

Faul, F., Erdfelder, E.,
Lang, A.G., & Buchner, A.
(2007). G*Power 3: A
flexible statistical power
analysis program for the
social, behavioral, and
biomedical sciences.
*Behavior Research
Methods*, 39, 175-191.

The screenshot displays the G*Power 3 software window. At the top, there are two tabs: 'Central and noncentral distributions' and 'Protocol of power analyses', with the latter being the active tab. Below the tabs, the 'Test family' is set to 't tests' and the 'Statistical test' is 'Correlation: Point biserial model'. The 'Type of power analysis' is 'A priori: Compute required sample size - given α , power, and effect size'. In the 'Input parameters' section, the 'Determine' button is visible, along with 'Tail(s)' set to 'One', 'Effect size |r|' set to 0.3, ' α err prob' set to 0.05, and 'Power (1- β err prob)' set to 0.95. The 'Output parameters' section lists 'Noncentrality parameter δ ', 'Critical t', 'Df', 'Total sample size', and 'Actual power', all with question marks indicating they are to be calculated. At the bottom right, there are buttons for 'X-Y plot for a range of values' and 'Calculate'.

Let's return to our earlier example.

A clinical psychologist wants to test hypothesis (H_1) that people who seek treatment have higher IQs than general population. She wants to use IQs of 25 randomly sampled patients and is interested in a difference of 5 points between the mean of the general population and the mean of her client population.

So, $\mu_0 = 100$, $\mu_1 = 105$, $\sigma = 15$