

# Grow It! Sophia: investigating the Grow It! smartphone app used to identify mood problems and promote adaptive coping in adolescents with a chronic somatic condition

<b>Submission date</b> 25/04/2022	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 27/06/2022	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 15/03/2024	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

A chronic somatic condition is defined as a condition that lasts longer than 3 months, recurs more than three times a year and/or is related to long-term use of medication, treatments or help. Youth with chronic somatic conditions are at increased risk of anxiety and depression. Recent studies have indicated that 34-40% of adolescents with a chronic somatic condition experience significant levels of anxiety and depression, which is far more than in their healthy peers. A sharp increase in the prevalence of emotional problems is typically seen in adolescence. Such problems are related to social and academic impairments and reduced quality of life, as well as non-compliance with medical treatment recommendations, poor health, and an increase in medical costs by up to 50%. The aim of this study is to study a serious gaming application (Grow It! App) by:

1. Testing the effect of a psychosocial intervention aimed at promoting adaptive coping in adolescents with a chronic somatic condition
2. Examining the acceptance and effectiveness of the Grow It! smartphone application as a method of obtaining insights into the daily emotions and behavior of adolescents with a chronic somatic condition
3. Examining demographic and illness-related factors that predict or are associated with the effect of the psychosocial intervention.

### Who can participate?

Children between 10 and 18 years, treated in the Erasmus MC- Sophia Kinderziekenhuis for a chronic somatic condition

### What does the study involve?

Children will be randomly allocated to the intervention group (to use the app straight away for 4 weeks) or the control group (a waiting list period, starting using the app 4 months later). Anxiety and depression are measured at the start of the study, after using the app (week 5), and after 3 months.

What are the possible benefits and risks of participating?

The benefits for the adolescents are gaining more insight into their emotions, identifying problems more quickly and strengthening emotional resilience by completing challenges aimed at adaptive coping. The smartphone application also promotes self-reflection and being more physically active. There are no risks involved with participating in this study.

Where is the study run from?

Sophia Children's Hospital Rotterdam (Netherlands)

When is the study starting and how long it is expected to run for?

September 2020 to July 2024

Who is funding the study?

Erasmus Universitair Medisch Centrum Rotterdam (Netherlands)

Who is the main contact?

Dr Jeroen Legerstee

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### **Study website**

<https://www.growitapp.nl/sophia/>

## **Contact information**

### **Type(s)**

Principal Investigator

### **Contact name**

Prof Manon Hillegers

### **Contact details**

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## **Additional identifiers**

### **EudraCT/CTIS number**

Nil known

### **IRAS number**

### **ClinicalTrials.gov number**

Nil known

### **Secondary identifying numbers**

NL75678.078.21

# Study information

## Scientific Title

Grow It! Sophia: a smartphone application to identify mood problems and adaptive coping in adolescents with a chronic somatic condition

## Acronym

Grow It! Sophia

## Study objectives

Recent studies have indicated that 34-40% of adolescents with a chronic somatic condition experience significant levels of anxiety and depression. The aim of this study is to study a serious gaming smartphone application (GrowIt! App) by:

1. Testing the effect of a psychosocial intervention aimed at promoting adaptive coping in adolescents with a chronic somatic condition
2. Examining the acceptance and effectiveness of the GrowIt! smartphone application as a method of obtaining insights into the daily emotions and behaviour of adolescents with a chronic somatic condition
3. Examining demographic and illness-related factors that predict or are associated with the effect of the psychosocial intervention.

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

Approved 17/05/2021, Erasmus MC Research Ethics Committee (Postbus 2040, 3000 CA, Rotterdam, Netherlands; +31 (0)207034428; metc@erasmusmc.nl), ref: NL75678.078.21

## Study design

Parallel-group randomized controlled trial

## Primary study design

Interventional

## Secondary study design

Randomised controlled trial

## Study setting(s)

Internet/virtual

## Study type(s)

Prevention

## Participant information sheet

See study outputs table

## Health condition(s) or problem(s) studied

Chronic somatic condition

## Interventions

Participants are allocated to the experimental or control condition through computer-based, block-wise randomisation. Patients are assigned to blocks based on their chronic somatic condition. Assessments are not blind to condition, because the researchers are not involved in any of the assessments, and only the children and adolescents fill out online questionnaires. Consequently, indications for breaking the randomisation code are not applicable.

1. Active condition: use of the Grow It! app for 4 weeks
2. Waiting list condition: online questionnaires, and after a period of approx. 4 months use of the Grow It! app for 4 weeks

## **Intervention Type**

Other

## **Primary outcome measure**

Anxiety and depression measured using the Hospital Anxiety and Depression Scale (HADS) and the Children Depression Inventory (CDI) at baseline, after using the app (week 5), after 3 months (condition group T4 and T5)

## **Secondary outcome measures**

1. Quality of life is measured using the Pediatric Quality of Life Inventory (PedsQL) Generic Core Scales at baseline, after 5 weeks and after 3 months (condition group T4 and T5)
2. Self-esteem is measured using the Rosenberg Self-Esteem Scale (RSES) at baseline, after 5 weeks and after 3 months (condition group T4 and T5)
3. Illness perception is measured using the Brief Illness Perception Questionnaire (B-IPQ) at baseline, after 5 weeks and after 3 months (condition group T4 and T5)
4. Emotional and behavioural problems are measured using the Child behaviour Checklist (CBCL) at baseline, after 5 weeks and after 3 months
5. Sleep quality and quantity are measured using a self-developed scale based on prior studies for 28 days once a day
6. Emotions are measured using a test based on the Positive and Negative Affect Schedule (PANAS) for 28 days, 5 times a day
7. Fatigue, loneliness and worry are measured using a self-developed scale based on prior studies for 28 days, 5 times a day
8. Physical pain is measured using the Numerical Rating Scale (NRS) for 28 days, 5 times a day
9. Events are measured using a self-developed scale based on prior studies for 28 days, 5 times a day
10. Coping is measured using a self-developed scale based on Fragebogen zur Erhebung der Emotionsregulation bei Kindern und Jugendlichen (FEEL-KJ), Emotion Regulation Questionnaire (ERQ), Cognitive Emotion Regulation Questionnaire (CERQ) and UCL for 28 days, once a day
11. Exercise questions are measured using a self-developed scale based on prior studies for 28 days, once a day
12. Medication adherence is measured using a self-developed question for 28 days, 5 times a day
13. Health status is measured using a self-developed scale for 28 days, 5 times a day

## **Overall study start date**

01/09/2020

## **Completion date**

18/07/2024

## **Eligibility**

**Key inclusion criteria**

Adolescents (aged 10 - 18 years) undergoing treatment in the Sophia Children's Hospital Rotterdam for a chronic somatic condition (a condition that lasts longer than 3 months, recurs more than three times a year and/or is related to long-term use of medication, treatments or help)

**Participant type(s)**

Patient

**Age group**

Child

**Lower age limit**

10 Years

**Upper age limit**

18 Years

**Sex**

Both

**Target number of participants**

200

**Key exclusion criteria**

1. Intellectual disability (IQ <70)
2. Insufficient comprehension and proficiency of the Dutch language

**Date of first enrolment**

01/06/2021

**Date of final enrolment**

06/10/2023

**Locations****Countries of recruitment**

Netherlands

**Study participating centre**

Erasmus MC - Sophia Children's hospital

Wytemaweg 80

Rotterdam

Netherlands

3015 CN

# Sponsor information

## Organisation

Stichting Vrienden van Sophia - Lichtjesactie

## Sponsor details

Wytemaweg 80  
Rotterdam  
Netherlands  
3015 CN  
+31 (0)10 703 67 50  
info@vriendensophia.nl

## Sponsor type

Charity

## Website

<https://vriendensophia.nl/agenda/sprinting-sophia/>

# Funder(s)

## Funder type

Hospital/treatment centre

## Funder Name

Erasmus Universitair Medisch Centrum Rotterdam

## Alternative Name(s)

Erasmus Universitair Medisch Centrum, Erasmus University Medical Center, Erasmus MC

## Funding Body Type

Government organisation

## Funding Body Subtype

Local government

## Location

Netherlands

# Results and Publications

## Publication and dissemination plan

Planned publications in high-impact international journals.

**Intention to publish date**

01/11/2024

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analyzed during the current study are not expected to be made available due to privacy of the participants

**IPD sharing plan summary**

Not expected to be made available

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Participant information sheet</a>	Aged 12 to 16 years	18/02/2022	19/05/2022	No	Yes
<a href="#">Participant information sheet</a>	Aged 16 to 18 years	18/02/2022	19/05/2022	No	Yes
<a href="#">Participant information sheet</a>	Parents	18/02/2022	19/05/2022	No	Yes