

Health Science Statistics using R and R Commander by Robin Beaumont

Chapter 18 Comparing pre-post test means: Paired samples *t* test

Learning Outcomes

*** = more advanced outcomes**

Learning outcome	Tick box
Be able to describe the purpose of the paired samples <i>t</i> test and how this relates to a statistical model	q
Be able to give examples of appropriate use of the paired samples <i>t</i> test	q
Be able to explain and demonstrate how to compute a new variable from within R Commander (chapter 8 learning outcome)	q
Be able to describe (possibly using a graphical explanation) the importance of the difference scores	q
Be able to select the appropriate R Commander menu option/dialog box options to carry out a paired samples <i>t</i> test	q
Be able to interpret a set of results including; <i>t</i> value, df, p-value, confidence interval and sample mean	q
Be able to calculate and interpret the effect size (both standardised and raw) for a paired samples <i>t</i> test	q
Be able to describe and provide an example of a dataset in wide and long format	q
*Be able to use the <i>melt()</i> function from the <i>reshape2</i> package along with the <i>order()</i> function to convert a dataset from wide to long format ordered appropriately	q
*Be able to use the <i>xypplot()</i> function from the <i>lattice</i> package to produce a plot of linked pre-post scores	q
*Be able to use the <i>t.test()</i> function to perform a paired samples <i>t</i> test	q
Be aware of the sample size advantage of the paired design	q