

Decision letter (Initial Submission)

Revision of manuscript JOR-24-0491



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CC: peterpainsvensson@gmail.com, simons@umkc.edu

22-Oct-2024

Dear Stephen D. Simon,

Your manuscript entitled: "Experimentation without randomized controls" has been reviewed by two experts within the field.

Overall, the referees find your manuscript interesting, but have noted several points that require major revision before a final decision can be made.

The referees have made the following comments on your manuscript:

Referee: 1

Comments to the Author

I enjoyed reading this manuscript. My only suggestion is that matching on extraneous factors as well as matching on propensity scores should also be discussed as options when randomization is not possible.

Referee: 2

Comments to the Author

Thank you very much for submitting this review article on the use of quasi-experimental designs and their applications to dental research.

The paper was written well and clearly. The choice of a rather informal and conversational tone is interesting. Some examples of phrasing include:

- * "Wait three years and count the number of dead bodies"
- * "Skip all that stuff and you can get a larger sample size"
- * "You are used to giving advice about oral health in an assured voice"

This can be helpful for creating an approachable story. However, it might also make assumptions about the readers or be offputting to some of them. With that said, Section 2's approach to describing each method of research design and then including a case example was outstanding in its presentation.

Likewise, some of the assertions presented here might benefit from citations, such as: "Most researchers sneer at historical control designs."

Some other messages could be a bit more careful:

- * "Randomization prevents covariate imbalance, both among measured and unmeasured covariates."

Probabilistically, this is true, but in practice, we get one outcome of a random process. Randomization reduces the likelihood of sizable imbalances and often performs better than other techniques for constructing treatment groups.

* "When you randomize, you lose this level of assurance and admit that you are leaving their treatment choice up to the flip of a coin." This is true of all research. If we knew the answer, we would not have to perform a study. It is fair to say that this might impact a doctor's manner of describing the treatment plan, but it should not impact the validity of conducting the research itself.

One of the drawbacks of individual randomization involves the potential for influence and crossover among subjects. It is difficult to randomly assign different textbooks to students in the same class because they study together and might pick up the second textbook if there's a benefit. It may be worthwhile to include this in some way.

The study of poor compliance with clear aligner therapy involves a shift in treatments from late 2019 to the second half of 2020 (with the onset of the COVID-19 pandemic in between). It might be worthwhile to point out this issue in interpreting the results.

Figure 2 could create a sharper contrast between the scenarios of good and bad news. While I get the point (that sharper increases convey more evidence in favor of the new treatment), the jumps are small. Zooming out, and considering the possibility of some noise, it seems like both the good and bad news scenarios go to the same place, with only small variations between them.

The author guidelines (<https://onlinelibrary.wiley.com/page/journal/13652842/homepage/forauthors.html>) limits the article to no more than 6 figures. This paper has 8. So you may have to remove 2 or find a way to consolidate them (e.g. Figures 6-8 into a single figure).

Some typos:

Page 4, line 10: Figure 1 shows "to" possible "outcomes". Switch to "two" and "results".

Page 6, line 41: "The masks gave the a fair degree of anonymity". Substitute "the a" with "a".

Page 9, lines 14-15: "where a qualifying variable is used to decide controls who gets the intervention." Perhaps you meant to say, "in which a qualifying variable is used by the researchers to decide who gets the intervention."

Page 11, line 30: "the the"

All correspondence regarding this manuscript is visible from the submission site. You can view the status of your manuscript at any time by logging into the submission site at submission.wiley.com/journal/joor.

You are encouraged to consider the complete series of comments provided by the referees as constructive suggestions for the overall improvement of the study.

You are welcome to rebut these views if you believe them to be in error, but to do so will require significant and substantial information to allow me to reject the referees' comments.

If you are willing to undertake the modifications and clarifications requested, please do so at your earliest convenience.

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Please also ensure that your revision is complete: the main document should include a title page and all figure legends and tables should be included at the end, after the references. Figures should be uploaded as separate files.

All supplementary and additional files will be carried over when you submit a revised manuscript. You may be required to provide additional files at the revision stage. If indicated to do so, please upload any additional required files as needed. Omission will prolong the publication process.

Your revision should be accompanied by a point-to-point response letter to the referees' comments. When submitting your revised manuscript, you will be able to respond to the reviewer comments when asked to "Upload your Author Response." If you fail to include the response letter, your revision will be unsubmitted and will not be sent for re-review until the response has been inserted. This will prolong the reviewing process unnecessarily.

Please also highlight the changes you make in your revised manuscript in YELLOW. This will help the reviewer to check the revised version of your manuscript.

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Best wishes from JOR!

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