The PRECHECK checklist

Title of preprint:

Reviewer:

1. Research question

Is the research question/aim stated?

Yes/No

Notes:

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2. Study type

Is the study type mentioned in the title, abstract, introduction, or methods?

Yes/No

Notes:

Let's dig deeper

If the study type is not explicitly stated, check whether you can identify the study type after reading the paper. Use the question below for guidance:
- Does the study pool the results from multiple previous studies? If yes, it falls in the category systematic review/meta-analysis.
- Does the study compare two or more experimenter-generated conditions or interventions in a randomised manner? If yes, it is a randomised experiment.
- Does the study explore the relationship between characteristics that were not experimenter-generated? If yes, then it is an observational study
- Does the study document one or multiple clinical cases? If yes, it is a case study.

Notes:

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3. Transparency

a. Is a protocol, study plan, or registration of the study at hand mentioned?

Yes/No

b. Is data sharing mentioned? Mentioning any reasons against sharing also counts as a 'yes'. Mentioning only that data will be shared "upon request" counts as a 'no'.

Yes/No

c. Is materials sharing mentioned? Mentioning any reasons against sharing also counts as a 'yes'. Mentioning only that materials will be shared "upon request" counts as a 'no'.

Yes/No

d. Does the article contain an ethics approval statement (e.g., approval granted by institution, or no approval required)?

Yes/No

e. Have conflicts of interest been declared? Declaring that there were none also counts.

Yes/No

Notes:

Let's dig deeper

a. Can you access the protocol/study plan (e.g., via number or hyperlink)
b. Can you access at least part of the data (e.g., via hyperlink, or on the preprint server). Not applicable in case of a valid reason for not sharing.
c. Can you access at least part of the materials (e.g., via hyperlink, or on the preprint server). Not applicable in case of a valid reason for not sharing.
d. Can the ethical approval be verified (e.g., by number). Not applicable if it is clear that no approval was needed.

By 'access', we mean whether you can look up and see the actual protocol, data, materials, and ethical approval. If you can, you can also look into whether it matches what is reported in the preprint.

Notes:

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4. Limitations

Are the limitations of the study addressed in the discussion/conclusion section?

Yes/No

Notes:

Let's dig deeper

Check for potential biases yourself. Here are some examples of potential sources of bias.

1. Check the **study's sample** (methods section). Do the participants represent the target population? Testing a drug only on white male British smokers over 50 is probably not going to yield useful results for everyone living in the UK, for example. How many participants were there? There is no one-size-fits-all number of participants that makes a study good, but in general, the more participants, the stronger the evidence.

2. Was there a **control group or control condition** (e.g., placebo group or non-intervention condition)? If not, was there a reason? Having a control group helps to determine whether the treatment under investigation truly has an effect on an experimental group and reduces the possibility of making an erroneous conclusion. Not every study can have such controls though. Observational studies, for example, typically do not have a control group or condition, nor do case studies or reviews. If your preprint is on an observational study, case study, or review, this item may not apply.

3. Was there **randomisation**? That is, was the allocation of participants or groups of participants to experimental conditions done in a random way? If not, was there a reason? Randomisation is an excellent way to ensure that differences between treatment groups are due to treatment and not confounded by other factors. For example, if different treatments are given to patients based on their disease severity, and not at random, then the results could be due to either treatment effects or disease severity effects, or an interaction - we cannot know. However, some studies, like observational studies, case studies, or reviews, do not require randomisation. If your preprint is on an observational study, case study, or review, this item may not apply.

4. Was there **blinding**? Blinding means that some or all people involved in the study did not know how participants were assigned to experimental conditions. For example, if participants in a study do not know whether they are being administered a drug or a sham medication, the researchers can control for the placebo effect (people feeling better even after fake medication because of their expectation to get better). However, blinding is not always possible and cannot be applied in observational studies or reanalyses of existing non-blinded data, for example. If your preprint is on an observational study, case study, or review, this item may not apply).

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