(Continued)

T-Test

Group Statistics

IV: Yes or No: Chicken Soup is a comfort food.		IV: Consume chicken soup or not?	N	Mean	Std. Deviation	Std. Error Mean
soup not cf	DV: Belongingness word stems completed	no food	26	1.3077	.67937	.13323
		food	27	1.1111	.75107	.14454
soup is cf	DV: Belongingness word stems completed	no food	28	1.2857	.53452	.10102
		food	30	1.6000	.56324	.10283

Independent Samples Test

			Levene's Test for Equality of Variances		t-test for Equality of Means						
										95% Confidence Interval of the Difference	
IV: Yes or No: Chicken Soup is a comfort food.			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
soup not cf	DV: Belongingness word stems completed	Equal variances assumed	.103	.750	.998	51	.323	.19658	.19696	-.19883	.5919
		Equal variances not assumed			1.000	50.807	.322	.19658	.19658	-.19811	.5912
soup is cf	DV: Belongingness word stems completed	Equal variances assumed	1.035	.313	-2.176	56	.034	-.31429	.14441	-.60358	-.0249
		Equal variances not assumed			-2.180	55.982	.033	-.31429	.14415	-.60305	-.0255

Questions to Answer

1. What are the hypotheses being tested?
2. Fill in the means for each of the four groups in this experiment:

		Soup Consumption: Yes	Soup Consumption: No
Comfort Food Status of Soup	Comfort Food		
	Not Comfort Food		

3. What are the marginal means?
4. What are the four sources of variability in these data?
5. The *p* value for the main effect of comfort food status of soup (cf) is .056. Explain what this number means.
6. Plug in the numbers needed to obtain the *F* ratio test statistic of 4.48 for the interaction between the two factors.
7. According to Appendix C, what is the approximate critical value that was used to see whether we reject or do not reject the null hypothesis for each main effect and for the interaction? Assume an alpha level of .05.
8. What is the probability that the interaction was due to random variation?
9. Did the researchers reject or not reject the null hypotheses? Answer for each hypothesis being tested.
10. What are the effect sizes for both main effects and the interaction?

Answers

1. Remember that there are three hypotheses for a 2×2 factorial design. One hypothesis for the first main effect, one hypothesis for the second main effect, and one hypothesis for the interaction.