

Stimulating physical activity in children with asthma

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The SIMBA project is a research collaboration in which children with asthma, their parents and healthcare professionals play an important role. The SIMBA study is a two year program that aims to develop and finally (pilot) test an exercise game that...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Bronchial disorders (excl neoplasms)
Study type	Observational non invasive

Summary

ID

NL-OMON44282

Source

ToetsingOnline

Brief title

SIMBA study

Condition

- Bronchial disorders (excl neoplasms)

Synonym

Asthma, respiratory disorders

Research involving

Human

Sponsors and support

Primary sponsor: Hogeschool van Amsterdam

Source(s) of monetary or material Support: SIA RAAK publiek

Intervention

Keyword: Asthma, Child, Game development, Physical activity

Outcome measures

Primary outcome

At the end of phase 2 of the study there is a prototype of an exercise game for children with asthma aged 8-12 years old. This prototype includes to the most important exercise promoting factors and overcomes important restricting factors in relation to exercise for children with asthma. The actual game will be pilot tested in phase 3 of the study.

Secondary outcome

A list of factors that restrict and promote exercise behavior in children with asthma aged 8-12 years old.

Study description

Background summary

In the Netherlands approximately 7-10% of all children live with asthma (Brunekreef, et al., 2002). Each year almost 40,000 children aged 0-19 years old are newly diagnosed with asthma (Bindels et al., 2014). Asthma is a chronic respiratory disease which often occurs in episodes, which are called asthma attacks (Bindels et al., 2014). During an asthma attack, children are short of breath, wheeze and cough a lot (Bindels et al., 2014). In an acute situation, medication helps to reduce these asthma symptoms. In a more preventive manner, exercises and guidance by a physical therapist may help to improve physical functioning (physical fitness), to increase knowledge about the disease and learn about an optimal posture to increase lung capacity. In addition they coach children with asthma to reintegrate and participate in normal life by training physical fitness.

For children with asthma, exercising is important to increase their lung condition. Exercise strengthens the respiratory muscles, making children more comfortable when breathing. Despite these known profits, children with asthma exercise 50% less than their healthy peers (Van Veldhoven et al., 2001; Lucas

et al., 2005; Williams et al., 2008; Kitsantas et al., 2000; Van der Giessen et al., 2005). Due to fear for asthma attacks exercising like biking, swimming, school gym and active play games during school breaks are avoided (Van Veldhoven et al., 2001; Lucas et al., 2005; Williams et al., 2008; Kitsantas et al., 2000; van der Giessen et al., 2005). As a result of decreased physical activity levels, children with asthma often have reduced physical fitness, reduced muscle strength, reduced self-esteem and higher incidence of obesity compared to healthy peers (Vahlkvist and Pedersen, 2009; Wanrooij et al., 2014). This all may negatively affect their general health (Wanrooij et al., 2014).

According to the Royal Dutch Society of Physiotherapy (KNGF) guideline children with asthma, the aim of asthma therapy is to increase joyful exercising, to guide children to become active at home and to decrease risk factors for an inactive lifestyle (Van der Giessen et al., 2005). Physical therapists who work with children with asthma support these children to increase their physical fitness, to coop with the disease and they teach them how to breathe during exercising (Zorgstandaard Astma kinderen & jongeren, 2012; Van der Giessen et al., 2005). Currently, programs to increase exercise and daily physical activity often show short-term effects, but long-term effects on physical fitness are absent (Wanrooij et al., 2014; Kotte et al., 2014). Little knowledge regarding factors influencing exercise behavior in children with asthma is present. Research on interventions using games that influence physical activity in healthy children show positive results. Games are matching the needs of the 21st century children and therefore are able to influence exercise behavior.

Physical therapists in the Netherlands make little use of digital tools, games, apps or smartwatches in their treatments of children with asthma. However they acknowledge the need for a sustainable game that can stimulate physical activity. This may help them to facilitate and motivate joyful exercising, increase and monitor daily physical activity for children with asthma. It can be an effective method of stimulating daily physical activity and pleasure in the long term (Pijpers & Scholte, 2013; Granic et al., 2014).

Study objective

The SIMBA project is a research collaboration in which children with asthma, their parents and healthcare professionals play an important role. The SIMBA study is a two year program that aims to develop and finally (pilot) test an exercise game that stimulates children with asthma being more physically active. The aim of this study, phase one and two, is to increase physical activity in children with asthma by developing an exercise game.

The research will identify factors that restrict and promote exercise behavior in children with asthma and will identify which ingredients for an exercise game are best suited to the needs of children with asthma.

Primary research question

* Which factors that restrict and promote exercise behavior in children with

asthma, aged 8 to 12 years, and how can the promoting factors be included as ingredients for the development of an exercise game to stimulate daily physical activity and asthma control?

Secondary research questions

- * Which factors that restrict and promote exercise behavior play a role in the exercise behavior of children with asthma, aged 8 to 12 years?
- * Which of these factors need to be included in the exercise game to increase joyful exercising and physical activity stimulation and participation?
- * What makes an exercise game effective, useful and valid to increase joyful exercising and physical activity participation in children with asthma?

Study design

This is a cross-sectional observational study; including one assessment day in phase 1 and two sound board group meetings in phase 2.

Study burden and risks

Phase 1 includes a one-day meeting; the children and their parents participate in two working groups in which free thinking about solutions and ideas are motivated to allow asthma children to increase their daily physical activity.

When children and parents also like to participate in phase 2 they are asked to contribute in two soundboard group meetings; each with a duration of one and a half hours.

Both the meeting of phase 1 and those of phase 2 are located outside the hospital in a central location in the Netherlands.

Participation is without risks for the patients, parents and healthcare professionals. Due to the nature and content of the study it is expected that children will enjoy participation in the study.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

Children (2-11 years)

Inclusion criteria

- 1) N $\leq$ 36: Children with asthma aged 8 to 12 years old with a mild to moderate asthma degree.
- 2) N $\leq$ 18: Parents of children with asthma (age 8-12 yrs old)
- 3) N $\leq$ 18: Health-care professionals who have experience in treating children with asthma.

Exclusion criteria

- 1) Children with an additional chronic disease or co-morbidity next to asthma and/or children who do not speak Dutch
- 2) Parents who do not speak Dutch
- 3) Health-care professionals who do not have any (work) experience in treating children with asthma

Study design

Design

Study type: Observational non invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Prevention

Recruitment

NL
Recruitment status: Recruitment stopped
Start date (anticipated): 18-10-2017
Enrollment: 36
Type: Actual

Ethics review

Approved WMO
Date: 28-09-2017
Application type: First submission
Review commission: METC Amsterdam UMC

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

ID: 21568
Source: NTR
Title:

In other registers

Register	ID
CCMO	NL62436.018.17
OMON	NL-OMON21568