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.	No antibodies were used in the current research.	n

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	No cell lines were used in the current research.	n
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	No cultures were used in the current research.	n

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	No animals were used in the current research.	n
Animal observed in or captured from the field: Provide species, sex and age where possible	No animals were used in the current research.	n
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	No animals were used in the current research.	n

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)	No plants were used in the current research.	n
Microbes: provide species and strain, unique accession number if available, and source	No microbes were used in the current research.	n

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.	This study was approved by the Institutional Review Board of The First People's Hospital of Yunnan Province (no. 2017YY227)(Methods section/10 paragraph)	a
Provide statement confirming informed consent obtained from study participants.	All patients gave informed consent. (Methods section/10 paragraph)	a
Report on age and sex for all study participants.	Five male and five female LUAD patients with 35-50 years old. (Methods section/10 paragraph)	a

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.	This is not a clinical trial.	n

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	Not carried out.	n

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	Not carried out.	n
Randomisation	Not carried out.	n
Blinding	Not carried out.	n
Inclusion/exclusion criteria	Not carried out.	n

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

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.	Data was from public databases. (Methods section/3 paragraph). Evaluated data was approved by the Institutional Review Board of The First People's Hospital of Yunnan Province (no. 2017YY227)	a
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Data was from public databases. No experimental animals were used. (Methods section/3 paragraph)	n
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Data was from public databases. No specimen and field samples were used. (Methods section/3 paragraph)	n

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	No authority granting approval.	n

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.	Data was from public databases.	n

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	WGCNA, DEGA, PPI network, survival analysis, diagnostic analysis, drug prediction. (Methods section/1-11 paragraphs)	a

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.	Data was from public databases. No newly created datasets are available. (Methods section/ 1-3 paragraphs)	a
If data are publicly available, provide accession number in repository or DOI or URL.	Data was from public databases. No newly created datasets are available. (Methods section/ 1-3	a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Data was from public databases. No newly created datasets are available. (Methods section/ 1-3 paragraphs)	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.	No newly generated code	n
If code is publicly available, provide accession number in repository, or DOI or URL.	No newly generated code	n

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.	a

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TRIPOD Checklist: Prediction Model Development

Section	Item	Checklist description	Reported on Page Number/Line Number	Reported on Section/Paragraph
Title and abstract				
Title	1	Identify the study as developing and/or validating a multivariable prediction model, the target population, and the outcome to be predicted.	Page 1/Line 2-3	Title
Abstract	2	Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions.	Page 3/line 31-51	Abstract/Para 1-4
Introduction				
Background and objectives	3a	Explain the medical context (including whether diagnostic or prognostic) and rationale for developing or validating the multivariable prediction model, including references to existing models.	Page 5-6/Line 56-98	Introduction/Para 1-3
	3b	Specify the objectives, including whether the study describes the development or validation of the model or both.	Page 7/Line106-108	Introduction/Para 4
Methods				
Source of data	4a	Describe the study design or source of data (e.g., randomized trial, cohort, or registry data), separately for the development and validation data sets, ifapplicable.	Page 7-8/Line 117-138	Methods/Para 1-2
	4b	Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up.	NA. Data is from public database	NA
Participants	5a	Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres.	NA. Data is from public database	NA
	5b	Describe eligibility criteria for participants.	NA. Data is from public database	NA
	5c	Give details of treatments received, if relevant.	NA. Data is from public database	NA
Outcome	6a	Clearly define the outcome that is predicted by the prediction model, including how and when assessed.	Page 11-12/Line 204-230	Methods/ Para 10-11
	6b	Report any actions to blind assessment of the outcome to be predicted.	NA	NA
Predictors	7a	Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured.	Page 11-12Line 204-230	Methods/Para 10-11
	7b	Report any actions to blind assessment of predictors for the outcome and other predictors.	NA	NA
Sample size	8	Explain how the study size was arrived at.	NA. Data is from public database	NA

Missing data	9	Describe how missing data were handled (e.g., complete-case analysis, single imputation, multiple imputation) with details of any imputation method.	NA. Data is from public database	NA
Statistical analysis methods	10a	Describe how predictors were handled in the analyses.	Page 11-12Line 204-230	Methods/ Para 10-11
	10b	Specify type of model, all model-building procedures (including any predictor selection), and method for internal validation.	NA	NA
	10d	Specify all measures used to assess model performance and, if relevant, to compare multiple models.	Page 11-12Line 204-230	Methods/ Para 10-11
Risk groups	11	Provide details on how risk groups were created, if done.	Page 11-12Line 204-230	Methods/ Para 10-11
Results				
Participants	13a	Describe the flow of participants through the study, including the number of participants with and without the outcome and, if applicable, a summary of the follow-up time. A diagram may be helpful.	NA. Data is from public database	NA
	13b	Describe the characteristics of the participants (basic demographics, clinical features, available predictors), including the number of participants with missing data for predictors and outcome.	NA. Data is from public database	NA
Model development	14a	Specify the number of participants and outcome events in each analysis.	NA. Data is from public database	NA
	14b	If done, report the unadjusted association between each candidate predictor and outcome.	NA	NA
Model specification	15a	Present the full prediction model to allow predictions for individuals (i.e., all regression coefficients, and model intercept or baseline survival at a given time point).	Page 22-23/Lin445-465	Results/Para 14
	15b	Explain how to the use the prediction model.	NA	NA
Model performance	16	Report performance measures (with CIs) for the prediction model.	Page 22-23/Lin445-465	Results/Para 14
Discussion				
Limitations	18	Discuss any limitations of the study (such as nonrepresentative sample, few events per predictor, missing data).	Page 33/ Line 678-682	Discussion/Para 6
Interpretation	19b	Give an overall interpretation of the results, considering objectives, limitations, and results from similar studies, and other relevant evidence.	Page 25-26/ Line 514-533	Discussion/Para 1
Implications	20	Discuss the potential clinical use of the model and implications for future research.	Page 33/ Line 678-682	Discussion/Para 6
Other information				
Supplementary information	21	Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets.	Page 34/Line 700-701	Data sharing statement
Funding	22	Give the source of funding and the role of the funders for the present study.	Page 34/Line 693-696	Acknowledgements

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