



ORIGINAL ARTICLE

Comparison between exercise performance in asthmatic children and healthy controls – Physical Activity Questionnaire application[☆]



Rita Santos-Silva^{*}, Cláudia Melo, Daniel Gonçalves, Janine Coelho, Fernanda Carvalho

Pediatrics Department, Centro Hospitalar do Médio Ave, Famalicão, Portugal

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KEYWORDS

Asthma;
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Abstract

Background: The PAQ questionnaire (*Physical Activity Questionnaire* - Kowalski, Crocker, Donen) is a self-administered 7-day recall validated questionnaire that measures physical activity levels in young people. A final activity score is obtained (1 indicates low and 5 indicates high physical activity level).

Our aim was to determine whether there was any difference between the level of physical activity of children with controlled allergic disease and healthy children.

Patients and methods: We used the PAQ questionnaire with a group of asthmatic children attending hospital outpatient clinic and a group of healthy children matched for age.

Results: 155 children with allergic disease (median age of 11 years; 63% males) and 158 healthy controls (median age of 10 years; 46% males) answered the questionnaire.

There were no differences in the overall level of physical activity, estimated by PAQ score, between allergic and healthy children ($2,40 \pm 0,7$ vs $2,48 \pm 0,62$; $p = 0,32$). Performance in physical education classes and after school sports activity was found to be different between the study groups; healthy children were more active ($p = 0,011$) and did more sports between 6 and 10 pm ($p = 0,036$). No other statistically significant differences were found between the study groups.

Conclusion: Despite the fact that a majority of the parents of allergic children stated that their child's disease was a barrier to physical activity, in our study there seems to be no difference between the level of physical activity of controlled asthmatic children and their healthy peers.
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^{*} Corresponding author.

E-mail address: ritasantossilva@gmail.com (R. Santos-Silva).

PALAVRAS-CHAVE

Asma;
Exercício;
Questionário de
Atividade Física

Comparaç o entre o desempenho de exerc cio em doenas asm ticas e grupos de controlo saud veis – aplica o de Question rio de Atividade F sica

Resumo

Introdu o: O question rio PAQ (*Physical Activity Questionnaire* - Kowalski, Crocker, Donen)   um question rio validado, que mede os n veis de atividade f sica em jovens atrav s de perguntas referentes aos  ltimos 7 dias.   obtido um resultado final (1 indica um n vel de atividade f sica baixo e 5 um n vel elevado).

O nosso objetivo foi determinar se existe alguma diferena entre o n vel de atividade f sica de crianas com doenas al rgicas controladas e em crianas saud veis.

Doentes e m todos: O question rio PAQ foi aplicado a um grupo de crianas asm ticas que frequentavam a consulta externa e a um grupo de crianas saud veis, de idade equivalente.

Resultados: Cento e cinquenta e cinco crianas com doenas al rgicas (idade m dia de 11 anos; 53% do sexo masculino) e 158 controlos saud veis (idade m dia de 10 anos; 46% do sexo masculino) responderam ao question rio.

N o se verificaram diferenas no n vel global de atividade f sica estimado pelo score PAQ entre crianas asm ticas e saud veis ($2,40 \pm 0,7$ vs $2,48 \pm 0,62$; $p=0,32$). Verificou-se que o desempenho nas aulas de educa o f sica e que a atividade desportiva depois das aulas era diferente entre os grupos de estudo: as crianas saud veis eram mais participativas nas aulas ($p=0,011$) e faziam mais desporto entre as 18-22 horas ($p=0,036$). N o foram verificadas quaisquer outras diferenas significativas entre os grupos.

Conclus o: Apesar do facto da maioria dos pais de crianas asm ticas afirmar que a doena dos seus filhos era uma barreira   atividade f sica, no nosso estudo n o parece haver diferenas entre o n vel de atividade f sica das crianas asm ticas controladas e dos seus pares.

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Introduction

Exercise tolerance and potential reduced work capacity in children with asthma are still a subject of debate. Results from trials with regard to the possible benefits and risks of exercise in asthmatic children and adolescents have shown contradictory results because exercise may trigger allergic systemic, cutaneous and respiratory symptoms, such as exercise-induced asthma.

However, on the other hand, regular exercise and participation in sports are considered useful in the management of asthma, since physical training improves cardiopulmonary fitness, neuromuscular coordination, self confidence and health-related quality of life.^{1,2} Regular physical activity appears to induce beneficial immunological changes, thereby reducing allergic inflammation.³ Oxygen consumption, maximum heart rate and work capacity are all increased significantly during exercise⁴ and asthmatics, during exercise, present higher tidal volumes and lower respiratory rates compared to healthy controls.⁵ In addition, physical training leads to significant reductions in the use of both inhaled and oral steroids.⁶

There was also found an association between asthma and both obesity and low levels of physical activity.⁷ Moreover, asthma impacts negatively on mental health, while higher levels of physical activity improves it.⁷ There is solid evidence to reassure physicians on the work capacity of asthmatics and to encourage them to take up sports.⁵

Data about limited physical fitness in asthmatic children and adolescents are contradictory. The aim of this study was

to determine any differences between the level of physical activity of controlled allergic patients and their healthy peers.

Materials and methods**Study type**

Descriptive comparative study. Participants were divided into two groups: a group of children with asthma and a control group of healthy children. PAQ questionnaire was applied to both groups and results were compared. The evaluation took place during school time (November 2011) in an urban area in the north of Portugal.

Physical activity questionnaire (PAQ Family)

The ‘‘PAQ family’’ (Physical Activity Questionnaire for Older Children – PAQ-C and Physical Activity Questionnaire for Adolescents – PAQ-A)⁸ are a family of self-administered 7-day recall questionnaires designed by the Canadian University of Saskatchewan to provide a general measurement of physical activity in youth. The PAQ-C is appropriate for elementary school aged children (approximately ages 8–14) and the PAQ-A is appropriate for high school students (approximately ages 14–20).

The PAQ-A is made up of nine questions that assess different aspects of physical activity on a 5-point scale. It includes questions about the physical activity of the children in the previous 7 days, during their spare time and physical

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