

# A Study on the Relationship Between Sports Engagement Sports Passion and Group Cohesion of College Ice Hockey Participants

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**Abstract:** The successful hosting of the 2022 Beijing Winter Olympics has promoted the development of ice and snow sports in China, including the rapid development of ice hockey as a collective competitive ball sport. As a young group, college students are bound to become the main participants in ice hockey. College students' participation in ice hockey can fully reflect characteristics such as speed, passion, and teamwork. This research adopts the methods of literature review, questionnaire survey, mathematical statistics and logical analysis, and takes the relationship among the sports investment, sports passion and group cohesion of college ice hockey participants as the research object. The research process mainly uses questionnaire survey method to collect population variable information of different college ice hockey participants; Using independent sample t-test, one-way Anova, and correlation analysis to explore the level of sports engagement, passion, and group cohesion among college ice hockey participants, as well as their correlation. The overall level of sports engagement, passion, and group cohesion among college ice hockey participants is relatively good; There is a significant positive correlation between the sports engagement, passion, and group cohesion level of college ice hockey participants, but the correlation coefficient between the dimensions of sports engagement and passion and the level of group social consistency is low. Based on the characteristics of ice hockey events and college students, this study explored the impact of different positive psychology variables on college students' group cohesion, and explored the role of sports investment, sports passion and group cohesion, aiming to provide reference and basis for college ice hockey team construction and students' comprehensive quality improvement.

**Keywords:** Ice Hockey Participants, Sports Engagement, Sports Passion, Group Cohesion

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## 1. Introduction

Ice hockey is the only collective competitive ball game at the Winter Olympics and a highly valuable winter sport. In recent years, the Chinese government has successively issued a series of policy documents on the "Development Plan for Ice and Snow Sports (2016-2025)", "Opinions on Vigorously Developing Ice and Snow Sports with the 2022 Beijing Winter Olympics as an Opportunity", and "2022 China Ice Hockey Plan", which have greatly promoted the development of ice and snow sports in China and brought new opportunities for the development of ice hockey. The college student group is an important component of the development of ice hockey, and the hosting of such events has laid a solid foundation for the development of ice hockey in Chinese universities. This

article will focus on studying the impact of different factors on the cohesion of college ice hockey participants, constructing a relationship model, and proposing reasonable suggestions. This article explores the relationship between sports engagement, sports passion, and group cohesion variables and finds that there is a positive correlation between sports engagement and group cohesion in relevant studies; Different dimensions of sports passion can effectively predict the level of group cohesion, and harmonious passion and compulsive passion have different impacts on different dimensions of task and social cohesion; There is relatively little research on sports engagement and passion, mainly through the variables of work engagement and learning engagement and passion. This study believes that exploring the relationship between sports engagement, sports passion, and group cohesion in

college ice hockey groups has a certain theoretical basis. The level of group cohesion among college ice hockey participants is influenced by both internal and external factors, and the psychological state of students during teaching is particularly important. The type and level of sports passion of students when participating in ice hockey are easily ignored by teachers and coaches in physical education teaching. Clarifying the type of sports passion of student movement can effectively design teaching plans and arrange exercise content and intensity. Teachers can affect student movement 'sports intensity and sports investment by setting different teaching contents. Teachers' intervention in student movement' sports investment can constantly transform and affect the type and level of sports passion. In teaching, attention should be paid to maintaining a good level of harmonious passion and continuously strengthening the internalization of forced passion into harmonious passion. Harmonious passion emphasizes the positive emotional state of participants in ice hockey, which can effectively enhance the group cohesion level of college ice hockey participants. This study will conduct research on relevant variables based on the dual model theory of passion, combined with the characteristics of ice hockey events and the characteristics of college ice hockey participation groups, to further explore the relationship between sports engagement, sports passion, and group cohesion.

## 2. Research Subjects

The study focuses on the relationship between sports engagement, passion, and group cohesion among college ice hockey participants.

## 3. Research Methods

### 3.1. Literature Method

Use the retrieval systems such as CNKI and Web of Science to search the relevant literature of the keywords such as sports investment, sports passion, group cohesion, ice hockey, sports input, sports passion, and group cohesion, read books such as reading education psychology, sports psychology, and sports research methods, consult and analyze the relevant literature and launch in-depth thinking.

### 3.2. Questionnaire Survey Method

The survey focuses on college ice hockey participants who participate in college ice hockey clubs and elective courses. Among them, "college ice hockey participants" refer to students who participate in ice hockey during their university years and possess basic sliding and passing skills in ice hockey. A total of 460 survey questionnaires were distributed, with 447 questionnaires recovered, with a recovery rate of 97.2%. Through statistical analysis and screening of the survey questionnaires, 26 invalid survey questionnaires were excluded, and 421 valid questionnaires were obtained, with an effective rate of 94.2%.

### 3.3. Mathematical Statistics

This article uses Excel and Spss23.0 data analysis software to organize and analyze the collected questionnaire information, including descriptive statistical analysis of various dimensions of sports engagement, sports passion, and group cohesion [1]; Perform correlation analysis on variables using Pearson correlation analysis [2].

### 3.4. Logical Analysis Method

The content of this research will be discussed and analyzed. Through objective facts, the connotation and correlation of sports involvement, sports passion and group cohesion will be summarized. The problems in positive psychology existing in current college students' hockey players will be sorted out and explored, providing theoretical basis for teachers and coaches to improve the level of group cohesion of college students' hockey players in the future.

## 4. Overall Level of College Ice Hockey Participants

### 4.1. Overall Level of Sports Engagement Among College Ice Hockey Participants

**Table 1.** Descriptive Statistics of Sports Input of College Hockey Participants (N=421).

DIM	N	X	U	M	R	SD
Z	421	1	5	4.157	0.823	0.677
F	421	1	5	4.255	0.782	0.612
H	421	1	5	4.365	0.775	0.601
R	421	1	5	4.378	0.790	0.625

The average dimensions of enthusiasm (R) and vitality (H) among college ice hockey participants are relatively high, followed by the dimensions (F) of dedication and confidence (Z). It is recommended to guide ideological and political education based on the psychological characteristics of college students in the ice hockey teaching process. The college student community is a dynamic group that can quickly integrate into a new environment and make independent activity choices according to their preferences. They are willing and energetic to complete their favorite activities, but their confidence dimension is relatively low. The main reason is that students may experience physical confrontation when participating in ice hockey, which is a challenge and breakthrough for the general college student. When teaching ice hockey to students, teachers and coaches should design teaching content based on their acceptance level, and require students to be equipped with a complete set of protective equipment to avoid sports risks, thereby improving students' sense of participation and confidence in sports, and ultimately promoting the overall level of students' sports engagement.

#### 4.2. Overall Level of Sports Passion Among College Ice Hockey Participants

**Table 2.** Descriptive Statistics of Sports Passion among University Hockey Participants (N=421).

DIM	N	X	U	M	R	SD
H	421	1	7	6.106	0.944	0.891
Q	421	1	7	5.532	1.255	1.576

The overall level of various dimensions of sports passion is relatively good, with harmonious passion (H) being higher than compulsive passion (Q). The development of ice hockey programs in Chinese universities is mainly carried out through elective courses in ice hockey and roller skating, clubs, and school teams. It is mainly oriented towards independent choice, and students are more interested and willing to integrate into the atmosphere of ice hockey. However, due to the high difficulty of ice hockey itself, negative emotions may arise. Harmony and passion refer to the activities that individuals internalize and internalize activities into individuals, Forced passion refers to the controlled internalization of external motivations into human activities. Harmony and passion can enable participants to participate in ice hockey more persistently. In the process of ice hockey teaching, it is important to emphasize the richness of teaching content, diversity of teaching methods, and flexibility of teaching forms, in order to stimulate students' harmonious sports passion as much as possible.

#### 4.3. Overall Level of Cohesion Among College Ice Hockey Participants

The level of group social attraction (SX) is relatively high, with group members having higher social attraction ability during ice hockey, followed by group task attraction (RX) and

group task consistency (RY). However, the overall level of group social consistency (SY) is relatively low. Among them, group social consistency is an important component of group cohesion, so in the teaching process, guidance should be provided through daily ideological and political elements courses, various teaching methods and means should be adopted to improve the level of group social consistency, and practical actions should be implemented on college students participating in ice hockey projects, thereby enhancing the overall level of group cohesion of college students.

**Table 3.** Descriptive Statistics of Group Cohesion of University Hockey Participants (N=421).

DIM	N	X	U	M	R	SD
SX	421	1	7	6.385	0.981	0.963
RX	421	1	7	6.304	0.968	0.937
SY	421	1	7	4.697	1.526	2.327
RY	421	1	7	6.349	1.031	1.062

### 5. Correlation Analysis of Sports Engagement, Passion, and Group Cohesion Among College Ice Hockey Participants

#### 5.1. Correlation Analysis Between Sports Engagement and Group Cohesion of College Ice Hockey Participants

This study used Pearson correlation analysis to analyze the dimensions of exercise engagement and group cohesion, and clarified that the correlation between the independent and dependent variables is a prerequisite for determining the mediation model. The results are shown in Table 4:

**Table 4.** Correlation analysis between sports engagement and group cohesion of college ice hockey participants.

DIM	1	2	3	4	5	6	7	8	9	10
1	1									
2	.597	1								
3	.479	.535	1							
4	.520	.606	.555	1						
5	.396	.421	.353	.442	1					
6	.485	.484	.378	.457	.611	1				
7	.280	.312	.249	.310	.533	.529	1			
8	.431	.470	.381	.417	.573	.594	.550	1		
9	.803	.840	.786	.823	.496	.555	.354	.523	1	
10	.460	.492	.398	.476	.806	.783	.855	.817	.561	1

The sequence numbers in Table 4 represent the following variables and dimensions: confidence dimension=1; Contribution dimension=2; Vitality dimension=3; Passion dimension=4; Group social attraction=5; Group task attraction=6; Group social consistency=7; Group task consistency=8; Exercise input=9; Group cohesion=10. After testing, there is a significant correlation between the dimensions of sports engagement and group cohesion of college ice hockey participants Positive correlation ( $r>0.2$ ,  $P<0.01$ ). The results showed that there was a high correlation between the independent variable exercise engagement and

the dependent variable group cohesion ( $r=0.561$ ,  $P<0.01$ ). Although the correlation coefficient between group social consistency and other variables was low, there was a positive correlation between exercise engagement and various dimensions of group cohesion, which did not affect the research hypothesis that exercise engagement positively predicted group cohesion levels, And the research results can provide theoretical support for the hypothesis that sports engagement positively predicts group cohesion.

Sports engagement has a predictive effect on the level of group cohesion among college ice hockey participants. There

is a significant positive correlation between the dimensions of confidence, dedication, vitality, and enthusiasm in sports engagement and various dimensions of group cohesion ( $r>0.2$ ,  $P<0.01$ ). Based on the viewpoints of relevant scholars, the relationship between sports engagement and group cohesion is discussed. Ma Hongyu (2004), Zhang Jun (2007), and Zhu Yubo (2008) pointed out that athlete engagement and role engagement can effectively predict the level of cohesion [3-5]. Zhang Zhongqiu (2012) believes that sports engagement can promote the generation of positive emotions, which is consistent with the results of this study [6]. The research shows that sports input and group cohesion belong to the category of positive psychology in psychological research. Group cohesion is affected by internal factors (gender, sports duration, main replacement and project characteristics, etc.) and external factors (leadership behavior, task objectives and value orientation, etc.) in college students' participation in ice hockey. Teaching should focus on improving the level of sports input of college students' ice hockey participants to meet their basic psychological needs, Enable students to have a sense of belonging and achievement in sports participation, and influence the level of group cohesion of ice hockey participants through sports engagement.

### 5.2. Correlation Analysis of Sports Engagement and Passion Among College Ice Hockey Participants

The Pearson correlation analysis method was used to analyze sports engagement and passion, and the results are shown in Table 5:

**Table 5.** Correlation analysis of sports engagement and passion among college ice hockey participants.

DIM	1	2	3	4	5	6	7	8
1	1							
2	.597	1						
3	.479	.535	1					
4	.520	.606	.555	1				
5	.433	.498	.432	.611	1			
6	.416	.362	.327	.341	.593	1		
7	.803	.840	.786	.823	.607	.446	1	
8	.473	.470	.416	.511	.858	.922	.575	1

The sequence numbers in Table 5 represent the following variables and dimensions: confidence dimension=1; Contribution dimension=2; Vitality dimension=3; Passion dimension=4; Harmony and passion=5; Forced passion=6; Exercise input=7; Sports passion=8. After testing, there is a significant positive correlation ( $r>0.3$ ,  $P<0.01$ ) between the dimensions of sports engagement and sports passion of college ice hockey participants. The results indicate that there is a high correlation between the independent variable of sports engagement and the intermediate variable of sports passion ( $r=0.575$ ,  $P<0.01$ ), which can meet the predictive effect of sports engagement on the sports passion of college ice hockey participants. The research results can provide theoretical support for the hypothesis that sports engagement positively predicts sports passion.

Sports engagement has a predictive effect on the level of sports passion among college ice hockey participants. The dimensions of confidence, dedication, vitality, and enthusiasm in sports engagement are significantly positively correlated with the harmonious and compulsive passions in sports passion. Combining the viewpoints of relevant scholars, discussing the relationship between sports engagement and sports passion, Carbonneau, Vallerand, Massicotte (2010) found in their research on passion for different activities (such as exercise, yoga, and sports) that engaging in professional practice can promote the improvement of sports performance and generate harmonious sports passion for a certain activity [7]. Xu Lei (2014) believes that passion is a positive emotion towards activities that people enjoy and consider important. Sports participants are willing to spend time in their favorite activities, and found that the dual factors of passion (harmonious passion and forced passion) are significantly correlated with the value judgment, time investment, and activity persistence of sports activities [8]. Lin Lin, Yang Li, and Yang Xuebo (2019) believe that academic investment is positively correlated with academic passion [9]. Research has shown that sports engagement in college ice hockey has a predictive effect on participants' emotions, and there is a significant correlation between the two variables and various dimensions. Through self determination theory analysis of the basic psychological needs of college ice hockey participants, college ice hockey participants spend a lot of time and energy in training, gradually improving their sports level through continuous participation behavior, When the level of motor skills mastered can meet their own needs, students will form a strong sense of participation and achievement, and their motor motivation will gradually enter the stage of autonomy internalization [10]. So this study shows that sports engagement (teacher intervention) during ice hockey can predict sports passion, and the data shows a significant correlation between the two.

### 5.3. Correlation Analysis Between Sports Passion and Group Cohesion of College Ice Hockey Participants

Explore the relationship between sports passion and group cohesion, reveal the internal mechanism of action between sports passion and various dimensions of group cohesion, and use Pearson correlation analysis to test. The results are shown in Table 6:

**Table 6.** Correlation analysis between sports passion and group cohesion of college ice hockey participants.

DIM	1	2	3	4	5	6	7	8
1	1							
2	.593	1						
3	.565	.365	1					
4	.585	.422	.611	1				
5	.390	.245	.533	.529	1			
6	.527	.330	.573	.594	.550	1		
7	.858	.922	.504	.550	.344	.463	1	
8	.604	.393	.806	.783	.855	.817	.540	1

The serial numbers in Table 6 represent the following variables and dimensions: harmonious passion=1; Forced passion=2; Group social attraction=3; Group task attraction=4; Group social consistency=5; Group task consistency=6; Sports passion=7; Group cohesion=8. After testing, there was a significant positive correlation ( $r>0.3$ ,  $P<0.01$ ) between the various dimensions of sports passion and group cohesion among college ice hockey participants, and the correlation coefficient between forced passion and group cohesion and various dimensions was relatively low ( $0.5>r>0.2$ ,  $P<0.01$ ). The results indicate that there is a high correlation between the mediating variable sports passion and the dependent variable group cohesion ( $r=0.540$ ,  $P<0.01$ ), which can meet the predictive effect of sports passion on the group cohesion of college ice hockey participants. The research results can provide theoretical support for the hypothesis that sports passion positively predicts group cohesion.

There is a correlation between sports passion and the level of group cohesion among college ice hockey participants, with a low correlation coefficient between harmonious passion and group social consistency, and a low correlation coefficient between forced passion and various dimensions of group cohesion. Exploring the relationship between sports passion and group cohesion, Zigarmi et al. (2011) believe that the antecedents of work passion include organizational factors (team collaboration, task orientation, and fairness and justice), work factors (work significance, performance feedback, and task diversity), and moderating factors (leadership style and colleague relationships). They believe that work passion is closely related to social and task cohesion levels [11]. Li Hongli and Yu Qiaoling (2013) found that at the organizational level, work passion is related to variables such as organizational decision-making, team cohesion, and performance [12]. Miao Yuanjiang (2015) pointed out that harmonious passion is positively correlated with positive emotions and negatively correlated with negative emotions [13]. Wang Qingbao (2018) pointed out that there is a correlation between sports passion and team cohesion level [14]. The research results are consistent with the views of other scholars. Enhancing the level of harmonious passion among ice hockey participants can gradually internalize the external motivation for forced passion, thereby enhancing their level of group cohesion. Therefore, university ice hockey teachers and coaches should clarify group responsibilities during teaching, guide students to work hard to achieve group goals, and improve students' interpersonal relationships. However, group task goals cannot be imposed on students. Otherwise, it will generate compulsive passion.

From the perspective of sports participants, in the process of college ice hockey participation, ice hockey participants need to stimulate their own harmonious passion in order to maintain a lasting and autonomous love, which in turn affects their participation motivation and behavior; From the perspective of teachers and coaches, they should understand and master the laws and needs of students, meet their basic psychological needs during the teaching process [15], improve teaching plans, arrangements, and content, and adopt appropriate

teaching methods for different ice hockey groups. For example, teachers and coaches can frequently organize competitions and set high teaching goals for students from college ice hockey teams. Diagnostic and procedural evaluations should be conducted for students in elective ice hockey courses and clubs for college students, and different groups, contents, and intensities should be set according to their needs and situations, so that students can participate in ice hockey in a harmonious sports atmosphere. Different sports needs, teaching content, and exercise intensities can cause disharmonious forced passion among ice hockey participants, thereby affecting the level of group cohesion among college ice hockey participants.

## 6. Conclusion and Suggestions

### 6.1. Conclusion

- (1) The overall level of sports engagement, passion, and group cohesion among college ice hockey participants is good, but the overall level of confidence dimension in sports engagement is low, the level of social consistency in group cohesion is low, and the level of compulsive passion in sports passion is low. The above variable dimension levels directly affect the overall level of each variable.
- (2) There is a significant positive correlation between the sports engagement, sports passion, and group cohesion level of college ice hockey participants. However, the correlation coefficient between the dimensions of sports engagement and sports passion and the level of group social consistency is relatively low. The group social consistency belongs to the dimension of group cohesion, which affects the correlation coefficient level between group cohesion and other variables.

### 6.2. Suggestions

- (1) Teachers should cultivate students' spirit of dedication and collaboration, pay attention to fair and just role allocation, advocate the use of teaching methods of mentoring in teaching, take students as the main body, stimulate students' internal motivation, guide students to place personal abilities and interests in the collective, and thereby improve the overall level of students.
- (2) Teachers should choose different teaching methods and contents to improve the level of student movement investment; Organize and carry out teaching competitions, stimulate the passion of student movement, and build a platform for student communication and exchange. Provide students with more positive encouragement, identification, and support in daily training or competitions, weaken the differential treatment of main substitutes, meet their basic self needs, and enhance their comprehensive abilities in autonomy, competence, and interpersonal relationships.

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