1. A researcher is interested in studying the relationship between viewing violent television and aggressive behavior of 5-year-old boys. Television preferences are obtained by interviewing each child. Based on the interview results, the boys are divided into two groups: those who prefer violent television and those who prefer non-violent television. Then aggressive behavior is measured by observing the children during an outdoor play period to determine if there is any difference between the two groups.

(a) What is/are the independent variable(s)?

(b) What are the levels of each independent variable?

(c) What is the scale of measurement of the independent variable?

(d) What is the dependent variable?

(e) What is the scale of measurement of the dependent variable?

(f) What is the appropriate hypothesis test to analyze the data? Explain.

1. **DIRECTIONS:** Identify the appropriate hypothesis test for each of the following research situations labeled (a) - (d). **Make sure to label your responses clearly!**

(a) A statistics professor wants to know if there is a relationship between time spent in tutoring and final exam scores.

(b) A psychologist wants to determine if a psychoeducation program before beginning therapy has a significant impact in anxiety levels of schizophrenic patients. The anxiety levels for a group of 12 participants is measured before and after therapy.

(c) A sociology professor measures the relationship between gender (male, female) and salaries in order to study wage gaps.

(d) A researcher wants to study if social media activity (activity, no activity) has a significant impact on self-esteem (low, high).

1. A researcher studied the happiness level of teenager-boys from receiving a game console during Christmas holiday. Three independent samples of individuals were given particular game consoles that shows in the data below. Using an ANOVA with α=0.05 to determine whether there are significant differences in happiness level among the three game consoles. please show all your works and statistic information.

|  |  |  |  |
| --- | --- | --- | --- |
|  | xbox | ps5 | Nintendo switch |
| a | 1 | 5 | 4 |
| b | 3 | 8 | 8 |
| c | 3 | 1 | 7 |
| d | 2 | 1 | 7 |
| e | 6 | 4 | 5 |
| f | 4 | 6 | 6 |
| h | 1 | 8 | 5 |

a. Perform a **complete** hypothesis test to determine whether there are any significant differences among the three groups. Test at the .05 level of significance. **SHOW ALL YOUR WORK**

b. Do you need to perform post hocs? Explain but **do not compute** the post hocs.

c. Compute effect size.

d. Summarize your findings in a source table.

e. Write an interpretation of our results in APA-format (include means and SDs in your interpretation)