Understanding triangulation in research

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The term ‘triangulation’ originates in the field of navigation where a location is determined by using the angles from two known points.1 Triangulation in research is the use of more than one approach to researching a question. The objective is to increase confidence in the findings through the confirmation of a proposition using two or more independent measures.2 The combination of findings from two or more rigorous approaches provides a more comprehensive picture of the results than either approach could do alone.3

Triangulation is typically associated with research methods and designs. However, there are several other variations on the term. Triangulation may be the use of multiple theories, data sources, methods or investigators within the study of a single phenomenon.4 The technique was originally introduced into qualitative research in the 1950s as a means to avoid potential biases arising from the use of a single methodology.5 This technique is used to confirm suggested findings, but it can also be used to determine the completeness of data.

Methodological triangulation is the most common type of triangulation.2 Studies that use triangulation may include two or more sets of data collection using the same methodology, such as from qualitative data sources. Alternatively, the study may use two different data collection methods as with qualitative and quantitative sources. Alternatively, the study may use two different methods that are comparable and may or may not be of equal weight in the research inquiry. In addition, when two or more data sets have convergent findings, there must be caution in interpretation since it may simply mean that each of the data sets is flawed. Others3 question whether the term triangulation has any meaning when it is so broadly defined, mixed methods is preferred. In spite of these criticisms, triangulation is generally considered to promote a more comprehensive understanding of the phenomenon under study and to enhance the rigour of a research study.

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References