



ORIGINAL ARTICLE

Association between electronic equipment in the bedroom and sedentary lifestyle, physical activity, and body mass index of children[☆]



Gerson Luis de Moraes Ferrari^{a,b,*}, Timóteo Leandro Araújo^a,
Luis Carlos Oliveira^a, Victor Matsudo^a, Mauro Fisberg^b

^a Centro de Estudos do Laboratório de Aptidão Física de São Caetano do Sul (CELAFISCS), São Caetano do Sul, SP, Brazil

^b Centro de Atendimento e Apoio ao Adolescente (CAAA), Department of Pediatrics, Escola Paulista de Medicina (EPM), Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil

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KEYWORDS

Physical activity;
Sedentary lifestyle;
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Abstract

Objective: To describe the association between electronic devices in the bedroom with sedentary time and physical activity, both assessed by accelerometry, in addition to body mass index in children from São Caetano do Sul.

Methods: The sample consisted of 441 children. The presence of electronic equipment (television, personal computer, and videogames) in the bedroom was assessed by a questionnaire. For seven consecutive days, children used an accelerometer to objectively monitor the sedentary time and moderate-to-vigorous physical activity. Body mass index was categorized as suggested by the World Health Organization.

Results: Overall, 73.9%, 54.2% and 42.8% of children had TV, computer, and videogames in the bedroom, respectively, and spent an average of 500.7 and 59.1 min/day of sedentary time and moderate-to-vigorous physical activity. Of the children, 45.3% were overweight/obese. Girls with a computer in the bedroom (45 min/day) performed less moderate-to-vigorous physical activity than those without it (51.4 min/day). Similar results were observed for body mass index in boys. Moderate-to-vigorous physical activity was higher and body mass index was lower in children that had no electronic equipment in the bedroom. Presence of a computer ($\beta = -4.798$) and the combination TV+computer ($\beta = -3.233$) were negatively associated with moderate-to-vigorous physical activity. Videogames and the combinations with two or three electronic devices were positively associated with body mass index. Sedentary time was not associated with electronic equipment.

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* Corresponding author.

E-mail: gersonferrari08@yahoo.com.br (G.L.d.M. Ferrari).

PALAVRAS-CHAVE

Atividade física;
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Conclusion: Electronic equipment in the children's bedroom can negatively affect moderate-to-vigorous physical activity and body mass index regardless of gender, school, and annual family income, which can contribute to physical inactivity and childhood obesity.

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Associação entre equipamentos eletrônicos no quarto com tempo sedentário, atividade física e índice de massa corporal de crianças

Resumo

Objetivo: Descrever a associação entre equipamentos eletrônicos no quarto com tempo sedentário e atividade física, ambos avaliados por acelerometria, além do índice de massa corporal (IMC) em crianças de São Caetano do Sul.

Métodos: A amostra foi composta por 441 crianças. A presença de equipamentos eletrônicos (televisão ou TV, computador e jogos de vídeo) no quarto foi avaliada por meio de um questionário. Durante sete dias consecutivos, as crianças usaram acelerômetro para monitorar objetivamente o tempo sedentário e atividade física de moderada a vigorosa (AFMV). O IMC foi categorizado conforme sugerido pela Organização Mundial de Saúde.

Resultados: No total, 73,9%, 54,2% e 42,8% das crianças tinham TV, computador e jogos de vídeo no quarto, e gastavam em média 500,7 e 59,1 min/dia de tempo sedentário e de AFMV. Das crianças, 45,3% tinham excesso de peso/obesidade. Meninas com computador no quarto (45 min/dia) faziam menos AFMV do que as que não tinham (51,4 min/dia). Resultados semelhantes ocorreram para o IMC nos meninos. AFMV foi maior e IMC menor nas crianças que não tinham equipamentos eletrônicos no quarto. Computador ($\beta = -4,798$) e a combinação de TV com computador ($\beta = -3,233$) foram negativamente associados com AFMV. Jogos de vídeo e as combinações com dois ou três equipamentos eletrônicos foram positivamente associados com IMC. Tempo sedentário não foi associado com equipamentos eletrônicos.

Conclusão: Equipamentos eletrônicos no quarto das crianças podem afetar negativamente a AFMV e o IMC independentemente do sexo, escola e renda familiar anual, podendo contribuir para a inatividade física e obesidade infantil.

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Introduction

Sedentary behavior, such as the use of electronic equipment (TV, personal computer, and videogames) in the children's bedroom, is highly prevalent during childhood¹ and may be associated with health risks.² In Brazil and other countries, public health guidelines recommend that children should minimize the amount of time spent in prolonged sedentary behavior.^{3,4} The American Academy of Pediatrics recommends that parents should remove electronic equipment from children's rooms.⁵

Because 78.6% of Brazilian children watch >2 h/day of TV,⁶ the influence of electronic equipment in the children's lifestyle has been a key area of research^{7,8}; for instance, the impact of the presence of electronic equipment in their rooms.⁹ Studies carried out in developed countries have found high levels of adiposity^{10,11} and low levels of physical activity¹² in children that maintain electronic equipment in the bedroom. Moreover, in a representative sample of English children participating in the study Sport, Physical Activity, and Eating Behaviour: Environmental Determinants in Young People (SPEEDY), Atkin et al.⁹ reported higher means of sedentary time (objectively assessed) in children that had a TV and

computer in the bedroom, when compared to those who did not.

The objective assessment of physical activity measured by an accelerometer provides detailed data representing physical activity intensities, such as moderate-to-vigorous physical activity (MVPA), and even the sedentary time. Studies using accelerometers have become more common in research on childhood physical activity worldwide.⁸ However, the number of studies in developing countries, such as Brazil, which used accelerometers is still very small. Thus, the aim of this study is to describe the association between the presence of electronic devices in the bedroom with sedentary time and physical activity, both assessed by accelerometry, in addition to body mass index (BMI) in children from São Caetano do Sul, Brazil.

Material and methods

Sample study

This study is part of the International Study of Childhood Obesity, Lifestyle, and the Environment (ISCOLE), which is characterized as a cross-sectional multicenter study

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