Example of a table where you could estimate the sample size you needed for a study that is going to compare if the means are different for two groups (t-test).

One would start with power=80% and a two tailed test (alpha=.05) [highlighted column] and then based on effect sizes found in the literature say others have found an effect size of .20 then I can see I would need a sample of 394. If there was a larger effect size I need less people (effect size= .50 then only need a sample size of 64).



Example of a plot of a range of effect sizes and how much power one has with various sample sizes.

Each line represents a different effect size (blue larger and red smaller) so you can see as the sample size increases how the power changes. Most things we study have small /moderate effect sizes so in this example if your sample was only 40 people your power would be only @ 55% which it way below the optimum power of 80%.

 