A CORRELATIONAL STUDY OF SPORT MOTIVATION AND PHYSICAL SELF-EFFICACY AMONG PHYSICAL EDUCATION STUDENTS

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Abstract: This study aimed to explore the correlation between sport motivation and physical self-efficacy among physical education students, using students from Xuecheng Physical Education Middle School in Zaozhuang City, Shandong Province, China, as the research subjects. A quantitative research method was employed, and data were collected through questionnaires. The questionnaires were based on the Sport motivation Scale by Yin (2019) and the Physical Self-Efficacy Scale by Wang (2015). Sport motivation was assessed across four dimensions, including two intrinsic motivations (stress relief and self-growth) and two extrinsic motivations (physical fitness and social interaction). Physical self-efficacy was evaluated across two dimensions: perceived physical ability and physical self-presentation. A total of 360 questionnaires were distributed, and all 360 were valid. The results revealed that students' sport motivation and physical self-efficacy were generally at a moderate to high level. Differences in demographic background variables, including gender, age, residence, sport type, and exercise frequency, had no significant impact on sport motivation or physical self-efficacy. A significant positive correlation was identified between sport motivation and physical self-efficacy, indicating that higher sport motivation contributed to enhanced physical self-efficacy. The conclusions of this study provide an important theoretical foundation and practical guidance for optimizing sports education curricula and improving students' sports experiences and confidence. Furthermore, the findings offer empirical support for advancing sport education reforms at the secondary school level in China.

Keywords: Sport Motivation, Physical Self-Efficacy, Physical Education Students

Introduction

Sport motivation and physical self-efficacy have been widely studied in educational psychology due to their significant influence on students' academic achievement, emotional experiences, and psychological well-being. Sport motivation refers to students' affective evaluations

of their experiences in sports learning, which are often shaped by multiple factors such as instructional quality, course content, and social interaction (Oliver, 1980). In recent years, researchers have increasingly recognized the role of social interaction in physical activity, particularly in team sports, where positive social experiences have been shown to enhance students' sport motivation (Smith & McHugh, 2022).

Physical self-efficacy, which reflects an individual's confidence in their ability to complete physical tasks, was first conceptualized by Bandura (1977). In the context of physical activity, physical self-efficacy plays a crucial role in determining students' willingness to participate and their ability to overcome challenges (Wood & Bandura, 1990). Research has consistently demonstrated a positive relationship between sport motivation and physical self-efficacy (Yu & Song, 2022; Zhao et al., 2023). Students with higher motivation in sports tend to exhibit greater physical self-efficacy, while those with higher self-efficacy are more motivated and persistent in physical activities, even in the face of difficulties (Pekrun et al., 2002; Sheikh et al., 2022).

International studies have indicated that factors such as gender, age, sport type, and exercise frequency influence students' levels of sport motivation and physical self-efficacy (Hosseini et al., 2021). In China, with ongoing educational reforms, research on these constructs has gradually expanded across various educational levels. The relationship between sport motivation and physical self-efficacy has gained increasing attention, particularly in secondary school physical education (Standage et al., 2005). However, while existing studies have explored the effects of these factors on students' learning experiences, research on their specific application in Chinese secondary schools remains limited.

This study aimed to examine the current levels of sport motivation and physical self-efficacy among students at Xuecheng Physical Education Middle School in Shandong Province and to explore their interrelationship in school-based physical education activities. Xuecheng Physical Education Middle School has a strong foundation in physical education and a high level of student participation in sports, making it a valuable site for research. By adopting the Sport Motivation Scale developed by Yin (2019) and the Physical Self-Efficacy Scale developed by Wang (2015), this study systematically assessed students' sport motivation and physical self-efficacy to provide a theoretical foundation and practical recommendations for improving physical education quality and increasing student participation.

Although previous studies have examined sport motivation and physical self-efficacy internationally and domestically, limited research has focused on secondary school students in China, particularly in the context of physical activity. This study aimed to fill this research gap by exploring the relationship between sport motivation and physical self-efficacy, thereby providing empirical evidence to support efforts to enhance student's learning experiences and engagement in physical activities.

Research Objectives

(1) To examine the demographic distribution of physical education students at Xuecheng Physical Education Middle School, including gender, age, residence, sport type, and exercise frequency.

(2) To assess the level of sport motivation among physical education students.

(3) To evaluate the level of physical self-efficacy among physical education students.

(4) To analyze differences in sport motivation among physical education students across demographic variables.

(5) To analyze differences in physical self-efficacy among physical education students across demographic variables.

(6) To investigate the correlation between sport motivation and physical self-efficacy among physical education students.

Based on the design of this study and the findings of some existing research by scholars, the following hypotheses were proposed in conjunction with the research direction and practical considerations.

H1: There are significant differences in sport motivation among physical education students of different demographic variables.

H2: There are significant differences in physical self-efficacy among physical education students of different demographic variables.

H3: There is a significant positive correlation between sport motivation and physical self-efficacy among physical education students.

Literature Review

Sport motivation and physical self-efficacy are two fundamental psychological constructs that influence individuals' attitudes and behaviors in physical education and sports contexts. Sport motivation refers to the internal and external drives that encourage individuals to engage in physical activity. Based on Self-Determination Theory (Deci & Ryan, 1985), motivation can be classified as intrinsic (engaging in activity for its own sake) and extrinsic (driven by external rewards or pressures). Several studies have demonstrated that students with higher intrinsic motivation are more likely to participate regularly in physical education and maintain long-term involvement in sports activities (Ryan & Deci, 2000).

Physical self-efficacy, derived from Bandura's (1977) social cognitive theory, reflects an individual's belief in their physical abilities and competence to perform physical tasks. It encompasses two key dimensions: perceived physical ability and physical self-presentation confidence. Research indicates that individuals with higher self-efficacy show more persistence,

greater enjoyment, and stronger performance in physical education (McAuley & Gill, 1983).

Multiple empirical studies support the positive correlation between sport motivation and self-efficacy. For instance, Yu & Song (2022) found that middle school students with stronger internal motivation tended to report higher self-confidence in physical tasks. Similarly, Zhao et al. (2023) demonstrated that motivation-enhancing sports programs significantly improved students' physical self-efficacy.

In the Chinese context, research on this correlation remains limited, particularly in urban-rural integrated educational environments. Wang (2015) developed and validated a self-efficacy scale tailored to Chinese students, highlighting the cultural relevance of assessment tools. Yin (2019) constructed a sport motivation scale suited to secondary school learners in China, indicating that social factors such as peer recognition and teacher support are unique influences on motivation in Chinese schools.

This study builds on the aforementioned theories and findings, aiming to contribute to the empirical understanding of how sport motivation and self-efficacy interact among secondary school students in a Chinese educational setting.

Methodology

This study focused on students from Xuecheng Sports Middle School in Zaozhuang City, Shandong Province, China. A total of 360 students participated in the study. The sample included male and female physical education students aged between 13 and 19 years. Stratified sampling was used to ensure representation across different demographic variables, including gender, age, residential area, sport type, and exercise frequency.

The scales used in this study were based on the Sport Motivation Scale developed by Yin (2019) and the Physical Self-Efficacy Scale developed by Wang (2015). Both instruments employed a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Internal reliability was confirmed, with Cronbach's α values exceeding 0.8 for all subscales.

Questionnaires were distributed during school hours under teacher supervision. All respondents were informed of the voluntary nature of their participation, and anonymity was guaranteed.

Data were analyzed using SPSS 23.0. Descriptive statistics (mean and standard deviation) were used to assess overall levels. Independent samples t-tests and ANOVA were conducted to examine differences based on demographic variables. Pearson correlation analysis was performed to evaluate the relationship between sport motivation and physical self-efficacy.

Results

Demographic Analysis of Questionnaire Participants

Table 1 summarized the distribution of demographic variables in the sample. In terms of gender, 47.2 percent (170) of the participants were male, and 52.8 percent (190) were female. In terms of age level, 51.7% (186) were in the 13-14-year-old group, 37.5% (135) were in the 15-16-year-old group, and 10.8% (39) were in the 17-19-year-old group. In terms of distribution by place of residence, urban students accounted for 65.8 percent (237), and rural students accounted for 34.2 percent (123). Regarding the type of physical activity, basketball participants accounted for 38.6% (139), football participants accounted for 39.7% (143), martial arts participants accounted for 14.4% (52), and running participants accounted for 7.2% (26). Finally, regarding the frequency of weekly practice, 23.9% (86) of the students practiced once, 38.9% (140) practiced twice, 22.2% (80) practiced three times, and 15.0% (54) practiced four times or more.

Table 1: Demographic Distribution of Sample

Demographic Variables	Group	n	Percentage (%)
Gender	Male	170	47.2
	Female	190	52.8
Age	13-14-year-olds	186	51.7
	15-16-year-olds	135	37.5
	17-19-year-olds	39	10.8
Residence	Urban	237	65.8
	Rural	123	34.2
Sport Type	Basketball	139	38.6
	Football	143	39.7
	Martial Arts	52	14.4
	Running	26	7.2
Exercise Frequency	Once per week	86	23.9
	Twice per week	140	38.9
	Three times per week	80	22.2
	Four times per week	54	15.0
Total		360	100

Descriptive Statistics on the Levels of Sport Motivation and Physical Self-Efficacy

Table 2 demonstrated the descriptive statistics of this study through data regarding sport motivation and physical self-efficacy. The table presented stress relief M=3.61, SD=0.88; self-growth M=3.62, SD=0.89; physical fitness M=3.63, SD=0.88; social interaction M=3.64, SD=0.89; and total sport motivation M=3.63, SD=0.85. The table also presented perceived physical ability M=3.62, SD=0.87; physical self-presentation confidence M=3.63, SD=0.85; and total physical self-efficacy M=3.63, SD=0.85. These means indicated that the students were at a high level of sport motivation, physical self-efficacy, and all their dimensions.

Table 2: The Levels of Sport Motivation and Physical Self-Efficacy

Dimension	n	M	SD	Interpretation

Stress Relief	360	3.61	0.88	High
Self-Growth	360	3.62	0.89	High
Physical Fitness	360	3.63	0.88	High
Social Interaction	360	3.64	0.89	High
Sport Motivation	360	3.63	0.85	High
Perceived Physical Ability	360	3.62	0.87	High
Physical Self-Presentation Confidence	360	3.63	0.85	High
Physical Self-Efficacy	360	3.63	0.85	High

Analysis of Differences in Sport Motivation and Physical Self-Efficacy Across Demographic Variables

Table 3 indicated that there were no significant differences in sport motivation, physical self-efficacy, or their dimensions between male and female students. Thus, gender did not have a significant effect on sport motivation or physical self-efficacy.

Table 3: Independent Sample T-Test Analysis of Sport Motivation and Physical Self-Efficacy by Gender

Dimension	Male (n=170)		Female (n=190)		t	p
	M	SD	M	SD		
Stress Relief	3.64	0.89	3.58	0.88	0.64	.524
Self-Growth	3.65	0.86	3.60	0.92	0.50	.616
Physical Fitness	3.64	0.87	3.62	0.89	0.26	.797
Social Interaction	3.66	0.88	3.62	0.90	0.47	.636
Sport Motivation	3.65	0.83	3.61	0.86	0.49	.624
Perceived Physical Ability	3.67	0.84	3.58	0.89	0.99	.325
Physical Self-Presentation Confidence	3.67	0.83	3.59	0.87	0.80	.427
Physical Self-Efficacy	3.67	0.83	3.59	0.87	0.90	.372

Similarly, Table 4 revealed no significant differences across different age groups in both sport motivation and physical self-efficacy, including all dimensions. This suggests that age did not play a meaningful role in influencing these variables.

Table 4: ANOVA Analysis of Sport Motivation and Physical Self-Efficacy by Age

Dimension	Grade	n	M	SD	F	p
Stress Relief	13-14-year-olds	186	3.65	0.82	1.98	.140
	15–16-year-olds	135	3.50	0.95		
	17–19-year-olds	39	3.79	0.88		
Self-Growth	13-14-year-olds	186	3.65	0.82	1.25	.288
	15–16-year-olds	135	3.54	0.97		
	17–19-year-olds	39	3.77	0.92		
Physical Fitness	13-14-year-olds	186	3.66	0.82	2.03	.133
	15–16-year-olds	135	3.52	0.95		
	17–19-year-olds	39	3.82	0.85		
Social Interaction	13-14-year-olds	186	3.66	0.81	1.69	.187
	15–16-year-olds	135	3.55	1.00		

	17–19-year-olds	39	3.84	0.82		
Sport Motivation	13-14-year-olds	186	3.66	0.78	1.87	.155
	15–16-year-olds	135	3.53	0.93		
	17–19-year-olds	39	3.81	0.83		
Perceived Physical Ability	13-14-year-olds	186	3.66	0.80	1.34	.262
	15-16-year-olds	135	3.54	0.95		
	17-19-year-olds	39	3.77	0.879		
Physical Self-Presentation Confidence	13–14 years old	186	3.67	0.79	2.01	.135
	15–16 years old	135	3.52	0.92		
	17–19 years old	39	3.79	0.84		
Physical Self-Efficacy	13–14 years old	186	3.67	0.79	1.69	.186
	15–16 years old	135	3.53	0.93		
	17–19 years old	39	3.78	0.85		

As shown in Table 5, no significant differences were observed in sport motivation, physical self-efficacy, or their dimensions based on students' place of residence. Therefore, residential background had no significant impact on these outcomes.

Table 6 further showed that sport type also did not lead to significant differences in sport motivation or physical self-efficacy. All dimensions remained statistically similar across students participating in different types of sports.

Table 5: Independent Sample T-test Analysis of Sport Motivation and Physical Self-Efficacy by Residence

Dimension	Rural (n=237)		Urban (n=123)		t	p
	M	SD	M	SD		
Stress Relief	3.64	0.87	3.58	0.88	0.52	.601
Self-Growth	3.65	0.86	3.60	0.92	0.18	.856
Physical Fitness	3.64	0.87	3.62	0.89	0.08	.936
Social Interaction	3.66	0.88	3.62	0.90	0.53	.597
Sport Motivation	3.65	0.83	3.60	0.86	0.35	.727
Perceived Physical Ability	4.01	1.10	4.02	1.02	0.76	.448
Physical Self-Presentation Confidence	4.04	1.05	4.04	0.97	0.65	.515
Physical Self-Efficacy	4.03	1.05	4.04	0.97	0.72	.473

Table 6: ANOVA Analysis of Sport Motivation and Physical Self-Efficacy by Sport Type

Dimension	Sport Type	n	M	SD	F	p
Stress Relief	Basketball	139	3.55	0.87	0.39	.759
	Football	143	3.63	0.90		
	Martial Arts	52	3.63	0.91		
	Running	26	3.73	0.83		
Self-Growth	Basketball	139	3.61	0.85	1.00	.392
	Football	143	3.59	0.93		
	Martial Arts	52	3.61	0.88		
	Running	26	3.91	0.86		
Physical Fitness	Basketball	139	3.60	0.84	0.47	.707

	Football	143	3.65	0.92		
	Martial Arts	52	3.57	0.89		
	Running	26	3.79	0.86		
Social Interaction	Basketball	139	3.58	0.85	0.57	.638
	Football	143	3.66	0.93		
	Martial Arts	52	3.64	0.94		
	Running	26	3.82	0.84		
Sport Motivation	Basketball	139	3.59	0.811	0.53	.660
	Football	143	3.63	0.834		
	Martial Arts	52	3.61	0.869		
	Running	26	3.81	0.812		
Perceived Physical Ability	Basketball	98	3.59	0.850	0.53	.661
	Football	26	3.67	0.890		
	Martial Arts	87	3.54	0.884		
	Running	33	3.75	0.802		
Physical Self-Presentation Confidence	Basketball	98	3.58	0.815	0.62	.605
	Football	26	3.66	0.892		
	Martial Arts	87	3.59	0.860		
	Running	33	3.80	0.827		
Physical Self-Efficacy	Basketball	98	3.58	0.823	0.56	.644
	Football	26	3.66	0.883		
	Martial Arts	87	3.57	0.864		
	Running	33	3.78	0.806		

Additionally, Table 7 demonstrated that exercise frequency had no significant effect on sport motivation, physical self-efficacy, or their individual dimensions. Students with different exercise frequencies reported comparable levels across all measures.

In summary, when comparing sport motivation and physical self-efficacy among Xuecheng Sports Middle School students with various demographic backgrounds, no significant differences were found across any demographic variable examined. Consequently, both Hypothesis H1 and Hypothesis H2 were invalid.

Table 7: ANOVA Analysis of Sport Motivation and Physical Self-Efficacy by Exercise Frequency

Dimension	Exercise Frequency	n	M	SD	F	p
Stress Relief	1 time	86	3.65	0.91	0.85	.465
	2 times	140	3.64	0.82		
	3 times	80	3.45	0.93		
	Over 3 times	54	3.66	0.90		
Self-Growth	1 time	86	3.69	0.89	0.92	.433
	2 times	140	3.64	0.86		
	3 times	80	3.48	0.95		
	Over 3 times	54	3.69	0.88		
Physical Fitness	1 time	86	3.65	0.94	0.51	.676
	2 times	140	3.63	0.82		
	3 times	80	3.53	0.90		
	Over 3 times	54	3.72	0.90		
Social Interaction	1 time	86	3.71	0.99	1.09	.352

	2 times	140	3.68	0.81		
	3 times	80	3.48	0.88		
	Over 3 times	54	3.67	0.94		
Sport Motivation	1 time	86	3.68	0.90	0.86	.460
	2 times	140	3.65	0.78		
	3 times	80	3.49	0.88		
	Over 3 times	54	3.68	0.88		
Perceived Physical Ability	1 time	86	3.68	0.94	0.82	.486
	2 times	140	3.66	0.80		
	3 times	80	3.49	0.90		
	Over 3 times	54	3.64	0.87		
Physical Self-Presentation Confidence	1 time	86	3.66	0.94	0.81	.489
	2 times	140	3.67	0.78		
	3 times	80	3.50	0.88		
	Over 3 times	54	3.65	0.86		
Physical Self-Efficacy	1 time	86	3.67	0.93	0.83	.480
	2 times	140	3.67	0.78		
	3 times	80	3.49	0.88		
	Over 3 times	54	3.65	0.86		

Correlation Analysis between Sport Motivation and Physical Self-Efficacy

The correlation analysis between sport motivation and physical self-efficacy showed that overall sport motivation, including stress relief, self-growth, physical fitness, and social interaction, was significantly positively correlated with each dimension of physical self-efficacy ($p < .01$). High correlation coefficients indicated a strong connection, suggesting that these factors were closely intertwined in driving the emergence and development of physical self-efficacy across all dimensions.

Table 9: Correlation Analysis of Sport Motivation and Physical Self-Efficacy

	Stress Relief	Self-Growth	Physical Fitness	Social Interaction	Sport Motivation	Perceived Physical Ability	Physical Self-Presentation Confidence	Physical Self-Efficacy
Stress Relief	1							
Self-Growth	0.894**	1						
Physical Fitness	0.880**	0.888**	1					
Social Interaction	0.886**	0.888**	0.892**	1				
Sport Motivation	0.956**	0.959**	0.956**	0.958**	1			
Perceived Physical Ability	0.915**	0.913**	0.927**	0.925**	0.961**	1		
Physical Self-Presentation Confidence	0.925**	0.930**	0.932**	0.926**	0.970**	0.959**	1	

Physical Self-Efficacy	0.930**	0.931**	0.939**	0.935**	0.976**	0.990**	0.989**	1

Discussion

The findings of this study indicate a statistically significant positive correlation between sport motivation and physical self-efficacy among secondary school students. This aligns with existing literature suggesting that motivation plays a critical role in enhancing students' confidence in their physical capabilities (Ryan & Deci, 2000; McAuley & Gill, 1983). Students who exhibit higher levels of intrinsic and extrinsic sport motivation are more likely to believe in their physical ability and present themselves confidently in sports settings.

The result that both sport motivation and physical self-efficacy were rated at a relatively high level across the sample supports the notion that Chinese middle school students, particularly those in specialized sports schools, have internalized positive attitudes toward physical activity. These findings reinforce the application of Self-Determination Theory and Social Cognitive Theory in the educational sports context.

Interestingly, demographic variables such as gender, age, and type of sport participation showed no statistically significant influence on either motivation or self-efficacy. This contradicts some previous research that suggested gender-based differences in motivation (Zhao et al., 2023), but supports Wang (2015), who found that students' physical self-beliefs were more influenced by psychological than demographic factors.

Furthermore, the study reveals that motivational subcomponents—such as stress relief, self-growth, physical fitness, and social interaction—are all positively correlated with perceived physical ability and self-presentation confidence. This multidimensional result suggests that motivation does not influence self-efficacy uniformly, but through various specific pathways.

These insights imply that physical education programs should emphasize not only skill acquisition but also emotional and psychological support to enhance students' motivation and confidence. Curriculum planners and educators should design engaging, inclusive, and self-reinforcing activities that stimulate students' intrinsic interests and belief in their capabilities.

Conclusions

This study investigated the relationship between sport motivation and physical self-efficacy among physical education students in a Chinese secondary school context. The findings revealed that both sport motivation and physical self-efficacy were at a relatively high level across the sample. Moreover, no significant differences were found based on demographic variables such as gender, age, residence, sport type, and exercise frequency, indicating that these psychological traits were broadly consistent among students.

A statistically significant and positive correlation was identified between sport motivation and physical self-efficacy. This suggests that students with higher levels of motivation to participate in sports also tend to perceive themselves as more competent and confident in physical tasks. This result supports existing literature on the reciprocal relationship between motivation and self-efficacy in the educational and physical activity domains.

The implications of this study are twofold. First, it highlights the importance of fostering intrinsic sport motivation in physical education settings to enhance students' confidence and engagement. Second, it underscores the need for educators and school administrators to consider psychological factors—not just physical skill or performance—when designing curricula and evaluation strategies.

In conclusion, this research provides empirical evidence that can inform educational policy, curriculum reform, and the promotion of physical activity among adolescents in China and comparable contexts. Future studies may explore intervention-based approaches and longitudinal effects to further strengthen the understanding of these critical constructs.

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