What is the power of our experiment with 25 people in each of our two groups?

For two-sample designs, we define δ as:

$$\delta = d\sqrt{\dfrac{n}{2}}$$

Where n is the number of cases in any one sample. We are assuming equal sample sizes here btw.

$$\delta = (0.50)\sqrt{\dfrac{25}{2}} = 0.50 \ \sqrt{12.5} = 0.50 \ (3.54)$$

$$= 1.77$$

With α = 0.05 and δ = 1.77, Power is about 0.43

This means there is a 57% chance of failing to find a difference (even though one might be present).

δ	α = 0.05
1.4	0.29
1.5	0.32
1.6	0.36
1.7	0.4
1.8	0.44
1.9	0.48