Why is it important to distinguish between correlation and causation?

It is important to distinguish between correlation and causation because one is a cause, and the other is only an association. Causation, according to the Encarta English Dictionary, is the cause, effect, or the act of causing an effect. It is the relationship between cause and effect (Encarta English Dictionary, N.D.). Correlation involves the link or relationship between two or more things, such as a population, a study, or issues, etc. (Encarta English Dictionary, N.D.). Research methods in criminal justice and criminology (2010), states that "causation lies at the basis of reality" (p. 66). Research is done to find possible causes, or the causation of a problem, and solutions; however, research also determines what may be correlated with the subject or problem under study (Hagan, 2010). Other aspects may be correlated to the problem yet not cause it. For example, smoking is a cause, or causation of cancer; people tend to smoke more when they drink alcohol, thus though smoking does not cause drinking and drinking does not cause smoking, smoking may be correlated with drinking alcohol (Stats, 2004).

Stats at George Mason University (2004) has a simple explanation regarding the differences between correlation and causation. An "action or occurrence" may cause a consequence, or it can correlate, or be associated, with another action or consequence without being the cause (Stats, 2004, para. 1). Two or more actions or consequences may happen in correlation with each other; however that does not mean that one causes the other (Stats, 2004). Though a statistically significant correlation may be distinguished between a population or sample under study, and something else, and the researcher may be able to determine causes for the correlation, the researcher must be careful not to incorrectly conclude a causation that is actually only a correlation (Stats, 2004). Another good example of causation versus correlation is video games; it has been suggested by several studies that playing violent video games may *correlate* with violent behaviors; however, it cannot proven that playing violent video games *causes* someone to commit a violent crime.

References

Encarta English Dictionary. (N.D.) Retrieved through MS Office.

Hagan, F. E. (2010). *Research methods in criminal justice and criminology* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Stats at George Mason University. (2004). What is the difference between causation and correlation? Retrieved from http://stats.org/in_depth/faq/causation_correlation.htm

Response 2

Correlation is the mutual relation between two or more things and Causation is when two variables directly affect each other or its the relationship in which one action or event is the direct consequences of another

Correlation is a way to measure how related two variables are. However, the researcher looks at things that exist already & decides if & what way it is related to each other. Also it allow us to make prediction about one variable based on what we know about the other variable. It is essential to distinguish between the two. Correlation asks the question: What relationship exists between the two variables? What connects or separate them from each other?.

An example of causation: if you continue not to stop at a STOP sign & it keep happens, its likely that a police officer spot you and give you a ticket because you continue to run the stop sign, . However, it might not be cause. You not paying attention or don't care about the stop sign that results in you getting a ticket or not stopping at the sign..

Example of correlation: Income & education. We collect that people with high income have more years of education or people with more years of college/education have higher incomes. Therefore we know there is a correlation between two variables, we can make a prediction. If we know a group income, then we can predict the years of education.

Can you distinguish what is causation and what is correlated?

(1) Bullying harms kids mentally....(2) Deep voiced men have more kids....(3) tv raises blood pressure in obese kids

summ.org. (n.d.). Correlation vs. Causation. *What do the data say*, 70-72.