

P66- Cross-cultural physical activity levels of adolescents : France vs Spain

Alberto Aibar^{1,2}, Julien Bois², Eduardo Generelo¹, Javier Zaragoza¹, Thierry Paillard²

¹*Groupe EFYPAF. University of Zaragoza* ²*Laboratoire LAPPS, STAPS, University of Pau and Countries of Adour*

aibar@unizar.es

The goals of this study were twofold: a) to describe and compare levels of physical activity (PA) of adolescents in France and in Spain, specifically comparing genders and weekdays-weekend classified according to intensities measured by accelerometry; b) to verify meeting of international PA guidelines by country and gender. Physical activity of 401 adolescents from France and Spain aged 14.45 ± 0.67 years was assessed with GT3X accelerometers over 7 consecutive days to evaluate their habitual levels of moderate to vigorous physical activity (MVPA). There were significant differences in MVPA by country, gender and period of the week: Spanish adolescents were more active than French teenagers, boys were more active than girls and MVPA was higher during weekdays compare to weekends. Only a 35.9% of adolescents met physical activities guidelines in both countries.

Keywords: Physical Activity, Cross-cultural, Guidelines, Accelerometry.

INTRODUCTION

Due to the increasing of physical inactivity levels in many developed countries, promoting physical activity and healthy behaviors for youths has become a European public health guideline (European Heart Health Initiative, 2001). However patterns of involvement in physical activity may be variables between countries (Van Sluijs et al., 2010). In the spite of the existence of cross-cultural surveys, to the best of our knowledge, no studies have attempted to compare levels of physical activity in adolescents between countries using accelerometry. Despite this, it has been consistently found that boys are more active than girls (Chillon et al., 2010) and that a higher level of practice of moderate-vigorous physical activity is reported in weekdays compared to weekend days (Treuth et al., 2007). Therefore, there were two main aims in this study: first, to describe and compare levels of physical activity in adolescents in France and in Spain, specifically comparing genders and weekdays-weekend classified by intensities measured by accelerometry; and second, to verify meeting of international physical activity guidelines by country and gender.

METHODS

A sample of 401 French and Spanish adolescents (6 public and state schools) volunteered to participate in this study. After eliminating cases with incomplete and missing data (inclusion criteria was to have physical activity registered for at least 3 week days and 1 weekend day) the final sample consisted of 301 adolescents, 162 French and 139 Spanish subjects (128 men and 173 women) with a mean age of 14.45 ± 0.67 years.

The Four-Day Average method of calculating prevalence of physical activity was used. Adolescents were considered compliant to the moderate-vigorous physical activity guidelines if their MVPA, averaged over four days, was ≥ 60 minutes a day (Cavill & Sallis, 2001).

The GT3X accelerometer was used to assess physical activity continuously during waking hours of a 7 day period. The GT3X is portable lightweight device (27g; 3.8cm x 3.7cm x 1.8 cm) and record acceleration ranging between 0.05 and 0.25 Gs. The analog signal is digitized by a 12-bit analog-to-digital converter and filtered using a band-pass filter with a frequency range of 0.25 – 2.5 Hz. In this study, an epoch time of 15 sec was used.

Data were collected from September to December 2010 and were analyzed using SPSS (version 15.0). A 2X2X2 (country by gender by period of the week) analysis of variance (ANOVA) with repeated measure on the last factor, was conducted with moderate-vigorous physical activity as dependant variable. Socio-economic status, mean day temperature and mean day precipitation were used as covariate as these variables are possible correlates of physical activity. The criterion for significance was set to $p < 0.05$.

RESULTS

The ANOVA revealed significant main effect of country ($F = 73.29, p = .000 ; \eta^2 = .258$), gender ($F = 19.26, p = .000 ; \eta^2 = .111$) and period of the week ($F = 23.7 ; p = .000 ; \eta^2 = .071$). However, no interaction effect was found. Results indicate that Spanish adolescent spend more time in physical activity compared to their French counterparts (see table 1). Boys also reported significantly more physical activity than girls and physical activity during weekdays was higher than physical activity during weekends. These differences were independent of socio-economic status, mean day precipitation and temperature.

Table1: Mean scores and Standard Deviations (SD) / [% of compliance with guidelines]

		Weekdays	Weekend	% of compliance with guidelines
France	Boys	53,34(19,29)	31,75(25,48)	26%
	Girls	42,97(19,71)	25,59(24,23)	11%
Spain	Boys	82,34(30,71)	60,34(43,33)	74%
	Girls	60,24(24,74)	48,58(43,87)	47%

Approximately 35,9% of the participants met physical activity guidelines, however if we just take into account French data, only a 16,7% of adolescents met physical activity recommendation comparing with 58,3 of Spanish adolescents. According to gender, 50% of men met physical activity recommendation against 25,4% of women.

DISCUSSION

Following other European investigation pattern (Biddle et al., 2009), our research has shown greater levels of physical activity in males than in females as well as differences between the studied countries, in this case France and Spain. Similarly, a lower level of activity was found in weekend than in weekdays (Cano Garcinuño, Pérez García, Casares Alonso, & Alberola López, 2011). Finally, the low percentage of adolescents who met the physical activity recommendations suggests the need to increase promotion policies of physical activity.

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