Confidence Interval for the Mean

Group Statistics CI % : 95

Variable	N	M	SD	SE	Lower	Upper
Total	8	4.000	3.117	1.102	1.394	6.606

One Sample T Test Test: 7.000

t	df	p	Diff.	SE	Lower	Upper
-2.722	7	0.030	-3.000	1.102	-5.606	-0.394

These statistics were obtained using same formulas as in the previous section on Frequencies and Descriptives.

This section provides a confidence interval around (centered on) the Mean ("M"). Calculation requires the appropriate critical value. Specifically, the *t* statistic (with 7 *df*) that has a probability of .05 equals 2.365. As a result:

$$CI_M = M \pm (t_{CRITICAL})(SE_M) = 4.000 \pm (2.365)(1.102)$$

Thus, the researcher estimates that the true population mean is somewhere between 1.394 and 6.606 (knowing that the estimate could be incorrect).

The Standard Error of the Mean ("SE") provides an estimate of how spread out the distribution of all possible random sample means would be. Here it's calculated as:

$$SE_M = \frac{SD}{\sqrt{N}} = \frac{3.117}{\sqrt{8}} = 1.102$$