FAMILY

"Running in the FAMILY – Understanding and predicting the intergenerational transmission of mental illness"

Grant Agreement number: 101057529

1st version of open science plan

Workpackage:	WP 2
Task:	Task 2.2
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Project Dates:	Project Start Date: October 01, 2022
	Project Duration: 60 months
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Dissemination Level			
PU	Public — fully open (automatically posted online)		X
SEN	Sensitive — limited under the conditions of the Grant Agreement		

OPEN SCIENCE PLAN

FAMILY proposal:

1.2.7 Open science

Open access: EMC, as the Coordinator of FAMILY, will ensure the compliance with HORIZON rules regarding Open Access to scientific publications, by making all scientific publications generated in the project freely accessible. FAMILY will publish as much as possible of its work in peer-reviewed open-access journals (gold open access). FAMILY partners have included funds in their budgets to do so. Additionally, RePub, which is the institutional repository of the EMC (https://repub.eur.nl/), meets all the requirements established by the European Commission within the framework of open-access publishing (green open access). FAMILY researchers will have early full-text access to any new publication arising from FAMILY through the password-protected project intranet. Whenever possible, the full text of published articles or corresponding accepted manuscript will also be made available on the project website (portal; WP9) and spread out through concomitant updates on the relevant social media channels upon publication, particularly Twitter, LinkedIn and ResearchGate. All peer-reviewed publications will be deposited in Zenodo, the open-access archive funded by EC, the OpenAIRE project, CERN, PROSPERA, bioRxiv, medRxiv, and PsyArxiv, ensuring public availability of research materials including journal articles, conference proceedings, reports, deliverables, and presentations.

Open data and methods: Data from all participating cohorts in FAMILY will be made available to interested researchers and the scientific community at large by placing it in local or repositories hosted by the FAMILY consortium for use by others. For this, the Digital Research Environment (DRE; WP2,7) offers a promising solution allowing data use by external researchers while assuring full control by those partners who are responsible for the data. However, in studies involving human subjects, the principles of open science must be balanced with the need for data protection and privacy. WP2 will explicitly formulate the principles and procedures for maximizing open science in studies with human subjects in Standard Operating Procedures (SOPs) and will continuously monitor their implementation. SOPs will differ between cohorts, given that the informed consent that is provided by participants differ between cohorts, resulting in different procedures for data sharing or data accessibility. Where relevant, FAMILY's methodology will be made available on GitHub and on the FAMILY website. In publications, reports and presentations using the methods, researchers will be referred to FAMILY's GitHub project or website.

Research integrity & reproducibility of scientific results: Researchers in FAMILY will adhere to relevant standards for good research practices. A mentoring program where young researchers are linked with senior researchers in the consortium (but who are not directly involved in the young researcher's project) will be put in place as part of the training program, where issues related to research integrity can be raised and solved. Reproducibility of scientific findings will be facilitated in several ways. To facilitate sharing and long-term use of FAMILY's data, the following formats will be chosen: pdf, txt, csv, sql, dat (SPSS), RData, DICOM, NIfTI. All files will be marked with explicit dates (YYYY–MM–DD) and version numbers, where appropriate and provenance information will be documented in the Knowledge Base. FAMILY will use standardized variable names linked to meta data in a data dictionary. In cases where possible, meta data will be included inside of files (e.g. attributes within RData structures). Industry-standard data structures will be utilized for brain imaging data (Gorgolewski et al., 2016) and standardized processing pipelines will be applied to imaging and -omics data, in many cases within Singularity containers to ensure consistent and reproducible processing is applied uniformly to all data (Kurtzer et al., 2017). Further, the DRE platform allows for virtual machines to be generated and cloned, using precisely the same hardware and software infrastructure, ensuring all researchers work within the same environment, avoiding any platform-dependent biases. Version control and data provenance mechanisms (e.g. GitHub) will allow for consortium partners to track, archive, and publish their code in a transparent fashion. Data management and harmonization plans

will be developed and documented on the web portal, and data provenance clearly established for all datasets.

<u>Open science education and skills:</u> FAMILY researchers will be offered access to education to develop the necessary skills and support to apply open science research routines and practices. In most institutions that participate in FAMILY, Open Science Communities are in place and/or Open Science Officers are employed (e.g. LIR, EMC, RUMC, UCL). FAMILY researchers will be encouraged to participate in activities that are organized locally. The EMC, Coordinator of FAMILY, is home to the Reproducible Interpretable Open Transparent (RIOT) Science Club Rotterdam, which originated from King's College London. The RIOT Science Club is a seminar series that raises awareness and provides training in Reproducible, Interpretable, Open & Transparent science practices. The initiative is entirely early career researcher-led and has now expanded beyond King's College to a growing number of sites (e.g. EMC, UCL) and is partnered with the UK Reproducibility Network. All presentation slides are stored on an Open Science Framework page: https://osf.io/8y7h2/, and recordings are uploaded to the RIOT Science Club YouTube channel. The FAMILY website will refer to these outlets and will stimulate its researchers to take full advantage of its content.

<u>Citizen science:</u> WP8 seeks active engagement of family members, patients, and mental health care professions, who can be reached via the European Federation of Associations of Families of people with Mental Illness (EUFAMI) and the European Society of Child and Adolescent Psychiatry (ESCAP). FAMILY will involve EUFAMI and ESCAP and they will support FAMILY with dissemination to their established communication channels. EUFAMI will reach 32 family organizations in 21 countries throughout Europe and ESCAP has 34 national member societies from 33 European countries. They will greatly facilitate direct access to relevant stakeholders for their contribution to WP8 as well as uptake of new knowledge by the clinical, scientific, policy making communities.

WP2 pProvides support and resources to facilitate open science practices across all its tasks. (Task 2.3)

Task 2.2 Construct a data management, harmonization, and open science plan (FCRB, EMC) - (M1-M60)

FCRB and EMC will create a Data Management Plan based on FAIR principles. FCRB will create a web-based Knowledge Base which will include the plan and all accompanying SOPs, including a detailed and searchable data dictionary of all raw and derived data. In addition to general management and harmonization of data, the plan will also include important information regarding GDPR, and protocols for collecting and collating all necessary documentation related to data from partners, including data use/transfer and confidentiality agreements. Further, WP2 will work closely with WP8 in ensuring ethical guidelines for use and reuse of data are well-documented in the Knowledge Base. Working closely with WP9, all documentation necessary for facilitating open publication of work from the project will be integrated into the web portal's Knowledge Base. Further, a GitHub repository will be created for the consortium and linked to the web portal, so that code from each WP can be openly shared with detailed version histories available.

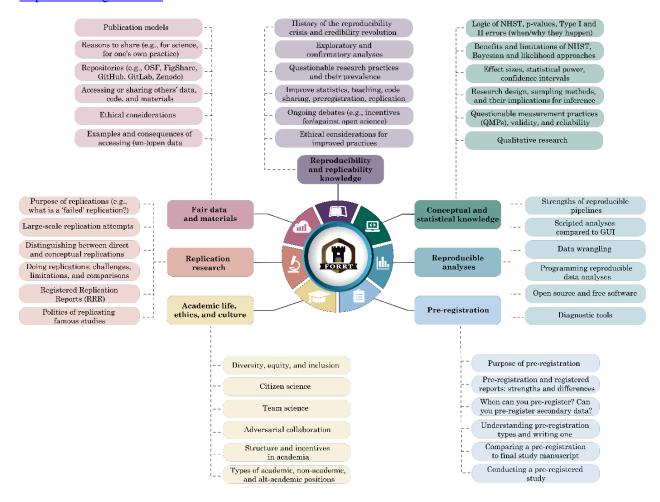*International collaborations:*

ROSiE UL (WP leader: Mezinska): Developing tools to ensure ethics and research integrity in open science. The tools will be applied for responsible practice of open science within the FAMILY.

Useful links:

[OSF | Open Science Initiative in Psychology @LMU](#) This OSF project collects documents, presentations, etc. from the Open Science Initiative at the psychology department of the Ludwig-Maximilians-Universität München.

[OSF | Open Science Crash Course (everything in 5 hours)](#) Open Science Workshop Materials of the LMU Open Science Center

https://forrt.org/clusters/