

Overview of Research Methods and Study Design

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Patterns of Research (1)

- Basic
 - Pure research
- Applied
 - Policy research
 - Action research
- Evaluation
 - Assessment/Appraisal research

Patterns of Research (2)

- Basic
 - Understand social phenomena
 - Describe the world as it exists
- Applied
 - Useful knowledge to apply to a problem
 - Describe the problem; Inform Change
- Evaluation
 - Social accounting
 - Establish efficiency/effectiveness/success of a program

Design Options

- Experimental/Observational
- Prospective/Retrospective
- Cross-sectional/Population
- Cohort/One group - pre and post
- Case-Control/Matched
- Time series/Multiple time series

Intervention Trials

- Investigators responsible for allocating subjects to study groups
- Random allocation/Double-blind allocation
- Multiple outcomes
- Incidence
- Expensive & Time Consuming
- Ethical Issues
- Compliance/Contamination

Cohort Study

- Prospective study/Selected on exposure
- Allocation not determined by investigators
- Exposure measured before disease
- Multiple outcomes
- Incidence
- Rare diseases/ long pre-clinical phase
- Expensive & Time consuming
- Information bias/Selection bias
- Changes in exposure status

Case-Control Study

- Retrospective study
- Recruit on basis on presence or absence of disease and collect data on past exposure
- Time & Cost efficient
- Wide range of risk factors
- Suited to rare/long induction diseases
- Not suitable to measure incidence
- Selection bias/Information bias
- Selecting Controls-matching/over-matching

Types of Variables/Data

- Demographic
- Informational/Knowledge
- Value, Motivational, Attitudinal
- Capability, Behavioural
- Health Service Utilisation
- Environmental
- Clinical, Biological

Main Purposes of Research

- Contextual
- Diagnostic
- Evaluative
- Strategic

Qualitative & Quantitative

Qualitative

Form/Nature

Underlying factors

Decision processes

Processes/Systems

Generating theories

Case-testing

Particular

Detailed accounts

Flexible

Quantitative

Extent/Location

Statistical Correlation

Discriminatory variables

Outcomes

Predictive Modelling

Numerical testing

General

Summaries

Fixed

Data Collection Options

- Quantitative Methods
 - Surveys
- Qualitative Methods
 - In-depth interviewing
 - Focus groups
 - Observation
 - Documentary (Textual analysis)
- Both Qualitative and Quantitative

When to use qualitative methods

- Ill-defined or not well understood
- Complex
- Sensitive
- Concerned with systems/processes
- Require an understanding of detail

Different Questionnaire Designs

- Different depending on use
 - Telephone interviews - short
 - Self administered - easy to follow & complete
 - Interviewer administered - longer, more detailed but need interviewer instructions

Bias

- History Bias/Recall Bias
- Measurement Bias
- Selection Bias
- Interviewer Bias

Keep in mind

- Reliability – consistent results
- Validity – measures what proposes
- Sensitivity – evaluation of test
- Specificity – performance of test

Planning

- The Foundation of Research
- All issues considered before commencing
 - ‘day to day’ issues
 - end product
 - target audience

Remember

- Clear understanding of the research objectives
- Training necessary
- Statistician/Analyst should be contacted as soon as possible