ISRCTN16114046 https://doi.org/10.1186/ISRCTN16114046

Promoting hEatlhy Diet and Active Lifestyle (PEDAL): a multi-component pilot programme to increase healthy eating and decrease sedentary behaviours in children

Submission date
09/10/2022

Recruitment status
No longer recruiting

Registration date
16/10/2022

Overall study status
Completed

Last Edited
26/05/2026

Condition category
Other

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol
Background and study aims
Setting lifestyle habits on the right track during the formative years of childhood and early adolescence is critical as lifestyle habits can track to adulthood and help prevent chronic disease risks in later life. However, increasing evidence indicates that children and adolescents, both globally and locally, do not meet dietary and movement behaviour (comprising physical activity, sedentary behaviour, and sleep) guidelines. Guided by the UK MRC framework for complex intervention, we aim to develop and pilot test a multi-component programme to increase healthy eating and decrease sedentary behaviours in primary school children. This programme will be developed under the guidance of an advisory committee comprising experienced health and education professionals (from MOE, HPB [Health Promotion Board, Singapore], and schools), and underpinned by behavioural change theories and techniques.

Who can participate?
Primary 5 students who are attending one of the two selected public primary schools in Singapore.

What does the study involve?
Five lessons on healthy eating and lifestyle behaviour and forming healthy habits will be conducted by Physical Education teachers to the Primary 5 students during the typical Healthy Education sessions during school time. They will also be given a take-home activity consisting of dietary and physically active activities to support habit formation to complete in their own time. Some of the activities will require the involvement of students' parents. To incentivise students to complete the activities, badges will be awarded to students when they accumulate a certain number of points from completing the activities. School-level-wide activities will also be conducted during recess to create social norms around healthy eating and lifestyle behaviours.

What are the possible benefits and risks of participating?
As this is an educational intervention study, the participants will benefit from the knowledge

and skills gained from the lessons and activities. No physical or psychological injury or harm is expected in participating in the study.

Where is the study run from?
The PEDAL study is being run by the Saw Swee Hock School of Public Health, National University of Singapore.

When is the study starting and how long is it expected to run for?
November 2021 to December 2023

Who is funding the study?
National Institute of Education (Singapore)

Who is the main contact?
Dr. Mary Foong-Fong Chong
mary_chong@nus.edu.sg

Contact information

Type(s)
Principal investigator

Contact name
Dr Mary Chong

ORCID ID
https://orcid.org/0000-0003-0587-2505

Contact details
Tahir Foundation Building
12 Science Drive 2
#09-01Q
Singapore
Singapore
117549
+65 8522 9510
mary_chong@nus.edu.sg

Additional identifiers

Protocol serial number
DEV 02/21 MCFF

Study information

Scientific Title
Development, implementation, and evaluation of a multi-component program to increase healthy eating and decrease sedentary behaviours in primary school children: a pilot study

Acronym

PEDAL

Study objectives
Current hypothesis as of 09/05/2023:
To develop, implement and pilot-test a multi-component program to increase healthy eating and decrease sedentary behaviours in primary school children

———

Previous hypothesis:
To develop, implement and evaluate a multi-component program to increase healthy eating and decrease sedentary behaviours in primary school children

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 22/11/2021, National University of Singapore Institutional Review Board (Blk MD11 Clinical Research Centre, 10 Medical Drive, #05-09, Singapore 117597; +65 6516 4311; irb@nus.edu.sg), ref: NUS-IRB-2021-640, amendment approval on 08/11/2023

Primary study design
Interventional

Study design
Multicenter interventional quasi-experimental pilot study

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Diet and sedentary behaviours

Interventions
This programme will consist of four core components:
1. A teaching curriculum on healthy eating and lifestyle behaviours, and forming healthy habits, to be conducted during the typical 30-minute Health Education sessions
2. Take-home activity consisting of dietary and physically active activities to support habit formation,
3. Involvement of parents in take-home activity, and
4. Conducting of school-level-wide activities during recess to create social norms around healthy eating and lifestyle behaviours.

Lesson plans, activities and the relevant materials will be developed and pre-tested with the relevant stakeholders (e.g., teachers and students). Feedback from the stakeholders will also be collected using quantitative and/or qualitative means. Refinement of the programme activities and materials will be done, if needed, after pre-testing.

The programme will then be implemented in two public, co-educational primary schools, to the Primary 5 cohort, over approximately one term (10 weeks). Process evaluation will be conducted

to assess the programme's reach, usage, implementation, and acceptability. Outcome evaluation will be conducted to assess changes in dietary and movement behaviours using a pretest-posttest design.

Intervention Type
Behavioural

Primary outcome(s)
Diet and sedentary behaviours are measured using an online time-use diary at baseline, 3, and 6 months.

Key secondary outcome(s)
1. Knowledge and skills on healthy eating and lifestyle behaviours measured using an online survey at baseline and 3 months.
2. Moderating factors that influence healthy eating and lifestyle behaviours (e.g., attitudes, perceived benefits/risks, self-efficacy, social support) using an online survey at baseline, 3, and 6 months.
3. Observations of school environment and canteen at baseline, 3 and 6 months.
4. Programme reach using class attendance for each lesson.
5. Feedback and acceptability of the PEDAL programme through online surveys with teachers after each lesson, students and parents post-intervention (3 months).
5. Feasibility of the PEDAL programme through focus group discussions with students and teachers, and interviews with canteen stall vendors.

Completion date
31/12/2023

Eligibility

Key inclusion criteria
For teachers:
1. Teacher teaching the Primary 5 Physical Health and Fitness (PHF) syllabus in the public schools approved for this study.
2. Able to understand and converse in English

For students:
1. Primary 5 students (10-13 years old) who are studying in the MOE (Ministry of Education) schools approved for this study
2. Able to understand and converse in English

For canteen vendors:
1. Canteen vendors of schools that are participating in the intervention program
2. Able to understand and converse in English or Mandarin

For parents:
1. Parents of children who attended the intervention program
2. Able to understand and converse in English

Participant type(s)
Mixed

Healthy volunteers allowed
No

Age group
All

Sex
All

Total final enrolment
270

Key exclusion criteria
For teachers, canteen vendors, and parents:
Those who refused to participate in the study.

For students:
Those whose parent, guardian or themselves refused to participate in this study.

Date of first enrolment
02/01/2022

Date of final enrolment
31/05/2023

Locations

Countries of recruitment
Singapore

Study participating centre
Alexandra Primary School
2A Prince Charles Crescent
Singapore
159016

Study participating centre
Punggol Green Primary School
98 Punggol Walk
Singapore
828772

Sponsor information

Organisation
National University of Singapore

ROR
https://ror.org/01tgyzw49

Funder(s)

Funder type
University/education

Funder Name
National Institute of Education, Nanyang Technological University

Alternative Name(s)
, National Institute of Education, NIE, NTU, NIE/NTU, NIE

Funding Body Type
Government organisation

Funding Body Subtype
Research institutes and centers

Location
Singapore

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available upon request from Dr Mary Chong (mary_chong@nus.edu.sg) after publication.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		11/05/2026	26/05/2026	Yes	No
Protocol article		23/03/2024	25/03/2024	Yes	No
Other publications		15/12/2025	07/01/2026	Yes	No