



Physical activity during school and after school among youth with and without intellectual disability



Ingi Þór Einarsson^{a,*}, Erlingur Jóhannsson^a, Daniel Daly^b, Sigurbjörn Árni Arngrímsson^a

^a Center for Sport and Health Sciences, University of Iceland, Laugarvatn, Iceland

^b KU Leuven, Department of Kinesiology, Faculty of Kinesiology and Rehabilitation Sciences, Leuven, Belgium

ARTICLE INFO

Article history:

Received 22 December 2015

Received in revised form 18 April 2016

Accepted 19 May 2016

Available online 2 June 2016

Keywords:

Accelerometer

Children

Adolescent

Sex

Sport participation

ABSTRACT

Background: Little is known about physical activity (PA) among children with intellectual disability (ID) or their reasons to take part in PA and sport.

Aims: To investigate PA and PA patterns during school and after school among Icelandic children with mild-to-severe ID.

Methods and procedures: Ninety-one children with ID and a matched group of 93 typically developed individuals (TDI) took part. PA was assessed with accelerometers and a questionnaire was used to collect data on PA behavior.

Results and outcomes: TDI children were more active and less sedentary than children with ID ($p < 0.001$). Both sexes with ID were more active and less sedentary during school than after school ($p < 0.003$) but no difference was found among TDI children. Children with ID (60%) were more likely to name weight loss as a reason to participate in PA than TDI children (34%, $p = 0.002$) but a higher proportion (96%) of TDI children than children with ID (50%) participated in PA to improve skills ($p < 0.001$).

Conclusion and implications: Children with ID depend more on schools to accumulate their PA and their reasons for PA participation differ from TDI children. This needs to be considered when designing and implementing PA promotion campaigns for children with ID.

© 2016 Elsevier Ltd. All rights reserved.

What this paper adds

This paper includes a large sample of children with intellectual disability (ID) and a randomly selected age- and sex-matched comparison group of typically developed individuals (TDI). All participants were objectively assessed at the same time with the same protocols by the same persons. The different patterns observed between the two groups during- and after school hours have to our knowledge not been reported before. Children with ID depend more on the schools to accumulate their physical activity (PA) and moderate-to-vigorous PA (MVPA) than their TDI peers. Further, children with ID are less sedentary during school hours than after school hours but the opposite is observed among TDI children. Children with ID were more likely to name factors related to negative body image such as losing- or not gaining weight as reasons for PA and sport participation, whereas a much higher proportion of TDI children named sport performance or improvement-related

* Corresponding author.

E-mail address: issi@hi.is (I.Þó. Einarsson).

factors. Despite a large difference in measured PA, no statistical difference was found between the two groups in self-assessed PA. These findings indicate that children with ID and their families are less aware of their level of PA and its importance, especially MVPA and thus overestimate their PA. Our results need to be considered when PA promotion campaigns are designed and implemented for this vulnerable group of children.

1. Introduction

Physical activity (PA) has shown a positive relationship with health, and a negative relationship with obesity and the opposite has been found for sedentary behavior (Mitchell et al., 2009). Fewer and fewer typically developed individuals (TDI) meet the recommended guidelines of 60 min/day of moderate to vigorous PA (MVPA) (Ortega et al., 2013; Riddoch et al., 2004) needed to maintain good health (Nader, Bradley, Houts, McRitchie, & O'Brien, 2008; Riddoch et al., 2004). Correspondingly, sedentary behavior has increased during the past few decades (Pate, Mitchell, Byun, & Dowda, 2011) and today children spend 4–8 h every day sedentary (Pate et al., 2011) or around 40% of their waking time (Syvaioja et al., 2013). Children and adolescents 6–16 years old spend a large amount of their waking time on weekdays at school, and although they accumulate 5–61% of their MVPA during school hours, they spend 65–71% of their day sedentary (Bailey et al., 2012; Guinhouya et al., 2009; Taylor et al., 2011; Li et al., 2013).

Studies of PA among persons with intellectual disability (ID) generally concur that this population is less physically active (Foley & McCubbin, 2009; Hinckson, Dickinson, Water, Sands, & Penman, 2013; Peterson, Janz, & Lowe, 2008) and is more obese (De, Small, & Baur, 2008; Einarsson, Olafsson et al., 2015; Melville, Hamilton, Hankey, Miller, & Boyle, 2007; Reinehr, Dobe, Winkel, Schaefer, & Hoffmann, 2010) than the TDI population and that PA declines with increased level of ID (Hinckson & Curtis, 2013). Similarly, sedentary time is greater among adults with ID than TDI adults (Dixon-Ibarra, Lee, & Dugala, 2013). Recently, in a sample of ~90 children with ID and ~90 TDI children, we found that objectively measured PA of TDI children was 40% greater than that of children with ID and none of the latter reached the recommended 60 min of MVPA per day whereas 40% of the TDI children met the recommendations. Studies with smaller samples have found children with ID to be 50% less active than their TDI peers although no differences were found in their self-reported sedentary behavior (Foley & McCubbin, 2009). Very few or no children with ID reached recommended levels of MVPA estimated via self-reported questionnaires (Rimmer & Yamaki, 2006; Lin et al., 2010) or accelerometers (Peterson et al., 2008). This low PA and MVPA frequently found in studies among children and adolescents with ID has partly been explained with a lack of safe environment in their residential area and potentially unsafe routes for active commuting to and from schools (Einarsson, Olafsson et al., 2015), as safety is an important factor for PA for all children (Hutzler & Korsensky, 2010; Kerr et al., 2006; Merom, Tudor-Locke, Bauman, & Rissel, 2006; Veitch, Salmon, & Ball, 2008; Zhu & Lee, 2008).

Furthermore, little is known about the reasons for PA or sport participation, or the frequency and type in which children with ID take part. Nevertheless, one study on young teens with ID reported “meeting friends”, “having fun” and “learning new skills” as the main reasons for taking part in every-day PA (Pozerine, Adomaitiene, Ostaseviciene, Reklaitiene, & Kragniene, 2008). Similarly, it is well documented that TDI children and adolescents take part in sports “to be with friends” and “have fun” as well as “to improve skills” and, among adolescents, “for weight control” (Allender, Cowburn, & Foster, 2006). The positive benefits of sports participation and increased PA in persons with ID for both health and general well-being have been demonstrated in many studies (Bartlo & Klein, 2011; Hutzler & Korsensky, 2010).

Finally, sex differences in PA among individuals with ID have not been well examined. A study on 150 individuals with ID aged 12–70 years found men to be more active than women with a trend for a decline in PA with age (Phillips & Holland, 2011), whereas we found no sex difference in PA or sedentary behavior among 6–16 year old children and adolescents (Einarsson, Olafsson et al., 2015).

There is a particular lack of knowledge about the role of schools in determining PA and sedentary time among children with ID as this is a place where all children spend a large part of their day. The purpose of this study was, therefore, to investigate PA and sedentary time during school hours vs. after school hours among Icelandic school children with ID and to compare them to an age- and sex-matched group of TDI children, as well as to investigate any potential sex differences in PA and sedentary time. A secondary purpose was to investigate the reasons for PA and sport participation in both groups. We hypothesized that children with ID would depend more on schools for PA than TDI children, but there would be no differences in the reasons for taking part in sports and PA. We also hypothesized that there would be no sex differences in PA and sedentary time among children with ID, whereas among TDI children, boys would be more active and spend less time sedentary than girls.

2. Materials and methods

2.1. Subjects

For this study, data were obtained on PA and PA behavior as well as basic anthropometric variables in Icelandic primary and secondary school children (aged 6–16 years) with and without ID. All ($n = 120$) children with ID from one special school and four inclusion schools were offered participation, and 94 children agreed to take part (78%). Sixty-two percent of the children with ID came from the special school, which only accepts children with moderate-to-severe ID, and 38% came from inclusion schools, which accept children with mild-to-moderate ID. All children lived at home with their parents or legal

Download English Version:

<https://daneshyari.com/en/article/371024>

Download Persian Version:

<https://daneshyari.com/article/371024>

[Daneshyari.com](https://daneshyari.com)