Functional Fitness, Physical Activity, Physical Frailty And Fall Risk Of Community-Dwelling Older Adults In Sub-Saharan African Countries: A Case Study Of Ghana.

A Data Management Plan created using DMPonline.be

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Template: KU Leuven BOF-IOF

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Project abstract:

The study aims to determine the Functional Fitness, Physical Activity (PA), Physical Frailty and Fall Risk of Community-Dwelling Older Adults aged 60 years and above in Ghana as an example of a Sub-Saharan African Low Middle Income Country. It will be a population-based cross-sectional study involving the use of a battery of physical performance tests, activity monitors, standardised questionnaires and individual semi-structured interviews. The expected outcomes of this project are to attain a descriptive epidemiology of these four interrelated constructs relevant to healthy ageing and to identify their interrelationships in this specific setting, as well as the socio-demographic factors associated with them. It is also expected that themes emerging from the interviews will identify the determinants, facilitators and barriers of PA. These outcomes will provide foundational data to support future trials and intervention studies that seek to improve PA and functional fitness and prevent frailty and falls in this population.

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Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

Dataset name / ID	Description	New or reuse	Digital or Physical data	Data Type	File format	Data volume	Physical volume
		Indicate: ***N****(ew data) or* ***E****(xisting data)*	Indicate: **D**(igital) or **P**(hysical)	Indicate: **A**udiovisual **I**mages **S**ound **N**umerical **T**extual **M**odel **SO**ftware Other (specify)		Indicate: <1GB <100GB <1TB <5TB >5TB NA	
ICF forms	ICF given by participants	N	P		Paper		2 sheets per participant - 1 box
ICF scans	Scanned version of ICF	N	D	I	.pdf	<1 GB	
Socio-demographic data, self-report physical activity and fall risk assessment	Data from survey questionnaires - Paper format	N	P		Paper		5 sheets per participant - 2 boxes
Socio-demographic data, self-report physical activity and fall risk assessment	Questionnaire data transcribed to spreadsheets	N	D	N	.xml .xls .csv	<1 GB	
Anthropometric and clinical measurements	Measured on participants	N	D	N	.xml .xls .csv	<1 GB	
Physical performance scores	Measured on participants	N	D	N	.xml .xls .csv	<1 GB	
Physical Activity profile	Recorded by wearable activity monitors	N	D	N	.xml .xls .csv	<1GB	
Interviews	Audio Recording of Individual interviews with participants	N	D	S	.mp4	<100 GB	
Transcripts	Transcripts of audio recordings	N	D	T	.doc .pdf .txt	<10 GB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

N/A

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.

- Yes, human subject data (Provide SMEC or EC approval number below)

EC applications yet to be started

Will you process personal data? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).

- Yes (Provide PRET G-number or EC S-number below)

* Personal data used for organising the research (i.e. name and phone number). This data will not be included in the analysis and will be stored separately from the research data.
*Personal data for research purposes: participants will be asked to provide their demographics (age, sex and family composition). These data will be pseudonymized.
Study protocol is currently under development upon completion, PRET and EC applications will be done.

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material or Data transfer agreements, Research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to

what data they relate and which restrictions will be asserted.

- No

Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, codebook.tsv etc. where this information is recorded).

For the quantitative work package there will be a ReadMe File that will follow KU Leuven's template including general information, project information, file overview, storage information, methodological information, data access and sharing, data specific information and relationships. Next, a logbook will be created to document every single data processing and analysis steps. Furthermore, a codebook generated by Redcap will explain the variables of the dataset(s).
The qualitative work package will also have a Readme file. Proper coding will be ensured and Nvivo will be used to generate the documentation and metadata.

Will a metadata standard be used to make it easier to find and reuse the data?
If so, please specify which metadata standard will be used.

If not, please specify which metadata will be created to make the data easier to find and reuse.

- Yes

Data Cite - KU Leuven RDR standards

- KU Leuven's institutional repository RDR requires the researcher to submit descriptive metadata for identification, publication, retrieval and citation of digital datasets with a persistent identifier. Metadata include a.o.: title, author (name, affiliation, identifier), contact, brief description, keywords, related publication, technical formats of the dataset, grant information, access rights.

Data Storage & Back-up during the Research Project

Where will the data be stored?

- Shared network drive (J-drive)
- OneDrive (KU Leuven)

J-drive: a shared network drive on KU Leuven's central storage infrastructure (data center) with automatic back-up.
OneDrive for Business: a Microsoft cloud solution to securely store documents and files.

How will the data be backed up?

- Standard back-up provided by KU Leuven ICTS for my storage solution

Is there currently sufficient storage & backup capacity during the project?

If no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- Yes

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Due to the personal nature of OneDrive, files that you do not explicitly share are not accessible to anyone else. As such, a separate folder will be created and encrypted for this dataset. Only the PI and registered collaborating researchers will have access to this folder via the encryption key.
KU Leuven network drives, are incorporated within secured KU Leuven environments, are password-protected (including smartphone-based multi-factor identification) and are only accessible by registered collaborating researchers. Only the PI can request access to the network drive for study personnel.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

All KU Leuven personnel has access to 2 TB of data storage on OneDrive. As the estimated sizes of the datasets <100 GB, sufficient storage and backup capacity is available.
Our research group has access to a J-drive with a capacity of 5 TB for active research data.

Data Preservation after the end of the Research Project

Which data will be retained for 10 years (or longer, in agreement with other retention policies that are applicable) after the end of the project?

In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

- All data will be preserved for 10 years according to KU Leuven RDM policy

All research data will be archived for minimally 10 years after study completion, in line with the KU Leuven RDM policy. While not a clinical trial, it is advised to preserve all research data obtained from humans for a period of 25 years. As such, we will evaluate after 10 years whether longer preservation is required or not.

Where will these data be archived (stored and curated for the long-term)?

- KU Leuven RDR
- Large Volume Storage (longterm for large volumes)

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

Digital data: Current costs for the K-Drive are € 11.38/100GB/year, from which 50% of the costs are covered by Group Biomedical Sciences. Given the expected size of the database of less than 100 GB, costs for long-term storage are estimated at € 11.38/year. The remaining 50% of the cost will be covered by the research lab of the PI.

Data Sharing and Reuse

Will the data (or part of the data) be made available for reuse after/during the project?
Please explain per dataset or data type which data will be made available.

- Yes, as open data

Fully anonymised data will be available as open data after the project on the KU Leuven RDR platform.

If access is restricted, please specify who will be able to access the data and under what conditions.

N/A

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

Please explain per dataset or data type where appropriate.

- No

Where will the data be made available?

If already known, please provide a repository per dataset or data type.

- KU Leuven RDR (Research Data Repository)

When will the data be made available?

- Upon publication of research results

Which data usage licenses are you going to provide?

If none, please explain why.

- CC-BY 4.0 (data)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- Yes, a PID will be added upon deposit in a data repository

What are the expected costs for data sharing? How will these costs be covered?

RDR is free for KU Leuven personnel, hence, no costs are expected for data sharing.

Responsibilities

Who will manage data documentation and metadata during the research project?

PhD researcher (Bertha Oppong-Yeboah) under supervision of PIs (Jos Tournoy, Jannique van Uffelen)

Who will manage data storage and backup during the research project?

PhD researcher (Bertha Oppong-Yeboah) under supervision of PIs (Jos Tournoy, Jannique van Uffelen)

Who will manage data preservation and sharing?

PI- Jos Tournoy

Who will update and implement this DMP?

The PhD researcher (Bertha Oppong-Yeboah) will be responsible for updating this DMP. The PI (Jos Tournoy) bears the end responsibility for updating and implementing this DMP.