

Chapter 10 – Comparing Groups with t Tests and Similar Nonparametric Tests Study Guide

OBJECTIVES:

The student will be able to:

1. Select the appropriate inferential statistic to compare groups (Table 10.1)
2. Compute and interpret a one-sample t test to compare one group or sample to a hypothesized population mean.
3. Explain the assumptions and conditions for use of the independent samples t test.
4. Compute and interpret an independent samples t test to compare two independent groups (between groups design).
5. Explain the assumptions and conditions for use of the Mann-Whitney U test.
6. Compute and interpret a Mann-Whitney U test to compare two groups.
7. Explain the assumptions and conditions for use of a paired samples t -test.
8. Compute and interpret a paired samples t test to compare groups in a within subjects design.
9. Compute and interpret a paired samples t test to check the reliability of a repeated measure.
10. Compute and interpret a Wilcoxon nonparametric test for a within subjects design.
11. Write about the results of the statistics performed in this chapter.

TERMINOLOGY:

- between groups design
- within subjects design
- one-sample t test
- independent samples t test
- Levene test
- equal variances assumed vs. equal variances not assumed
- 95% confidence interval of the difference
- Mann-Whitney U test
- ranks
- paired samples t test
- test-retest (parallel forms) reliability
- Wilcoxon (nonparametric test for two related samples)

ASSIGNMENTS: See additional activities and extra SPSS problems for assignment examples.