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| Journal Name: | **Journal of Complementary and Alternative Medical Research** |
| Manuscript Number: | **Ms\_JOCAMR\_132901** |
| Title of the Manuscript: | **Hands-on Guide to Sample Size Calculation in Medical Research Using EZR** |
| Type of the Article | **Short communication** |

PART 1: Comments

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|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | Power analysis indeed crucial though somewhat contentious topic. There are two types of power analysis: ad-hoc and post-hoc though sometimes boundaries are fuzzy. The paper concerns with R based EZR (easy R) software, delivering some statistical analyses, ad-hoc power routines among them.  4 routines are described, 2 one sample based, they are sample size based on estimation of mean and proportion, and 2 two independent samples based, namely sample size based on comparison of two means and two proportions.  Author(s) use ubiquitous formulations, routines follow given formulas precisely. Examples (put as problems) are typical and self-explanatory, all pertaining to field of medicine though researchers of different disciplines can also benefit from using ERZ software.  What is nice is simply put organised framework that is particularly appealing to applied researchers, not deeply versed in statistical complexities. R designed as functional language, interface and framework follow the suit. It is very convenient for analytics but requires time to get tuned for novices. ERZ complements functional interface with menu based and I agree on its usefulness. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **Guide to Sample Size Calculation in Medical Research Using EZR** |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | No corrections on my part |  |

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| **Is the manuscript scientifically, correct? Please write here.** | One-sample based routines are questionable  As to me usage of sample size calculus without error type-2 is somewhat questionable in two opening examples but many use it indeed. More rigorous researcher can use other R power analysis libraries, e.g., «pwr», «pwr2», and many more elaborated others like G\*Power for instance. These routines conduct one sample based power analysis with two types of errors substantiated by theory. But their usage is more involved.  Let’s consider first example. The null (H0) and alternate (H1) hypotheses define that sampled based mean having some true unknown value *μ*0 can deviate within  «margin of error» (±0.5 kg).  This approach is implemented in R library «pwr», function pwr.t.test() with output of n  = 127 instead of 62 by ERZ. Syntax is:  pwr.t.test(d=0.25, power=0.8, sig.level=0.05, type="one.sample",alternative="two.sided")  d signifies effect size, that is ratio of «margin of error» over standard deviation of birth weight = 2 kg, so that d=0.5/2.  G\*Power supports «pwr» (t test: Mean: Difference from constant ) with n=128 Discrepancy (127 against 62) is obvious and explained by different couching of Problem 1. Less sophisticated approach neglects power information and related uncertainty therefore came up with half of the size. But why we need to include power? Because we couched it in terms of H0 and H1 which is substantiated by sample size\power theory.  P-level used to define probability of wrongly rebuffed H0, in this example it is related to «margin of error», the larger the margin the smaller the p-level given same power and sample size. So we try to reach sample size that keeps small enough p-level given stated «margin of error» or possible deviation from true value. In parallel we want assure that result IS from span true result +- 95%CI. Error II shows probability that obtained result is beyond the actual confidence interval which is VERY important too. That’s why we need both types of error to be accounted for. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | Yes, I think so |  |
| **Is the language/English quality of the article suitable for scholarly communications?** | Yes, I think so. I would rather use more common terminology of effect size instead of  «clinically significant difference» or «margin of error» |  |
| **Optional/General** comments | Typos: In formulas of sample size estimation of mean\ means difference *σ*2 omitted from nominator given that d denotes margin of error instead of standard effect size known as Cohen’s d. p should be removed from denominator of formula for sample size calculation for estimation of proportion. |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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