### WH RESEARCH TRAINING WORKSHOPS 2014

**Date:** Thursdays, 12:30-1:30pm  *except on 13 March: 1-2pm*  
**Venue:** WHCRE Sunshine Hospital; Telecast to Footscray Padua Room

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MIXED METHODS: QUANTITATIVE & QUALITATIVE

WH Research Training Workshop
10 April 2014
A/Prof Cate Nagle
Content

What are mixed methods?

What are the traditional approaches?

What are the advantages/limitations?

When is the use of mixed methods justified?

What are some examples of using mixed methods?
Definitions

- Interchangeable terms: mixed methods/ pluralism/methodological triangulation/multi-method

- **Mixed methods research** refers to the use of a combination of research approaches, paradigms and/or methods used in a single study

- **Triangulation** refers to the blending of qualitative and quantitative approaches
  - Emerged in the 1950s from the social sciences
Types of triangulation

<table>
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<th>Type</th>
<th>Components</th>
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<tr>
<td>Data</td>
<td>Variety of data sources</td>
</tr>
<tr>
<td>Investigator</td>
<td>Variety of researchers</td>
</tr>
<tr>
<td>Theory</td>
<td>Multiple perspectives to interpret a single dataset</td>
</tr>
<tr>
<td>Methodological</td>
<td>Multiple methods to study a single problem</td>
</tr>
<tr>
<td>Multidisciplinary</td>
<td>Multiple disciplines to inform the research process</td>
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Janesick, 1994
When should Mixed Methods be used?
When should Mixed Methods be used?

.......when it best answers the research question posed
Paradigm wars

Quantitative

Qualitative
Quantitative paradigm

Philosophical basis = POSITIVISM

The four key features of positivism:

- objectivity
- ‘only what can be counted, counts’
- all people are similar and react in the same ways to stimuli
- there is an absolute truth that can be measured

Example = RCT

Historically considered more scientific, trustworthy and has had great impact on interventions in health care and health policy

Hunter and Leahy, 2008
Objectivity

Positivism holds that only that which can be directly observed and tested is real.

Subjective phenomena cannot be reliably measured.

Traditionally within quantitative approaches it has been held that the ‘truth’ is established by applying logical principles and reasoning.

Systematic process

Researcher is distant, non interactive

Reductionist in nature, research control external factors
Only measurable phenomena exist
Positivism assumptions regarding human behaviour

Humans are viewed as identical closed systems

Not place for cultural interpretations, technological disturbances

The world is static

All human will react in the same way to external stimuli
Absolute truth exists

The absolute truth is derived *deductively* from existing knowledge.

For every effect there exists a cause and the cause can be measured.

Assumes objective tools for measurement exist.
Quantitative research design

Non-experimental

- Exploratory
  - Surveys
  - Descriptive statistics

Experimental

- Effectiveness, Predictive
  - Establishes cause and effect
  - Clinical trials
Qualitative paradigm 1

Philosophical underpinnings include:

- Interpretivism
- Constructivism
- Naturalism
Qualitative paradigm 2

- **Interpretivism**
  - Human experience is understood by each individual
  - Focuses on how the social world is interpreted, understood & experienced
  - Multiple realities, no absolute truth
  - Dependent on subjectivity – of both researcher and participant

- **Constructivism**
  - Reality is constructed incrementally through experiences, language and concepts
  - Understanding is organized by clustering ideas

- **Naturalism**
  - The setting is central
  - Meaning relates to a specific context
Qualitative approaches

Phenomenology
Grounded theory
Ethnography
Narrative research
Case studies
Action research
Parallel relationships with quantitative methods

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<th>Criteria</th>
<th>Parallel characteristic</th>
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<td>Credibility</td>
<td>Internal validity</td>
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<tr>
<td>Audibility/dependability</td>
<td>Reliability</td>
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<tr>
<td>Fittingness/transferability</td>
<td>External validity</td>
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<tr>
<td>Confirmability</td>
<td>Objectivity</td>
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Why would use a mixed method approach?

- To develop a more comprehensive understanding
- To develop a broader understanding
- To gain more certainty in the results
- To enhance flexibility and creativity to a study
### Mixed methods: types, categories and combinations

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<th>Rationale</th>
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<td>Qualitative → Quantitative</td>
<td>Finding from a qualitative approach <em>lead to</em> the use of a quantitative investigation</td>
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<td>Qualitative + Quantitative</td>
<td>Qualitative foundation and quantitative methods provide <em>complementary</em> information</td>
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Mixed methods

Adapted from Hanson, 2005
The value of mixed methods research

Potentially enhances a more holistic understanding

- Provides information that is rich and more comprehensive
- Understanding phenomena from more than one viewpoint

Offers a broader understanding

- Gain insights that may not be possible with one approach
- Weaknesses of one approach can be counterbalanced by the strengths in the other approach
The value of mixed methods research 2

May improve confidence in research findings
- Enhance reliability by using two or more methods
- Reduce sample bias

Enhance flexibility and creativity
- More responsive in nature
- Able to explore emergent themes
Limitations of mixed methods

Requires knowledge and skills
  Training is expensive
  Potential damage to integrity of the research
  Risk associated with outcomes being harder to predict

Evaluating mixed methods studies
  Lack of criteria to guide researchers in triangulation
  Emerging processes

Publication bias
  Purists
  Qualitative vs Quantitative paradigm
When is the use of mixed methods justified?

When it best answers the research question
When a rationale for use is present
When use will provide valuable insights
When the reach of the finding to a wider audience is enhanced
When there is the relevant expertise in the team
Use of a decision aid for prenatal testing of fetal abnormalities to improve women’s informed decision making: a cluster randomised controlled trial [ISRCTN22532458]

C Nagle, J Gunn, R Bell, S Lewis, B Meiser, S Metcalfe, OC Ukoumunne, J Halliday

* Murdoch Childrens Research Institute, Parkville, Victoria, Australia  
  b Department of General Practice, The University of Melbourne, Carlton, Victoria, Australia  
  c Women’s Health Program, Department of Medicine, Monash University, Central and Eastern Clinical School, Alfred Hospital, Prahran, Victoria, Australia  
  d Psychosocial Research Group, Department of Medical Oncology, Prince of Wales Hospital, Randwick, New South Wales, Australia

Correspondence: Dr C Nagle, Maternity Services Education Program, Royal Women’s Hospital, 132 Grattan Street, Carlton, Victoria 3053, Australia. Email cate.nagle@rwh.org.au

Accepted 7 October 2007.

**Objective** To evaluate the effectiveness of a decision aid for prenatal testing of fetal abnormalities compared with a pamphlet in supporting women’s decision making.

**Findings** Women in the intervention group were more likely to make an informed decision 76% (126/165) than those in the control group 65% (107/165) (adjusted OR 2.08; 95% CI 1.14–3.81). A greater proportion of women in the intervention
Example 2

AQUA Study

Monash Health

Why are we doing the AQUA study?

Women are told not to drink during pregnancy to protect their babies, but can the occasional glass of wine cause any harm? And what if a woman has already had a drink before knowing she is pregnant? We are seeking to answer these questions through the AQUA study.

As we don’t know how much alcohol pregnant women can drink without harming the developing baby, not drinking any alcohol is the safest option. Our lack of knowledge in this area has the potential to cause unnecessary children to be born with disabilities or to suffer in other ways.
Example 3

Development and evaluation of a culturally appropriate breastfeeding resource for Vietnamese women

Methods

- Interviews
- Focus groups
- Delphi Technique
- Interviews
Conclusion

In an increasingly complex health & healthcare environment, we are challenged to be more creative with our research and in the evaluation of safety and quality of care.

Remember….

    the question guides the answer

Ensuring that the research question is well framed will inform the methodology you use and the methods.

Consider whether a mixed methods approach will value add to your study and to the interpretation of your results.
References


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