

## MIXED METHOD RESEARCH

### Abstract

Mixed method Research is a method of integrating both the method of research in one research study. It involves methods of collecting, analyzing and synthesizing the quantitative and qualitative data into to understand a research phenomenon and to answer Research Question. Researchers use this method to expand their evidences and improve credibility of the research findings. It is the best method to solve a Research question, with 2 aspects of data.

**Keywords:** Mixed Method Research, Triangulation, Quantitative data, Qualitative data, Mixed method Design.

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## **I. MIXED METHOD RESEARCH**

The intentional blending of quantitative and qualitative data in a single study or well-coordinated group of studies is known as mixed method research. It is a developing trend in the fields of nursing research.

## **II. HOW MIXED METHOD RESEARCH WORKS**

In order to better understand a research problem, mixed methods research is a process for gathering, analyzing, and combining both quantitative and qualitative approaches in one study and a series of studies. According to Creswell and Plano Clark (2011), mixed methods research entails gathering, interpreting, and combining quantitative and qualitative information into a single study or a long-term programme of inquiry.

The goal of this type of study is to better comprehend a topic by combining qualitative and quantitative research.

## **III. CHARACTERISTICS**

1. Explain the design's justification
2. comprise a combination of qualitative and quantitative data
3. Consider importance
4. Think about the order
5. Process flow diagram
6. synchronize data analysis and design

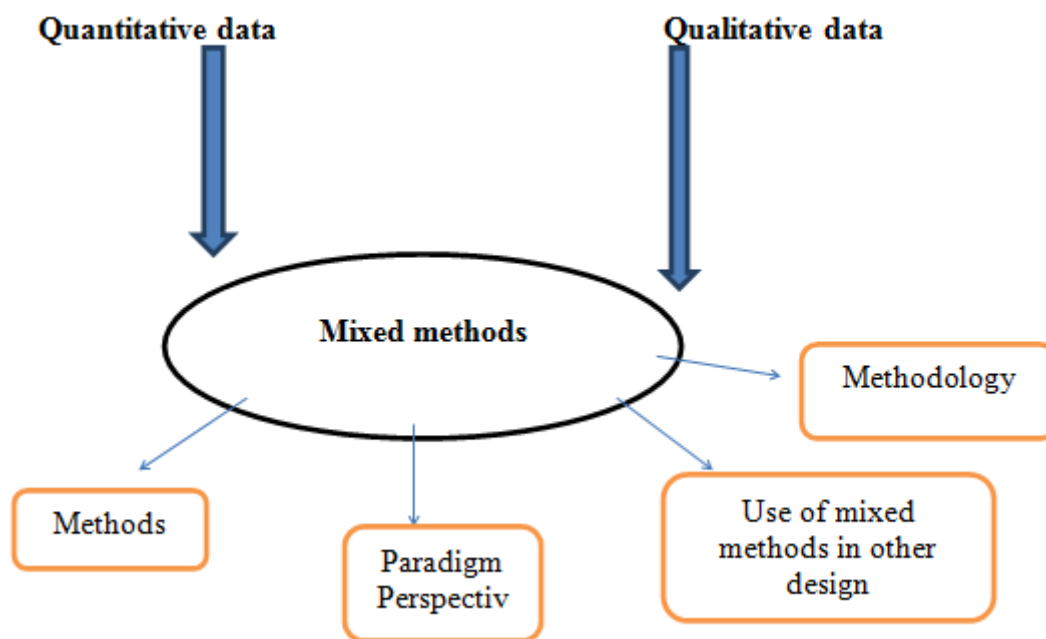
## **IV. WHY MIXED METHODS RESEARCH?**

1. Researcher must be clear about the reason .
2. It is critical that your research question is one that lends itself to a mixed method (MM) design-ideally a question in which using quant or qual methods alone would be inadequate.
3. If it is possible to answer your research question completely using a mono-method design then this needs to be considered (more is not necessarily better)
4. You may have one or more clear reasons for utilizing a Mixed method design(e.g., primary and secondary reason)
5. It may be the case that at the end of the MM study there were further unanticipated advantages of using a MM design.
6. Answer different research questions-quant, qual and mixed methods questions may be posed at the beginning of the study : an example-
  - To identify the factors associated with mode of delivery of baby-quantitative method
  - To explore the factors influencing decision making for cesarean section – Qualitative method.
  - To integrate the factors associated with and influencing decision making for Cesarean section- Mixed method.
7. Explanation of findings- the first phase has findings that require explanation quantitatively; the second phase has findings that require rich qualitative data.

## V. PRINCIPLES FOR SELECTING MM DESIGN

1. The goal of employing an MM design—A crucial determining factor
2. When to use quantitative and qualitative techniques
3. The integration of the quantitative and qualitative methodologies;
4. The weightage of the quantitative and qualitative methods.
5. Nevertheless, designs can be either fixed or emergent, with many MM investigations falling somewhere in the centre (the general two –phased design is planned but some aspects emerge as the study progresses)

## VI. FRAMEWORK FOR PERSPECTIVES ON MIXED METHODS



## VII. MIXED METHODS DESIGNS

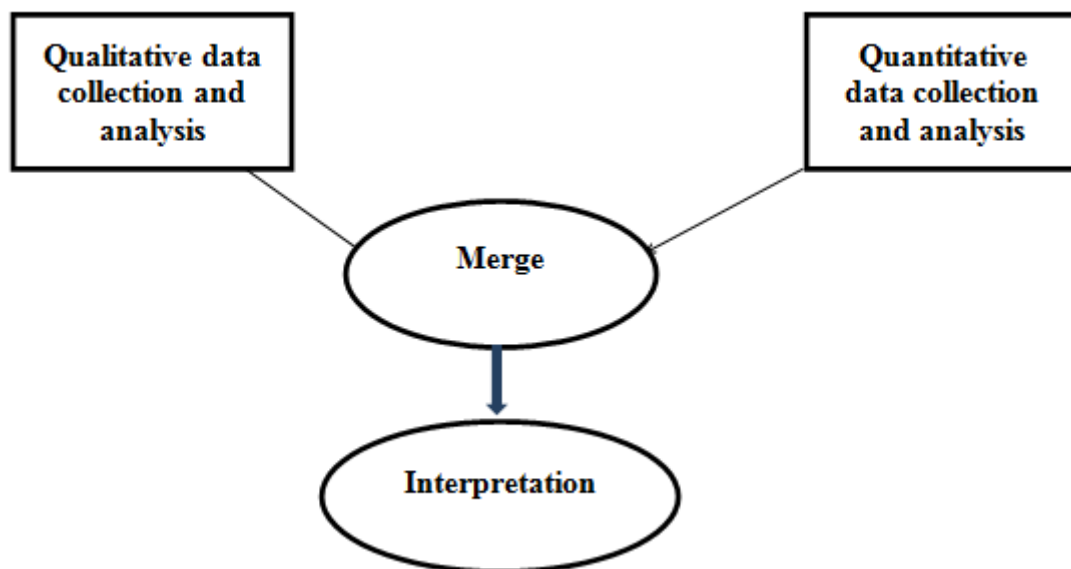
There are many design typologies which can make choosing a MM design confusing. A particular study may not fit exactly into a specific design so some modifications may be required (real life research is messy!) Creswell & Plano –Clark(2007,2011) propose the following MM design:

1. Concurrent Convergent (triangulation)
2. Sequential explanatory
3. Sequential exploratory
4. Embedded intervention
5. Multiphase design
6. Transformative design

- 1. Concurrent convergent design (triangulation):** Convergent parallel mixed method designs aim to collect both qualitative and quantitative data simultaneously, combine the data, and use the results to comprehend a study problem.

- **Characteristics**

- Addresses one overarching research question: Two different ways of looking at the same problem and gaining a more complete understanding.
- Used for corroboration and validation purposes.
- Findings may demonstrate convergence and/or divergence.
- Parallel timing, but distinct (result of one phase not dependent on the results of another-sometimes called parallel)
- Equalization of priorities (usually)
- Unless there is a deliberate objective to compare various viewpoints, the sample often comes from the same demographic.
- When meta-inferences are established during the study's interpretation phase, results are often pooled.

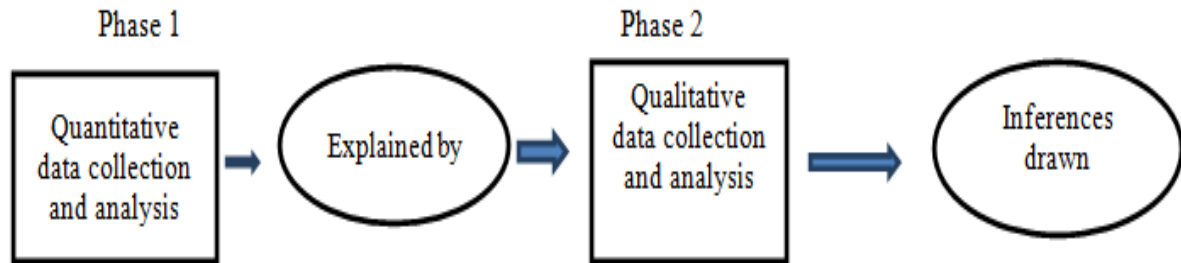


**Example-** In an integrated (convergent) mixed methods study, Colarossi et al. (2010) investigated the challenges faced by medical professionals conducting intimate partner violence screenings in family planning clinics. On the same day that 64 staff members completed a survey, 75 staff members took part in focus groups. Comparing quantitative survey data with qualitative focus group interview outcomes. Themes that arose from the focus groups showed excellent concurrent validity since they were very congruent with survey responses. Additionally, the qualitative data shed light on a few issues that the poll had missed.

**2. Sequential explanatory MM design:** In an explanatory sequential mixed method design, quantitative data are initially gathered, and then qualitative data are gathered to further explain or expound on the quantitative results.

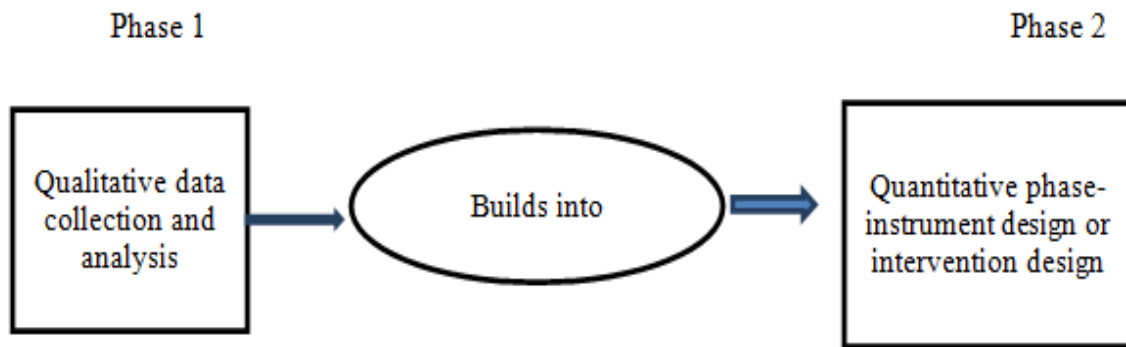
- A two-phase sequential design, typically with a larger quantitative phase and a smaller qualitative phase.
- Following the collection and analysis of quant data (and depending on how thorough that analysis must be), the second phase is initiated.
- Outliers or associations in the quant results are followed up on in the second phase's (qualitative) results, which also aid in their explanation.

- Data are typically collected and analysed independently before being combined during the interpretation stage.
- Sample for phase 2 should normally be a sub-sample from phase 1.



**Example of a sequential explanatory design:** Doyle (2011) conducted a sequential explanatory study on the extent of adolescent self-harm and emotional problems and subsequent help seeking. A quantitative survey of almost 1,000 adolescents identified a high level of self-harm and emotional problems but a very low level of professional help-seeking for this. Part 2 of this study involved focus group interviews with 35 adolescents exploring why young people do not seek professional help when distressed. In addition to the "explanation" component, this design also allowed for the further investigation of unexpected results, for example, it was found in the survey that only a small percentage of adolescents used teachers as a source of assistance despite all adolescents having regular contact with teachers. In the study's second part, it was possible to investigate the reasons for this.

- 3. Sequential exploratory design:** In an exploratory sequential design, qualitative data are first collected to examine a phenomena, and then quantitative data are collected to explain relationships discovered in the qualitative data.
- A two-phase sequential design that starts with a qualitative phase and moves into a quantitative phase. The second phase is guided by the findings of the first phase.
  - Frequently used to create a survey-type instrument (e.g., based on qualitative data) that is subsequently used in the quantitative phase; this is helpful when there is no such instrument or when the variables are unknown.
  - May be applied to evaluate and/or extrapolate qualitative findings to a larger sample and population.
  - If generalisation is the goal, the sample can originate from the same population in both phases, or it can come from a different group.
  - Greater emphasis is usually placed on the qual phase but can be equal, or in some cases the quant can be bigger - this must be Justified.



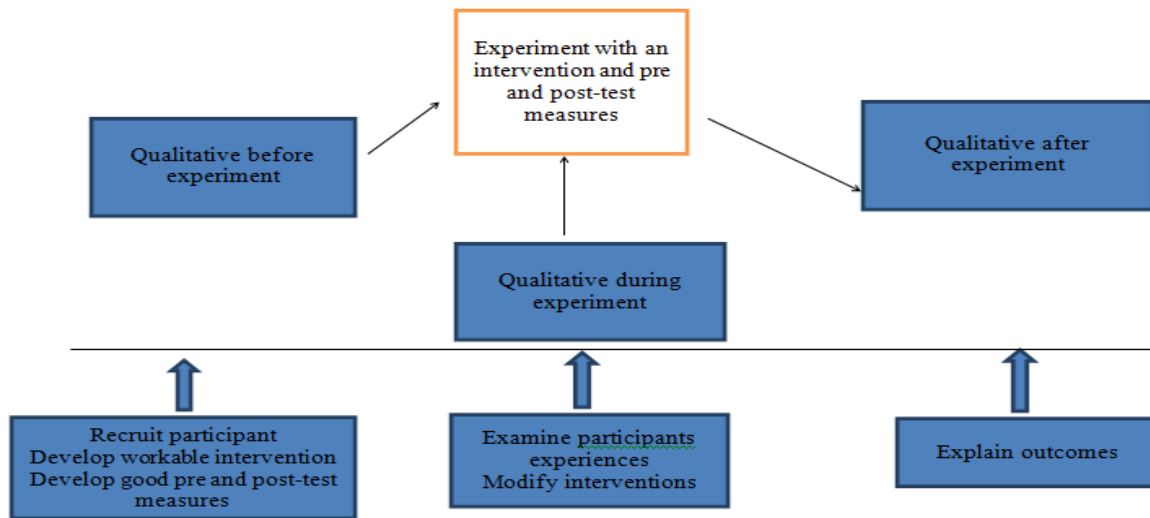
**Example of sequential exploratory design:** A sequential exploratory MM study was carried out by Stoller et al. (2009) to investigate the variables influencing people with Hep C's decision to reduce their alcohol use. Previous research has only looked at those who abuse alcohol, not people who do not abuse alcohol but have Hep C. (so a new research area). They conducted 42 semi-structured interviews with Hep C patients who had been advised to limit their alcohol consumption, and the results revealed 17 additional decision factors that had not been discovered in earlier studies. This influenced the creation of a survey that evaluated these 17 novel factors. After then, this survey was given to 577 people who had Hep C, testing these additional variables on a bigger sample and calculating prevalence rates.

**4. Embedded (Nested) Mm design:** Quantitative and qualitative data will be collected concurrently or sequentially according on the embedded design, but each type of data will assist the other.

- One dominant method with a supporting role from the other; some contend that the lesser part need not be "stand alone."
- It begins by addressing many research topics, setting it apart from sequential designs (which might be emergent) and from convergent designs (which have the same research question).
- Can be concurrent or sequential (usually concurrent).
- Most common usage is when a qualitative study is embedded within a larger quantitative study e.g. within intervention studies-this can happen at many stages during the study (pre peri- or post-intervention or in some cases at all 3 time points).

**5. Embedded MM design-intervention studies:** A qualitative component within an intervention study can:

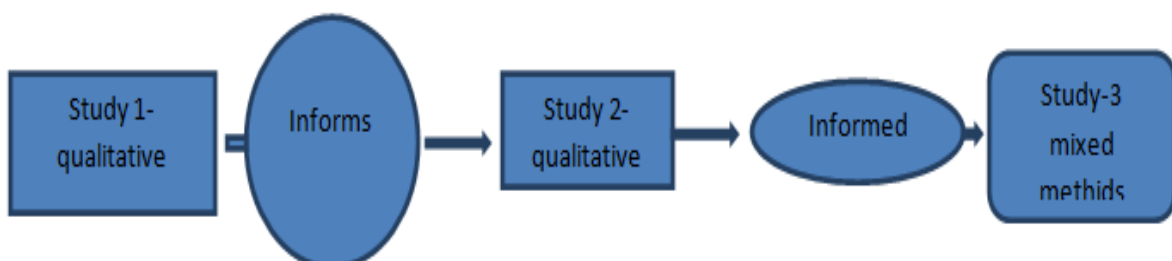
- Make use of to create an instrument (pre-trial).
- Provide information about trial sample recruitment (pre-trial).
- Improve comprehension of the intervention's impact on the participant (peri-trial). If there is a problem that may be easily identified and fixed, this might cause an intervention to be modified.
- Improve comprehension of the participant's response to the intervention (during and after the trial).
- Why explain why an intervention was successful or not (post-trial).
- Point out potential improvements to an intervention (post-trial).
- Assist in examining extreme cases that either responded poorly or not at all or statistically insignificant findings (post-trial).



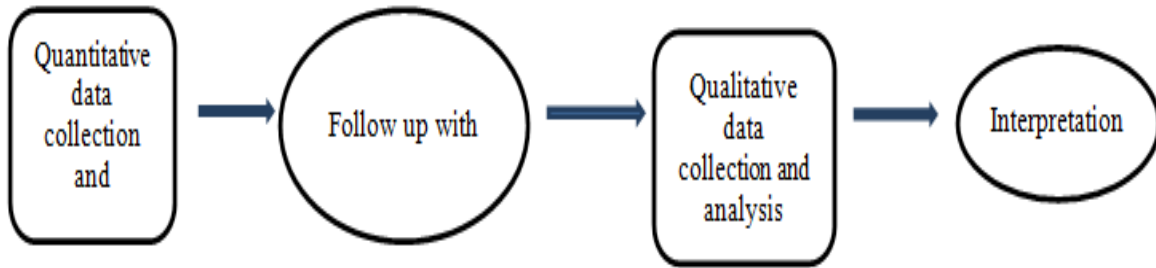
**6. Example of embedded Mm design:** McCabe et al. (2011) conducted an RCT to assess the impact of new media art utilising a virtual window on patients undergoing stem cell transplantation to a control group receiving standard care. Quantitative results demonstrated that participants in the intervention group had better overall experiences and lower scores on tests of depression and anxiety. The art provided a welcome diversion from the realities of disease and a connection to the outside world, according to findings from the embedded qualitative aspect, which helped to explain why improved outcomes were observed in the intervention group.

**7. Multiphase design:** A complex design known as a multiphase design builds on the fundamental convergent, explanatory, exploratory, and embedded designs that take place when a team of researchers or an individual researcher examines a subject or problem over a number of stages or independent investigations.

- Combines qualitative and quantitative research over time in both parallel and sequential strands (longitudinal).
- Used most often in programme development and evaluation in large funded studies.
- Can incorporate a variety of people and is most frequently used in programme creation and assessment in big financed projects (programme developers, programme participants, key stakeholders etc.).



**8. Transformative design:** The transformative mixed method design is to use one of the four designs but to encase the design within a transformative framework or lens.



## REFERENCES

- [1] Hadley, E., Smith, C., Gallo, A., Angst, D., & Knafl, K. (2008). Parents' perspectives on having their children interviewed for research. *Research in Nursing & Health*, 31, 4–11.
- [2] Denys F.polit, Cheryl Tatano Beck. *Essentials of Nursing Research Appraising Evidence for Nursing Practice*. Seventh Edition. (2010) wolters Kluwer Health| Lippincott Williams & Wilkins, 284-287.