

Answers

Article: Communication in Relationships

Topic: Inferential Test: Independent t-test

Practice Items:

1. How many independent t-tests were conducted by the authors?

5

2. What is the level of measurement for the dependent variables? What inferential test would you suggest be used?

Ordinal. Mann Whitney since there are 2 independent groups

3. To keep the experimentwise alpha at .05, what alpha should each p value be compared to?

$.05/5 = .01$

4. Testing each t statistic at .01, how many of the results from the independent t-tests can be considered statistically significant? Use your t-table. Explain the finding(s) in words.

All of them. There is a statistically significant difference in the means from the dating and married groups on each item. In every case, the dating group more frequently engaged in the nonverbal activity.

5. For the arm around the shoulder item, determine the effect size and explain what your findings mean. In addition, obtain eta squared and explain what that tells you.

Effect size = $3.6 - 2.5 / 1.65 = .67$ Difference is of moderate practical significance. The two means are .67 of a standard deviation apart.

$\text{Eta}^2 = (t^2 - 1) / (t^2 + n_1 + n_2 - 1) = 20.16 / 212.16 = .095$. 10% of the variability in response to the arm around the should item explained by status (married/dating). Translates to little practical significance. The remaining 90% of the variance is due to individual differences among subjects, other variables not studied, and measurement error. So, even if the t test was statistically significant, the difference is of little practical significance.