

Instructions for carrying out statistical procedures and tests using Minitab

These instructions are closely linked to the author's book:

Essential Statistics for the Pharmaceutical Sciences
John Wiley & Sons Ltd <http://eu.wiley.com>
2007
ISBN: 978-0-470-03468-2

For all references to chapters or tables, see the above book.

**Using Minitab to calculate the necessary sample size for a
contingency chi-square test**

Using Minitab to calculate necessary sample size for a contingency chi-square test

Example: Section 16.4.2 Calculating the necessary sample size for an IUD expulsion trial

The example concerns a clinical trial of a new design of IUD which will test whether the new design reduces expulsion rates.

Follow the menus:

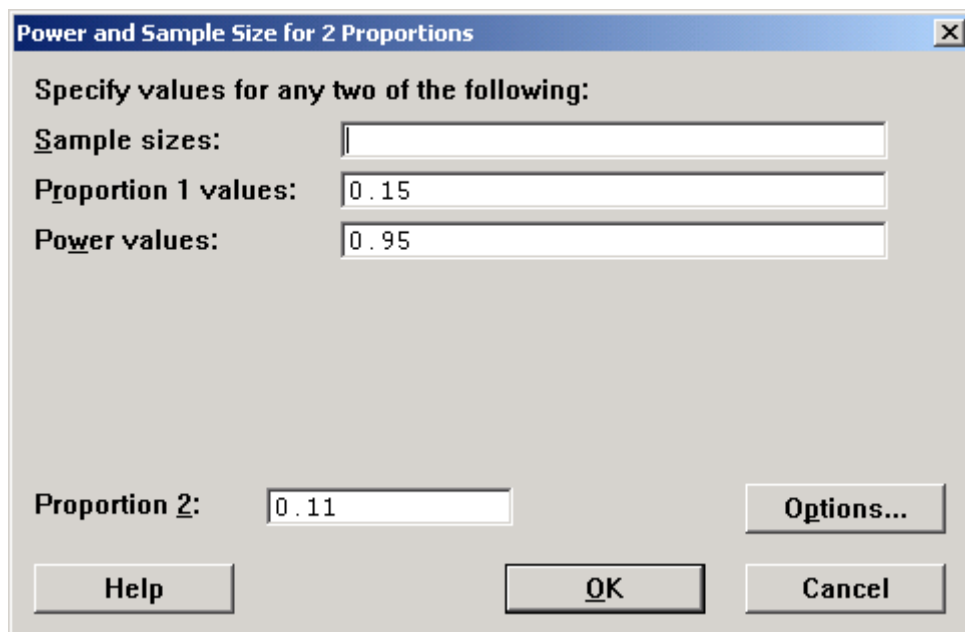
Stat / Power and Sample Size / 2 Proportions ...

The first box is labelled 'Sample sizes'. This is what we want to calculate, so leave it blank.

In the 'Proportion 1 values' box, enter the anticipated proportion in one of the groups. We anticipated a 15% expulsion rate in the controls, so enter 0.15.

In the 'Power values' box, enter the required power 0.95 (95%)

In the 'Proportion 2' box, enter the proportion that represents the smallest change we want to be able to detect, which is a change to 11%. Enter as 0.11.



Power and Sample Size for 2 Proportions

Specify values for any two of the following:

Sample sizes:

Proportion 1 values:

Power values:

Proportion 2:

Options...

Help OK Cancel

The output will be as on the next page:

Power and Sample Size

Test for Two Proportions

Testing proportion 1 = proportion 2 (versus not =)

Calculating power for proportion 2 = 0.11

Alpha = 0.05

Proportion 1	Sample Size	Target Power	Actual Power
0.15	1835	0.95	0.950085

The sample size is for each group.

A sample size (Penultimate line) of 1835 means that we need 1835 women with the existing design and another 1835 with the new design. (See Section 16.4.2 for discussion of need for greater numbers in practice.)