**Correlations and Considering Explanations**

Correlational studies examine the relationships between variables. Demonstrating that a correlation exists does not necessarily mean that changes in one variable cause changes in the other variable. If both variables are measured at the same time, researchers may not be able to determine which variable is causing the other variable. In addition, there may be other factors that are influencing both known variables.

For the studies described below, a) decide whether the correlation is positive or negative and b) give three possible explanations for the finding.

1. A government study reveals that the more mothers’ smokes, the more her children are likely to exhibit behavioral problems.
   1. Positive correlation (as smoking increases, behavioral problems increase)
   2. It is possible that mothers’ smoking may cause her children to act out. It is possible that children acting out may cause mothers to smoke more. It is possible that a third variable, like socioeconomic status, may affect both variables.
2. The more psychology courses students take during their college years, the higher scores they get on a measure of emotional intelligence.
3. Positive correlation (as the number of psychology courses taken increases, interpersonal sensitivity increases)
4. It is possible that taking psychology courses improve people’s emotional intelligence. It is possible that people who are emotionally intelligent prefer to take psychology courses. It is possible that another variable, like a serious life event, might affect both variables.
5. Researchers investigating the relationship between alcohol and memory found that higher doses of alcohol were associated with increasingly lower scores on a test of memory recall.
6. Negative correlation (increasing alcohol, decreasing memory)
7. It is possible that high levels of alcohol impair memory. It is possible that those with a poor memory like to drink larger amounts of alcohol. It is possible that a third variable, like low intelligence, might cause both variables.
8. A college professor notices that the farther students sit toward the back of the room, the worse their grades in the course seem to be.
9. Negative correlation (distance away from instructor increases, grades decreases)
10. It is possible that sitting in the back of the room interferes with students’ performance. It is possible that a history of poor grades cause students to prefer to sit in the back of the class. It is also possible that another variable, like anxiety, affects both variables.
11. When the popularity of high school girls was rated by their peers, it was noticed that those girls who were most popular tended to do the best on a measure of self-esteem.
12. Positive correlation (popularity increases, self-esteem increases)
13. It is possible that popularity improves self-esteem. It is also possible that self-esteem increases popularity. It may also be possible that another variable, like extraversion or socioeconomic status, influences both variables.
14. A survey of adolescents noted that those who watched the most TV during the week tended to receive the lowest ratings on a measure of general health.
15. Negative correlation (TV watching increases, general health decreases)
16. It is possible that watching TV causes poor general health. It is also possible that those who have poor general health prefer to watch more TV. Additionally, it is possible that a third variable, like depression, may influence both TV watching and health.
17. A survey reveals that college students who eat breakfast regularly have a higher GPA than those that do not eat breakfast regularly.
18. Positive correlation (eating breakfast regularly increases, GPA increases)
19. Eating breakfast could cause students to achieve more in school. Or it is possible that those with higher GPAs prefer to eat breakfast. It is also possible that another variable could be causing both (i.e., socioeconomic status).
20. Researchers find that as exposure to violent media decreases, aggressive behavior tends to decrease.
    1. Positive correlation (consumption of violent media decreases, aggressive behavior decreases).
    2. Perhaps watching violent media causes people to behave more aggressively. It is also possible that aggressive people seek out more violent media. Perhaps another variable like parental monitoring or family background influence how much violent media people consume and how aggressive they are.

Worksheet modified from Andrew Geoghegan,

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