Sample Size Calculation Results

Results and Live Interpretation

Assuming a pooled standard deviation of 25.67 units, the study would require a sample size of:

25860054

for each group (i.e. a total sample size of 51720108, assuming equal group sizes), to achieve a power of 80% and a level of significance of 5% (two sided), for detecting a true difference in means between the test and the reference group of 0.020000000000000018 (i.e. 3.39 - 3.37) units.

In other words, if you select a random sample of 25860054 from each population, and determine that the means of the test and the reference groups are 3.39 and 3.37 units, respectively, and the standard deviation is 25.67 units, you would have 80% power to declare that the two groups have significantly different means, i.e. a two sided p-value of less than 0.05.

Reference: Dhand, N. K., & Khatkar, M. S. (2014). Statulator: An online statistical calculator. Sample Size Calculator for Comparing Two Independent Means. Accessed 5 July 2023 at http://statulator.com/SampleSize/ss2M.html

Note: Statulator used the input values of a power of 80%, a two sided level of significance of 5% and equal group sizes for sample size calculation and adjusted the sample size for t-distribution. You may change the options by clicking here or the 'Options' button and the adjustments by clicking here or the 'Adjust' button.