

## A Study on the Process of Sports Socialization through the Physical Education Classes of Middle School Students

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### **Abstract**

*This research sought to verify the relationship between South Korean middle school students' physical education class awareness, their sports socialization, and their willingness to participate in future sports. The following results were obtained: first, physical education class awareness had a positive effect on sports socialization; second, sports socialization had a positive effect on willingness to participate in future sports; third, physical education class awareness did not directly affect the willingness to participate in future sports, but did indirectly affect it through sports socialization.*

**Keywords:** *Physical education class awareness, Sports socialization, Willingness to participate in future sports*

### **1. Introduction**

Modernity's scientific advancements have increased life expectancy and leisure time. As a result, the focus of attention on work and economic strength is shifting toward the pursuit of a high quality of life, and such demands of the times are expected to intensify. In the future, the value and importance of health will be further emphasized to maintain a good balance of life by increasing life expectancy and leisure time. For our purposes, this landscape prompts several questions: can a variety of physical activity and sports socialization experiences in middle school motivate students to continue to participate in sports as adults after graduation? What processes and procedures lead to a willingness to participate in sports? This study began with such questions, wagering that their answers would provide insight into the athletic behavior of middle school students who spend the majority of their time at school; such knowledge can be of practical help in planning and implementing sports and physical activity programs, including physical education classes on school grounds. To be sure, secondary school physical education departments should encourage youth to continue to participate in various physical activities in the future to live healthy lives. Previous studies have found that sports activities positively affect sports socialization and that increased satisfaction with sports activities amplifies the activities' positive social effects [1][2][3]. In addition, studies have also found [4] that opportunities for social development, such as those that involve activism, sociality, and accountability are often provided by after-school sports activities during which students collaborate and compete with their peers. However, while many studies on physical education classes and sports socialization have been conducted, studies verifying

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the relationships of these elements with other variables have not yet been conducted in a variety of different manners. A limitation exists here in that little research exists to verify the relationship between these different variables and willingness to participate in future sports. In particular, no work has yet been done on how sports socialization mediates such variables. To overcome this research gap, I sought to verify how the relationship between sports awareness and sports socialization processes impact student willingness to participate in future sports. Accordingly, this study aimed to generate a model in which physical education class awareness ultimately improves willingness to participate in future sports through sports socialization, and provides a theoretical foundation for the development of various programs in physical education classes. To achieve this objective, I took up the following research questions: 1. How does the awareness of physical education class affect sports socialization? 2. How does the awareness of physical education affect willingness to participate in future sports? 3. How does sports socialization affect willingness to participate in future sports? 4. Does sports socialization mediate the relationship between physical education class awareness and willingness to participate in future sports?

## 2. Research methods

### 2.1. Participants

A preliminary survey was conducted on 187 middle school students in Jeonju in September 2019 and a main survey was conducted on 359 middle school students in Gwangju and Jeonju in October 2019. The general characteristics of the subjects are shown in [Table 1].

Table 1. General characteristics of study subjects

Variable	Classification	Preliminary Survey		Primary Survey	
		Number of Cases	Percent (%)	Number of Cases	Percent (%)
Gender	Male	97	52.4	195	54.3
	Female	90	47.6	164	45.7
Residential Area	Gwangju	-	-	183	51.0
	Jeonju	187	100.0	176	49.0
Academic Performance Level	High	51	27.3	91	25.3
	Middle	88	47.0	186	51.8
	Low	48	25.7	82	22.9
Economic Level of Parents	Upper	63	33.8	105	29.2
	Middle	70	37.4	169	47.1
	Lower	54	28.8	85	23.7
Frequency of Physical Activity Participation	5 or more times a week	32	17.1	76	21.2
	3 to 4 times a week	41	21.9	97	27.0
	1 to 2 times a week	70	37.5	101	28.1
	None	44	23.5	85	23.7
Total		187	100	359	100

### 2.2. Measurement tools

To analyze the relationship between each variable, the questionnaire survey method was used for data collection. The survey questions used were those that were verified for reliability and validity in the preliminary survey and those that were determined to be consistent with the purpose of this study. The questionnaire consisted of four categories of questions measuring the general characteristics of the subjects, physical education class awareness, sports socialization, and willingness to participate in future sports. Questions related to the individual characteristics of the subjects were measured after organizing four questions on a nominal scale: gender, academic performance level, economic level of parents, and frequency of participation in physical activities. The measure for physical education class awareness was developed by [5] and the questionnaire used by [6] was employed. Specifically, the questionnaire consisted of 21 questions about four factors: physical ability, distrust, physical education teacher, and class atmosphere. Sports socialization was measured using the sports socialization questionnaire used by [7]. Specifically, 30 questions measured the following five sub-variables: autonomy, sociability, dominance, activity level, and stability. Willingness to participate in future sports was measured using a questionnaire developed by [8] that referred to [9] 's classification of sports participation based on the motion persistence measures presented by [10]. The specific subcomponents consisted of 17 questions that addressed the following three factors: willingness to participate in action, willingness to participate in knowledge, and willingness to participate in attitude. Awareness of physical education classes, sports socialization, and willingness to participate in future sports was measured using a five-point Likert scale that ranged from "very much (5 points)" to "not at all (1 point)" to facilitate the independent calculation of each score.

### **2.3. Reliability & validity test**

To verify the reliability of the produced measurement instruments, SPSS 18.0 was used to estimate internal consistency with Cronbach's  $\alpha$ , and a confirmatory factor analysis was performed using AMOS 18.0 to verify the convergent validity and discriminant validity. The Cronbach's  $\alpha$  of each sub variable ranged from .440 to .963. Physical education teacher (.440), a sub variable of physical education class awareness, and dominance (.649), a sub variable of sports socialization, were lower than the reliability criterion of .7 and were therefore removed before the study was conducted. The Cronbach's  $\alpha$  of all other variables were  $> .7$ , showing internal consistency. Next, convergent and discriminant validities were verified through a Confirmatory Factor Analysis (CFA). The suitability of the data and the normed fit index were verified through NFI, IFI, and CFI. The absolute fit index was verified through CMIN/DF, RMSEA, GFI, and RMR. The results of the analysis of the confirmatory factors in Table 4 were then evaluated for convergent validity and discriminant validity. First, the values of the standardized regression coefficient and construct reliability were determined to assess convergent validity. The values for the standardized regression coefficient ranged from .464 to .956 and .966 to .972 for construct reliability - convergent validity was secured. Next, discriminant validity was verified by comparing the correlation of each variable and the mean-variance distribution. As a result, the square of the correlation coefficient (.627) between sports socialization and willingness to participate in future sports, which had the highest correlation coefficients among all variables, was .982 for sports socialization and .978 for willingness to participate in future sports. As it was lower than the mean-variance distribution, discriminant validity was verified.

## 2.4. Data Processing Method

As noted above, to analyze the relationship between physical education class awareness, sports socialization, and willingness to participate in future sports, 546 middle school students (187 preliminary surveys, 359 primary surveys) were surveyed. Using this data, frequency and reliability analyses were conducted using SPSS 18.0, a confirmatory factor analysis was conducted using AMOS 18.0, and a path analysis was conducted. In factor analysis and path analysis, the criteria for specific goodness-of-fit indices are considered good if  $\chi^2/DF$  is  $< 2.0$  and RMR is  $< .80$ . In addition, the goodness of fit is considered good if GFI, NFI, IFI, TLI, and CFI are  $> .90$ . Meanwhile, the RMSEA is considered a close fit if its value is  $< .05$ , a mediocre fit if it is  $< .08$ , and an unacceptable fit if it is  $> 1.0$ . Finally, the bootstrapping method was used to determine the mediating effects of sports socialization. [11] proposed using 10,000 bootstrapping data samples generated from raw data to estimate parameters and to set the confidence interval at 95% from the original data, as it is difficult to ensure that mediating effects follow stationarity. Following Shrout and Bolger's propositions, this study examined the indirect effect of physical education class awareness through sports socialization and willingness to participate in future sports. The analytic process of the structural equation model is as follows: (1) development of a theoretical model, (2) application of the model's actual data, (3) evaluation of the model, (4) modification of the model if necessary, and (5) reassessment of the model [12]. This study followed this procedure. All subjects at the research stage were given specific explanations about the purpose and methods of the study and it was communicated that information collected during the study would only be used for the purpose of the study. The study was conducted after obtaining consent from those who wanted to participate.

## 3. Results

### 3.1. Descriptive statistics analysis

To confirm the descriptive statistics of the variables used in the analysis, the total score of each variable and the descriptive statistics of the sub-variables were analyzed. The mean ranged from 3.17 to 3.97 and the standard deviation ranged from .77 to 1.14. Next, the skewness and kurtosis were analyzed. On this basis, normal distribution can be considered to have been met if the skewness is  $< \pm 3.0$  [11] and kurtosis is  $< \pm 10.0$  [13], the criteria for univariate normality violations. The analysis shows that the absolute value of skewness is between .11 and .68 and the absolute value of kurtosis is between .16 and .67. The results showed that because the normality of the structural equation is satisfied, the estimation of unknown quantities through the maximum-likelihood method will not affect the results; the structural equation model verification proves eligible [11].

### 3.2. Verification of goodness-of-fit model

The model of this study consists of three latent variables—physical education class awareness, sports socialization, and willingness to participate in future sports—and ten observed variables. As there are many opinions about which goodness-of-fit index is best to evaluate structural equation models, it is best to report on several indices using many goodness-of-fit indices to evaluate the model. Among these indices, RMSEA has many advantages and is good to use with NFI and CFI [11]. Based on this, this study validated the incremental fit index through NFI, IFI, and CFI, and the absolute fit index through  $\chi^2/DF$ ,

RMSEA, GFI, RMR. To verify the hypothesis according to the research model, the fit of the entire research model was verified; the results are presented in [Table 2]. The results showed that the fit of the data was suitable overall; the data was thus used for the final analysis.

Table 2. Goodness-of-Fit of Proposed Model

Model	/DF	RMR	GFI	NFI	IFI	TLI	CFI	RMSEA
Proposed	4.015	.031	.929	.964	.972	.961	.972	.094

### 3.3. Path analysis

In order to verify the research questions, a path analysis was performed between the different variables; the results are shown in [Table 3]. First, physical education class awareness had a significant positive effect on sports socialization: the path coefficient was .917 ( $t=17.219$ ). Second, physical education class awareness did not demonstrate a significant effect on willingness to participate in future sports: the path coefficient was -.024 ( $t=.189$ ). Third, sports socialization had a significant positive effect on willingness to participate in future sports: the path coefficient was .928 ( $t=6.304$ ).

Table 3. Parameter estimation of research model

Hypothesis	Path		Estimate	S.E.	C.R.	p	
1	Physical Education Class Awareness	→	Sports Socialization	.917	.039	17.219	.000***
2	Physical Education Class Awareness	→	Willingness to Participate in Future Sports	-.024	.144	-.189	.850
3	Sports Socialization	→	Willingness to Participate in Future Sports	.928	.200	6.304	.000***

\*\*\* $p < .001$

## 4. Discussion & conclusions

The purpose of this study was to verify the structural relationship between physical education class awareness, sports socialization, and willingness to participate in future sports. The research was conducted using preliminary and main surveys. The results are as follows: first, middle school students' awareness of physical education classes has a positive effect on sports socialization. Second, sports socialization has a positive effect on willingness to participate in future sports. Third, the awareness of physical education classes does not directly affect willingness to participate in future sports, but does have an indirect impact on willingness to participate in future sports through sports socialization. Based on the above results, the significance of this study is as follows. First, it is significant in terms of raising awareness of the importance of school sports activities and also identifying the possibility of sports socialization to enhance the willingness to participate in future sports and encourage students to participate in physical education for life. Based on the results of this study, relevant institutions should come up with measures to provide positive opportunities for students to participate in school sports activities that effectively improve future quality of life.

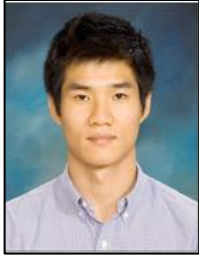
In addition, teachers at each school should make sufficient plans for class design and sports activities that allow students to experience the process of sports socialization in ways socialization in ways reflect their needs and promote their willingness to participate in future sports. The following are suggestions for the development of future studies to address the problems of this study, areas that were difficult to control within it, and the limitations that became evident during this research. First, since the target of this study was limited to students attending middle schools located in only a few areas of Korea, it may not be possible to generalize the findings to speak to the Korean population at large. Subsequent studies should take this into account and expand their samples to students from a wider range of countries and regions. Second, while this study was able to derive meaningful results by setting the path of awareness of physical education classes, socialization of sports, and willingness to participate in future sports, future research may do well to perform more complex and cross-sectional analyses of variables that may act as parameters in the relationship between physical education class awareness and the willingness to participate in future sports. Physical education class awareness and sports socialization can vary greatly across teachers, school environments, developmental processes, and backgrounds. Considering that willingness to participate in sports well into the future remains likely to change due to various factors, it will also be necessary to plan and conduct an end-to-end study that clarifies the relationships between these variables over time.

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