

Correlational Studies

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Correlational studies are a type of research design that involves examining the relation among two or more phenomena. The design's distinguishing features are (a) data are collected more or less simultaneously, or at least treated as if they were collected at a single point in time; and (b) there is no manipulation of phenomena (e.g., assigning participants into groups).

The term *correlational* in the name denotes a co-relation among phenomena, not the statistic. Data from correlational studies can be analyzed using a variety of techniques including, but not limited to, correlations. When the phenomena of interest involve differences among already-existing groups, the design is sometimes called *causal-comparative* or *ex post facto*. Such distinctions are unnecessary, however, because they are based on data analysis techniques instead of design features. One of the distinct advantages of correlational studies is the ability to investigate relations among a variety of phenomena types.

Correlational studies can be used to answer a variety of questions of the type: how does change in one or more phenomena correspond to a change in one or more other phenomena? For example, what is the relation between socioeconomic status and secondary memory? How well do SAT Total scores predict earning a college degree? Does psychological distress moderate the economic hardship–parenting behavior relation? Is the factor structure of a psychological instrument?

Analysis of data from correlational studies should follow directly from the purpose of the study. It should seldom involve null hypothesis significance testing, however, the data are burdened with the *crud factor*. That is, almost every variable—at least in psychology and related disciplines—has a statistical relation with every other variable to some extent. Thus, simply finding a statistically significant association between two phenomena is seldom scientifically interesting, generative of interesting hypotheses, or does much to advance theory.

Traditionally, correlational studies have been thought to provide low causal evidence because they do not involve phenomena manipulation. It is true that correlational studies are insufficient to demonstrate that phenomena are causally related, but it does not follow that they cannot inform causal inferences. Correlational studies can be used to test rival models and determine if the best-fitting models are the ones most consistent with an underlying theory. More ambitiously, they can inform causal inference by analyzing the study's data using a potential outcomes framework and employing directed acyclic graphs.

Further Reading

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