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A city-wide program to encourage active and sustainable travel in young people

Submission date 14/08/2024	**Recruitment status** No longer recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [_] Results [_] Individual participant data [_] Record updated in last year
Registration date 16/08/2024	**Overall study status** Ongoing	
Last Edited 15/08/2024	**Condition category** Other	

Plain English summary of protocol

Background and study aims

In recent decades, physical activity, like cycling and walking, has declined among adolescents in Finland. This trend may continue due to factors like the centralization of services. Active transportation, such as walking or biking, is an easy way for young people to stay active. However, the use of these methods for school and leisure travel is decreasing, and access to them is getting harder, especially for adolescents in small towns, medium-sized towns, and rural areas. As distances to schools and services increase, active commuting becomes more challenging. Walking to public transportation stops also contributes significantly to physical activity, and using public transport can help adolescents travel longer distances independently. Towns, schools, and families have the potential to promote practices that encourage active commuting, whether by walking, cycling, or using public transportation. These practices can be supported by various factors, such as providing bicycle maintenance support, highlighting the benefits of traveling with friends or the environmental friendliness of public transport, and teaching the skills needed to navigate using these methods.

This study aims to test a program designed to promote active commuting among 300 adolescents, aged 13-15 years, living in two small towns with rural areas in Finland: Mikkeli and Kouvola.

Who can participate?

Participants in the study will be young people aged 13-15 years who are students at the selected schools.

What does the study involve?

Schools will be randomly assigned to either a control group or an intervention group. Participants in the intervention group will receive the full program, while those in the control group will get a brief version of the program at the end of the study. Since active commuting is a social behavior, the program will involve adolescents from the same classes, their parents, and their teachers. The adolescents will participate in workshops on active commuting, measure the carbon footprint of their travel, receive guidance on hybrid travel in their areas, and provide feedback on active commuting opportunities through travel panels. Parents and teachers will also receive information on active commuting and adolescents' perspectives on it, and they will

be invited to join the travel panels. The goal of this year-long program (about 8 months) is to increase the number of trips adolescents make using active and public transportation and to boost their overall daily physical activity. Participants will wear a device on their thigh that measures their daily physical activity for three weeks at the beginning, middle, and end of the study. They will also complete a survey about their travel habits. If the program is proven effective, it could be applied and scaled up across other Finnish cities facing similar challenges with increasing distances to schools and services.

What are the possible benefits and risks of participating?
The study provides valuable insights into adolescent mobility and the factors influencing their travel choices. This information can be used to plan transportation and physical activity-related services in cities and rural areas. Participants will gain experience in scientific research and using measurement devices. After the study, they will receive a personal report showing how much they moved and sat during the measurement weeks.
The potential risks of participating in this study are minimal and are not greater than those experienced during normal daily activities and transportation. However, the device used to measure physical activity will be attached to the thigh with adhesive tape, which could cause minor skin irritation for some participants.

Where is the study run from?
The study is conducted by Active Life Lab at the South-Eastern Finland University of Applied Sciences.

When is the study starting and how long is it expected to run for?
January 2024 to December 2026

Who is funding the study?
The study is funded by the Ministry of Education and Culture, Finland.

Who is the main contact?
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Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Protocol serial number
OKM/14/626/2023

Study information

Scientific Title
A multi-component city-level intervention to increase physical activity via sustainable active and public transport modes in 13–15-year-old young people: a mixed-methods cluster randomized controlled trial

Acronym
Julkine

Study objectives
After the 8-month (academic year) intervention, the participants receiving the intervention will differ from the controls on both the primary and secondary outcomes.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 03/04/2024, South-Eastern Finland University of Applied Sceinces Ethics Committee (Patteristonkatu 3, Mikkeli, 50100, Finland; +358 405469262; Johanna.Hirvonen@xamk.fi), ref: 03 /04/2024

Primary study design
Interventional

Study design
Interventional cluster-randomized controlled trial

Study type(s)
Efficacy

Health condition(s) or problem(s) studied
Active and sustainable travel in young people

Interventions
The participants will be recruited into an 8-month controlled trial, where secondary school pairs from Kouvola (n=4) and Mikkeli (n=4) will be matched based on their accessibility to public transportation (determined from open data sources, including bus service frequency), then randomized into intervention and control schools. Recruitment will be conducted through the schools. Participation is voluntary, and informed consent is obtained both from the participants and their guardians.

The trial will be conducted between 8/2024 and 5/2025. Activity and survey measurements are done for both the intervention and control groups three times: baseline, middle (at 4 months), end (at 8 months, after intervention). The intervention takes place in 2 schools in Kouvola and 2 in Mikkeli, between 9/2024 and 5/2025.

The intervention and the measurements are administered and delivered by the researchers, who adjust the details of the activities and timetables in cooperation with the school principal and teachers. The intervention activities mainly take place during school hours, with at least one teacher present at all the events. The control group receives a delayed, narrowed version of the intervention and the schools receive the materials for their own use, after the end measurements.

Communication between the researchers and the participants and their guardians is facilitated by direct email and phone contacts, as well as by using the schools' application for communication with the guardians.

The intervention consists of five parts: 1) self-monitoring, 2) information campaign, 3) active travel workshops, 4) guidance for hybrid travel and 5) youth travel panel. The main content of first component, self-monitoring, is that young people track voluntarily their own carbon footprint of transportation. They do it by using a free mobile application (MOPRIM) or web-based carbon footprint calculator. The aim is that the young understand the impact of different modes of transportation on carbon footprint formation and that their choices can affect the size of the carbon footprint.

The second component is information campaign for youth and parents. The goals of the information campaign are to enhance knowledge related to active and sustainable travel, influence attitudes and perceived accessibility of active modes of transportation and available hybrid travel options, encourage own reflection about everyday travel, and to gain parental support for active and sustainable travel. The information campaign consists of video messages for youth (length 0,5 - 1,5 minutes) and electronic newsletters for their guardians (a total of 7 monthly videos/newsletters). The material includes, for example, evidence-based information on the health and sustainability effects of active travel, tips for active travel in different seasons, reflective questions, and positive images.

Active travel workshops are the third component of the intervention. The workshops include information and group tasks related to the health and environmental effects, meanings, and prerequisites of active travel. The goal is to enhance positive meanings and attitudes and social support related to active travel. For example, pupils are invited to identify meanings and benefits attached to different travel modes, introduced to sustainability issues via action-based methods, and given bike maintenance instructions. The workshops can be implemented either in conjunction with environmental studies, physical and health education, or other classes, and the content can support the regular curriculum. Results and experiences from the self-monitoring component are utilized. Depending on the school specific arrangements, also other pupils beside the study participants may take part in the workshops.

Guidance for hybrid travel forms the fourth intervention component. The goal is to familiarize young people with hybrid travel and its benefits, and to enhance their ability to recognize options for hybrid travel in their everyday. Hybrid travel in the study areas means combining bus travel with walking or cycling. The more specific content is adapted locally. For example, a researcher may plan 2 - 3 hybrid trips for the intervention area and introduce them in the lecture, or the pupils may be invited to develop their ideas on how to get a certain number of steps during hybrid leisure-time travel in their area.

The last component is youth travel panel. Young people's experiences of travelling in their neighbourhoods are gathered via an online PPGIS survey, complemented with pictures and videos taken by the young people, and reported at school events that are open to parents, local cycling clubs, city transportation officials, etc. Permission is sought from individuals who may appear in the material before the event. The panel discusses these trips and tries to make notes on risks and development opportunities on these trips.

The transformation of active and public transport practices will be evaluated by qualitative analyses of semi-structured interviews with 12 to 15 participants and 2-4 guardians, of active travel workshop materials the youth produce, and of group interviews and observations made during the workshops, hybrid travel guidance and travel panel. The participants' experiences of intervention induced changes in practices will also be gathered via short surveys after each intervention component.

Intervention Type
Behavioural

Primary outcome(s)
Duration of moderate-to-vigorous physical activity (hours/day). Participants will use a validated Fibion® device (Fibion Inc., Jyväskylä, Finland) for 8 days, 24 hours a day at baseline, 4 months and 8 months. The Fibion® device is attached to the participant's right thigh with a waterproof cover and medical tape to measure sitting and various forms of physical activity, including cycling.

Key secondary outcome(s)
1. Active travel practices as a duration of different modes of transportation per week: walking, walking to the stop, cycling, cycling to the stop, personal motorized vehicle, bus, and car, assessed at baseline, 4 months and 8 months. Based on geographical information, the duration of trips is estimated using a map based PPGIS (Public Participatory GIS) survey, where participants indicate the mode of transportation, departure, and destination for each trip. In the PPGIS survey, participants are asked if they use the bus daily, several times a week, once or twice a week (weekly bus users), less than weekly, or never (less than weekly bus users)
2. Sitting time (accelerometer attached to thigh, Fibion device) assessed at baseline, 4 months and 8 months

Completion date
31/12/2026

Eligibility

Key inclusion criteria
1. 13 - 15-year-old young people who attend classes in the study schools
2. Give informed consent and have their guardian's consent to participate
3. Additionally, from amongst the participants, a sample of 12 to 15 young people with diverse travel habits and 2 to 4 parents will be recruited for the semi-structured interviews

Participant type(s)
Healthy volunteer

Healthy volunteers allowed

No

Age group
Child

Lower age limit
13 Years

Upper age limit
15 Years

Sex
All

Key exclusion criteria
Does not meet inclusion criteria

Date of first enrolment
20/08/2024

Date of final enrolment
31/12/2024

Locations

Countries of recruitment
Finland

Study participating centre
Active Life Lab
Raviradantie 22b
Mikkeli
Finland
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Sponsor information

Organisation
South Eastern Finland University of Applied Sciences

ROR
https://ror.org/051v6v138

Funder(s)

Funder type
Government

Funder Name
Opetus- ja Kulttuuriministeriö

Alternative Name(s)
Ministry of Education and Culture, Finland

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Finland

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?
Study website	Study website	11/11/2025	11/11/2025	No	Yes