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ORIGINAL

EXTRA PHYSICAL EDUCATION LESSONS, MOTIVATION AND MOTOR SELF-EFFICACY IN ADOLESCENTS

INCREMENTO DE SESIONES DE EDUCACIÓN FÍSICA, MOTIVACIÓN Y EFICACIA MOTRIZ PERCIBIDA EN ADOLESCENTES

Úbeda-Palomares, A.B.[1] and Hernández-Álvarez, J.L.[2]

[1] Doctora. Profesora asociada. Departamento Educación Física, Deporte y Motricidad Humana. Universidad Autónoma de Madrid (España) ana.ubeda@uam.es

[2] Doctor. Profesor Departamento Educación Física, Deporte y Motricidad Humana. Universidad Autónoma de Madrid (España) juanluis.hernandez@uam.es

Spanish-English translators: Adrián Olmos-Alonso, aolmosa@exseed.ed.ac.uk

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RESUMEN

El objetivo de este estudio fue comprobar los efectos de un programa de intervención con incremento de sesiones semanales de Educación Física (EF), sobre la motivación intrínseca y la percepción de autoeficacia motriz en estudiantes de Enseñanza Secundaria. La muestra la formaron 375 alumnos de 1º de ESO de institutos públicos de la Comunidad de Madrid. Se utilizó un diseño cuasi experimental con tres centros control (n=109) cuyo alumnado cursaba dos sesiones semanales de EF y tres centros experimentales (n=266) donde el alumnado cursó cuatro sesiones semanales. El estudio, de carácter longitudinal, tuvo una duración de cinco meses, con medidas pre y post test en ambos grupos.

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Los resultados muestran una mayor motivación hacia las clases de EF al final del estudio, y una menor pérdida de autoeficacia motriz percibida a lo largo del curso, en el alumnado de centros experimentales respecto a centros control, especialmente entre las chicas.

PALABRAS CLAVE: Educación física, **i**ntervención, actividad física, motivación intrínseca, autoeficacia motriz.

ABSTRACT

The aim of this study is to evaluate the effects of a school-based intervention with extra physical education (PE) lessons per week on intrinsic motivation and perceived motor self-efficacy among Spanish secondary school students. The study sample was comprised of 375 participants, first-year secondary school students from state schools located in Madrid. A quasi-experimental design was used in the study. Three control and three experimental schools were selected. Students from the control group (n=109) had two PE lessons per week while students from the experimental group (n=266) had four. The longitudinal study lasted five months and both groups were pre and post-tested.

The results show that students from the experimental group had higher motivation for PE after the intervention and lower loss of perceived motor self-efficacy over time than those from the control group. The difference between groups was particularly obvious among girls.

KEY WORDS: Physical education, intervention, physical activity, intrinsic motivation, motor self-efficacy.

INTRODUCTION

Insufficient physical activity (i.e., physical inactivity) has been identified as the fourth leading risk factor for global mortality, increasing the prevalence of non-communicable diseases (NCDs) and affecting general health worldwide (OMS, 2014). Obesity, cardiovascular diseases, colon cancer or type 2 diabetes, together with other psychosocial factors, have dramatically increased over the last decades (Hallal, Bertoldi, Goncalves y Victoria, 2006; Strong et al., 2005; OMS, 2014), leading to an important social, health, and educational challenge. In addition, the cost to the healthcare system derived from physical inactivity and NCDs has imposed a substantial economic burden on society (Ding et al., 2016; Duncan, Spence y Mummery, 2005).

Older adults, women, and young people are all at high risk for physical inactivity. Nevertheless, our study only focuses on the young population.

As recommended by the World Health Organization (WHO), many governments have developed policies and plans over the past few years to promote health-

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enhancing physical activity (PA) among schoolchildren and adolescents (OMS, 2010). However, reports show that most adolescents do not meet the current WHO guidelines of sixty minutes of moderate-to-vigorous intensity PA per day—eighty per cent of adolescents did not reach the minimum standard in 2014, according to the latest HBSC survey (Inclhey et al., 2016). Reports also show, that girls and late adolescents are particularly more sedentary than other groups (Allison, Adlaf, Dwyer, Lysy & Irving, 2007; Bauman et al., 2012; Butcher, Sallis, Mayer & Woodruff, 2008; Currie et al., 2012; Gordon-Larsen, Adair, Nelson & Popkin, 2004; Hernández et al., 2008; Inclhey et al., 2016; Ramos, Jiménez-Iglesias, Rivera y Moreno, 2016).

Hence, in order to address the current situation of inactivity, it is crucial to identify factors influencing PA among schoolchildren. Several studies have shown that there are factors that might be key to understand schoolchildren's sedentary or physically active behaviour. Such factors include personal and psychosocial variables, being perceived motor self-efficacy and intrinsic motivation for physical education (PE) especially relevant.

Numerous studies in adolescents have proved a positive relationship between intrinsic motivation (i.e., self-determined motivation profiles) for PE and out-of-school PA (Cox, Smith & Williams, 2008; Moreno, Zomeno, Marin, Cervello & Ruiz, 2009a; Owen, Smith, Lubans, Ng & Londsdale, 2014; Shen, 2014), based on achievement goal theory (Nicholls, 1984) and self-determination theory (SDT; Ryan & Deci, 2000). Similarly, many studies have proved a positive relationship between adolescents' intrinsic motivation for PE and their intention to be physically active in the future (Standage, Duda & Ntoumanis, 2003; Hein, Muur & Koka, 2004; Méndez-Giménez, Cecchini, Fernandez-Rio & Gonzalez, 2012; Lim & Wang, 2009). This relationship has been described in both genders, being especially obvious among girls (Biddle & Wang, 2003; Biddle, Whitehead, O'Donovan & Nevill, 2005).

Self-efficacy, as defined by Bandura's social cognitive theory (Bandura, 1977), has been consistently related to PA in systematic reviews undertaken over the last decade (Bauman, 2012; Biddle, Atkin, Cavill & Foster., 2011; Craggs 2011; Martins, Marques, Sarmento & Carreiro da Costa., 2015; Park & Kim, 2008; Sterdt, Liersch & Walter, 2014; Uijdewilligen 2011). In addition, reviews show that the positive relationship between self-efficacy and PA is also particularly obvious among females (Biddle, Whitehead, O'Donovan & Nevill, 2005; Dishman, Dunn, Sallis, Vandenberg & Pratt, 2010; Lawman, Wilson, Van Horn, Resnicow & Kitzman-Ulrich, 2011).

Several authors have proved the influence of these two factors on out-of-school PA, in school-based interventions aimed at modifying the teaching methods or PE curricula to improve schoolchildren's motivation or perceived motor self-efficacy (Chatzisarantis, & Hagger, 2009; Dishman et al., 2005; Tessier, Sarrazin, & Ntoumanis, 2010; Wallhead, & Ntoumanis, 2004).

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However, few studies to date have examined these two variables based on the time devoted to curricular PE per week. In the study by Ntoumanis (2005), the author compared motivational variables, taken from SDT, between British sixteen-year-old school students who enrolled in a PE program and those who didn't—participation in PE lessons is optional at that age, according to the British school system. Results from the study showed that participants had higher intrinsic motivation for PE than non-participants. In addition, participants' psychological needs for competence were more satisfied. Although results seem obvious, participation in PE might cause dissatisfaction if the lessons' quality was deficient. Nevertheless, results support the idea of an acceptable quality that positively feedbacks students' initial motivation for PE. Similarly, students that do not participate in PE would also feedback their initial amotivation. Thus, results suggest that PE should be compulsory in the national curriculum.

The annual academic load for PE in Spain (Figure 1) is one of the lowest in Europe (Eurydice, 2003). Hence, we hypothesised whether a quantitative modification (i.e., extra PE lessons per week) would improve schoolchildren's motivation and perceived motor self-efficacy, as previously shown in the literature in school-based PA interventions targeting qualitative aspects, such as the lifestyle education for activity program (LEAP). LEAP intervention aimed to boost perceived self-efficacy through enjoyable and successful PA experiences among adolescent girls from South Carolina (Dishman et al., 2005). Evidence from the study showed that both enjoyment and self-efficacy mediated the positive effects of the LEAP intervention on PA among participating girls.

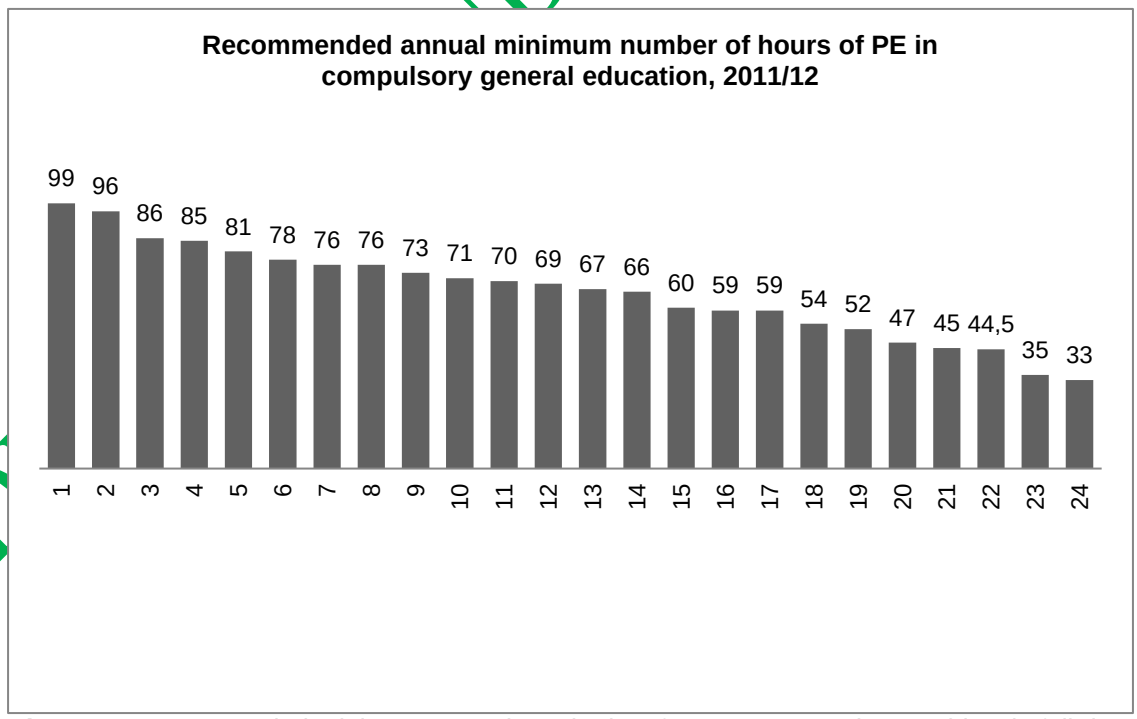

Figure 1. Recommended minimum annual taught time for PE as compulsory subject in full-time compulsory general education, 2011/12 (Eurydice report, 2013). Graph shows the average number of hours devoted to PE in secondary school across European countries.

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Such positive effects on PA have been observed more recently in schoolchildren and adolescents from Madrid, due to sport specialization plans (*proyectos de especializacion deportiva de la Comunidad de Madrid*, SSP) launched by the regional government in state schools from 2010 to 2015. SSP's main feature was that PE curriculum included extra compulsory PE lessons per week (4368/2012 regulation, BOCM no.112).

The aim of this study is to evaluate the effects of a school-based intervention with extra PE lessons per week (as part of the SSP) on intrinsic motivation and perceived motor self-efficacy among Spanish first-year secondary school students.

We selected first-year secondary school students in our study because they had not experienced any school-based PA intervention previously (i.e., they were not *biased*), compared to students from other grades.

This study is part of a broad research using the same study sample. However, due to lack of space only the main findings were included in the final manuscript.

MATERIAL AND METHODS

DESIGN

A quasi-experimental design was used in the study. Three control and three experimental schools located in Madrid were selected.

The longitudinal study lasted five months (i.e., October to March). Students from the control group had two PE lessons per week, while students from the experimental group had four (i.e., two extra PE lessons per week; see *Intervention*). Students from the experimental group used those extra PE lessons to increase their PE curriculum (which was the same for all participating schools).

All the experimental schools selected had an implemented SSP. Control schools were selected based on the experimental schools' main features (e.g., school size, location, lack of bilingual education program, lack of post-compulsory education related to sports, etc.). In addition, control schools were selected based on other features (such as close proximity to an experimental school, presence of contacts within the school, etc.).

Contacts of each participating school (i.e., PE teachers) provided qualitative information based on individual face-to-face interviews.

Intrinsic motivation and perceived motor self-efficacy were tested before and after the intervention (pre and post-test, respectively) in both control and experimental groups (see *Questionnaire and Measures*).

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INTERVENTION

The SSP was applied to the three experimental schools. It was defined by the variable *extra PE lessons*. SSP's main features (4368/2012 Regulation, BOCM no.112) are:

a) Two extra PE lessons per week—students have four compulsory PE lessons per week and grade.
b) An elective sport course per grade: *sports I, II, III and IV*, respectively.
c) A specific sports program with extra and out-of-school activities.
d) A school sports club (at a basic level).

Overall, SSP's features c) and d) encourage PA at school—any school could launch those without necessarily having an implemented SSP.

The three control schools also had implemented plans to encourage PA at school, such as specific extra activities, promotion of PA during recess, and/or an official out-of-school sports program (i.e., schools championships).

PARTICIPANTS

Before the intervention (pre-test), the study sample was comprised of 444 participants (n=251 boys and n=193 girls), first-year secondary school students from six state schools located in Madrid (mean age=12.44±0.67 years). Three schools were assigned to the control group (n=140) while the other three were assigned to the experimental group (n=304). In both cases, the proportion of boys was slightly bigger than that of girls.

Only 375 out of 444 participants answered the questionnaire after the intervention (post-test). Thus, the final study sample was reduced to 375 participants. Participants were assigned to the groups as shown in Table 1.

Table 1. Final study sample per group and gender.

		Gender		Total
		Boys	Girls	
Control group (two PE lessons)	N	58	51	**109**
	%	53.20%	46.80%	100.00%
Experimental group (four PE lessons)	N	153	113	**266**
	%	57.50%	42.50%	100.00%
TOTAL	N	211	164	**375**
	Total %	**56.30%**	**43.70%**	**100.00%**

The whole population of first-year secondary school students from state schools located in Madrid with an implemented SSP, is N=717. Thus, after applying the

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formula: n= (〖Z∝〗^2 Npq) / (e^2 (N-1)+Z^2 pq); at a confidence level of ninety five per cent, we can confirm that our sample from the experimental group is representative of the study population.

To minimize potential socioeconomic differences among participants, both control and experimental schools were located within the same areas of Madrid.

Participants, PE teachers, and head teachers of each school were informed about the purpose of the study. Informed consent was obtained in all cases (see *Ethics*).

QUESTIONNAIRE AND MEASURES

A questionnaire was administered to the participants. The questionnaire included the following items:

a) The motor self-efficacy scale was applied to measure perceived motor self-efficacy. This scale was developed by Hernández-Álvarez, Velázquez-Buendía, Martínez-Gorroño, Garoz-Puerta, & Tejero (2011), based on the general self-efficacy scale (Baessler & Schwarcer, 1996). The scale was adapted to the general situations during PE lessons. E.g., the word *game* or *match* was replaced by *PA*. This scale includes ten items with a ten-point Likert-type format, such as *I can manage to solve difficult tasks during PE lessons if I try hard enough*. The calculation of internal consistency of the scale found a Cronbach's alpha of 0.84 and 0.88 (pre and post-test, respectively).
b) The subscale perceived locus of causality (Goudas, Biddle, and Fox, 1994) was applied to measure intrinsic motivation. This scale, was translated to Spanish and validated for PE in Spain by Moreno, González-Cutre, and Chillón (2009b). It includes four items, such as *I take part in PE because developing new skills is fun*. Participants' answers were measured on a scale ranging from one to seven. The calculation of internal consistency of the scale found a Cronbach's alpha of 0.83 and 0.87 (pre and post-test, respectively).
c) Questions about gender, age or whether participants were repeating grade or not, were also included.

STATISTICS AND DATA ANALYSIS

Pre-test data (before the intervention) were preliminary analysed using ANOVA to determine whether potential differences between groups were statistically significant.

For the variable *motivation* (pre-test data), Levene's test showed unequal variances between the control and the experimental group (F=4.13, p=0.043) and between girls of both groups (F=5.964, p=0.016). Thus, a T-test for independent samples was performed assuming *unequal variances*.

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Intra-group differences between pre and post-test data were analysed using T-test for related samples. Inter-group differences for post-test data were analysed using ANOVA.

Correlation between variables were analysed using Pearson's correlation.

Gender differences were analysed in all cases (i.e., intra and inter-group).

All results are shown with a margin of error of five per cent.

PROCEDURE

Head teachers of each school were contacted and were asked for consent. Once consent was given, schools' coordinators were interviewed and were informed about the purpose of the study. Schools' coordinators of each school also provided information related to the SSP.

In addition, PE teachers of each school were contacted and were informed about the purpose of the study.

PE teachers informed their students about the study and administered the informed consent.

A fully trained and qualified team made the questionnaires in October and five months later, i.e., in March.

ETHICS

Informed consent was obtained from participants (i.e., their parents) and head teachers of each school.

PE teachers voluntarily helped with the questionnaire administration.

Questionnaires were administered at the start of a PE lesson. Before the questionnaire administration, participants were told that their responses would be kept confidential and that they could decline to participate or withdraw at any time. Questionnaires were administered before the start of the school year 2014/15 (i.e., October) and five months later (i.e., March).

RESULTS

CONTROL GROUP (CG) AND EXPERIMENTAL GROUP (EG)

Preliminary results (Table 2) showed that intrinsic motivation was significantly higher in the CG ($T=1.969$, $p=0.05$), whereas perceived motor self-efficacy was higher in the EG ($T=-2.306$, $p<0.05$). The mean score of both variables was also

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high (intrinsic motivation was higher than 5.6 out of 7, and perceived motor self-efficacy was higher than 7.3 out of 10).

Before the intervention (pre-test), inter-group gender analysis showed that intrinsic motivation was significantly higher between girls from the CG (M=5.85, SD=0.85), and girls from the EG (M=5.41, SD=1.24; p<0.05). Likewise, perceived motor self-efficacy was significantly higher between boys from the EG (M=7.77, SD=1.56), and boys from the CG (M=7.24, SD=1.62, p<0.05).

After the intervention (post-test), we found significant differences in both intrinsic motivation and perceived motor self-efficacy between groups. Both intrinsic motivation and perceived motor self-efficacy were significantly higher in the EG than in the CG (5.65 vs 5.34, p<0.05 and 7.5 vs 6.75, p<0.001, respectively). Figure 2 summarizes pre and post-test mean values for both variables.

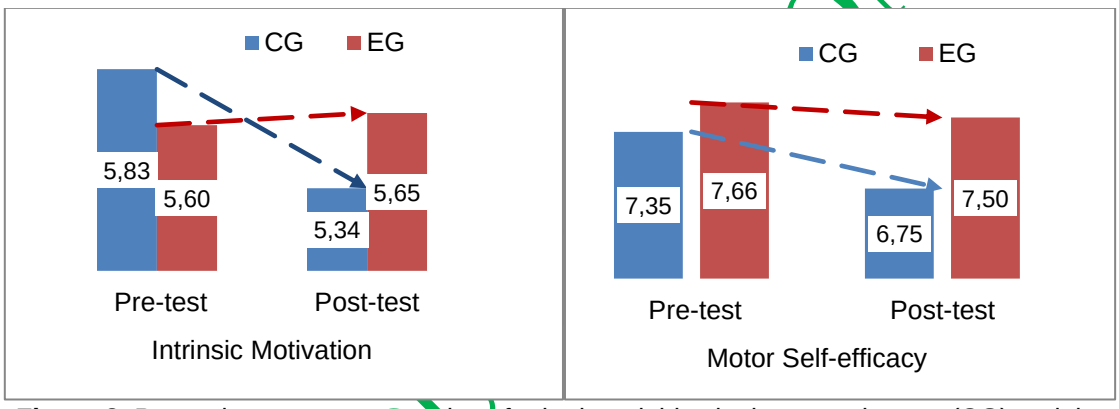

Figure 2. Pre and post-test mean values for both variables in the control group (CG) and the experimental group (EG).

After the intervention, inter-group gender analysis also showed that, in both boys and girls, intrinsic motivation and perceived motor self-efficacy were higher in the EG than in the CG. In particular, we found significant differences in perceived motor self-efficacy between groups in both genders (p<0.01).

It should be noted that, after the intervention, girls from the EG even had higher intrinsic motivation (M=5.48, SD=1.24) and higher perceived motor self-efficacy (M=7.25, SD=1.63) than boys from the CG (M=5.46, SD=1.14 and M=7, SD=1.85, respectively).

Table 2. Preliminary results per group and gender.

		Mean (SD)		
		GROUP	**BOYS**	**GIRLS**
Intrinsic Motivation Pre-test	CG	**5.83* (0.94)**	5.82 (1.03)	**5.85* (0.85)**
	EG	5.60 (1.24)	5.73 (1.23)	5.41 (1.24)
	CG	5.34 (1.14)	5.46 (1.14)	5.21 (1.15)

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Intrinsic Motivation Post-test	EG	**5.65* (1.18)**	5.78 (1.12)	5.48 (1.24)
Motor Self-efficacy Pre-test	CG	7.35 (1.74)	7.24 (1.62)	7.47 (1.86)
	EG	7.66 (1.58)	**7.77* (1.56)**	7.52 (1.61)
Motor Self-efficacy Post-test	CG	6.75 (1.70)	7.00 (1.85)	6.48 (1.50)
	EG	**7.50*** (1.56)**	**7.69* (1.48)**	**7.25* (1.63)**

*p<0.05; ***p<0.001; CG: Control group; EG: Experimental group.

CHANGES IN MOTIVATION AND SELF-EFFICACY OVER TIME

Table 3 summarizes the changes in motivation and self-efficacy over time (i.e., over five months), at both intra-group (T-test for related samples) and inter-group (T-test for independent samples) level.

Table 3. Changes in motivation and self-efficacy over time per group.

	Mean (SD)		Mean (SEM)
	EG	CG	Difference between groups
Intrinsic Motivation	0.07 (1.30)	**- 0.43***(1.23)**	**-0.50 *** (0.15)**
Boys	0.07 (1.28)	-0.25 (1.38)	-0.32 (0.21)
Girls	0.08 (1.32)	**-0.63*** (1.03)**	**-0.70*** (0.22)**
Motor Self-efficacy	-0.19 (1.54)	**-0.63** (1.83)**	**-0.44* (0.21)**
Boys	-0.09 (1.59)	-0.19 (1.85)	-0.10 (0.29)
Girls	**-0.32** (1.46)**	**-1.09*** (1.72)**	**-0.77* (0.29)**

*p<0.05; **p<0.005; ***p<0.001; CG: Control group; EG: Experimental group.

We found that intrinsic motivation decreased over time in the CG (M=-0.43, SD=1.23). This change was highly significant at intra-group level (T=-3.51, p=0.001). Conversely, we found that intrinsic motivation increased over time in the EG (M=0.07, SD=1.30). However, this change was not significant. Thus, the mean difference between CG and EG was -0.5 (SEM=0.15). The difference between groups was highly significant (T=-3.34, p=0.001).

We also found that perceived motor self-efficacy decreased over time in the CG (M=-0.63, SD=1.83). This change was significant at intra-group level (T=-3.22, p=0.002). Similarly, we found that perceived motor self-efficacy decreased over time in the EG (M=-0.19, SD=1.54). However, this change was not significant (T=-1.785, p>0.05). Thus, the mean difference between CG and EG was -0.44 (SEM=0.21). The difference between groups was significant (T=-2.16, p<0.05).

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Gender analysis showed that, among boys, intrinsic motivation and perceived motor self-efficacy did not significantly change over time. Both variables did not change either between boys from the CG and the EG. Nevertheless, the change in intrinsic motivation was better in boys from the EG (M=0.07, SD=1.28) than in boys from the CG (M=-0.25, SD=1.38), although this change was not significant in both cases (T=0.642, p>0.05 and T=1.335, p>0.05, respectively). Thus, the mean difference between CG and EG was -0.32 (SEM=0.21). The difference between groups was not significant (T=-1.532, p>0.05).

The change in perceived motor self-efficacy was similar between boys from the CG and boys from the EG (T=-3.59, p>0.05). Perceived motor self-efficacy slightly decreased in both cases (M=-0.19, SD=1.85 and M=-0.09, SD=1.59, respectively), although this change was not significant (p>0.05).

Gender analysis also showed that the differences between the CG and the EG were bigger in girls than in boys. We found that intrinsic motivation decreased over time among girls from the CG (M=-0.63, SD=1.03). This change was highly significant at intra-group level (T=-4.209, p<0.001). Conversely, we found that intrinsic motivation increased over time among girls from the EG (M=0.08, SD=1.32). However, this change was not significant. Thus, the mean difference between CG and EG was -0.7 (SEM=0.22). The difference between groups was significant (T=-3.246, p=0.001).

Finally, we also found that perceived motor self-efficacy decreased over time among girls from the CG (M=-1.09, SD=1.72). This change was highly significant at intra-group level (T=-4.131, p<0.001). Likewise, we found that perceived motor self-efficacy decreased over time among girls from the EG (M=-0.32, SD=1.46). This change was also significant (T=-2.083, p<0.05). Thus, the mean difference between CG and EG was -0.77 (SEM=0.29). The difference between groups was significant (T=-2.703, p=0.008).

DISCUSSION

Perceived motor self-efficacy and intrinsic motivation for PE have been identified as key factors influencing PA among schoolchildren and adolescents (Sterdt et al., 2014). In this study, we evaluated the effects of a school-based intervention with extra PE lessons per week on intrinsic motivation and perceived motor self-efficacy among Spanish secondary school students. We hypothesized that extra PE lessons per week would improve schoolchildren's motivation and perceived motor self-efficacy. This would add a different perspective to previous studies showing that both variables decline with age (Borges, De la Vega y Ruiz, 2012; Cox et al., 2008; Hernández Álvarez et al., 2008, 2011).

Before the intervention, we only found that students from the control group had a significantly higher intrinsic motivation for PE. However, after the intervention,

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we found that students that had extra PE lessons per week (i.e., students from the experimental group) had higher intrinsic motivation and perceived motor self-efficacy than those who only had two (i.e., students from the control group).

The mean score of both intrinsic motivation and perceived motor self-efficacy was also high in both groups. These findings are similar to those reported previously by other Spanish authors in questionnaire-based studies measuring comparable items. Indeed, adolescents from Spain, Argentina, Colombia and Ecuador, showed an equally high score of intrinsic motivation (Franco, Coterón, Gómez y Martínez, 2017). Likewise, studies in adolescents from Spain (Hernández-Álvarez et al., 2011; Velázquez, Hernández, Garoz y Martínez, 2015), and more specifically from the Canary Islands (Borges, De la Vega y Ruiz, 2012), and Madrid (Chamero y Fraile, 2013), showed a self-efficacy's score of ~30 out 40, measured on the same motor self-efficacy scale that we used in our study.

The change in intrinsic motivation and perceived motor self-efficacy over time was different between students that had four PE lessons per week (i.e., extra PE lessons) and those who only had two. Although the change was not significant, students that had extra PE lessons increased their motivation for PE over time, whereas students that only had two significantly lost motivation. These results agree with prior longitudinal studies in adolescents of similar age (Cox et al., 2008). However, our results on perceived motor self-efficacy contrast with those observed by others in schoolchildren (Cox et al., 2008; Hernández Álvarez et al., 2008, 2011). Again, although the change was not significant, students that had extra PE lessons had lower loss of perceived motor self-efficacy over time than those who only had two (who significantly lost their perceived motor self-efficacy).

Thus, our results show that this school-based intervention with extra PE lessons per week (as part of the SSP), had both a slowdown effect on students' perceived motor self-efficacy and a positive effect on their intrinsic motivation for PE.

In addition, it is worth noting that the intervention had particular effects on girls. Girls that had extra PE lessons per week had a significant lower loss of perceived motor self-efficacy and a slight increase of intrinsic motivation over time than girls who only had two. Moreover, girls that had extra PE lessons per week even had higher intrinsic motivation and perceived motor self-efficacy than boys from the control group. Surprisingly, these findings contrast with previous reports showing that both variables are typically higher in boys than in girls (Biddle & Wang, 2003; Biddle, Whitehead, O'Donovan & Nevill, 2005; Lawman et al., 2011).

Since PA progressively declines during adolescence (Allison, Adlaf, Dwyer, Lysy & Irving, 2007; Bauman et al., 2012; Butcher, Sallis, Mayer & Woodruff, 2008; Currie et al., 2012; Gordon-Larsen, Adair, Nelson & Popkin, 2004;

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Hernández et al., 2008; Inclhey et al., 2016), our study underscores the possibility of increasing adolescents' PA levels through the modulation of intrinsic motivation and perceived motor self-efficacy.

CONCLUSION

Our study proves that a school-based intervention with extra PE lessons per week is enough to improve schoolchildren's perceived motor self-efficacy and intrinsic motivation for PE. In addition, since both factors influence PA inside and outside of school, this study proves the effectiveness of the sport specialization plans for promoting PA among adolescents.

In addition, the positive effects of the intervention reported herein might be potentially transferred to the entire population of Spanish adolescents, since PE is compulsory within the national curriculum until the age of sixteen. Hence, it is crucial to develop more national strategies and large-scale initiatives to increase the time devoted to curricular PE at school, reaching at least the European average (Eurydice, 2013). This would increase Spanish adolescents' perceived motor self-efficacy and intrinsic motivation for PE and would help them to practice PA regularly throughout their lives.

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