

SHORT REPORT

Physical activity and screen time exposure in primary school aged children.

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Introduction

The sedentary lifestyle along with the deficient physical activity (PA) in children, increase the dangers for various non-contagious diseases (Ekelund et al., 2006). The sedentary lifestyle is often connected to the increased use of new technologies as well as the applications that “run” on screens, such as digital television, high internet speed, computer, and videogames. The main exposure to screen activities happens at home, where the family environment constitutes a crucial influence source for sedentary behavior and the lack of PA (Salmon et al., 2005). The last is considered a factor influencing health (Themblay et al., 2011). Although several studies have investigated the relation of PA and sedentary behavior, most of them have found that the time spent on sedentary behaviors is not related to PA (Marshall et al., 2004). However, the national health authorities in countries such as the USA (Strasburger et al., 2010) and Australia (Salmon et al., 2005), published national instructions, advising parents to limit the time their children spend in screen activities to two hours a day or even less (Barlow & the Expert Committee, 2007).

The lack of PA is particularly important to the pediatric population. It is worth noting that according to a Canadian research, it seems that only 7% of children participate in at least 60-minute moderate to intense activity per day (Rey – Lopez et al., 2008). Low PA during childhood is connected with increased danger for cardiovascular disease in adult life (Ruiz & Ortega, 2009). The reduced PA of children, the sedentary behavior models that they follow, TV viewing, computers, and computer games, always in combination with wrong diet standards, constitute an important risk factor for children (van Der Horst et al., 2007). In the present study the relation of PA and “exposure” time to screen in primary school aged children was investigated.

Method

Abstract

Children’s sedentary lifestyle and deficient physical activity, increase the dangers for many kinds of non-communicable diseases. Sedentary lifestyle is often related to the increasing tendency towards the use of new technology, mainly the on-screen games and applications. According to several surveys, the time of exposure to such on-screen activities is considered to be a significant risk factor for children. In the current survey, the relation between physical activity of school aged children and the time of exposure to screens was examined. Fifty children coming from Komotini, aged 7-9 years old, participated in this study. Their height and weight were measured with a stadiometer and a weight scale respectively, while their physical activity was estimated with the pedometer Omron HJ-720 IT-E2. The time children spent on screen activities was recorded with a questionnaire which was completed by the children’s parents and was reexamined for the accuracy of the answers through interview-discussion with the parents during the completion process. For the data analysis a One Factor Analysis of Variance (ANOVA) was used and the significance level was defined at $P < .001$. The analysis showed that the children who spent more than 3 hours per day on screen activities, recorded less steps (< 7500 steps per day) than those who spent less than 2 hours per day ($P < .001$). The results indicate a constantly increasing danger; children’s game seem to be more and more limited to virtual gaming which takes place on a screen and this could lead to considerable limitation of active gaming. This could probably have dramatic health consequences on the later life of the kids and this should be carefully taken into consideration by the experts.

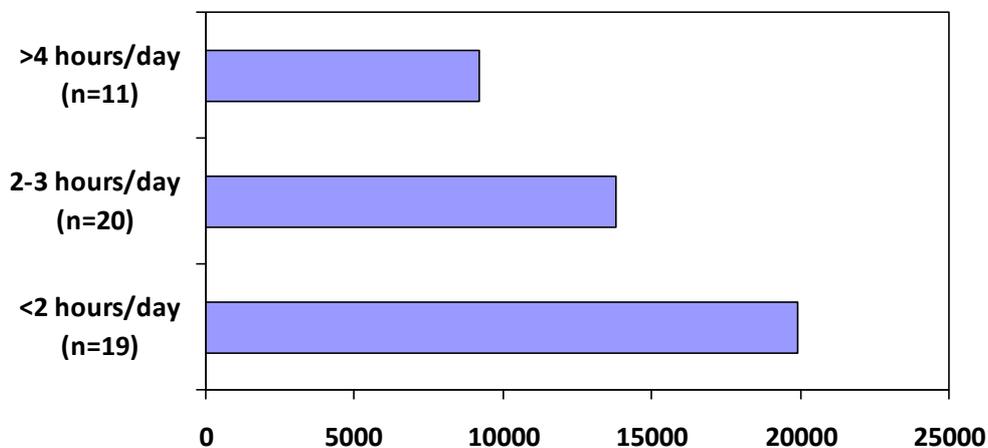
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The study sample comprised of 50 children, aged 7-9 years old that studied in Primary schools in Komotini, Greece. The body height was measured using a stadiometer (Stadiometer 208, Seca, UK) and weight was measured using balance scale (Beam Balance 710, Seca, UK), while children's PA was recorded by common Omron pedometers Hj-720IT-E2. The time that children spent on screen activities was recorded with a questionnaire that children's parents filled in. The accuracy of the responses to the questions was counterchecked through interview – discussion with parents during the delivery of the questionnaires. A one factor analysis of variance (exposure time to screens) was used for the data analysis and the importance level was defined at $p < .001$.

Results

The analysis showed that the children who were exposed more than 4 hours/day to screen “activities” recorded less steps (<10,000 steps/day) than children who were exposed for less than 2 hours/day ($p < .001$) but also than children who were exposed for 2-3 hours/day.



Graph 1. Relationship of “screen time” and ambulatory PA

Discussion – Conclusion

Results indicate a continuously increased danger: children's games seem to become more and more oriented to “virtual” digital ones, taking place on a screen. This results to a significant restriction of physically active games that use both the body and all senses. The consequences of this phenomenon on children's health may be dramatic and all of us should consider them.

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