RELATIONSHIP BETWEEN SELF-PERCEPTION OF MOTOR COMPETENCE AND PREFERENCES FOR SOCIAL INTERACTION IN PHYSICAL EDUCATION CLASSES

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Abstract: *The main objective of this study was to examine the relationship between the aforementioned achievement motivation factors and preferences for social interaction in physical education classes in order to identify the variables that promote motivational climates conducive to student engagement. The sample consisted of 865 enrolled students in educational institutions in the Autonomous Community of Aragon, spanning grades 1 to 4 of Compulsory Secondary Education, with 470 being male (54.34%) and 395 female (45.66%). The normality of the variables was assessed using the Kolmogorov-Smirnov test, leading to the use of non-parametric tests (p<.001). Motor competence self-perception was assessed using the AMPET4 Test, and social interaction preferences through the GR-SIPPEL Test. Motor competence self-perception correlated at a low intensity with Cooperation, Individualism, and Affiliation preferences, and at a moderate to high intensity with Competition. Boys scored significantly higher than girls in motor competence self-perception. The social participation preference in physical education classes was Cooperation for both boys and girls.*

Key words: *physical education, motivation, cooperation, motor competence*

INTRODUCTION

The practice of physical activity (PA) has a positive impact on health, being an important factor in it (Moral-García et al., 2021). In fact, PA brings numerous physical, psychological, and social benefits (Chaput et al., 2020), with adolescence being a crucial period for establishing active lifestyles (Telama et al., 2014).

Despite this, most adolescents worldwide do not meet PA recommendations (WHO, 2019). These levels are not met either in Physical Education (PE) classes (Mayorga-Vega et al., 2020) or in extracurricular physical activity (Fernández et al., 2019).

One of the most important goals of the Physical Education (PE) area is the promotion of active lifestyles (Romero-Chouza et al., 2021), which positively impacts participation in extracurricular activities (Ventola et al., 2020). In recent years, studies on how to increase motivation in PE classes have proliferated, especially from cognitive-social constructs (Turabik & Baskan, 2015).

Among these constructs, one of the most used has been Achievement Goal Theory (Nicholls, 1989), which argues that people are guided by a demonstration of competence in achievement environments such as PE classes. Within the Achievement Goals factors, Ruiz et al. (2015) include the perception of motor competence (PMC), understood as the opinion each individual has of their motor competence, which has been classified as a mediator between motor competence and PA and is a significant predictor of PA (Royo et al., 2023a; Stodden et al., 2008). Various studies have found significant differences between genders in PMC, favoring boys over girls (Márquez-Barquero & Azofeifa-Mora, 2019; Royo et al., 2023b).

Another cognitive-social construct used to study students' motivation in PE classes is social interaction and learning in PE (Ruiz et al., 2010). In PE, these interactions are important as they are key

to the development of activities and a driving force in didactic aspects (Navarro-Patón et al., 2019). Social interaction is essential to provide students with valuable experiences in PE (Beni et al., 2016). Ruiz et al. (2010) explored secondary school students' social interaction preferences by developing the GR-SIPPEL scale, classifying four types of dimensions: Cooperative, Competitive, Individualistic, and Affiliative (Ruiz et al., 2010). Few studies analyze the pattern of preferences in secondary school students, finding that most have cooperation as their main preference, followed by competition and affiliation (the order of these last two varying by study), and finally, individualism (Navarro-Patón et al., 2019; Ruiz, 2010). Regarding gender differences, some studies found higher ratings for boys in the competitive and individualistic dimensions and for girls in the cooperative and affiliative dimensions (Navarro-Patón et al., 2019; Ruiz et al., 2010). In this regard, some authors have commented on a greater predisposition of boys for social comparison and winning in sports, while for adolescent girls, the outcome is not their primary motivation (Ruiz et al., 2010); on the other hand, a greater male ego orientation and a greater female task orientation in PE have also been observed (Sánchez-Alcaraz et al., 2016).

There is little research that has explored the interaction of both cognitive-social constructs; therefore, the main objective of this study was to analyze the relationship between PMC and social interaction preferences in PE classes in order to identify possible variables that promote motivational climates conducive to the engagement of adolescent students.

METHOD

Participants

The sample consisted of 865 students enrolled in educational centers in the Autonomous Community of Aragón, covering 1st to 4th years of Compulsory Secondary Education. Of these, 470 were boys (54.34%) and 395 were girls (45.66%). The mean age was 13.75 years (SD = 1.28).

Instruments

PMC was assessed using the AMPET4 Achievement Motivation Test for Learning in Physical Education classes developed by Ruiz et al. (2015). It consists of 32 items, each rated on a 5-point Likert scale, where 1 means strongly disagree and 5 means strongly agree. The structure was confirmed by confirmatory factor analysis with good internal consistency in all its dimensions, with reliability coefficients equal to or greater than .70 in all of them

Social interaction preferences in PE classes were assessed using the Graupera/Ruiz Scale of Preferences for Social Interaction in Physical Education Classes (GR-SIPPEL) by Ruiz et al. (2010). The scale is composed of 28 items divided into four dimensions of seven items each, named cooperation, competition, affiliation, and individualism. Each item was presented with a 4-point Likert scale, where 1 means totally disagree and 4 means totally agree. The Cronbach's α reliability coefficients were 0.77 (95% CI: 0.76-0.78) for cooperation; 0.70 (95% CI: 0.69-0.71) for affiliation; 0.83 (95% CI: 0.83–0.84) for competition; and 0.77 (95% CI: 0.76-0.78) for individualism. Cut-off values were GFI = 0.94 and CFI = 0.90. In the confirmatory analysis, the RMSEA index yielded a score of 0.046 (90% CI: 0.045-0.047; Pclose = 1), concluding that the data fit the initially hypothesized model.

Procedures

Both instruments, of an individual nature, were filled out in parallel with the rest of the classmates. This study was reviewed and conducted in accordance with the ethical standards set out in the Declaration of Helsinki.

Statistical analysis

The normality of the variables was studied using the Kolmogorov-Smirnov test, which rejected the normality assumption of these variables, leading to the use of non-parametric tests. Descriptive statistics of the variables were then examined. To study gender differences in PMC and GR-SIPPEL, the Mann-Whitney U test was used, and to examine the correlation between PMC and social participation preferences in PE, Spearman's Rho test was employed. All analyses were conducted using the SPSS statistical package version 26.0 for Windows.

RESULTS

Table 1 shows the descriptive statistics of the studied variables, both for the complete sample and for each gender. As can be seen, considering the complete sample, students are predominantly cooperative, followed by competition and affiliation, which occupy the second and third positions respectively, with individualism being the least preferred. Differentiating by gender, the only difference is that boys choose competition as their second preference, while girls choose affiliation.

Table 1 Descriptive statistics

	Complete sample		Boys		Girls	
Variables	M	SD	M	SD	M	SD
Cooperation	29,16	208,03	21,84	3,74	22,39	3,75
Competition	25,31	207,63	19,61	4,60	16,76	4,44
Individualism	21,92	207,27	15,61	4,19	14,12	4,05
Afiliation	25,07	208,08	18,22	3,81	17,74	3,61
PMC	33,16	268,30	25,74	4,92	21,95	5,30

The gender differences in the analyzed variables from the two instruments are shown in Table 2. It can be observed that there are significant differences between the male and female groups in all analyzed variables ($p < 0.05$), with boys scoring higher in all variables except for cooperation, where the average ranks are higher in the girls' group.

Table 2 Mann-Whitney test to establish gender differences

Variables	Sexes	Average ranks	U Mann Whitney	Sig.
Cooperation	Boys	414,41	84086,00	,017
	Girls	455,12		
Competition	Boys	504,63	61981,00	,000
	Girls	355,57		
Individualism	Boys	482,75	74135,50	,000
	Girls	385,84		
Afiliation	Boys	450,79	84811,00	,026
	Girls	412,89		
PMC	Boys	508,39	54571,50	,000
	Girls	335,71		

Tabla 3 Rho Spearman Correlations between PMC and social interaction preferences in Physical Education Classes

Variables	PMC	PMC	PMC boys	PMC girls
Cooperation	Correlation coefficient	.241**	.266**	.302**
	Sig.	.000	.000	.000
Competition	Correlation coefficient	.450**	.449**	.314**
	Sig.	.000	.000	.000
Individualism	Correlation coefficient	.201**	.130**	.141**
	Sig.	.000	.000	.000
Afiliation	Correlation coefficient	.170**	.143**	.148**
	Sig.	.000	.000	.000

In Table 3, the results obtained from the correlations between PMC and the four variables of social interaction preferences in PE classes are reflected. For the entire sample, a positive correlation of low intensity has been found between the variables Cooperation, Individualism, and Affiliation with PMC, and a moderate intensity correlation with Competition. The pattern of results by gender is very similar,

except in Competition, where the intensity of the relationship is lower in the case of the female group.

DISCUSSION

The main objective of this study was to analyze the relationship between PMC and preferences for social interaction in PE classes in order to identify possible variables that promote motivational climates conducive to the engagement of adolescent students.

One of the relationships detected, and of greater intensity among those found, is the correlation between perceptions of motor competence and preference for competition. Students with higher scores in competitive preferences also perceive themselves as having higher motor competence. This could possibly be because those who feel more athletically and coordinatively prepared are motivated to participate in competitions with their peers; however, individuals who perceive their motor skills as lower may avoid competitions that highlight their shortcomings. Some authors conclude that students with low motor performance feel marginalized and avoid any contact with physical activity (Hands, 2008). Although this relationship has been found in both sexes, its intensity was greater in the male group, possibly because, as some authors have noted, boys have a greater predisposition for social comparison and winning in sports, whereas adolescent girls may not be as motivated by these factors (Ruiz et al., 2010).

Regarding preferences for social interaction in physical education classes among adolescents, both in the complete group and separately by gender, adolescents show a preference for cooperation. These results are consistent with previous research (Patón et al., 2019; Ruiz et al., 2010). This pattern could be attributed to the fact that adolescence is a period when peer relationships become important and cooperative learning is preferred (Ruiz et al., 2010). Increasing the time dedicated to cooperative practices in PE classes could offer a more effective solution to the challenges posed in teaching this discipline (Barriopedro et al., 2016), allowing adolescents to benefit from improvements in learning, environment, and motivation in the area (Velázquez et al., 2015), and increasing the likelihood of them being altruistic and cooperative in the future (Ito et al., 2022).

Finally, in the study of gender differences, these were found in all variables, highlighting the greater cooperative preference among girls, in line with observations by other authors (Patón et al., 2019; Ruiz et al., 2010), and a higher PMC among boys, consistent with the results of Royo et al. (2023b).

CONCLUSIONS

Although competition generates motivation and commitment (García et al., 2021; Sánchez-Oliva et al., 2012), we observe that individuals with lower PMC in PE classes have not prioritized competition as a preferred social interaction.

The social participation preference in physical education classes was Cooperation for both boys and girls. If students predominantly exhibit a preference for cooperation, it is important to increase the time and number of cooperative situations while reducing the time dedicated to competition

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ODNOS SAMOPERCEPCIJE MOTORNE KOMPETENCIJE I PREFERENCIJA ZA SOCIJALNU INTERAKCIJU NA ČASU FIZIČKOG VASPITANJA

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Sažetak: *Osnovni cilj ovog istraživanja bio je da se ispita odnos između pomenutih faktora motivacije postignuća i preferencija za socijalnu interakciju na časovima fizičkog vaspitanja kako bi se identifikovale varijable koje promovišu motivacionu klimu pogodnu za angažovanje učenika. Uzorak se sastojao od 865 upisanih učenika u obrazovne ustanove u Autonomnoj zajednici Aragon, od 1. do 4. razreda obaveznog srednjeg obrazovanja, pri čemu je 470 muškaraca (54,34%) i 395 žena (45,66%). Normalnost varijabli je procenjena korišćenjem Kolmogorov-Smirnov testa, što je dovelo do upotrebe neparametarskih testova (p<.001). Samopercepcija motoričke kompetencije je procenjena korišćenjem AMPET4 testa, a preferencije socijalne interakcije kroz GR-SIPPEL test. Samopercepcija motoričke kompetencije bila je u korelaciji sa niskim intenzitetom sa preferencijama saradnje, individualizma i pripadnosti, a umerenim do visokim intenzitetom sa konkurencijom. Dečaci su postigli značajno veći rezultat u odnosu na devojčice u samopercepciji motoričke kompetencije. Prednost društvenog učešća na časovima fizičkog vaspitanja bila je Saradnja i za dečake i za devojčice.*

Ključne reči: *fizičko vaspitanje, motivacija, saradnja, motorička kompetencija*