Materials Design Analysis Reporting (MDAR) Checklist for Authors

The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: doi:10.31222/osf.io/9sm4x.). The MDAR checklist is a tool for authors, editors and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

Materials

Antibodies	**Yes (indicate where provided: section/paragraph)**	**n/a**
For commercial reagents, provide supplier name, catalogue number and RRID, if available.		**n/a**

Cell materials	**Yes (indicate where provided: section/paragraph)**	**n/a**
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		**n/a**
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		**n/a**

Experimental animals	**Yes (indicate where provided: section/paragraph)**	**n/a**
Laboratory animals: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		**n/a**
Animal observed in or captured from the field: Provide species, sex and age where possible		**n/a**
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		**n/a**

Plants and microbes	**Yes (indicate where provided: section/paragraph)**	**n/a**
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		**n/a**
Microbes: provide species and strain, unique accession number if available, and source		**n/a**

Human research participants	**Yes (indicate where provided: section/paragraph)**	**n/a**
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Yes. The reference number of ethics approval is provided in the “Subjects and Neuropsychological Measures” part of Method and the Footnote.	
Provide statement confirming informed consent obtained from study participants.	Yes, please refer to the “Subjects and Neuropsychological Measures” part of Method and the Footnote.	
Report on age and sex for all study participants.	Yes. The information is provided in the Method part as well as Table 1.	

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		**n/a**

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	Yes, please refer to the "Experiment Procedures" part of Method.	

Experimental study design (statistics details)	Yes (indicate where provided: section/paragraph)	n/a
State whether and how the following have been done**, or** if they were not carried out.		
Sample size determination		**n/a**
Randomisation		**n/a**
Blinding		**n/a**
Inclusion/exclusion criteria	The inclusion and exclusion criteria of subjects can be found in the "Subjects and Neuropsychological Measures" part of Method.	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory		**n/a**
Define whether data describe technical or biological replicates		**n/a**

Ethics	Yes (indicate where provided: section/paragraph)	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	This study was approved by the ethics committee of Shanghai Tongji Hospital (No. K-2017-003-XZ-190130). Written informed consent was obtained from all participants after being given a complete description of the study.	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		**n/a**
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		**n/a**

Dual Use Research of Concern (DURC)	Yes (indicate where provided: section/paragraph)	n/a
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		**n/a**

Analysis

Attrition	Yes (indicate where provided: section/paragraph)	n/a
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.	No data was excluded from the analysis.	

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Analysis of Variance (ANOVA) was used to examine the difference among HC, MCI and AD groups. Details can be found in the "Statistical analysis" part of Method.	

Data Availability	Yes (indicate where provided: section/paragraph)	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.	The current study used the EEG data of resting state from a large AD cohort. Data is available for research purposes from the corresponding author upon request.	
If data are publicly available, provide accession number in repository or DOI or URL.		n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		n/a

Code Availability	Yes (indicate where provided: section/paragraph)	n/a
For all newly generated code and software essential for replicating the main findings of the study:		
State whether the code or software is available.	The custom code used in this study is available for research purposes from the corresponding author on reasonable request.	
If code is publicly available, provide accession number in repository, or DOI or URL.		n/a

Reporting

Adherence to community standards	Yes (indicate where provided: section/paragraph)	n/a
MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals have their own policy about requiring specific guidelines and recommendations to complement MDAR.		
State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.	ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication.	

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