

Effectiveness of a novel digital application for the development of fundamental movement skills in preschool-aged children

Submission date 01/05/2020	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 06/05/2020	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 02/12/2020	Condition category Other	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Fundamental movement skills (FMS) are the foundational building blocks for lifetime participation in physical activity (PA). Programs to promote FMS development have been primarily delivered in childcare and school-based settings. But no studies have evaluated the effectiveness of an interactive digital application, designed to be co-used by the parent and child, to increase FMS proficiency in preschool-aged children.

This study will evaluate the effectiveness of a digital application called Moovosity to promote FMS in 3- to 6-year-old children.

Who can participate?

Children aged 3 to 6 years and their parents/caregivers living in the greater Brisbane metropolitan region

What does the study involve?

Half of the families will be randomly assigned to have free use of the Moovosity app for the 8-week program and half will be randomly assigned to the waiting list for access to the app. Participants will complete assessments of FMS proficiency, physical activity, and parental support for physical activity before and after the 8 week period. After these assessments, the wait-listed group will be given free access to the app.

What are the possible benefits and risks of participating?

The outcomes of this research project may benefit families with preschool-aged children. The results will tell us if the app is effective in increasing FMS proficiency in 3 to 6-year olds and enhancing parental support for physical activity. If we can confirm that the digital platform provides children with fun, developmentally-appropriate physical activity and significantly improves FMS proficiency, families with young children will be able to access a new evidence-based app to promote active play and regular physical activity as part of a healthy lifestyle.

Participants may experience a mild discomfort and/or anxiety from being assessed on FMS proficiency. There is a minimal risk that participants may fall or receive a minor injury during any games chosen to play while using the app. However, the likelihood of these occurring is very low, and the level of discomfort/anxiety associated with these risks is low. The risk of injury using the game-based app session is no greater than the risk of playing outside in the backyard or playing while attending preschool or other childcare.

Where is the study run from?
Queensland University of Technology (Australia)

When is the study starting and how long is it expected to run for?
From June 2018 to May 2019

Who is funding the study?
The study is investigator-initiated and funded

Who is the main contact?
Prof Stewart Trost
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Contact information

Type(s)
Scientific

Contact name
Prof Stewart Trost

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
Nil known

Study information

Scientific Title

Effectiveness of a novel digital application for the development of fundamental movement skills in 3- to 6-year-old children: A randomised controlled trial

Acronym

Moovosity

Study objectives

Families randomised to the 8-week intervention will demonstrate significantly greater changes in fundamental movement skills, child physical activity, and parental support for physical activity than families allocated to the wait list control condition.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 17/08/2018, the Queensland University of Technology Human Research Ethics Committee (Research Ethics Advisory Team, Office of Research Ethics & Integrity on behalf of the Chairperson, UHREC Level 4, 88 Musk Avenue, Kelvin Grove, QLD 4059, Australia; +61 7 3138 5123; humanethics@qut.edu.au), ref: 1800000675

Study design

Randomized, wait-list controlled study

Primary study design

Interventional

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Physical inactivity

Interventions

Participants will be randomized to either the treatment group or the wait-listed control group. The treatment group receives immediate access to the Moovosity app over 8-weeks. The wait-listed control group receives access to the app after completing post-test assessments.

Participants will undergo baseline testing prior to allocation which will be repeated after 8 weeks of either access to the Moovosity app, or no access in the wait-list.

A permuted block randomization method was used for allocation, with four parent-child dyads in each block. The allocation sequence has been generated by a researcher who was not involved in participant recruitment or outcome assessments. The allocation sequence will be concealed in a set of sealed opaque envelopes labeled with the participant number. Data collection and Fundamental movement skill (FMS) assessments will be conducted by trained research assistants blinded to group allocation.

Moovosity™ is a mobile application (app) designed to promote the development of FMS and increase physical activity in young children. The app is designed as a digital library of age-appropriate active games that promote child and parent co-participation in physical activity. Games are designed to be fun, engaging, and establish a positive relationship with physical activity.

Intervention Type

Behavioural

Primary outcome(s)

Fundamental movement skill proficiency, and object control and locomotor skills will be measured using the Test of Gross Motor Development 2nd Edition at baseline and 8 weeks

Key secondary outcome(s)

1. Child physical activity will be measured using the Burdette Outdoor Play Checklist at baseline and 8 weeks
2. Parental support for physical activity will be measured using the parent support scale (by Trost et al 2003) at baseline and 8 weeks

Completion date

15/05/2019

Eligibility

Key inclusion criteria

1. Aged 3 to 6 years
2. Free from any chronic conditions that affect their growth and development
3. Able to participant in activities of daily living
4. Resident in the greater Brisbane metropolitan region

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Child

Lower age limit

3 years

Upper age limit

6 years

Sex

All

Total final enrolment

34

Key exclusion criteria

Does not meet the inclusion criteria

Date of first enrolment

15/10/2018

Date of final enrolment

15/01/2019

Locations**Countries of recruitment**

Australia

Study participating centre

Queensland Centre for Children's Health Research

62 Graham Street

South Brisbane

Australia

4101

Sponsor information**Organisation**

Queensland University of Technology

ROR

<https://ror.org/03pvn4752>

Organisation

Moovosity Pty Ltd

Funder(s)**Funder type**

Other

Funder Name

Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Professor Stewart Trost (s.trost@qut.edu.au). Interested parties will be asked to state why they are interested in the dataset, their proposed research question, and proposed analytical strategies. Due to the conditions stipulated in the research agreement between Moovosity Pty Ltd and Queensland University of Technology, any request for the dataset must also be approved by Moovosity Pty Ltd. Approved parties will be emailed a password protected csv file comprising a completely de-identified dataset and data dictionary.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/02/2021	02/12/2020	Yes	No
Basic results		06/05/2020	15/05/2020	No	No