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A school-based study to improve healthy eating habits amongst Malaysian teenagers

Submission date 28/08/2018	**Recruitment status** No longer recruiting	[_] Prospectively registered [X] Protocol
Registration date 02/10/2018	**Overall study status** Completed	[_] Statistical analysis plan [X] Results
Last Edited 30/06/2022	**Condition category** Other	[_] Individual participant data

Plain English summary of protocol

Background and study aim
Recent research has shown that Malaysian adolescents are more likely to have an unhealthy food intake. Therefore, it is crucial to promote healthy eating and the regular intake of meals amongst adolescents, especially in Malaysian schools, as this is where breakfast and lunch are often consumed by adolescents. Therefore, the school canteen plays an important role in influencing, creating and instilling awareness of a healthy diet in schoolchildren. Studies have shown that environmental interventions can play an important role in providing healthier food and drinks. To promote a healthy diet amongst Malaysian adolescents, a canteen-based intervention was considered necessary. This study aims to look at the feasibility and effectiveness of an intervention involving training canteen operators to provide healthy food, and promoting healthy eating practices amongst adolescents.

Who can participate?
Malaysian adolescents aged 14 years at recruitment

What does the study involve?
Six schools will be selected to participate, including schools from rural and urban areas in Selangor and Perak states. Schools will be randomly allocated into 3 groups - 2 intervention groups and 1 control group, with 2 schools in each group.
One of the intervention groups will receive canteen operator training to promote provision of healthy options. The other intervention group will also receive this training, in addition to changing food provision, which will involve a subsidy for fruit, vegetables and kuih, and free drinking water.
The control group will not experience any changes to their usual canteen service.
All schools will have their canteen menu audited by trained dieticians.
Students will have their diet history assessed, along with body measurements and focus group discussions. Sales of food and drink will also be estimated using weekly receipts from canteen operators.

What are the possible benefits and risks of participating?
Participants in this study may benefit from increased healthy options available to them and from encouragement of healthy eating. There are no known risks to participants taking part in this study.

Where is the study run from?
University of Malaya (Malaysia)

Who is funding the study?
1. Academy of Science Malaysia (Newton Ungku Omar Fund) (Malaysia)
2. UK Medical Research Council between the University of Malaya and University of Bristol (UK)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
NMRR-18-965-41783

Study information

Scientific Title
Dietary patterns and their relation to cardiometabolic health among Malaysian adolescents: a school-based intervention feasibility study

Acronym
MyHeARTBEaT

Study objectives

Adolescents from the intervention arm will engage with possible changes of food choices into healthy options after the intervention to a greater extent than adolescents in the control arm

Ethics approval required
Old ethics approval format

Ethics approval(s)
Medical Research Ethics Committee, University Malaya Medical Centre, 21/03/2018, MREC ID NO: 2018214-6029

Primary study design
Interventional

Study design
Interventional quasi-experimental study

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Dietary intake among Malaysian adolescents

Interventions
The study will be conducted in 6 secondary schools in Malaysia. The sample will include schools from rural and urban areas in Selangor and Perak states, which will be randomised into 2 intervention arms and 1 control arm, with 2 schools in each arm, by an independent statistician using a computer-generated randomisation method. Intervention 1 will focus on training and change of food provision, whilst intervention 2 will focus on training only. The control group will not receive any intervention and will continue the usual service operation. All schools will have their canteen menu audited by trained dietitians. Study outcome measures will be assessed at the organisational level, and include 3-day diet history assessments, anthropometric measurements and focus group discussion among students conducted at baseline and post-intervention (4 weeks after intervention). Sales of food and drink items will be crudely estimated using weekly receipts from the canteen operators.

Intervention 1: Training & enabling healthy food environment
1. Training: Canteen operators will be trained to provide healthy foods and consider alternative methods for cooking by using a training manual which will be developed based on the Malaysian healthy canteen guidelines.
2. Subsidy for fruits, vegetables and low-energy dense (low ED) kuih (traditional cakes). The canteen operators will receive a weekly allowance (the amount can be revised when necessary) for the subsidy of fruit, veg and low ED kuih.
3. Providing free drinking water by installing a proper water container/tank to dispense drinking water. It can be assessed through diet history and focus group discussion with students.
4. All students (Form 2 students) will receive Ringgit Malaysia RM) valued coupons to pay for fruits (given for 2 days per week over 4 weeks) and low ED kuih (given for 2 days per week over 4 weeks).
A trained dietitian will deliver the training in these two schools and the canteens will be examined each week to assess the foods provided.

Intervention 1 will entail the adjustments to the choice of healthier food options by students which will be mainly led by the research team with the cooperation of food vendor operators. The issue of unhealthy dietary habits and practices will be addressed by encouraging and training the operators on healthy cooking methods, such as steaming and grilling.

Intervention 2: Training
Intervention 2 involves training only. Canteen operators will be trained to provide healthy foods and consider alternative methods for cooking by using a training manual which will be developed based on the Malaysian healthy canteen guidelines.

Control: Control group will receive usual practices of food service delivery by the canteen operators
The control group will receive usual practice of food service delivery by the canteen operators - there will be no changes to their food choices or delivery of service.

This study will mainly focus on altering the availability of foods/drinks in the school canteen. This 4-week intervention will be divided intervention and control group which involved 6 schools (3 from rural and 3 from urban).

Intervention Type
Behavioural

Primary outcome(s)
The following will be assessed using the checklist for healthy school canteens and sales receipts from the canteen by an external evaluator at the baseline, weekly during the intervention and at the end of the intervention:
1. Feasibility of providing healthier food options at the school canteen with cooperation of the food vendors
2. Possible changes of food choices into healthy options among adolescents before and after intervention

Key secondary outcome(s)
1. Dietary intake (3-days diet history), assessed using a focus group with students who participate in the intervention at the baseline and at the end of the intervention:
2. Anthropometric measurements related to the health outcome, assessed at the baseline and at the end of the intervention:
2.1. Height (without socks and shoes), recorded to the nearest mm using a calibrated vertical audiometer
2.2. Weight (measured with light clothing), recorded to the nearest 0.1 kg using a digital electronic weighing scale
2.3. Waist circumference, recorded to the nearest mm using a non-elastic Seca measuring tape
2.4. Percentage body fat, measured using a portable body composition analyser

Completion date
15/05/2019

Eligibility

Key inclusion criteria
1. Malaysian adolescent
2. Aged 14 years

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Other

Sex
All

Total final enrolment
441

Key exclusion criteria
1. Boarding schools
2. Religious schools
3. Vernacular schools

Date of first enrolment
28/08/2018

Date of final enrolment
15/04/2019

Locations

Countries of recruitment
Malaysia

Study participating centre
Department of Social and Preventive Medicine
Faculty of Medicine,
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Sponsor information

Organisation
University of Malaya

ROR
https://ror.org/00rzspn62

Organisation
University of Bristol

Funder(s)

Funder type
University/education

Funder Name
Academy of Science Malaysia (Newton Ungku Omar Fund)

Funder Name
UK Medical Research Council between the University of Malaya and University of Bristol

Results and Publications

Individual participant data (IPD) sharing plan
The data sharing plans for the current study are unknown and will be made available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	qualitative study results	01/06/2021	08/06/2021	Yes	No
Results article	qualitative results	01/09/2021	02/09/2021	Yes	No
Results article		30/06/2022	30/06/2022	Yes	No
Protocol article		22/09/2020	08/06/2021	Yes	No