Random assignment and stringent controls are used in experimental designs to modify an independent variable. This design's characteristics make it less prone to systematic bias. Besides, true-experimental designs study the source of the relationship between dependent and independent variables. Contrary, quasi-experimental models look at the connections between cause and effect and the correlations between independent and dependent variables. Experimental designs include tight control criteria (Ref-AB1CD2). This approach conducts experiments on individuals and manipulates predictor variables while the research observes and analyzes what they see in the non-experiment phase.

The observation of natural occurrences focuses on non-experimental research designs, which do not involve the manipulation of variables, random assignment, or comparison groups. This design can be used in circumstances where independent variables have already occurred. Alternatively, if the variables should not be altered for ethical grounds and cannot be adjusted experimentally. Descriptive and correlational designs are the two non-experimental designs available (Ref-AB1CD2). There is no modification of variables, and only graphic drawings are used to depict what exists. When little is known about the phenomena, the design works. Correlational designs investigate the nature of how variables link or associate, rather than the direct cause-and-effect relationship, without involving the researcher. Because of the type of control used in a non-experimental design, validity is an issue.

It is feasible to identify a cause-and-effect connection in experimental designs, but it is not viable to conclude that this causes that in non-experimental designs. Therefore, an experimental research method is most suited for measuring the cause of a casualty because it has the traits features that manipulate randomized variables to ensure that the measurable effect is the consequence of the independent variable being controlled (Ref-DJ49KL). When measuring for casualties, the researcher will ensure that only a single suspected cause is measured at a time, and the variables can be manipulated until the desired effect is concluded. However, the non-experimental design only deals with qualitative data and observable changes meaning there is no manipulation of variables making it difficult to test for phenomenal like a cause of death.