

## **TEACHING GRADUATE STUDENTS SAMPLE SIZE PLANNING BY USING R**

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Instead of statistical test of equality of means, the test of equivalence of means has become more popular for clinical trials and pharmaceutical science, and it has recently been expanded into broader applications in many fields. However, the sample sizes planning using conventional techniques found in the literature on this topic have usually been under-valued with less statistical power than is required. For better preparing graduate students to design experiments and allocate required sample sizes for the experiments, the present study develops a new visualized method by using R to provide distinctive insights into effect sizes, the statistical power, and/or pre-specified equivalence boundaries to enhance comprehension of sample size planning.