

SOFTWARE BASED CALCULATION

Based on the G*Power analysis, the calculated sample size required is 146 participants. To account for a potential 15% non-response/incomplete response rate, we recommend recruiting a total sample of 168 participants to ensure adequate analyzable data.

Software Used: G*Power (Version 3.1.9.7)

Test family: t tests

Statistical test: Means

Tail(s): Two

Effect size d: 0.47

α err prob: 0.05

Power ($1-\beta$ err prob): 0.80

Allocation ratio N2/N1: 1

Sample size group 1: 73

Sample size group 2: 73

Total sample size: 146

Final Recommended Recruitment Target (with 15% non-response):

Recommended recruitment: 168 participants

FORMULA BASED CALCULATION

$$N \approx [(Z_{1-\alpha} + Z_{1-\beta})^2 / f^2] \times (1 / \kappa)$$

$$Z_{1-\alpha} \approx 1.645$$

$$Z_{1-\beta} \approx 0.842$$

$$f^2 = (0.25)^2 = 0.0625$$

$$\kappa \approx 6.2$$

Estimated sample size: 32 (16 per group)

The adjusted sample size considering 15% attrition rate will be 36 (18 each group)