

Assignment 2: Correlation Study Summary

Citation:

Shokouhi Moqhaddam S, Khezri Moghadam N, Javanmard Z, Sarmadi Ansar H, Aminaee M, Shokouhi Moqhaddam M, et al. A Study of the Correlation between Computer Games and Adolescent Behavioral Problems. *Addict Health* 2013; 5(1-2): 43-50.

1. This study focuses on the association of computer gaming to the behavioral problems faced by adolescents. Since behavioral problems is such a broad umbrella, the researchers of the study broke down the term to refer to the circumstance whereby emotional and behavioral responses of an individual is different to cultural norms, age, or ethnicity; so that it can negatively affect the individual's academic performance, self-care, social relations, personal adjustment, and adaptive behavior in the classroom and workplace [2]. The background of the study focused on primary factors of computer gaming that former correlation studies have shown association to some subsets of behavioral problems such as low social participation rates, increased aggressive behavior, and an increase in anxiety disorder.
2. The study included male guidance school students in Kerman, Iran in 2010 - 2011 and the sample size was calculated using Cochran's formula which yielded $n = 384$ participants to be sampled randomly. Data analysis of the study was conducted using bivariate regression and analysis of variance (ANOVA). The participants had to do two questionnaires: one developed by one of the researchers to better understand computer games and the other being Achenbach's Youth Self-Report (YSR). A researcher known as Achenbach broke down behavioral problems into several sets and created his scale which measures competencies and syndromes by asking questions about academic

performance, social functioning, withdrawals & depression, somatic complaints, anxiety, social issues, trouble with thinking, paying attention, & breaking rules, and several phobias. The researchers quantified the reliability of the YSR using Cronbach's Alpha to be consistent at 0.94. The computer game questionnaire included 8 questions the type of game played and the frequency of how long it was played. The questionnaire was reliable at 0.92 and after using the numerical sigma method, calculated the validity of the questionnaire to be 0.87. Bivariate regression was used to find a correlation between using computer games and behavioral problems based on the results of the YSR & computer game questionnaire which yielded a R value of 0.37. The ANOVA analysis was used to measure the usage of computer games based on where the participants lived. After gaining a P value less than 1%, the researchers found a statistical significant difference between the amount of using computer games and the area where the students lived. ANOVA was also used to find a statistically significant difference ($P < 0.05$) between computer game usage and the employment of the students' mothers. The researchers conclude the study by saying there was a significant and direct correlation between behavioral problems and computer game usage.

3. I have many criticisms of this study. First of all, I think the entire notion of using bivariate regression in this study is totally flawed especially when the variables of interest are both composite in nature. SPSS reported an R value of 0.37 which shows a positive correlation, but I think it's not valid enough to consider significant because there may confounding factors in the YSR data collected that could potentially cause variability in the regression analysis and I think that variability has not been accounted for due to the use of bivariate regression instead of a regression method that could analyze

associations between all the various subsets of behavioral problems and the components of computer games. Furthermore, I think it's strange that the validity levels of both questionnaires turned out to be so high especially when it was only sampled from only male students from a school in a city pertaining to Iran. There's also a lack of replication in the study since the article mentioned that no other study was found inside or outside of Iran in order to prove their hypothesis.

4. Questions I had about the study is:
 - a. How accurate are the methods used to measure reliability and validity such as Cochran's formula and Cochran's Alpha?
 - b. What is the basis behind determining how strong the correlation between two variables is?
 - c. Why was it so easy for the researchers to present a direct correlation between "two variables" when those variables are composite?