

## **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](https://doi.org/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**

<b>Antibodies</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
For commercial reagents, provide supplier name, catalogue number and RRID, if available.		Not discussed in this manuscript
<b>Cell materials</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
<b>Cell lines:</b> Provide species information, strain. Provide accession number in repository <b>OR</b> supplier name, catalog number, clone number, <b>OR</b> RRID		Not discussed in this manuscript
<b>Primary cultures:</b> Provide species, strain, sex of origin, genetic modification status.		Not discussed in this manuscript
<b>Experimental animals</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
<b>Laboratory animals:</b> Provide species, strain, sex, age, genetic modification status. Provide accession number in repository <b>OR</b> supplier name, catalog number, clone number, <b>OR</b> RRID		Not discussed in this manuscript
<b>Animal observed in or captured from the field:</b> Provide species, sex and age where possible		Not discussed in this manuscript
<b>Model organisms:</b> Provide Accession number in repository (where relevant) <b>OR</b> RRID		Not discussed in this manuscript
<b>Plants and microbes</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
<b>Plants:</b> provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		Not discussed in this manuscript
<b>Microbes:</b> provide species and strain, unique accession number if available, and source		Not discussed in this manuscript
<b>Human research participants</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	This study was approved by the Massachusetts General Hospital IRB. Approval number is 2018P001897. See title page	
Provide statement confirming informed consent obtained from study participants.		Data has been anonymized so this was not required by IRB
Report on age and sex for all study participants.	See methods section (Page 4, 1 <sup>st</sup> paragraph, line 21) and results section (Page 5, 1 <sup>st</sup> paragraph, lines 16-18)	

**Design**

<b>Study protocol</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
For clinical trials, provide the trial registration number <b>OR</b> cite DOI in manuscript.		Retrospective chart review
<b>Laboratory protocol</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
Provide DOI or other citation details if detailed step-by-step protocols are available.		Retrospective chart review
<b>Experimental study design (statistics details)</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
State whether and how the following have been done, <b>or</b> if they were not carried out.		
Sample size determination	Detailed in Methods section (page 4 lines 20-28; page 5 lines 1-8)	
Randomisation		Retrospective chart review
Blinding		Retrospective chart review
Inclusion/exclusion criteria	Detailed in Methods section (page 4 lines 20-27)	
<b>Sample definition and in-laboratory replication</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
State number of times the experiment was replicated in laboratory		Retrospective chart review
Define whether data describe technical or biological replicates		Retrospective chart review
<b>Ethics</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
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 Massachusetts General Hospital IRB. Approval number is 2018P001897. See title page	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		This study did not involve animals
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		This study did not involve specimen or field samples
<b>Dual Use Research of Concern (DURC)</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		This study is not subject to dual use research of concern

**Analysis**

<b>Attrition</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.		No attrition relevant to our analysis
<b>Statistics</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
Describe statistical tests used and justify choice of tests.	See methods section (page 5; lines 5-8)	
<b>Data Availability</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
State whether newly created datasets are available, including protocols for access or restriction on access.	All datasets were obtained via chart review from hospital patient data	
If data are publicly available, provide accession number in repository or DOI or URL.		Data are not publicly available
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		Data are not publicly available
<b>Code Availability</b>	<b>Yes (indicate where provided:</b>	<b>n/a</b>
For all newly generated code and software essential for replicating the main findings of the study:		No code utilized
State whether the code or software is available.		No code utilized
If code is publicly available, provide accession number in repository, or DOI or URL.		No code utilized

**Reporting**

<b>Adherence to community standards</b>	<b>Yes (indicate where provided: section/paragraph)</b>	<b>n/a</b>
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.	We maintain that we are adherent to all community standards recommended by MDAR as outlined in our correspondence with the Journal and what is presented on the Journal of Spine Surgery submission site.	
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.	

Article information: <http://dx.doi.org/10.21037/jss-20-668>.