



Non-organised Extracurricular Physical and Sport Practice: gender, educational stage and physical activity index

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Abstract

There are very few studies on the types of non-organised physical and sport practice outside the school setting. Therefore, this paper consisted of describing these activities and analysing their relationship with other variables: gender, educational stage and physical activity index. The research design was quantitative, cross-sectional and descriptive. It involved 1,040 students, 521 boys and 519 girls ($M = 12.30$; $SD = 3.08$) enrolled in 26 Galician schools and aged between 10 and 17. The *International Questionnaire on Physical Education, Health and Lifestyle* was administered. The results showed that the most popular activities were soccer, walking, cycling, basketball and running. Significant differences were found in some of the activities studied in terms of gender and school stage. The physical activity index was higher in boys and in primary students. Very low levels of physical activity were observed. Differences were also found between active and less active people in some of the sports. The information obtained helps to identify the features of how free time is spent in Galician society. This type of evidence makes it possible to address participation needs in childhood and adolescence better by enabling future actions in the community and sports management settings.

Keyword: informal practice, sex, age, physical activity level.

Introduction

Nowadays there is ample confirmation of the importance of physical activity during childhood and adolescence. The evidence linking it to a positive impact on health is of paramount interest (Janssen & LeBlanc, 2010).

The options for exercising in physical activity and doing sports and complying with the WHO recommendations in the primary and secondary school stages are varied and can be implemented in a more or less organised fashion. These recommendations call for at least 60 minutes a day of moderate or vigorous physical activity which should be mostly aerobic. Performing muscle- and bone-strengthening activities at least three times a week is also recommended (World Health Organization, 2010).

Physical education (PE) classes are an organised practice learning setting which is crucial for promoting healthy activity (González-Calvo et al., 2018; Martínez-Martínez et al., 2012). Research has also been conducted on the study of organised practice, albeit in non-formal contexts (Nuviala et al., 2009), which can also help to meet these recommendations.

However, as Gil-Madrona et al. (2017) point out, there are less data on participation in non-organised activities which “may reflect the physical activity habits of schoolchildren better because they are dependent on their own motivation” (p. 82). These activities are not systematised but rather are performed autonomously with no need for guidance and supervision.

School recess has been advocated in particular as an opportunity for physical exercise within this type of non-organised activity, and international data are available in this regard (Ridgers et al., 2012; Hall-López et al., 2017). For example, Aznar et al. (2011) showed that children had high peaks of moderate to vigorous physical activity coinciding with breaks at school. However, literature that specifically addresses participation in non-organised activities outside the school setting is scant.

In Spain, this kind of data was included in the study on schoolchildren's sport habits carried out by the Spanish National Sports Council (CSD), the Deporte Joven Foundation and the Alimendum Foundation in 2011. It was conducted in Spain's 17 regions and Ceuta and Melilla with 17,632 participants aged 6 to 18. One of its findings is that the most frequent non-organised activities are cycling, soccer and running; it also takes quite a few “neutral” activities into account, although there are still gender differences. Marques et al. (2015) also provide input on this question in a study of 2,580 students at seven Portuguese state primary and secondary schools. Besides the differences between boys and girls in this area, one of the most relevant results concerning

participation in non-organised activities is that soccer is a sport played by the most active people in certain age groups.

With regard to the above, studies on sports habits need to be extended in schoolchildren in Galicia, where this research was conducted. One out of every two people aged over 15 in this region is not active in their free time and inactivity is higher in women (Pérez-Ríos et al., 2015).

For these reasons, the purpose of this study was to analyse the relationship between the types of non-organised extracurricular physical and sports activities and other variables: gender, educational stage and physical activity index (PAI).

Methodology

Participants

A total of 1,040 students (49.9% girls and 50.1% boys) aged 10 to 17 with an average age of 12.30 + 3.08 years participated in the study. They were studying in 26 schools in Galicia (Spain), 56.9% of which were state, 35.8% state-assisted and 7.3% private. The schools were selected from the seven main towns and cities in the area: A Coruña (24.6%), Lugo (15.5%), Ourense (20.4%), Pontevedra (9.2%), Santiago de Compostela (14.4%), Vigo (11.3%) and Ferrol (4.5%). 56.3% of the students were in 5th and 6th year of primary education and 43.7% in 2nd and 4th year of secondary education. One class group (the one with the greatest number of students) per school year was chosen from each school to be part of the sample.

Instrument

The International Questionnaire on Physical Education, Health and Lifestyle, adapted to Spanish and validated by Mourelle (2014), was used as a data collection instrument. It was divided into four blocks: (1) personal data, (2) lifestyle, (3) attitudes and perceptions, and (4) assessment of school, PE and doing physical and sports activity. Cronbach's alpha (Cronbach, 1951) was greater than 0.87.

This paper addressed the study of non-organised physical and sports activities. More specifically, the participant was asked to indicate which activity they did most outside class hours without being in a club or association and which lasted at least twenty minutes. To make it clear that the question referred to the informal setting, the questionnaire included examples of activities such as: walking, running, cycling, swimming, playing

soccer in the street, basketball in the park, volleyball in the garden or on the beach, etc.

In addition, the Finnish PAI was used to calculate the level of physical activity, which is indicative of the likelihood of future physical and sports activity (Telama et al., 2005; Telama et al., 2006). Recent papers (Marques & Carreiro da Costa, 2013; Marques et al., 2015; Mota et al., 2008) were based on this index using the sum of five items in the questionnaire: frequency of participation in physical activity per week; participation in non-organised physical activity; participation in organised physical activity; intensity and participation in sports competitions. Each item was measured on a four-point scale, so the index ranged from 5 to 20.

This index allowed the participants to be divided into two categories, as in Marques et al. (2015), by classifying them as more or less active, distinguishing between participants who were *not very active* (scores of 12 or less) and those who were *active* (scores of above 12).

Procedure

This study had two research teams, one of which gathered and anonymised the data and then sent them to the other team for analysis.

For data collection, the administrators of the selected schools were contacted and the relevant documents were sent to them so that they would be aware of the study and in case any clarifications were required. The parents or legal guardians and students were given precise information about the study's objectives and contents and signed specific informed consent forms. The questionnaire was administered by staff from the research group and always in the presence of PE teachers. The protocol was approved by the University of A Coruña as it comes under a general proposal of the Euro-American Physical Activity, Education and Health Network (REAFES). In studies carried out in Portugal, the same protocol was approved by the Ethics Committee of the Faculty of Human Motor Skills and the Portuguese Ministry of Education.

Data analysis

The analysis of the frequencies of the activities performed led ballet, rhythmic gymnastics and dance to be grouped in a single variable called rhythmic expressive activities. Similarly, the karate, judo and taekwondo options formed the martial arts group, while net sports were paddle tennis, table tennis, tennis, volleyball and badminton. Finally, skating, inline skating, skateboarding and roller

hockey comprised the small-wheel activities variable. The other variable contained numerous sports and physical activities with very low participation rates.

The chi-square test was used to establish the relationship between non-organised physical and sports activities and gender, school stage and the PAI ($p < .05$). Levene's test and Student's *t* were also used to describe the PAI by gender and stage ($p < .05$). Statistical analysis was conducted using SPSS Statistics 24.0.

Results

The analysis of the results revealed that the most popular activities were soccer (26.9%), walking (21.9%) and cycling (11.8%). They were followed by basketball and running, with percentages hovering around 10%, and swimming at 7.7%. A further 32 physical and sports activities were reported by the students encompassing a wide variety of disciplines with percentages always below 2% (accounting for 4% of the total participants). Some of them could be considered more common or well-known, such as tennis (1.4%), going to the fitness centre (1%) and artistic gymnastics (0.1%). Others might be regarded as more alternative, for instance boxing (0.2%), parkour (0.1%) and kitesurfing (0.1%).

1.6% of the participants engaged in rhythmic and expressive activities. Martial arts activities totalled 0.6%. Net sports accounted for 2.9% of the total and small-wheels for 1.8%.

An association between gender and some activities was confirmed. Table 1 shows the results for the categories in which significant differences between girls and boys were observed. Firstly, soccer is mainly played by boys and very little by girls ($p < .001$). Nevertheless, the percentage of girls taking part in it is higher than the figure for rhythmic expressive activities, disciplines traditionally chosen by women (the figure for dance is 3.5%). Statistically significant differences were also found in the analysis of the relationship between gender and activities such as walking, cycling, running, swimming and rhythmic expressive activities; these activities are practiced mostly by girls.

By contrast, no gender impact was seen in participation in basketball ($p: .151$), net sports ($p: .864$) or small-wheel activities ($p: .492$).

Turning to educational stage, there were statistically significant relationships in soccer ($p < .001$) and cycling ($p: .021$), in which the highest proportion of practitioners were primary school pupils. Similarly, differences were observed in running and walking ($p < .001$) with secondary school students showing higher participation

Table 1
Physical activity performed by gender

Category	♂ (n = 521)	♀ (n = 519)	χ^2	<i>p</i>
Soccer	47,6% (248)	6,2% (32)	226, 883	.000***
Walking	9% (47)	34,9% (181)	101,529	.000***
Cycling	14,1% (73)	14,1% (73)	4,979	.025*
Running	7,5% (39)	11,9% (62)	5,899	.015*
Swimming	5% (26)	10,4% (54)	10,734	.001**
Rhythmic expressive activities	0,4% (2)	6% (31)	26,435	.000***

$p = * < .05$; ** < .01; *** < .001

percentages. No significant differences were observed in the remaining options (basketball p : .074, swimming p : .156, net sports p : .836, rhythmic expressive activities p : .607 and small-wheel activities p = .748). Before the description of the relationship between the physical activity performed and the PAI, the data defining the PAI with respect to the sample used are shown. Calculating Student's t for the PAI revealed significant differences by both gender and educational stage, and the level of physical activity was higher in boys and in the primary stage. Of all the students, 712 (68.5%) can be considered not very active; however, only 328 (31.5%) are really active.

Associations were identified between the PAI and the type of informal activity chosen. The data showed relationships between active people and soccer ($p < .001$) and between not very active people and swimming ($p < .01$) and walking ($p < .001$). In the remaining categories,

the performance of these activities was assumed to be independent of the level of physical activity (cycling p : .648, basketball p : .109, running p : .847, net sports p : .262, rhythmic expressive activities p : .179 and small-wheel activities p : .113).

Discussion

Doing physical and sports activity delivers many health benefits in childhood and adolescence, such as reducing overweight and obesity rates and improving cardiovascular and bone mineral density aspects. Furthermore, the benefits are not only physical but also social and mental (Gracia-Marco et al., 2010; Janssen & LeBlanc, 2010).

This research aimed to describe the type of non-organised extracurricular physical and sports practice in which students engaged by providing new data about the range

Table 2
Physical activity performed by educational stage

Category	Primary (n = 585)	Secondary (n = 455)	χ^2	<i>p</i>
Soccer	32,6% (191)	19,6% (89)	22,287	.000**
Walking	15,6% (91)	30,1% (137)	31,673	.000**
Cycling	13,8% (81)	9,2% (42)	5,228	.021*
Running	6,5% (38)	13,8% (63)	15,770	.000**

$p = * < .05$; ** < .001

and specific types of activities. Non-organised activities may entail greater participation, as there are more options to choose from (Gil-Madrona et al., 2014). Girls and boys were found to take part in them to a greater extent than in organised ones, and more particularly the advantage of these activities is that they can be performed at will during free time (Marques et al., 2015).

In this study, participation was highly concentrated in particular activities, and even more so in the case of boys. A general analysis of the data revealed that the most popular activities are soccer, walking and cycling, followed by basketball, running and swimming. These data are consistent with the literature about non-organised activities outside the school setting. CSD et al. (2011) present similar data to this study. The most popular activities include soccer and cycling (both 18%), running (12%) and basketball (10%); however, walking and swimming are not among the activities in which young people take part.

The results showed significant differences between girls and boys with respect to the type of activities performed. Boys' participation was particularly strong in soc-

cer, as almost 50% of them played it. This sport also ranks first among boys in other studies on extracurricular activity (Calvo-Ortega & Perrino-Peña, 2017; CSD et al., 2011; Gracia-Marco et al., 2010; Marques et al., 2015; Seabra et al., 2007).

Girls reported walking, running, cycling, swimming and expressive activities more often than boys, meaning they did more non-cooperation-opposition, low-contact activities and their practice was more diversified.

As in this research, other studies addressing the type of physical and sports activities chosen report differences between girls and boys in both childhood and adolescence (Aznar et al., 2011; Gracia-Marco et al., 2010; Marques et al., 2015). Boys tend to opt for activities which they consider appropriate to their gender role and make them feel more competitive (Alvariñas-Villaverde & Pazos-González, 2018). This topic has been extensively studied in recent decades and mainly explained in terms of gender socialisation and its impact on the behaviour of girls and boys in this field (Babkes-Stellino & Sinclair, 2014; Calvo-Ortega & Perrino-Peña, 2017). Thus, girls are known to

Table 3
PAI by gender and educational stage

Variable		N			Levene's test		Student's t	
			Mean	DE	F	Sig.	t	Sig. (2-sided)
Gender	Boys	521	11,45	3,310	1,721	0,190	8,680	.0001
	Girls	519	9,70	3,161				
Stage	Primary	585	10,87	3,285	0,699	0,403	3,225	.001
	Secondary	455	10,20	3,398				

Table 4
Physical activity performed by PAI

Category	Not very active (n =712)	Active (n =328)	χ^2	p
Soccer	21,8% (155)	38,1% (125)	30,474	.000**
Walking	25% (178)	15,2% (50)	12,487	.000**
Walking	9,1% (65)	4,6% (15)	6,564	.007*

$p = * < .01$; $** < .001$

prefer lighter and less “sporty” activities, while boys are more likely to engage in more competitive sports and activities (Babkes-Stellino & Sinclair, 2014).

As for individual versus group sports, it was confirmed that girls are more attracted to individual sports and boys to group sports. Moreno, Martínez and Alonso (2006) also report this trend in their study on attitudes towards physical activity and sports performance by gender. Similarly, in the survey of sports habits in Spain (Ministry of Education, Culture and Sports, MEC, 2015) almost 70% of women do this type of sport. Alvariñas-Villaverde and Novoa (2015) found that the main extracurricular activities of secondary school students in the four provinces of Galicia conformed to this pattern. This is also the case in the study by Calvo-Ortega and Perrino-Peña (2017) carried out with adolescents in the Region of Castile and León. This preference is observed by CSD et al. in terms of non-organised participation since girls’ three main activities are cycling, running and inline skating.

Another noteworthy aspect is that the proportion of girls who played soccer and did rhythmic expressive activities was practically the same, suggesting a shift towards activities considered traditionally masculine or a hint of a departure from classically feminine activities. In addition, no differences were found in net sports, basketball or small-wheel activities, which might allow us to relate these findings to other studies in which there is a significant amount of neutral physical and sports activities (CSD et al., 2011; Gracia-Marco et al., 2010; Seabraet al., 2007).

In this regard, recent studies have underscored changes in terms of doing away with stereotypes in the minds of students (Alvariñas-Villaverde & Pazos-González, 2018; Gil-Madrona et al., 2017). If behaviour is factored in, then soccer is also a girls’ sport in studies such as that of Seabraet al. (2007) conducted with over 12,000 students in Portugal. Similarly, in Spain neither is it one of the least played sports according to data by the CSD et al., which place soccer in fifth and fourth position in organised and non-organised activities, respectively. In the study by Alvariñas-Villaverde and Novoa (2015), soccer is in seventh place in the extracurricular activities of girls, ahead of athletics, basketball, tennis, rhythmic gymnastics, Pilates and volleyball. Consequently, the king of sports in Spain (López-Albalá, 2016) enjoys increasingly greater presence in women’s leisure time activities in childhood and adolescence.

As for differences by educational stage, relationships were observed with regard to soccer and cycling, which were more popular in primary school. Running and walking were also more popular in secondary school. The fact that there were no statistically significant differences in the

rest of the activities suggests that the stage variable is not a major determinant in the choice of activities in the informal setting and in relation to non-organised activity.

When the PAI is calculated, it transpires that the proportion of people who were not very active was very high, almost 70%. This figure is consistent with previous studies. For instance, after a major review in which they analysed compliance with healthy physical activity recommendations by school-age students, Calahorra-Cañada et al. (2014) stressed this point and the need for studies geared towards generating intervention programmes to help to increase these levels. A comparison of the secondary school stage data with figures produced by Marques and Carreiro da Costa (2013) shows much lower PAIs (15.15 versus 10.20). This index therefore places Portuguese students in the moderately active range and Galician students in the not very active bracket.

Similarly, and consistent with the literature, significant gender differences were found insofar as the level of physical activity was higher in boys than in girls (Aznar et al., 2011; Martínez-Martínez et al., 2012; Mota et al., 2008). An exception to this is the paper by Calahorra-Cañada et al. (2015) which analyses the physical activity of primary and secondary school students using accelerometers and finds no significant differences in this respect.

The PAI was also better in the primary than in the secondary stage, as previously noted by Aznar et al. (2011) and Martínez-Martínez et al. (2012), among others. In Marques and Carreiro da Costa (2013) the PAI decreases with age in secondary school students.

Finally, this paper broached the question of a possible relationship between a person’s level of physical activity and their choice of non-organised extracurricular sport. Although the activity performed was independent of the PAI in most options, the results confirm associations between active people and soccer and less active people and swimming and walking; this seems reasonable, since in principle the latter do not call for such high levels of fitness and energy expenditure and are individual activities with less contact. Marques et al. (2015) also show that soccer is a sport for the most active people (girls in the 13-15 age group and boys in the 13-15 and 16-18 age groups). Meanwhile, Mota et al. (2008) unsurprisingly observe, in relation to organised and non-organised free-time sports activities, that active people do more than not very active people. As a side note, and given that the same PAI is used in this study, this index is also related to another type of recreational activities. Active girls are significantly more involved in individual artistic activities (in music, reading, art or crafts) than less than active ones. Similarly, active people engage more in social leisure activities such

as going to parties or meeting friends than their non-active counterparts.

The results of this study help to identify the features of how free time is spent in Galician society. As Gil-Madrona et al. (2014) point out, this type of knowledge should be used to improve compulsory physical activity and cater to students' interests. Furthermore, these data provide evidence to meet children and young people's participation needs in the community and sports management settings better. As Telama et al. (2005) pointed out, it should also be borne in mind that the activities in which adults take part may have been learned at an early age (carryover value), so if this knowledge is turned into opportunities to build physical and sporting habits they may be transferred into adulthood and drive healthier lifestyles.

This paper has also prompted consideration of student accessibility to particular settings for safe performance in safe venues and with accessible resources. Since it concerns the region of Galicia, which boasts a major variety of natural spaces (mountains, sea, rivers, etc.) and a rainy and cold climate at certain times of the year, it is essential that the relevant institutions make an effort to improve these activities.

Conclusions

The levels of physical activity in the seven towns and cities of Galicia are very low. The most popular non-organised extracurricular activities are soccer, walking, cycling, basketball and running. There is an association between some activities and the PAI, school stage and gender. The information gathered may be useful for improving decision-making and measures to promote both school and out-of-school activities, with an emphasis on improving planning, mainly for secondary school students.

One of the limitations of the research is the fact that data gathering was cross-sectional and self-reported. An objective method of quantifying the level of physical activity outside school hours (accelerometry, pedometer, etc.) would improve the quality of the paper. Furthermore, the study is set in an urban environment, meaning that it is impossible to achieve a global vision of participation given the significance of the countryside in a region such as Galicia. Consequently, using more objective tests and ascertaining the features of rural populations would be welcome in future studies.

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