

## Original Article

### Perception of adolescents on physical education classes according to the physical activity level, weight status, gender and age

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#### Abstract.

This study aims at knowing the motivations of Spanish students towards physical education through the Measure of Goals in the Physical Education Students scale, at setting the standards of the scale and at discovering whether there are differences by gender, age, body mass index and physical activity level in the motivational profile of adolescents. The sample consisted of 989 Compulsory Secondary Education students, of the subject of Physical Education (a proportional cluster sampling was carried out in two phases, with an error of <.03 at a confidence level of 95%), with an average age of 14.36 years (51.5% men). The greatest general motivation is found in the factor called "mastery-approach", coinciding also with older adolescents. Males feel closer to social approval and mastery-approach (as well as to normal weight). At a general level, the mastery-approach generates greater motivation in adolescents. In addition, males, older students and students with normal weight feel more attracted to this motivational aspect. In contrast, active students feel more identified with the performance-approach. Predictive validity determines the correlation between the subscale of performance-avoidance goal and the physical activity. In conclusion, the adolescents show the greatest interest towards the mastery-approach as the main reason for practicing PA; the motivations related to the mastery-approach and social approval enjoy greater acceptance among males; the older subjects are closer to the mastery-approach, the middle-aged to the performance-approach and the younger; the active adolescents show great motivation towards the performance-approach while the inactive are more concerned about social approval.

**Key Word:** Motivation, physical activity, validity, physical education, adolescence.

#### Introduction

The motivation is understood in the scientific literature from a prism of globalism (Guzmán, Garratalá, García-Ferriol, & Carratalá, 2006), evolving from the first approaches where a clear difference was established between intrinsic and extrinsic motivation (Maslow, 1943; Harter, 1978) towards more current perspectives that defend a dimension composed of internal or external factors that can lead to the emergence and maintenance of specific behaviours or actions (Candela, Zucchetti, & Villosio, 2014). This could be better understood from the context of the Self-Determination Theory (Deci, & Ryan, 1991, 2000), which divides motivation into three types: intrinsic motivation, extrinsic motivation and amotivation.

Two of the main theories on which researchers have drawn on to analyse motivation in Physical Education (PE) have been the achievement goal theory (Nicholls, 1989) and the Self-determination Theory (Deci, & Ryan, 1991, 2000). However, the self-determination theory has gained ground in recent years, especially as a result of the development of the theoretical framework of achievement goals (Elliot, 1999, Elliot and McGregor, 2001). As evidenced by different researches, the motivation has been analysed from different action areas, and if the emphasis is placed on sports psychology, two essential approaches are distinguished: studies of cognitive orientation and, on the other hand, researches that give priority to the motivational dimension of the individual (Parry, Chinnsamy, Papadopoulou, Noakes, & Micklewright, 2011, Quintana, Rivera, De la Vega, & Ruiz, 2012, Gillet, Berjot, Vallerand, Amoura, & Rosnet, 2012, Li et al., 2011; Plessner, 2012; Vega, Ruiz, Tejero, & Rivera, 2014).

An example of an instrument used to determine motivation is the scale called Measure of Goals in the Physical Education Students (MMAEF, for its Spanish initials) created by Papaionnou, Tsigilis, Kosmidou, & Milosis (2007), in its original version: Measuring Perceived Motivational Climate in PE. Specifically, for the Spanish context, a version adapted by Cervelló, Moreno, Martínez, Ferriz, & Moya (2011) was validated.

The school sports context, through the subject of EF, is an interesting opportunity to delve into the motivational possibilities that the context has in the students. This is what some authors understand as the general orientation towards a specific context or specific area of human activity. Therefore, the way in which

teachers approach and present their content to students may influence the generation of a type of motivation or another, which is also related to the possibility of generating adherence to the practice of Physical Activity (PA), thus increasing the intentionality of the practice as a healthy habit (Moreno, Huéscar, & Cervelló, 2012).

One of the main objectives of PE classes should be to promote the practice of PA on a regular basis among students, trying to avoid bad experiences with physical activities in adolescence, since they can negatively influence the intention to be physically active in adulthood (Taylor, Blair, Cummings, Wun, & Malina, 1999). In fact, intervention studies (Cecchini et al., 2001; Digelidis, Papaioannou, Laparidis, & Christodoulidis, 2003; Morgan, & Carpenter, 2002) where two class groups have been used (control/ego-oriented climate group and task-oriented climate group), have detected in the students a greater tendency towards the task (mastery-approach), perceived competence and intrinsic motivation (Papaioannou, Tisigilis, Kosmidou, & Milosis, 2007). In this regard, it is especially necessary to investigate the factors that can influence students to achieve a positive motivation towards this subject. This need is even more reinforced considering that in secondary school the PE teacher and the students only interact for two hours a week and, there seems to be a mismatch between the PE curriculum and the physical-sporting practices that interest adolescents. For that reason, one of the most important functions that should be investigated is related to the type of motivation that the teacher awakes in the students (Núñez, Fajardo, & Quimbayo, 2010). This study aims at determining the motivations of adolescent students of Salamanca towards PE through the Measure of Goals in Physical Education students (MMAEF, for its Spanish initials) scale, in its adapted version to Spanish by Cervelló, Moreno, Martínez, Ferriz, & Moya (2011). Three secondary objectives have also been proposed in order to verify the psychometric properties of the scale to check if there are differences by gender, age, Body Mass Index (BMI) and PA level, with the purpose of determining if the trends found in previous studies reappear; set the standards of the scale to be able to establish comparison models.

## Methodology

**Participants.** The population under study was composed of Compulsory Secondary Education (ESO) Spanish students. The sample analysed was of 989 ESO students who took part in this study, coming from different educational centres. The selection of the sample was made by proportional cluster sampling in two phases, assuming an error of  $<.03$  at a confidence level of 95%. The different strata were selected according to their geographical location, academic year, age, and gender. All adolescents belonging to the selected classes were invited to participate. 100% of the sample belongs to urban areas, taking into account that an area with more than 10,000 inhabitants is considered of urban origin. The average age of the participants was of  $14.36 \pm 1.13$  years within a range between 12 and 16 years. By paying special attention to gender, it was found that 51.5% ( $n = 200$ ) were men and 48.5% ( $n = 189$ ) were women. The BMI was adjusted according to the overweight and obesity values of the tables standardised by percentiles based on the studies of Cole (2000).

Table 1. Characteristics of the sample according to weight, height, BMI, PA level and body type. Classification by gender and age.

	Male (n=500)					Female (n=489)					Total (n=989)
	12 -13 years	14-15 years	16 years	<i>p</i>	Total	12 -13 years	14-15 years	16 years	<i>p</i>	Total	
<b>Weight (kg)</b>	49.04 ±9.053	54.89 ±4.38	65.38 ±8.84	-	54.91 ± 8.12	45.33 ± 4.77	51.25 ± 3.50	64.76 ± 5.88	-	52.24 ± 7.91	*
<b>Height (m)</b>	1.57 ± .07	1.63 ± .06	1.72 ± .34	-	1.63 ± .07	1.51 ± .08	1.61 ± .05	1.69 ± .04	-	1.60 ± .08	-
<b>BMI (Weight/height<sup>2</sup>)</b>	19.86 ± 3.19	20.58 ± 1.40	22.15 ± 1.54	-	20.63 ± 2.19	19.94 ± 2.65	19.78 ± 1.17	22.60 ± 1.66	-	20.36 ± 2.07	-
<b>Active (%)</b>	34.8	20	23.1	-	20	0	16.4	0	**	9	***
<b>Inactive (%)</b>	65.2	80	76.9	-	61	100	83.3	100		91	
<b>Low weight (%)</b>	43.5	6.7	0	-	16	33.3	8.3	0	-	13.5	
<b>Normal weight (%)</b>	52.2	93.3	100	-	82.7	62.5	91.7	100	-	85.4	-
<b>Overweight (%)</b>	4.3	0	0	-	1.3	4.2	0	0	-	1.1	

Observation: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Average results and standard deviation ( $\pm$ ) of the measurements of weight, height and BMI. Percentage results according to level of physical activity (active and inactive) and body type (normal weight, overweight and obesity). Data expressed according to gender and age of the participants. ANOVA variance analysis and T test were used for continuous variables and  $\chi^2$  for categorical variables.

Males: 12 -13 years ( $n=163$ ), 14-15 years ( $n=185$ ) y 16 years ( $n=152$ ).

Females: 12 -13 years ( $n=157$ ), 14-15 years ( $n=181$ ) y 16 years ( $n=151$ ).

**Method.** The questionnaire Measure of Goals in the Physical Education Students (MMAEF) made by Cervelló, Moreno-Murcia, Martínez Galindo, Ferriz, & Moya (2011) was used.

**Description of the scale (MMAEF, for its Spanish initials).** The MMAEF questionnaire consists of 24 items and a Likert-type response scale of 6 options (1. Strongly disagree, 2. Disagree, 3. Slightly disagree, 4. Slightly agree, 5. Agree, 6. Totally agree). Following the version adapted to Spanish, the 24 items are grouped into 4 factors: approach (items 5, 9, 12, 14, 20 and 24), performance-approach (items 1, 2, 6, 15, 18 and 23), performance-avoidance (items 4, 7, 10, 13, 16 and 21) and social approval (items 3, 8, 11, 17, 19 and 22).

**Description of the original reliability of the scale (MMAEF, for its Spanish initials).** The reliability of the scale in the Spanish version of Cervelló, Moreno-Murcia, Martínez Galindo, Ferriz, & Moya, (2011) is of (.81) for the global scale, while for the factors it takes the following values: mastery-approach (.77), performance-approach (.68), performance-avoidance (.82) and social approval (.79).

On the other hand, in order to know the level of weekly PA the *Adolescent Physical Activity Measure*—MVPA— (Prochaska, Sallis, & Long, 2001) was used. This questionnaire consisted of two questions that include the number of days that PA is practiced weekly, which include, at least, sixty minutes a day of physical exercise at an intensity that oscillates between moderate and vigorous, in a normal week and in a typical one. The response scale was the same for the two items (from zero to seven days of practice of PA/week). For comparison purposes, the average of the two items was used and those who carried out weekly PA for 5 days or more were considered active, while the others were considered as inactive. This questionnaire is widely used by the scientific community, acquiring a great presence in the international studies Health Behaviour in School-aged Children (HBSC).

In order to obtain the weight and size of the participants, they used the ASIMED type B scale - class III (Spain) and a handheld height rod SECA 214 (SECA Ltd, Germany) respectively. Both measurements were made barefoot and with light clothing. BMI was obtained using the formula weight/height (m)<sup>2</sup>.

**Procedure.** The questionnaires were applied by the same researcher within a single session of 50 minutes in the usual class schedule. It was authorised by the school and teachers and the parents or guardians of the minors involved provided their written consent. Short instructions were offered and participants were assured of the confidentiality of their answers. The participation was totally voluntary. The anonymity of the answers of the participants was guaranteed, since all the data were treated in a database through codes. The respondents did not receive any academic or monetary compensation for their contribution. No student refused to participate. The research was developed following the ethical guidelines of the currently in force Declaration of Helsinki, complying at all times with the highest standards of safety and professional ethics for this type of work.

**Data analysis.** Descriptive analysis of the data was carried out by performing frequency analysis (T test for continuous variables, and Chi2 for categorical variables), which allowed to extract information as accurate as possible about the characteristics of the sample. To verify the reliability coefficient of the scale, the Cronbach's Alpha test was used. Correlations and comparisons of means were obtained by means of the ANOVA test (where the mean, standard deviation and effect size were reported) between the different factors of the scale and the independent variables used. The level of significance was considered at  $p < .05$ . All analyses were developed using the Statistical Package for Social Sciences (SPSS, version 23.0 for Windows, SPSS, Inc., Chicago, IL, USA).

## Results

**Study of the reliability.** The reliability of the scale for our sample was studied, obtaining a Cronbach's alpha coefficient of .783. By factors, the scale that best fits the desired parameters is the mastery-approach (.81), followed by the performance-approach (.79), social approval (.761) and performance-avoidance (.724). The factorial structure of the proposal of the initial questionnaire was considered, since by keeping four factors, 50.77% of the variance is explained.

**Statistical description of the items.** For the description of the items, and for each subscale, the descriptive statistics of mean, median, standard deviation, asymmetry and kurtosis were calculated. It was possible to verify how the highest means correspond to the elements that compose the scale of mastery-approach ( $4.89 \pm 1.25$ ) and social approval ( $4.43 \pm 1.40$ ), of which none of their items show high mean values, but instead, they all remain within the scores that could be considered normal, taking into account the mean and the standard deviation of their factor. On the other hand, the scales with the lowest average score are the performance-approach ( $3.18 \pm 1.61$ ), and the performance-avoidance ( $3.21 \pm 1.65$ ). The resulting values in the items referring to these factors have a score that remains within the normal values calculated using the mean and the standard deviation as a reference.

**Analysis of variance.** The results of the ANOVA analysis that studies whether the motivation towards physical education varies, measured by the MMAEF scale, according to the gender, age, BMI and level of PA of the adolescents (Table 2). In the mastery-approach factor, only significant differences have been found in the

independent variable BMI, for example in item No. 5 ( $F = 5322$  and  $p = .006$ ) where overweight adolescents have higher motivational values. Differences have also been detected in item No. 9 ( $F = 4.136$  and  $p = .018$ ), No. 14 ( $F = 3.442$  and  $p = .034$ ) and No. 20 ( $F = 2.671$  and  $p = .04$ ). In the performance-approach factor, only significant differences have been found in the variable age, in item No. 1 ( $F = 5.191$  and  $p = .007$ ) and No. 18 ( $F = 3.773$  and  $p = .025$ ) where older students have a higher motivation. In the performance-avoidance factor, significant differences were found in the independent variables BMI and PA level. Regarding the BMI, it has been found in item no. 21 ( $F = 3,289$  and  $p = .040$ ) that adolescents with overweight experience greater motivation. On the other hand, in the PA, the significant differences are found in item no. 7 ( $F = 6.104$  and  $p = .014$ ) and no. 16 ( $F = 9.358$  and  $p = .003$ ), having the active students a greater level of motivation in both cases. In the social approval factor, there are significant differences according to the BMI in item No. 3 ( $F = 4,219$  and  $p = .016$ ), having those adolescents with normal weight a greater motivation.

Table 2. Descriptive and variance analyses of the MMAEF (Measure of Goals in the Physical Education Students) scale (by factors). Classification according to BMI, age and level of PA.

Factor	Items	Independent variable	Descriptive		Sum of squares	g	ANOVA		
			Mean	Standard deviation			Root mean square	F	Sig.
Mastery-approach	5. My goal is to develop my skills.	Low weight	4.76	1.48	13,566	2	6,783	5,322	.006
		Normal weight	5.22	1.05					
		Overweight	3.00	1.41					
	9. I intend to practice more in order to learn new skills and games.	Low weight	4.68	1.72	13,914	2	6,957	4,136	.018
		Normal weight	4.99	1.21					
		Overweight	2.50	0.70					
14. When I learn a skill, it makes me try to perform it more times.	Low weight	4.68	1.37	10,073	2	5,037	3,442	.073	
	Normal weight	4.76	1.18						
	Overweight	2.50	0.70						
Performance-approach	1. I feel good when I'm the only one who can do the exercise.	12-13 years	4.40	1.35	28,982	2	14,491	5,191	.007
		14-15 years	3.45	1.80					
		16 years	3.93	1.70					
	18. I always try to outperform my peers.	12-13 years	3.26	1.56	22,911	2	11,455	3,773	.025
		14-15 years	3.18	1.87					
		16 years	4.17	1.57					
Performance-avoidance	21. I avoid exercises and games where I see myself unable to perform them	Low weight	2.20	1.41	18,760	2	9,380	3,289	.040
		Normal weight	3.13	1.27					
		Overweight	3.50	2.12					
	7. I'm usually worried because they told me I did not have many skills.	Active	3.61	2.06	17,042	1	17,042	6,104	.014
		Inactive	3.01	1.73					
		16. I am often worried that by trying to perform a task, I might feel incompetent.	Active	4.39					
Inactive	3.39	1.60							
Social approval	3. The most important thing for me so as to learn a game or skill is to get approval from others.	Low weight	2.84	1.59	21,256	2	10,628	4,219	.016
		Normal weight	3.82	1.57					
		Overweight	3.00	2.82					

### Correlation.

The Pearson correlation analysis reflects statistically significant differences between MMAEF scale factors such as mastery-approach with performance-avoidance ( $-.263$  and  $p \leq .001$ ) and social approval ( $.389$ ,  $p \leq .001$ ). The performance-approach and social approval ( $.553$ ,  $p \leq .001$ ) have also been related to positive significance. With regard to the other independent variables, a significant correlation between the performance-avoidance factor with the BMI ( $.211$ ,  $p \leq .01$ ) and the PA ( $.217$ ,  $p \leq .01$ ). On the other hand, the BMI is positively related to age ( $.348$ ,  $p \leq .001$ ). Gender and PA show a positive significance ( $.211$ ,  $p \leq .01$ ). The relationships between the other variables are shown in Table 3.

Table 3. Pearson correlation analysis between the different factors of the MMAEF scale (Measure of Goals in the Physical Education Students), gender, age, BMI and level of PA.

		Mastery- approach	Performance- approach	Avoidance- approach	Social approval	Gender	Age	BMI	PA
<b>Mastery- approach</b>	PC	1	.067	-.263**	.389**	.013	.063	-.066	-.054
	<i>p</i>		.385	.001	.000	.865	.412	.391	.487
<b>Performance- approach</b>	PC		1	.089	.553**	.041	.039	.010	.000
	<i>p</i>			.248	.000	.599	.613	.902	.999
<b>Avoidance- approach</b>	PC			1	.019	.103	.072	.211**	.217**
	<i>p</i>				.802	.182	.348	.006	.004
<b>Social approval</b>	PC				1	.028	.122	.028	.040
	<i>p</i>					.718	.112	.718	.601
<b>Gender</b>	PC					1	.048	.062	.211**
	<i>p</i>						.538	.419	.006
<b>Age</b>	PC						1	.348**	.011
	<i>p</i>							.000	.886
<b>BMI</b>	PC							1	.048
	<i>p</i>								.536
<b>PA</b>	PC								1

\*\* The correlation is significative at 0.01 level (bilateral).

PC: Pearson Correlation

*p*: Sig. (bilateral)

**Assessment.** An assessment of the scale was carried out. Selected the items for each subscale, we proceeded to calculate the statistics that serve as a reference to be able to compare the individual score with some standardised criteria (Table 4). With these scales that are presented, a subject can be placed in a low group (lower than the 25th percentile, for example in the mastery-approach with a score of 5.5), in a medium-low group (below the 50th percentile, for example, in performance-approach the score could be of 3.7), a medium-high group (lower than the 75th percentile, for example, in performance-avoidance a score could be of 3.9), or the high group (higher than the 75th percentile, for example, in social approval a score could be of 5.3).

Differences between men and women. The data show that there are no significant differences between men and women in the subscales of Mastery-Approach, Performance-Approach, Performance-Avoidance and Social Approval ( $p > .05$ ).

Table 4. Scale standards.

		Mastery-approach	Performance-approach	Avoidance-approach	Social approval
<b>TOTAL</b>	<b>N</b>	989	989	989	989
	<b>Mean</b>	7.2598	3.8098	3.2098	4.4373
	<b>Median</b>	7.4167	3.8333	3.3333	4.5000
	<b>Standard Dev.</b>	2.05952	1.13464	1.07253	.95338
	<b>Asymmetry</b>	-.391	-.097	-.262	-.749
	<b>Kurtosis</b>	-.698	-.707	-.603	.525
	<b>Percentiles 25</b>	5.6667	2.9583	2.5000	3.8333
	<b>50</b>	7.4167	3.8333	3.3333	4.5000
	<b>75</b>	9.0000	4.6667	4.0000	5.1667
	<b>MALES</b>	<b>N</b>	500	500	500
<b>Mean</b>		7.2881	3.8580	3.3251	4.4650
<b>Median</b>		7.3333	4.0000	3.3333	4.5000
<b>Standard Dev.</b>		2.04905	1.08593	1.04480	.82526
<b>Asymmetry</b>		-.273	-.223	-.312	-.450
<b>Kurtosis</b>		-1.001	-.699	-.462	.092
<b>Percentiles 25</b>		5.6667	3.0833	2.6667	4.0000
<b>50</b>		7.3333	4.0000	3.3333	4.5000
<b>75</b>		9.0000	4.6667	4.0833	5.0000

		489	489	489	489
<b>FEMALES</b>	<b>N</b>	489	489	489	489
	<b>Mean</b>	7.2341	3.7659	3.1049	4.4120
	<b>Median</b>	7.5000	3.6667	3.3333	4.6667
	<b>Standard Dev.</b>	2.08026	1.18165	1.09244	1.06069
	<b>Asymmetry</b>	-.498	.007	-.209	-.834
	<b>Kurtosis</b>	-.425	-.692	-.686	.400
	<b>Percentiles</b>				
	<b>25</b>	5.7500	2.8333	2.3333	3.8333
	<b>50</b>	7.5000	3.6667	3.3333	4.6667
<b>75</b>	9.0000	4.7500	3.9167	5.2500	

## Discussion

Some of the objectives of this research were to discover the motivations of students towards physical education, to determine whether the motivation varies according to gender, age, BMI and level of practice of PA, and to set the standards of the scale.

The global reliability of the scale established some acceptable levels (.783), thus complying with the quality standards set out by Nunally (1978) and Nunnally, & Bernstein (1998). Similarly, the data for each of the subscales also comply with these recommendations: mastery-approach (.81), performance-approach (.79), social approval (.761) and performance-avoidance (.724). These values coincide with those found in the original version created by Cervelló, Moreno, Martínez, Ferriz, & Moya (2011), who obtained an acceptable overall reliability (.81), also for the different dimensions such as the mastery-approach (.77), performance-approach (.68), performance-avoidance (.82) and social approval (.79).

The results of this research match those previously presented in the scientific literature, evidencing that when learning environments are developed with a task-oriented motivational climate, the intrinsic motivation of the students in PE classes is more likely (Papaioannou, Tsigilis, Kosmidou, & Milosis, 2007). Therefore, it is important that teachers propose to their students significant tasks that promote cooperation among them. The role of teachers in the creation of environments with a high orientation to learning is of utmost importance. For that purpose, they must propose tasks that imply a challenge for each student, goals with personalised difficulty as well as they must promote autonomy and they must highlight personal and group achievements (Trouilloud, Sarrazin, Bressoux, & Bois, 2006).

Based on the data of the present investigation, the association of the aspects performance-approach and avoidance-performance, as it happened in the original version (Papaionnou, Tsigilis, Kosmidow, & Milosis, 2007; Cervelló, Moreno, Martínez, Ferriz, & Moya, 2011), is moderately positive, which is consistent with the trichotomous model of achievement goals (Elliot, 1997).

The social approval aspect is positively linked, as expected, to the other performance aspects, presenting slightly higher correlation values than in the original version. According to Papaioannou et al. (2007), these results support the internal validity since a common characteristic of the social approval and the performance goals are achievements based on criteria determined by others.

The data from this study reveal that adolescents show the greatest interest towards the mastery-approach as the main reason for practicing PA. This is positive, since it can be a predictor of participation in physical and sports activities (White, & Duda, 1994) and, above all, for the persistence and maintenance of the activity over the years (Papaioannou, Bebetos, Theodorakis, Christodoulidis, & Kouli, 2006). Mastery-oriented individuals tend to pay attention in order to learn new skills, tend to strive and demonstrate behavioural control. This orientation creates a personal development and reinforces the commitment to participate in organised sports, using free time in an active and healthy way (Amado et al, 2012; Ruiz-Juan, 2014). Other related studies highlight the relationships between goal orientations, continuity in physical practice, intensity or dynamism (Duda, & Balaguer, 2007, Cervelló, Moreno, Alonso, & Iglesias, 2006, Ruiz-Juan, 2015). The emphasis on mastery orientation favours the appearance of feelings of competence, effort and greater continuity of physical-sportive activity in their free time (Ries, 2011). So it can be very interesting that the subject of physical education offers adapted physical activity programs that improve the subsequent evaluation of their physical condition (Grao-Cruces, Ruiz-Ariza, De la Torre-Cruz, & Martínez-López, 2018 ; Grao-Cruces, Ruiz-López, Moral-García, Ruiz-Ariza, & Martínez-López, 2016; Martínez-López et al., 2013).

Likewise, other studies have unveiled that the orientation and the perception of a mastery climate promote the effort and enjoyment (intrinsic motivation), as well as a positive attitude and intention and a participation towards physical exercise in their free time (Díaz, & Aguado, 2012; Papaioannou, Marsh, & Theodorakis, 2004; Wang et al., 2007; Wang et al., 2010). Therefore, it is suggested that they are strong positive predictors of sport and of future participation in physical-sport activity outside school (Papaioannou et al., 2004). Accordingly, this population is more likely to continue to be active in the future, pursuant to our data, more boys than girls, which is in line with other researches (Peiró, & Sanchis, 2004, Flores, Salguero, & Márquez, 2008, Pazo, & Tejada, 2012).

In this investigation, middle-aged students value the performance-approach more positively (14-15 years). Potentially, this is a group that can give up the practice and become inactive in the immediate future, as shown by different longitudinal studies (Papaioannou, Bebetos, Theodorakis, Christodoulidis, & Kouli, 2006), becoming more significant in those who show motivation and boredom. From which it can be inferred that the control of mastery favours the feelings of competence and effort, while an objective aimed at performance, to outperform others, can lead to perceptions of incompetence and less continuation of physical activity (Doubt, & Nicholls, 1992). In many cases, the withdrawal of the students comes originally from a too developed ego that has not been satisfied by the results obtained in the sport practice and, above all, in the competitive practice. These failures may have led to frustration and, subsequently, to interrupting physical practice (Amado et al., 2012). The orientation towards mastery appears as a decisive concept to increase motivation and prolong the practice of PA over time (Standage, & Treasure, 2002).

The analysis of variance performed to see if there were significant differences between the various subscales and the independent variables analysed indicated that by comparing the gender, boys had a higher performance-approach and social approval than girls. These data match previous studies on gender differences in PE (Pazo, & Tejada, 2012; Van Der Horst, Paw, Twisk, & Van Mechelen, 2007).

### Conclusions

This research also has limitations, since it is possible that the adolescents could misunderstand some of the questions, whether intentional or unintentional. However, this possibility was reduced, probably, since in the whole process anonymity was guaranteed, making the questionnaire very reliable and valid.

For future researches, it would be ideal to design a longitudinal study, being able to distinguish several groups based on their PA level, as well as on the teaching methodology used by the teacher and/or on the type of content addressed in class.

Adolescents show the greatest interest towards the mastery-approach as the main reason for practicing PA; the motivations related to the mastery-approach and social approval enjoy greater acceptance among males. In addition, boys are more active than girls. The older subjects are closer to the mastery-approach, the middle-aged to the performance-approach and the younger, they feel little motivation towards the performance avoidance. Students with normal weight are more motivated by the mastery-approach and those who are overweight focus on social approval. To conclude, it is worth mentioning that active adolescents show great motivation towards the performance-approach while the inactive are more concerned about social approval.

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