Reviewer's report

Title: Selecting a Sample Size for Studies with Repeated Measures: A Tutorial

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Reviewer: ziad taib

Reviewer's report:

Title: concerning the manuscript "Selecting a sample size for studies with repeated measures: a tutorial" Authors: Yi Guo et al. Introduction: The article aims at providing a tutorial for calculating sample sizes for repeated measures studies and to describe a "practical method for selecting a sample size ...". I find this manuscript well written and think it could be of some value for certain scientists who lack statistical training but who still want to perform their own sample size calculations. Moreover, I have no objections worth mentioning on the facts it contains. Having said that, I also find this manuscript to be a hybrid between a tutorial for sample size determination for repeated measures and a case study based on GLIMMPSE. As such it is neither a good tutorial nor a good case study. Discussion: In my opinion, the target audience group of an article of this kind is very limited: scientists who lack statistical training but who still want to perform their own power calculations. Such scientists could handle simple designs on their own but when dealing with complicated multilevel designs they should consult a statistician. This is due to various choices that need to be made concerning e.g. the variance covariance structure. Another crucial step in sample size consideration is the choice of an analysis method, which is beyond the reach of such a scientist. This is because the choice of an analysis method builds upon the choice of type of statistical model. The article avoids discussing this issue, beyond what is used in the example. Besides the case study, the article offers little generic information beyond what the documentation and manual of e.g. GLIMMPSE offers. GLIMMPSE is an open-source online tool for calculating power and sample size that is used in the case study in the article. In Guided Mode GLIMMPSE offers step-by-step guided instructions for entering data in order to obtain power and sample size outputs. GLIMMPSE supports a variety of multilevel and longitudinal study designs. Perhaps the area where the article has most to offer is how to gather the necessary information for sample size determination. Unfortunately this is not the main focus of the article. In general, sample size calculation for repeated measures cannot be reduced to a simple recipe and an example. The case study is nice but that is all it is: a case study. It cannot be easily generalized to other cases without some knowledge about statistical methods for longitudinal data. In general, there is more to this topic than can be inferred from one single example. Recommendation: Based on the above discussion, I conclude that, as a general tutorial, the article lacks crucial key ingredients to function as such for a reasonable target audience. As a case study, the article has some merits but as such it needs more focus on the particular model, software etc. Therefore, I cannot recommend it for publication...
as it is.