.160, 0.348]	<0.01

4. Conclusions and Suggestions

4.1 Conclusions

4.1.1 There is a Significant Positive Correlation between Coach Leadership Behavior and Social-Emotional Competence

There is a significant positive correlation between democratic coach leadership behavior and athletes' social-emotional competence. Specifically, the coach's democratic leadership behavior can effectively improve athletes' performance in social-emotional competence dimensions. Democratic leadership behavior creates a supportive team atmosphere, promotes athletes' emotional management abilities and interpersonal communication skills, thereby significantly enhancing their social-emotional competence.

4.1.2 Team Cohesion Plays a Complete Mediating Role between Coach Leadership Behavior and Social-Emotional Competence

Team cohesion plays a complete mediating role between coach leadership behavior and athletes' social-emotional competence. Coaches enhance trust and cooperation among team members through their leadership behavior, especially democratic leadership behavior, thereby improving team cohesion. The enhancement of team cohesion, especially in terms of emotional regulation and social skills, further promotes the improvement of athletes' social-emotional competence. Therefore, team cohesion is not only a key path for coach leadership behavior to influence athletes' social-emotional competence but also an important factor promoting the all-round development of athletes.

4.2 Suggestions

Based on the main conclusions of this study, the following suggestions are put forward to help coaches improve athletes' social-emotional competence in practical training and promote their all-round development.

(1) Strengthen Coaches' Democratic Leadership Behavior

This study shows that democratic leadership behavior can significantly improve athletes' social-emotional competence, especially in terms of emotional regulation and interpersonal communication skills. Therefore, it is suggested that coaches should pay more attention to adopting a democratic leadership style in daily training, give athletes more autonomy and sense of participation, and encourage athletes to express their opinions and suggestions in training to enhance their self-confidence and sense of belonging.

(2) Attach Importance to the Cultivation of Team Cohesion

The research results clearly show that team cohesion plays a mediating role between coach leadership behavior and social-emotional competence. Therefore, coaches should improve team cohesion through team-building activities and enhancing interaction and communication among team members. It is suggested to carry out regular team-building training, such as group discussions and cooperative games, to enhance team members' collective identity and trust.

(3) Implement Emotional Regulation and Social Skills Training

The improvement of social-emotional competence is inseparable from targeted training. It is suggested to add special training on emotional regulation and social skills in volleyball training to help athletes learn how to manage and regulate emotions and improve their coping abilities in competitions and training. At the same time, athletes' social skills can be improved through simulated competitions and team cooperation to help them communicate and cooperate better with teammates.

(4) Strengthen the Support and Cooperation between Parents and Schools

Although coach leadership behavior plays an important role in improving athletes' social-emotional competence, the support of families and schools is equally crucial. It is suggested that schools and parents strengthen communication and cooperation, pay attention to the development of athletes' mental health and

social skills together, and provide comprehensive support. Parents should provide more emotional support for their children, while schools should provide a good social environment for athletes.

The sample of this study is limited to volleyball. In the future, it can be extended to other sports and athletes of different age groups to verify the universality of the relationship between coach leadership behavior, team cohesion, and social-emotional competence. In addition, future research can explore the impact of other potential influencing factors, such as athletes' individual differences and family backgrounds, on social-emotional competence, so as to provide a theoretical basis for more extensive intervention measures.

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