Running towards Mental Health, Outside or Treadmill?

A Data Management Plan created using DMP Assistant

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Project abstract:

This research study will be focused on understanding the psychological benefits of running on a treadmill compared to running outside. The hypothesis is that treadmill running is not as effective as running outside when it comes to improve recreational runners' mental well-being. At least 10 participants will be recruited and randomly assigned to the outside group and the treadmill group. All the participants will be taking a self-supervised and self-reported 5-kilometers run 3 times a week for 6 months at an approximate speed of 7 minutes per kilometer. A State Trait Anxiety Inventory (Form Y) consists of 40 questions will be used to measure participants' mental well-being at the beginning of the study and after every week. After data are collected, mean and standard deviation of the scores will be analyzed and used to examine the psychological effects both within group and between groups. A qualitative semi-structured interview with the participants to find out their changes on a psychological level will also be carried out after every month, due to limitations of time, maybe only some of the participants will be interviewed. Interview data and transcribes will be processed using a qualitative thematic analysis. The result of the study may strengthen the positive relationship between running and mental health, point out future research directions and some empirical use for improving mental well-being.

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Data Collection

What types of data will you collect, create, acquire and/or record?

1. Demographic data (age, gender, etc)
2. Numerical data from questionnaires (State Trait Anxiety Inventory Y-1 and Y-2, distance and speed details of run)
3. Audio data from semi-structured interviews

What file formats will your data be collected in? Will these formats allow for data re-use, sharing and long-term access to the data?

Spreadsheets
Case report form

If data are collected using laptops or mobile devices, please explain how will you will securely store and transfer the data.

Data will be stored at Google Drive using my ualberta account on encrypted devices.

How much data do you anticipate collecting? Include an estimate of how much storage space you will require (in megabytes, gigabytes, terabytes). This estimate should also take into account storage space required for file versioning, backups, and the growth rate over time.

Approximately 5GB (probably smaller) of data will be collected. The estimate of storage space is at 15GB.

Are there are any existing data that you can re-use? If so, please explain how you will obtain that data and integrate it into your research project.

No

What conventions and procedures will you use to structure, name and version control your files to ensure that your data is well-organized?

The participants will be marked with number and letter according to the groups they're assigned to. Their answers to the questions in the questionnaire will be marked by the sequence of the questions. A dash will be used to separate the two.
For example, the 7th participant in treadmill group's answer to the 10th question in the STAI Y form will be listed as T7-10

Documentation and Metadata

What documentation will be needed for the data to be read and interpreted correctly in the future? This includes study-level documentation, data-level description, and any other contextual information required to make the data usable by other researchers.

Research methodology, units of measurement, hypothesis, description of the data capture and collection methods will be documented for future use.

Please list the metadata standard and tools you will use to document and describe your data. If there is not an appropriate standard, please explain how you will ensure consistency in your documentation.

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How will you make sure that documentation is created or captured consistently throughout your project?

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Storage and Backup

How will your data be stored and backed up during your research project?

Data gathered from the research project will be stored in an encrypted flash drive
Data will be regularly (every week) backed up on my ualberta Google Drive account

How will you ensure that sensitive data is stored securely and only accessible to the research team during the research project?

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The devices and cloud drive used to store and back up the data will all be encrypted, only the researcher will be able to get access to it. No sensitive data will be shared via email or storage services.

Preservation

Which data are selected for preservation and access will depend on potential reuse value, whether there are obligations to either retain or destroy data, and the resources required to properly curate the data and ensure that it remains usable in the future. In some circumstances, it may be feasible to preserve all versions of the data (e.g. raw, processed, analyzed, final), but in others, it may be preferable to only keep only selected data (e.g. transcripts instead of audio interviews).

Given the relatively small size of the data, all versions of the data in this research study will be preserved

At the end of your research project, where will you deposit your data for long-term preservation and access?

The numerical data (probably less than 500MB) will be deposited in Dataverse.
The audio data from the semi-structured interview and transcribing will only be stored in encrypted Google Drive and not be shared.

Please describe how you will prepare the data for preservation and access, including any necessary procedures for data cleaning, normalization or de-identification. Explain how you will prevent data from being lost while processing and converting files.

Numerical data will be documented in a spreadsheet, and be sorted using numbers and letters, for example, the 7th participant in treadmill group's answer to the 10th question in the STAI Y form will be listed as T7-10, to achieve de-identification.
Audio file from interview will in format of mp3 with transcribing ind doc format. Pseudonyms will be given to the participants to protect their privacy and confidentiality.

Data Sharing and Reuse

What data will you be sharing and in what form? (e.g. raw, processed, analyzed, final). Consider which data may need to be shared in order to meet institutional or funding requirements, and which data may be restricted because of confidentiality/privacy issues.

Both raw and final numerical data gathered from questionnaires will be shared
Audio data and transcribing of the interviews will not be shared due to privacy issues

How will you be sharing your data? (e.g. institutional repository, a specialized data archive, project website, informal/on-request sharing). Include a brief description of any resources needed to share your data (equipment, systems, expertise, etc.).

Given the small size, the raw and final numerical data gathered from questionnaires canl be shared through Dataverse.
The University of Alberta school account is needed to share the data.

Please describe whether there will be any restrictions placed on your data when they are made available and who may access them. If data are not openly available, describe the process for gaining access.

The shared data will be openly available without any restrictions.

What type of end-user license will you include with your data? Please include a copy of this license with your Data Management Plan.

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Responsibilities and Resources

Who will be responsible for data management during the project? (i.e. during collection, processing, analysis, documentation). Identify staff and organizational roles and their responsibilities for carrying out the data management plan (DMP), including time allocations and training requirements.

Mostly of responsibilities lie on the researcher (myself) and possibly some on researcher's supervisor Dr. Brain Soebbing as well
The collection, processing, analysis and documentation of data during this project will be carried out by the researcher himself, the supervisor will oversee the overall procedure of the entire study.

What will happen when personnel changes occur or if the principal investigator leaves the institution before the project has concluded?

The principal investigator (myself) has to conclude the project before he can leave the institution as it is part of the study program

Who will be responsible for data sharing and preservation after the project has concluded? Indicate the party who will have primary responsibility for how the data will persist over time when the

original personnel have moved on.

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What resources will you require to implement your plan? Will extra people, time or hardware, storage be required? How much will this cost (estimation)?

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