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:	n/a	Reasons for NA
For commercial reagents, provide supplier name, catalogue number and RRID, if available.		✓	No commercial reagents was used

Cell materials	Yes (indicate where provided:	n/a	
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		✓	No cell line was used
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		✓	No primary culture was used

Experimental animals	Yes (indicate where provided:	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		✓	No experimental animal was used
Animal observed in or captured from the field: Provide species, sex and age where possible		✓	No experimental animal was used
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		✓	No experimental animal was used

Plants and microbes	Yes (indicate where provided:	n/a	
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		✓	No plant was used
Microbes: provide species and strain, unique accession number if available, and source		✓	No microbe was used

Human research participants	Yes (indicate where provided:	n/a	
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Method subjects section, Paragraph 2 (Page 4, Line 91-94; Page 14, Line 335-340;)		
Provide statement confirming informed consent obtained from study participants.	Method subjects section, Paragraph 2 (Page 4, Line 93-94; Page 14, Line 340-341;)		
Report on age and sex for all study participants.	Method subjects section, Paragraph 1 (Page 4, Line 82-83)		

Design

Study protocol	Yes (indicate where provided:	n/a	Reason for NA
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		✓	Not a clinical trial.

Laboratory protocol	Yes (indicate where provided:	n/a	
Provide DOI or other citation details if detailed step-by-step protocols are available.		✓	No lab experiment was done

Experimental study design (statistics details)	Yes (indicate where provided:	n/a	
State whether and how the following have been done**, or** if they were not carried out.		✓	
Sample size determination	Not carried out		
Randomisation		✓	observation study
Blinding		✓	observation study
Inclusion/exclusion criteria	Method subjects section, Paragraph 1 (Page 4, Line 86-90)		

Sample definition and in-laboratory replication	Yes (indicate where provided:	n/a	
State number of times the experiment was replicated in laboratory		✓	No lab experiment was done
Define whether data describe technical or biological replicates		✓	No lab experiment was done

Ethics	Yes (indicate where provided:	n/a	
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Method subjects section, Paragraph 2 (Page 4, Line 91-94; Page 14, Line 335-340;)		
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		✓	No experimental animal was used
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		✓	No specimen or field samples was used.

Dual Use Research of Concern (DURC)	Yes (indicate where provided:	n/a	
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		✓	No dual use research

Analysis

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

Statistics	Yes (indicate where provided:	n/a	
Describe statistical tests used and justify choice of tests.	Methods, Statistical analysis section (Page 6, Line 129-136)		

Data Availability	Yes (indicate where provided:	n/a	
State whether newly created datasets are available, including protocols for access or restriction on access.		✓	No newly created datasets are used.
If data are publicly available, provide accession number in repository or DOI or URL.		✓	Data is not publicly available
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		✓	Data is not publicly available

Code Availability	Yes (indicate where provided:	n/a	
For all newly generated code and software essential for replicating the main findings of the study:		✓	No code/software is used
State whether the code or software is available.		✓	No code/software is used
If code is publicly available, provide accession number in repository, or DOI or URL.		✓	No code/software is used

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.	TREND reporting checklist is provided. ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication.	

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TREND Statement Checklist

Paper Section/ Topic	Item No	Descriptor	Reported on Page Number/Line Number	Reported on Section/Paragraph
Title and Abstract				
Title and Abstract	1	• Information on how unit were allocated to interventions	Page2/30-33	1/2
		• Structured abstract recommended	Page2/27-47	1
		• Information on target population or study sample	Page2/30-31	1/2
Introduction				
Background	2	• Scientific background and explanation of rationale	Page3/52-66	2/1-2
		• Theories used in designing behavioral interventions	3-4/67-78	2/3
Methods				
Participants	3	• Eligibility criteria for participants, including criteria at different levels in recruitment/sampling plan (e.g., cities, clinics, subjects)	4/82-90	3/1
		• Method of recruitment (e.g., referral, self-selection), including the sampling method if a systematic sampling plan was implemented	4/82-84	3/1
		• Recruitment setting	4/82-89	3/1
		• Settings and locations where the data were collected	4/85	3/1
Interventions	4	• Details of the interventions intended for each study condition and how and when they were actually administered, specifically including:	n/a	n/a
		o Content: what was given?	4-5/97-115, 5/118-126	3/3-5
		o Delivery method: how was the content given?	4-5/97-115, 5/118-126	3/3-5
		o Unit of delivery: how were the subjects grouped during delivery?	n/a	n/a
		o Deliverer: who delivered the intervention?	5/118-119	3/5
		o Setting: where was the intervention delivered?	4/85	3/1
		o Exposure quantity and duration: how many sessions or episodes or events were intended to be delivered? How long were they intended to last?	4/97-98	3/3

		o Time span: how long was it intended to take to deliver the intervention to each unit?	4/97-98	3/3
		o Activities to increase compliance or adherence (e.g., incentives)	4/91-94	3/2
Objectives	5	• Specific objectives and hypotheses		
Outcomes	6	• Clearly defined primary and secondary outcome measures	4-5/97-115	3/3-4
		• Methods used to collect data and any methods used to enhance the quality of measurements	4-5/97-115	3/3-4
		• Information on validated instruments such as psychometric and biometric properties	4-5/97-115	3/3-4
Sample Size	7	• How sample size was determined and, when applicable, explanation of any interim analyses and stopping rules	n/a	n/a
Assignment Method	8	• Unit of assignment (the unit being assigned to study condition, e.g., individual, group, community)	n/a	n/a
		• Method used to assign units to study conditions, including details of any restriction (e.g., blocking, stratification, minimization)	n/a	n/a
		• Inclusion of aspects employed to help minimize potential bias induced due to non-randomization (e.g., matching)	n/a	n/a
Blinding (masking)	9	• Whether or not participants, those administering the interventions, and those assessing the outcomes were blinded to study condition assignment; if so, statement regarding how the blinding was accomplished and how it was assessed.	n/a	n/a
Unit of Analysis	10	• Description of the smallest unit that is being analyzed to assess intervention effects (e.g., individual, group, or community)	n/a	n/a
		• If the unit of analysis differs from the unit of assignment, the analytical method used to account for this (e.g., adjusting the standard error estimates by the design effect or using multilevel analysis)	n/a	n/a
Statistical Methods	11	• Statistical methods used to compare study groups for primary methods outcome(s), including complex methods of correlated data	5/129-136	4/1
		• Statistical methods used for additional analyses, such as a subgroup analyses and adjusted analysis	5/129-130	4/1
		• Methods for imputing missing data, if used		
		• Statistical software or programs used	5/129-130	4/1
Results				
Participant flow	12	• Flow of participants through each stage of the study: enrollment, assignment, allocation, and intervention exposure, follow-up, analysis (a diagram is strongly recommended)	n/a	n/a
		o Enrollment: the numbers of participants screened for eligibility, found to be eligible or not eligible, declined to be enrolled, and enrolled in the study	n/a	n/a

		o Assignment: the numbers of participants assigned to a study condition	6/139	5/1
		o Allocation and intervention exposure: the number of participants assigned to each study condition and the number of participants who received each intervention	6/139	5/1
		o Follow-up: the number of participants who completed the follow- up or did not complete the follow-up (i.e., lost to follow-up), by study condition	6/139	5/1
		o Analysis: the number of participants included in or excluded from the main analysis, by study condition	n/a	n/a
		• Description of protocol deviations from study as planned, along with reasons	n/a	n/a
Recruitment	13	• Dates defining the periods of recruitment and follow-up	6/143	5/2
Baseline Data	14	• Baseline demographic and clinical characteristics of participants in each study condition	6/139-140	5/1
		• Baseline characteristics for each study condition relevant to specific disease prevention research	7-8/170-205	5/5
		• Baseline comparisons of those lost to follow-up and those retained, overall and by study condition	n/a	n/a
		• Comparison between study population at baseline and target population of interest	n/a	n/a
Baseline equivalence	15	• Data on study group equivalence at baseline and statistical methods used to control for baseline differences	n/a	n/a
Numbers analyzed	16	• Number of participants (denominator) included in each analysis for each study condition, particularly when the denominators change for different outcomes; statement of the results in absolute numbers when feasible	n/a	n/a
		• Indication of whether the analysis strategy was “intention to treat” or, if not, description of how non-compliers were treated in the analyses	7-8/170-205	5/5
Outcomes and estimation	17	• For each primary and secondary outcome, a summary of results for each estimation study condition, and the estimated effect size and a confidence interval to indicate the precision	7-8/170-205	5/5
		• Inclusion of null and negative findings	7-8/170-205	5/5
		• Inclusion of results from testing pre-specified causal pathways through which the intervention was intended to operate, if any	n/a	n/a
Ancillary analyses	18	• Summary of other analyses performed, including subgroup or restricted analyses, indicating which are pre-specified or exploratory	n/a	n/a
Adverse events	19	• Summary of all important adverse events or unintended effects in each study condition (including summary measures, effect size estimates, and confidence intervals)	7/211-212	5/6

DISCUSSION				
Interpretation	20	• Interpretation of the results, taking into account study hypotheses, sources of potential bias, imprecision of measures, multiplicative analyses, and other limitations or weaknesses of the study	10-11/243-258, 12-13/299-302	6/3,9
		• Discussion of results taking into account the mechanism by which the intervention was intended to work (causal pathways) or alternative mechanisms or explanations	11-12/259-298	6/4-8
		• Discussion of the success of and barriers to implementing the intervention, fidelity of implementation	n/a	n/a
		• Discussion of research, programmatic, or policy implications	13/305-308	7/1
Generalizability	21	• Generalizability (external validity) of the trial findings, taking into account the study population, the characteristics of the intervention, length of follow-up, incentives, compliance rates, specific sites/settings involved in the study, and other contextual issues	n/a	n/a
Overall Evidence	22	• General interpretation of the results in the context of current evidence and current theory	13/305-308	7/1

From: Des Jarlais, D. C., Lyles, C., Crepaz, N., & the Trend Group (2004). Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: The TREND statement. *American Journal of Public Health*, 94, 361-366. For more information, visit: http://www.cdc.gov/trendstatement/

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*As the checklist was provided upon initial submission, the page number/line number reported may be changed due to copy editing and may not be referable in the published version. In this case, the section/paragraph may be used as an alternative reference.