

The role of elementary schools in the promotion of physical activity and sports in Flanders

Greet Cardon, Ilse De Bourdeaudhuij

Department of Movement and Sports Sciences, Ghent University

Introduction

In most nations, schools are the primary societal institution with responsibility for promoting physical activity and sports in young people (Sallis & Owen, 1999). Physical education (PE) classes, physical activity outside PE classes and information to parents and other educational team members can contribute to the development of an active lifestyle.

According to Vilhjalmsson and Thorlindsson (1998) schools primarily affect leisure time physical activity through positive PE experiences and sport and exercise related instruction. Furthermore, it was found that an increase in PE can favourably influence general physical activity in children and pupil response to physical activity (Chad et al. 1999). However, Kristjandottir and Vilhalmsson (2001) evidenced that compulsory school PE frequently fails to translate into voluntary physical involvement. To strengthen the association between PE and physical activity, elementary schools should promote physical activity during PE classes, as well as during recesses and sporting days outside PE, and outside the school (Sallis et al. 1997) and PE lesson time should be managed to include sufficient levels of physical activity and to encourage a desire to be active, whilst simultaneously facilitating the realization of other PE objectives (McKenzie et al., 1995).

The purpose of the present report, consisting of two studies, is to describe how extensively PE and physical activity and sports outside PE are addressed in elementary schools in Flanders and to evaluate physical activity engagement levels during swimming PE classes and during non-swimming PE classes in 8 to 12 year old school pupils.

Methods

To evaluate how extensively PE and physical activity outside PE are addressed in elementary schools in Flanders, in the first study, a questionnaire was filled out by a representative sample of 78 teachers (response rate: 71%) who teach PE in public elementary schools of Flanders. Respondents were 27 male (35 %) and 51 female (65%) teachers. Twenty-three of the schools were located in a city, the others in more rural areas. The number of pupils in the schools varied between 45 and 579 (mean: 217 pupils). The following characteristics of the school and the teacher were obtained: the number of pupils in the school, the educational system and location of the school, the gender of the teacher. Questions were included about PE classes, physical activities outside the PE classes, parent involvement and receptiveness to project implementation.

In the second study, making use of System for Observing Fitness Instruction Time (SOFIT) (McKenzie et al, 1991) physical engagement levels during PE were evaluated in 39 class groups of fourth and fifth grade children (394 boys, 386 girls, mean age 9.7 ± 0.7), from 16 randomly selected elementary schools in Flanders. For all SOFIT observations three boys and three girls from each of the 39 class groups were randomly selected. As a result, 234 pupils (117 boys and 117 girls) were observed during one swimming class and during one non-swimming PE class to determine physical activity engagement levels.

Results

Results of the survey

Twenty-eight % of the questioned teachers were satisfied with the amount of time spent on PE classes. 40 % of the teachers were satisfied with the PE location. 53 % of the teachers reported that they have sufficient space and adequate materials for the PE classes. 31 % of the teachers believed the school spends too little money on sports materials. 95 % of the teachers reported they teach their pupils the importance of physical activity, 91 % gave attention to healthy food and lifestyle. 75 % of the teachers reported they test the fitness level of their pupils. 57 % of the teachers did not give the pupils a home task for PE. 68 % of the schools did provide possibilities to do unsupervised sports activities during the school hours outside PE classes, for example by having a basketball or grass court available. 17 % of the schools organized

supervised sports activities for all the pupils, while 15 % of the schools organized supervised sports activities only for selected pupils, like only for pupils of the highest grades, or only for subscribed pupils. Supervised sports activities were more organised in schools in the city (35%) than in schools in more rural areas (9%) (χ^2 : 10.15, $p= 0.006$). 60 % of the schools provided possibilities to do sports at school after school hours. 63 % of the teachers reported that their school has never implemented a project on physical activity. According to 47 % of the respondents the importance of physical activity should be stressed in PE classes, according to 4 % in other classes and according to 49 % it should be stressed in both PE and other classes. 57 % of the teachers reported that the class teachers are also addressed to promote physical activity. According to the PE teachers the promotion of physical activity is supported by the school principal in 88 % of the schools and by the class teachers in 72% of the schools. 68 % of the schools did not organize information sessions for the parents related to physical activity and health. 93 % of the schools gave information to the parents regarding sports camps and 90 % regarding sports clubs.

Results of the SOFIT-observations

An overview of the percentages of lesson time spent on the different engagement levels and on Moderate to Vigorous Physical Activity (MVPA) during swimming classes and during non-swimming PE classes can be found in Table 1.

Table 1. Means, standard deviations and ranges for % of actual lesson time engaged in the 5 SOFIT activity categories for swimming class and non-swimming PE class.

<i>Activity category</i>	<i>Mean % ± SD (range) of lesson time in swimming class</i>	<i>Mean % ± SD (range) of lesson time in non-swimming PE class</i>
1: lying	0.7 ± 1.3 (0-4.1)	1.0 ± 2.3 (0-8.1)
2: sitting	6.2 ± 8.2 (0-38.4)	21.6 ± 19.2 (0-81.9)
3: standing	40.3 ± 11.8 (18.2-62.0)	37.2 ± 17.43 (6.3-72.1)
4: walking out of water	13.4 ± 5.3 (4.1-24.7)	18.3 ± 11.39 (3.6-54.0)
5: active	38.2 ± 9.6 (14.6-61.5)	21.9 ± 7.9 (9.0-42.3)
MVPA (4+5)	51.6 ± 9.9 (18.7-86.2)	40.2 ± 17.1 (15.3-96.4)

The average percentage of MVPA engagement during lesson time was significantly higher during swimming class (51%) than during non-swimming PE (40%) ($t= 3.0$; $df= 38$; $p< 0.01$). In both types of PE classes the most observed SOFIT activity category was standing. Forty one percent of the swimming lessons and 77% of the non-swimming PE lessons did not reach 50% MVPA engagement. Of the average total scheduled time for a swimming lesson (83 minutes ± 22), 31 % (26 minutes ± 14) was spent for transportation to the pool, 30 % (25 minutes ± 4) for dressing and 38% (32 minutes ± 12) for the actual swimming class. Thirty two groups went to the pool by bus (82 %), while 7 groups walked (18 %). All non-swimming PE classes took place in the schools. The average scheduled PE lesson length varied from 35 to 75 minutes (mean 50.8 ± 7.1). Seventy two percent of this time (36.6 minutes ± 8.4; range: 18-58) was actually spent on the PE lesson, while 28% was used for moving from the class room to the gym room and dressing (see Figure 2). The length of the lessons did not significantly influence MVPA engagement (non-swimming PE: $r= 0.01$, $p= 0.26$; swimming PE: $r= 0.09$, $p= 0.59$).

Discussion

In Flanders the development of a healthy and active lifestyle is adopted as an important mission of PE. According to the present findings most teachers in Flanders are moderately well to well equipped and have enough space to provide their PE classes. In contrast with these satisfying results, 72 % of the teachers find the PE time insufficient. In line with the findings of Sallis et al. (1997) and Mc Kenzie et al. (1995) the PE lesson time is too limited to reach the recommended daily physical activity time of 60 minutes.

Moreover, according to the present findings, elementary school pupils engaged in MVPA during 51% of a swimming lesson and during 40% of a non-swimming PE lesson. According to “Healthy People 2000“ (USDHHS, 1996) children should participate in MVPA during at least 50% of PE class, preferably

engaged in lifetime physical activities. In the present study, 41% of the swimming lessons and 77% of the non-swimming PE lessons did not reach the 50% MVPA engagement. There is a need to move beyond the curriculum and to promote more physical activity through extra-curricular and out of school activities. Moreover, the organization of physical activity at school outside PE classes, such as during recesses and after school hours and the introduction of movement breaks between and within lessons, are important to reach the recommended daily physical activity time of 1 hour. Besides the intra- and extra-curricular activities, active commuting to school by means of walking or by bicycle is an important source of children's physical activity.

Promoting and organizing physical activity outside PE and managing PE lesson time to include physical activity and to encourage a desire to be active, whilst simultaneously facilitating the realization of other PE objectives, is a particular challenge for PE teachers. In addition, parents and other members of the educational community should also be involved in the promotion of an active lifestyle.

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Contact co-ordinates author:

Greet Cardon
Department of Movement and Sports Sciences, Ghent University
Watersportlaan 2, 9000 Gent, Belgium
Tel. 0032.9.264.91.42. / Fax. 0032.9.264.64.84.
e-mail: greet.cardon@UGent.be