INDividualised EXercise approach for people with chronic low back pain (INDEX study): The development of an enhanced EMG biofeedback app

A Data Management Plan created using DMPonline

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Template: University of Manchester Generic Template

Project abstract:

The project is researching the design of a new mobile application. The application will visualise electromyography readings from small sensors. The aim of the project is to develop the application to be used by chronic low back patients whilst conducting their physiotherapy exercises to manage their condition.

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Manchester Data Management Outline

1. Will this project be reviewed by any of the following bodies (please select all that apply)?

- Ethics

2. Is The University of Manchester collaborating with other institutions on this project?

- No - only institution involved

3. What data will you use in this project (please select all that apply)?

- Re-use existing data (please list below)
- Acquire new data

New data will be collected through recorded group meetings where designs for the application will be shown, and feedback from the participants will be asked for. There will be discussions around the application design and what the participants want from the application. All recorded sessions will be transcribed by the researcher (Carolina Costa Lopes).

Existing data has been collected by Dr Janet Deane in previous PPIE sessions.

4. Where will the data be stored and backed-up during the project lifetime?

- P Drive (postgraduate researchers and students only)
- Other storage system (please list below)

OneDrive through the University of Manchester account.
Key for Unique IDs will be stored on the P drive.

5. If you will be using Research Data Storage, how much storage will you require?

- Not applicable

6. Are you going to be receiving data from, or sharing data with an external third party?

- No

7. How long do you intend to keep your data for after the end of your project (in years)?

- 5 - 10 years

Guidance for questions 8 to 13

Highly restricted information defined in the Information security classification, ownership and secure information handling SOP is information that requires enhanced security as unauthorised disclosure could cause significant harm to individuals or to the University and its ambitions in respect of its purpose, vision and values. This could be: information that is subject to export controls; valuable intellectual property; security sensitive material or research in key industrial fields at particular risk of being targeted by foreign states. See more examples of highly restricted information .

Personal information, also known as personal data, relates to identifiable living individuals. Personal data is classed as special category personal data if it includes any of the following types of information about an identifiable living individual: racial or ethnic origin; political opinions; religious or similar philosophical beliefs; trade union membership; genetic data; biometric data; health data; sexual life; sexual orientation.

Please note that in line with data protection law (the UK General Data Protection Regulation and Data Protection Act 2018), personal information should only be stored in an identifiable form for as long as is necessary for the project; it should be pseudonymised (partially de-identified) and/or anonymised (completely de—identified) as soon as practically possible. You must obtain the appropriate ethical approval in order to use identifiable personal data.

8. What type of information will you be processing (please select all that apply)?

- Audio and/or video recordings
- Personal information, including signed consent forms

Personal data will be pseudonymised as soon as the transcript has been complete. Key will be kept separate from the data. The data will be anonymised as soon as the second session is complete.

9. How do you plan to store, protect and ensure confidentiality of any highly restricted data or personal data (please select all that apply)?

- Pseudonymise data and apply secure key management procedures
- Store data in buildings, rooms or filing cabinets with controlled access
- Anonymise data
- Store data on University of Manchester approved and securely backed up servers or computers

OneDrive will be used to store transcripts during the project. Once the student portion of the project is complete, the data will be transferred to Dr Alexander Casson's university servers.

10. If you are storing personal information (including contact details) will you need to keep it beyond the end of the project?

- No

11. Will the participants' information (personal and/or sensitive) be shared with or accessed by anyone outside of the University of Manchester?

- No

12. If you will be sharing personal information outside of the University of Manchester will the individual or organisation you are sharing with be outside the EEA?

- No

13. Are you planning to use the personal information for future purposes such as research?

- No

14. Will this project use innovative technologies to collect or process data?

- No

15. Who will act as the data custodian for this study, and so be responsible for the information involved?

Dr Alexander Casson

16. Please provide the date on which this plan was last reviewed (dd/mm/yyyy).

2022-04-14

Project details

What is the purpose of your research project?

The aim of this project is to develop a mobile application for chronic low back patients to visualise electromyography (EMG) data as they conduct exercises. The application will allow patients to visualise the data collected from Delsys EMG sensors applied to their low back. Chronic low back patients are recommended to complete exercises at home to manage their condition. However, it is often difficult for patients to truly understand what they are trying to achieve through the exercises, leading to less compliance and worse outcomes. The aim of the creation of this application is to help patients better understand their muscle movements during their exercises. This project will also involve understanding what the physiotherapists would want from an application for them to use it within routine chronic low patient care.

The project will involve multiple iterations of designs for the application to ensure the best form of visualisation for the users.

What policies and guidelines on data management, data sharing, and data security are relevant to your research project?

The data management plan has been prepared in accordance with the Universities Information Governance Office (https://www.staffnet.manchester.ac.uk/igo/) guidelines and existing research data management policies of The University of Manchester.

Responsibilities and Resources

Who will be responsible for data management?

Dr Alexander Casson will control and act as the custodian for the data since this is a student project, and Dr Alexander Casson is the primary supervisor.

What resources will you require to deliver your plan?

Access to the Microsoft Teams and OneDrive will be sufficient for the project data collection.

Data Collection

What data will you collect or create?

The data will consist of the feedback given by the public and the physiotherapist group. Video recordings of the online Microsoft Teams meetings will be collected along with the automatic transcripts. The transcripts will be corrected by Carolina Costa Lopes. The transcripts will be in text format .docx. The recordings will be .mp4 files.

How will the data be collected or created?

Microsoft Teams' recording feature will be used to record the meetings, and will also be used to automatically transcribe the meeting. The recordings will be automatically saved onto the OneDrive account belonging to Carolina Costa Lopes who will host the meeting and will be set to automatically be deleted after 1 month. The transcripts will have to be downloaded from the Teams software and then uploaded to the OneDrive after the session.

Documentation and Metadata

What documentation and metadata will accompany the data?

The interview guide and presentations will accompany the data.
Copies of the Figma prototypes at the stages of the group feedback sessions will also be

kept.
All personal information will be anonymised. The only metadata recorded will be the age of the participant for the group of regular people.

Ethics and Legal Compliance

How will you manage any ethical issues?

A proportionate ethics review application will be submitted to the University of Manchester Research Ethics Committee (UREC) before any recordings are carried out.
Data collection will only begin once approval has been obtained from UREC and the committee will be kept informed of any developments throughout the lifetime of the study.
All data will be fully anonymised as early in the study process as possible.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

Through the ethics process, the researchers receive permission for anonymised quotes to be used in any reports or publications. We do not anticipate participants to have any IPR issues, as it has been made clear that their no compensation for their participation.

Storage and backup

How will the data be stored and backed up?

Data will be downloaded and stored on the researcher's (Carolina Costa Lopes) University of Manchester OneDrive account.

Recordings via Microsoft Teams will be automatically saved to the University of Manchester OneDrive as soon as the meeting ends. Automatic transcripts will be uploaded to the OneDrive once the meeting has ended, and deleted on the machine used to download them from the Teams software. Transcripts will be checked against the recordings. The recordings will be set to delete automatically after 1 month. All signed consent forms and transcriptions will also be saved on Carolina Costa Lopes' university OneDrive.

These are backed up daily as part of University security.

A password-protected excel document will be created with participant names and pseudonyms.
It will be stored in a separate folder to the data. Only the researcher will have access to

this document, and the supervisory team if necessary. The key will be stored in the P Drive. After the second session, the key and excel sheet will be deleted, anonymising the data.

Once Carolina Costa Lopes has completed her project, the data will be transferred to Dr Alex Casson and stored on his university servers.

How will you manage access and security?

If data needs to be shared with other members of the supervisory research team (Dr Alexander Casson and Dr Janet Deane), data can be shared using a University-approved Dropbox
for Business account.

Selection and Preservation

Which data should be retained, shared, and/or preserved?

The data collected will be stored for up to 5 years to allow it to be used by the research team for any future work on the development of the mobile application.

What is the long-term preservation plan for the dataset?

Dr Alexander Casson will oversee the archiving/ preservation of the research data. The data will be moved to the RDMS once Carolina Costa Lopes completes the project and leaves the university.

Data Sharing

How will you share the data?

All metadata, documentation and pseudonymised data will only be made available to the immediate research team.
There is no intention to make the data public since we do not see the value in that, however, if any subsequent papers are published it will be made clear that the data will be available on request.

Are any restrictions on data sharing required?

There will be no restrictions necessary as the data will be anonymised.