



TRIANGULATION: ROLE IN NURSING RESEARCH

Nursing

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ABSTRACT

Research is a scientific process that uses various methods to find solution to the problems. The ultimate goal of the research is to provide the findings that are reliable and valid. Triangulation is one such process, which satisfies the goal of conducting research by using more than one method, theory, researcher and data collection method & technique to make the research findings more valid, reliable and generalisable. The method is helpful in reducing biases, overcoming the deficiency of single method, and provides the holistic view to the study.

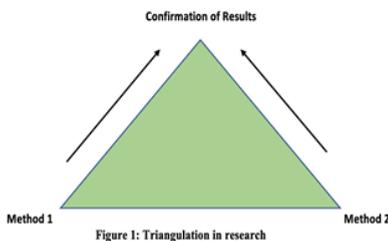
KEYWORDS

Triangulation, Nursing

INTRODUCTION

Research is a scientific process conducted to find out solutions to the problem. The main aim of the research is to find the truth, which is hidden, and which has not been discovered yet. From conceptualization of the research study to data analysis, various factors can influence the results. To increase the validation and reliability of the findings, triangulation plays an important role in the research process by bringing neutrality. Triangulation is the term used in the field of navigation where a location is determined by using the angles from two known points. While triangulation in research uses more than one approach for finding solution to the given problem. It is a powerful method that facilitates data validation through cross verification of the data using different methods. 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. This technique is used to confirm suggested findings, but it can also be used to determine the completeness of data.

Triangulation involves a rigorous scientific approach to compensate for weaknesses in the study methodology by application of different approaches for measuring the same characteristic. The objective of triangulation is to increase confidence in the findings by confirming it through application of two or more independent measures. The combination of findings from two or more approaches provides a more comprehensive picture of the results than either approach could do alone.



This article aims to discuss the importance of triangulation approaches in nursing research and how it plays vital role for reliable and valid research findings.

IMPORTANCE OF TRIANGULATION IN RESEARCH

Triangulation in research can be employed for various reasons. Triangulation technique is suitable for giving holistic view to the phenomenon. It can provide variety of information on the same issue. This technique can also be used to overcome the deficiencies of single-method studies and thus providing strength to the study findings. Triangulation helps in providing realistic view to the phenomenon. It is appropriate when different methodologies are to be evaluated. It is also suitable for research which involves controversial aspect. It is useful when an established approach yields a limited and frequently incomplete picture.

TYPES OF TRIANGULATION

According to Norman Denzin there are four basic types of triangulation: (1) data triangulation: multiple data sources are used in a single study; (2) investigator triangulation: multiple

investigators/researchers to study a particular phenomenon; (3) theory triangulation: use of multiple perspectives to interpret the results of a study; and (4) methodological triangulation: use of multiple methods to conduct a study.

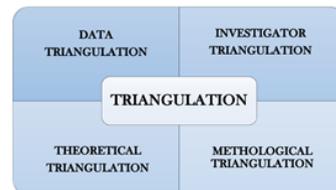


Figure 2: Types of triangulation in research

1. Data Triangulation

Data Triangulation is a process of using more than one data sources to make the research findings more reliable and variable. In data triangulation, data can be gathered through different sampling strategies such as collecting data:

- at different times
- in different contexts
- from different people.

However, it may also include gathering data both from the people involved and researcher's own experience of a situation. It helps in compensating for weakness of any one type of data with the strengths of another type of data, thereby increasing reliability and validity of the findings. It also reduces the risk of false interpretations.

Example

To determine the perception towards nursing profession among nurses. In this study, the data collection can be done by different set of people i.e. staff nurses, nursing educators, and nurse administrators. Data collection can also be done in different context like, public or private setting or at different times i.e. nurses in shift duties and nurses with fixed time duties/ OPD duties. This will help in reducing biases in the findings and hence make data more reliable.

2. Investigator Triangulation

Qualitative studies heavily rely on researcher's interpretation in generating data. The findings of these kind of studies can be highly affected by researcher's biases. Triangulation technique can be used to control these biases and also reliability and validity of the study findings. Investigator triangulation requires use of more than one investigator/researcher in a study. This technique is commonly used in qualitative studies. It involves the use of more than one investigator, interviewer, observer, researcher or data analyst in a study. Different investigators can significantly enhance the credibility of the findings, as these findings are generated without any prior discussions or collaborations between the investigators. Investigator triangulation is particularly important for decreasing bias in gathering, reporting and/or analysing study data.

Example: Investigators from local NGO, social marketing and nursing college investigates factors affecting coverage and non-usage of family planning devices among people of community. Each

investigator may have different conclusions on the issue. Triangulating the findings from the three different investigators allows their approaches, biases and findings to be directly compared and contrasted and to identify opportunities to improve interventions, in this case family planning devices coverage.

3. Theory Triangulation

It involves the use of multiple theories or hypotheses when examining a situation or phenomenon. This type of triangulation gives scope to the investigator to look at the situation/phenomenon from different perspective with different questions in mind. The major strength of this type of triangulation is its ability to look deeper and more broadly at findings. According to theory triangulation, using one perspective can decrease the number of alternative explanations for a situation or phenomenon. The more divergent theories are, the investigator is more likely to identify different issues or concerns.

Example: One of the study focusing on needle sharing among drug users, bases its premise that social norms among local injecting drug users (IDU) encourages sharing as way to show trust. Another study believes that needle exchange projects does not provide clean needles to meet the demands of these IDUs. While another study looks at the correlation between police activity and corresponding need for IDUs to stay on the move to avoid arrests and efficiency of sharing needles. So triangulation gives the opportunity to draw comparisons and contrasts in the findings in order to identify relevant strategies in improving the interventions with IDUs.

4. Methodological Triangulation

Methodological or method Triangulation uses multiple methods to study a phenomenon. The intention is to compensate for the deficiencies and biases that comes from the use of single method. This type is very similar to mixed method approach, where results from one method are used to enhance and clarify the results of another. A combination of methods gives a more complete picture regarding someone's life and behaviour. For example, a researcher could observe a respondent's behaviour using participant observation and also question them about the phenomenon.

Researcher could also compare the results from two different methods used on same sample, e.g. semi-structured interview and focus group discussion. If both methods draw same conclusion, it helps in confirming reliability and validity of the data. It can be subdivided into two types:

- i) Within Method Triangulation and
- ii) Between Method Triangulation

Within method Triangulation: Use of varieties of same method to investigate the phenomenon in question.. E.g. Using open and closed ended questions in the questionnaire

Between Method Triangulation: Use of contrasting research methods to investigate the phenomenon in question. E.g. Using interview and Observation Method.

Example: Nurses' attitudes about teamwork may be collected through a survey and focus group discussion. A study to explore improvement in nutritional status of under five children through nutritional education program may include children's dietary intake assessment (Indirect method) and anthropometric measurements(direct method). In every case, the researcher may relate and compare different methods related to a single research question.

ADVANTAGES OF TRIANGULATION

1. Triangulation technique compensates for the weakness or shortcomings of one method.
2. It provides more holistic view by gathering and aggregating different types of data.
3. By application of different methods and sampling strategies, researcher can improve the overall validity and reliability of the findings.
4. Triangulation technique provides more accuracy and truth to the research data.
5. It also gives scope for cross validation.
6. The use of triangulation may also help in synthesis and integration of theories.

DISADVANTAGES OF TRIANGULATION

1. It is expensive, as it takes a toll on the resources: time, effort and expense.
2. Researcher may get contrasting findings from two different methods which may be difficult to entangle to reach to truth from falsity.
3. Collection of more data requires greater planning and organizing resources, that may not be available to lead researchers.
4. It adds to more complexity to an already- complex process.

ROLE IN NURSING RESEARCH

Nurse researchers, while addressing theoretical and practical problems, that are encountered during clinical practice, uses a wide variety of scientific methods. The complexity of the nursing research demands use of multifaceted approach to investigate problems. Triangulation helps in revealing the complex nature of nursing and its context of practice. Triangulation method has practical significance in explaining the nursing phenomenon more thoroughly and distinguish between ritualistic and therapeutic nursing activities. Triangulation provides scope for deeper understanding of the patient's condition and measurable outcomes of the health care. Triangulation in nursing research, also enhances the relationship between nursing theory and practice through multiple conceptualizations. Nurse researcher can use triangulation technique to provide more holistic view to the phenomenon under study.

However, triangulation requires an extensive and meticulous planning in its application. A nurse researcher should be well versed and have broad research expertise to be able to apply multiple methods to study a phenomenon. Triangulation may enhance the completeness and confirmation of the data in findings, if it is used properly. Nurse researcher should use triangulation only if it can enhance the findings or contribute to the understanding of the phenomenon. Researcher should avoid using it for strengthening an already flawed study.

CONCLUSION

Triangulation provides holistic and realistic view to the phenomenon under study. It can be applied in four ways: Data, investigator, theory and methodological. The investigator should be creative enough to converge different types to provide valid and reliable findings.

In nursing, it may provide deeper understanding to a patient's condition. It should be applied to enhance the understanding of the phenomenon, rather than strengthening an already flawed study. Hence investigator must have expertise in application of multiple methods to study a phenomenon.

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