A single-arm pre-post evaluation of a chatbot app to promote physical activity to support wellbeing in adolescents.

Project description

Being physically active is linked to increased wellbeing. We have developed a chatbot to help young people (11-19 years of age) to identify and persist with physical activity using a holistic approach consistent with the Whare Tapa Whā model. Using a mixed methods open pilot trial, we will examine acceptability and feasibility of using the chatbot and estimate effects on exercise self-efficacy, wellbeing, and physical activity behaviours. At least 40 adolescents (aged 11-19) will be recruited from selected intermediate or secondary schools or online. Once participants have consented/ assented to participate they will complete baseline questionnaires and be given access to the chatbot app. After 2 weeks, participants will be interviewed to discuss their experiences with using the app and to provide feedback for future iterations. Participants will be asked to complete exercise self-efficacy (ESE), wellbeing (WHO-5) and self-reported physical activity questionnaires at 2 weeks and 6 weeks after the intervention. Primary outcomes include 1) qualitative feedback, 2) satisfaction ratings, and 3) app usage data. Secondary outcomes include pre-post changes in exercise self-efficacy, wellbeing and self-reported physical activity behaviours.

- Project information

Information about the project, people's roles and responsibilities, and the funding source(s).

Project Identifier
3725441

Keywords
physical activity
wellbeing
adolescent health
digital tools
dmp-exemplar

Start date
02/01/2025

End date
01/31/2026

People

Principal Investigator

Title	Name	Email	ORCID
	Sarah Hopkins	s.hopkins@auckland.ac.nz	0000-0002-xxxx-xxxx

Project team

Title	Name	Email	Role
	Yvette Wharton	y.wharton@auckland.ac.nz	Data Manager

Project roles and responsibilities
1. Sarah Hopkins will be responsible for:
- Creating and maintaining the data management plan (DMP),
- Oversight of data management decisions, including planning of data collection, metadata and data sharing decisions.

2. Yvette Wharton will be responsible for:
- Day-to-day implementation of data management activities, including data collection and curation, implementing appropriate data storage, metadata and documentation production, preparation of final datasets for archive and retention; data stewardship, including appropriate access control.

Funding

Funding source(s)/scheme

[Name of research funding organisation, if applicable]

Grant/Contract/Award number(s)

PROP-xxx-UOA

Financial risk

Activity type

Applied research

FoR codes

- 321301 - Adolescent health
- 420603 - Health promotion
- 520107 - Sport and exercise psychology
- 5203 - Clinical and health psychology

SEO codes

Authors

Sarah Hopkins

- Requirements and Considerations

Information about regulatory and contractual obligations, as well as considerations around the ethical and sensitive nature of the research data.

Requirements

Research data security classification

Internal

Sensitive

Related data policies

The following University of Auckland policies apply to this research project:
- University of Auckland Research Data Management Policy (https://www.auckland.ac.nz/en/about-us/about-the-university/policy-hub/research-innovation/research-data-management/research-data-management-policy.html)
- Research Integrity Policy
- Privacy Policy (and the Privacy Act 2020)
- Intellectual Property Created by Staff and Students Policy

All digital data is subject to the following University of Auckland IT policies and standards:
- Generative AI Usage Standard
- IT Security Policy
- IT Acceptable Use Policy

Considerations

Considerations that apply to this project

Ethics approval required

Health or medical

Industry partners

Personally Identifiable Information

Other

Data considerations

- Human participants ethics approval will be sought from HDEC (refer to Ethics section below).
- App usage data for this study will be provided by the app vendor (a data sharing agreement will be in place between app vendor, 'Chatbot teck', and The University of Auckland).
- Personal information will be collected and stored for the duration of the study and will comply with the requirements of Privacy Act 2020.

Ethics

Ethics approval number

TBA

Ethics type

Human participants

Ethical considerations and management of data

1. Informed consent
-Informed consent will be sought from participants to publish (share) de-identified data, if appropriate, and to publish study findings.

-Assent/consent will be collected from minors in this study.
-No information will be published that would allow for the identification of participants.

2. Protection of participant identity

-With the exception of consent, all study data will be stored using a unique code and will not contain personal identifiers. All efforts will be made to remove or reduce the storage of any personal identifiers.

3. Storage of data

-Identifiable data will be stored on appropriate University of Auckland-managed research storage, with access restricted to named research group members (and collaborators) using University credentials. Data will be retained for at least 10 years to allow for verification of results and data re-use.
-De-identified data will be stored separately on appropriate University of Auckland-managed research storage, with access restricted to named research group members (and collaborators) using University credentials. De-identified data and research findings will be published, with an appropriate license applied.

Rights holders

Engagement and consultation

- Engagement and co-design activities were held with the subject population during the co-design and development of the physical activity intervention. This included understanding the acceptability of the study outcomes and methodologies.

- Participants have the right to request a lay summary of study results.
- Results will not be made available to participants of any future research conducted using data collected in this study. Participants are informed of this in the PISCF.

Vision Mātauranga

This project aligns with Pae Ora (Healthy Futures) Act 2022 (Pae Ora (Healthy Futures) Act, 2022), Pae Tū: Hauora Māori Strategy (Minister of Health, 2023), and the Health Workforce Plan 2023/2024 (Te Whatu Ora, 2023), supporting healthcare systems and healthcare delivery to give effect to Te Tiriti o Waitangi.

Data sovereignty

During the study, data may be collected from participants identifying as Māori. Personal and health information is a tāonga (treasure) and will be treated accordingly.

Formal Māori consultation for this study was completed as part of the intervention co-design and development with [name of consultation group or advisors]. Any recommendations for additional measures to improve Māori rights and interests in relation to data will be acted upon.

Contracts and copyright

Licenses/Agreements/Contracts

Copyright and intellectual property (IP) owners

The University of Auckland

Copyright and IP considerations

No restrictions to copyright or IP are stated in the funding agreement.

- Data collection and analysis

Information about the organisation of the research data across the project life-cycle.

Creation and collection

Data creation/collection

Identifiable data:

1.Name and contact details of participants (entered into REDCap for duration of project)
2.Interview audio files, containing potentially identifiable information (.mp3, WAV) ~30-60 mins per session; ~10-100 MB per file depending on quality

De-identified data:

3.Online survey data (raw + processed + final dataset; Excel - .xlsx or .csv) Raw data will be collected using REDCap. At the end of data collection, a complete file from REDCap will be downloaded and saved as an 'original' and unchanged version of the data as a .csv file. A copy of the data will be saved (.xlsx) and used for statistical analyses.
4.Interview transcripts x40 (text - docx, txt, pdf) ~5000-10,000 words per transcript = ~2-5 MB
5.Output of thematic analysis of interviews (NVivo - .nvp or Excel - .xlsx)
6.App usage data obtained from third-party app vendor (raw + processed; .csv or xlsx) = <1MB

Non-digital data/physical artefacts

1. Handwritten field notes taken during or after interviews (notebook; paper)

Data source(s)

Primary
Other

If other, provide further details

App usage data will be accessed directly from a secure interface provided by the app vendor (external vendor)

Data source considerations

Data will be collected from the following sources:

-Direct communication with the participant (Primary)
-Study assessments, including questionnaires, interviews, (Primary)
-App usage data will be accessed directly from a secure interface provided by the app vendor.

Metadata and documentation

-A project-level README file will be maintained and stored with the data.
-A variable logbook will be created that details the coding scheme of variable names and/or variable creation/computation so that this serves as a key for
all/future researchers. This will be stored with the data.

-The digital data will be organised in a simple hierarchical folder Structure: Project
>docs, >rawdata, >results, >src
- General File naming convention [date]-[creator]-[subject].[ext] for docs, [project]-[data-type]-[outcome/participant ID]-[raw/date].[ext] for data (details maintained in project README).

Discipline-related metadata standard(s) or schema(s)
The study protocol (including data to be generated) will be published via the ANZCTR registry (or WHO registry).

Storage

Size/amount of data
100GB - 2TB

Data storage location(s)
Research Drive (University-approved) Other

If other, please provide further details:
REDCap

Software and Equipment

Software and Equipment used to collect/create the data
- REDCap will be used to collect identifiable and de-identified study data during this study. REDCap is a password-protected secure web application hosted on the University of Auckland's server.
- Interview Audio files will be recorded using a hand-held recording device (in person) or recorded via Zoom using an authenticated session (online interviews).
- App usage data will be obtained from the app vendor (include details of collection after confirmation of contract with vendor)

Software and equipment used to manipulate/analyse the data
- A University-approved transcription service will be used to convert audio recordings of online and in person interviews to initial transcripts, before being checked manually by the researcher.
- SPSS will be used to analyse de-identified questionnaire data and app usage data.
- NVivo will be used to analyse themes arising from semi-structured interviews.

- Sharing and access

Information about management of and access to the data, now and in the future.

The primary Data Owner is:
Sarah Hopkins

The primary Data Custodian is:
Yvette Wharton

During the project

Data access and sharing during the project
Identifiable data (e.g., participant details, raw audio recordings) will be stored separately from de-identified data (e.g., transcripts, metadata, survey data) to ensure participant confidentiality.

Identifiable data may be accessed by the Investigator and designated study staff to fulfil protocol requirements. Rarely, it may be necessary for the Investigator to share identifiable data with people or groups not listed – for example, in the event of a serious threat to public health or safety, or to the life or health of the participant or another person; or if the data is required for certain legal situations.

De-identified data will carry the participant's unique study code. The Investigator will retain a log linking participant code with identifiers. This log will not be made available to the rest of the study team.

De-identified data may be accessed and used by:
-The Investigator and suitably trained and experienced study staff, to conduct the study.
-The named app vendor, for analysis and reporting purposes. The named vendor will not be authorised to shared data with third parties.

After the project

Data access and sharing after the project
In the future, de-identified data may be anonymised and made available for future research. Anonymised data will be irreversibly stripped of the unique participant code and any other identifiers. Participants will be informed that anonymised data is unable to be accessed, corrected, or withdrawn; and that return of individual results will not be possible.

Applicable minimum retention period
[16 y/o + 10 years] Health data involving children, retention period starts once participants turn 16 y/o.

Data retention and deletion
All research data will be retained for a minimum of 10 years after participants turn 16 years of age, in accordance with institutional and ethics requirements.

During the retention period, a primary copy of the data will be stored on secure, institutional research storage. Identifiable data will be stored separately from de-identified data to maintain confidentiality. Access to stored data will be restricted to authorised project members.

The code list and the de-identified database will be retained by University of Auckland for at least 10 years following the completion of the study, or from when the last participant turns 16 year's old, whichever comes first.

After the retention period, stored data may be securely disposed of using approved methods to ensure compliance with ethical and legal standards.

- Publish and Report

Plans to publish research data arising from this project, including considerations related to Open Access and licensing.

Data accessibility

A metadata record about this project will be published to Institutional Figshare. The purpose of this metadata publication is to ensure that the research data is discoverable, accessible, and (potentially) reusable by other researchers, while respecting the privacy and confidentiality of our participants. The metadata record will be published in the institutional repository upon completion of the data collection and initial analysis phases, and after ensuring that all ethical and cultural considerations have been addressed.

If participants provide optional additional consent, de-identified or anonymised data will be made available to other researchers on request for future research as specified below:

- unspecified purposes which are directly related to the study question(s)
- unspecified purposes which are related to the item and/or condition under study
- unspecified medical or scientific purposes which are not related to the study questions
- other unspecified research

De-identified datasets will be published on Institutional Figshare or made conditionally available via requests to the data custodian.

Data publication(s)

A list of DOIs for publication of a metadata record and/or de-identified dataset will be added, once published.

Creative Commons and other licencing

De-identified data, if appropriate consent is provided, will be published to Institutional FigShare with a CC-BY license applied to selected datasets.