

# RESEARCH DESIGN AND METHODS

## The Basics



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# Outline

## Financial Relationships

All individuals involved in the planning and delivery of this activity have no relevant financial relationship(s) with ineligible companies.

## Commercial Support

This educational activity has not received any form of commercial support.

## Off-Label or Investigational Use

This presentation will not discuss the off-label or investigational use of a drug, biological product, or medical device name.

# Outline

- Conducting Research
- What is research design?
- Common methods for conducting research



# What is Research?

**An inquiry to understand and describe or explain relationships, attitudes, beliefs, correlation of variables, or make predictions.**



# Conducting Research

- The research question guides your design and methods
- Design-**The plan** to answer your question
- Method-**The strategy** to answer your plan



# RESEARCH DESIGN

## Quantitative

- Descriptive
- Correlational
- Causal/Comparative/Quasi-experimental
- Experimental
- Diagnostic
- Explanatory



# RESEARCH DESIGN

## Qualitative

- Historical
- Phenomenology
- Grounded Theory
- Ethnography
- Case Study



# RESEARCH METHODS

- Observational
- Survey
- Interviews
- Focus Groups
- Experimental
- Secondary Analysis
- Mixed Methods



# RESEARCH METHODS

## Quantitative

- Systematic process to obtain numerical data
  - Data is numerical (age, AM-PAC scores) or may be assigned a number (ex. yes/no)
  - Observational to describe relationships
    - Variables associated with Patient Falls
    - Process measures associated with CLABSI prevention
  - Causal/Comparative/Quasi-experimental
  - Experimental to control the variables



# RESEARCH METHODS

## Qualitative

- Gathering and analyzing non numerical data to achieve an in-depth understanding of phenomenon
- Describe a point of view or problem from the perspective of those experiencing it
- Focus groups, in depth interviews with individuals
  - Patient focus groups-patient experience
  - Nurse focus groups-what was their experience in their first year of nursing



# MIXED METHODS RESEARCH

<https://catalyst.harvard.edu/about>

## BASIC MIXED METHODS RESEARCH DESIGNS

### Convergent Parallel Design



### Explanatory Sequential Design



### Exploratory Sequential Design



# MIXED RESEARCH METHODS

## Convergent Parallel

- Data collection is simultaneous but analyzed separately and the results are merged or integrated. The goal is create separate data sets.
  - Tomasi J., Warren C., Kolodzey L., Pinkney S., Guerguerian A-M., Roxanne Kirsch, Hubbert J., Sperling C., Sutton P., Laussen P., Trbovich P. (2018). Convergent parallel mixed-methods study to understand information exchange in pediatric critical care and inform the development of safety enhancing interventions: a protocol study; *BMJ Open*. 8(8): e023691; doi:10.1136/bmjopen-2018-023691
    - Surveys, semi structured interviews, quality metrics

# MIXED RESEARCH METHODS

## Explanatory Sequential

- Starts with quantitative data collection and analysis and then follow with qualitative data collection and analysis. The goal is to further explain the quantitative data
  - Ghods AA., Ebadi A., Nia H.S., Allen KA., Ali-Abadi T. (2022). Academic burnout in nursing students: An explanatory sequential design. *Nursing Open*:18 August 2022; doi: 10.1002/nop2.1319
    - First Phase- Maslach Burnout Inventory Student Survey
    - Second Phase- Individual interviews

# MIXED RESEARCH METHODS

## Exploratory Sequential

- Starts with qualitative data collection and analysis and then follows with quantitative data collection and analysis. The goal is to explore a topic before collecting quantitative data.
  - Azizi T.H., Nayeri N.D., Jackson A.C., Bahramnezhad F. (2023). Mixed-methods study protocol for exploring the perception of nurses' resilience the COVID-19 pandemic: Designing, implementing and evaluation of intervention. *Nurse Open*; Jun; 10(6):4111-4119. doi: 10.1002/nop2.1627
    - Three Phases- Semi Structured Interviews, Intervention using interviews and literature review, Pre/Post Test for interview and control groups

# QUESTIONS

