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Queensland Forensic Mental Health Service

# What do you want to know? Qualitative and quantitative research approaches

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# Aims

1. To understand what the terms qualitative research and quantitative research mean, and key differences between these modes of research

2. To understand when and why you might use these different modes of research in the context of health services research

3. To understand how to build research questions for these different modes of research

4. To think about some different approaches to combining qualitative and quantitative approaches

5. To provide advice on proposing qualitative research in grant applications

# What is qualitative research?

"*[…] disciplined inquiry that examines people's lives, experiences and behaviours, and the stories and meanings individuals ascribe to them. It can also investigate organisational functioning, relationships between individuals and groups, and social environments.*" (National Health and Medical Research Council, 2015)

"[…] *research that investigates aspects of social life which are not amenable to quantitative measurement. […] qualitative research uses a range of methods to focus on the meanings and interpretation of social phenomena and social processes in the particular contexts in which they occur*." (Jupp, 2006, underlining is mine)

# What is quantitative research?

"[…] *research involving the collection of data in numerical form for quantitative analysis. The numerical data can be durations, scores, counts of incidents, ratings, or scales. Quantitative data can be collected in either controlled or naturalistic environments, in laboratories or field studies, from special populations or from samples of the general population. The defining factor is that numbers result from the process, whether the initial data collection produced numerical values, or whether non-numerical values were subsequently converted to numbers as part of the analysis process […]*" (Jupp, 2006, underlining is mine)

# When and why do we do qualitative research?

We undertake qualitative research when we think that:

1. At least some elements of human life cannot be understood by reducing them to numeric data

   e.g., experience, meaning, narrative, context or place

2. Our research participants have expertise to impart

   e.g., experts in relation to their lived experience, or to a specific organisation or process, barriers/facilitators research

3. There are limitations to our own expertise that open-ended empirical research can address

   e.g., new and emergent fields, hypothesis generation, contextualisation of quantitative findings

4. Consumer engagement and input is a fundamental good (democratic or pragmatic)

   e.g., agenda setting or co-design (‘nothing about me without me’), satisfaction, acceptability, usability (pragmatism)

5. When we have a small target population

   e.g., service users at a specific service, minority group in a regional area, people with specific health profile

## What are our data in qualitative research?

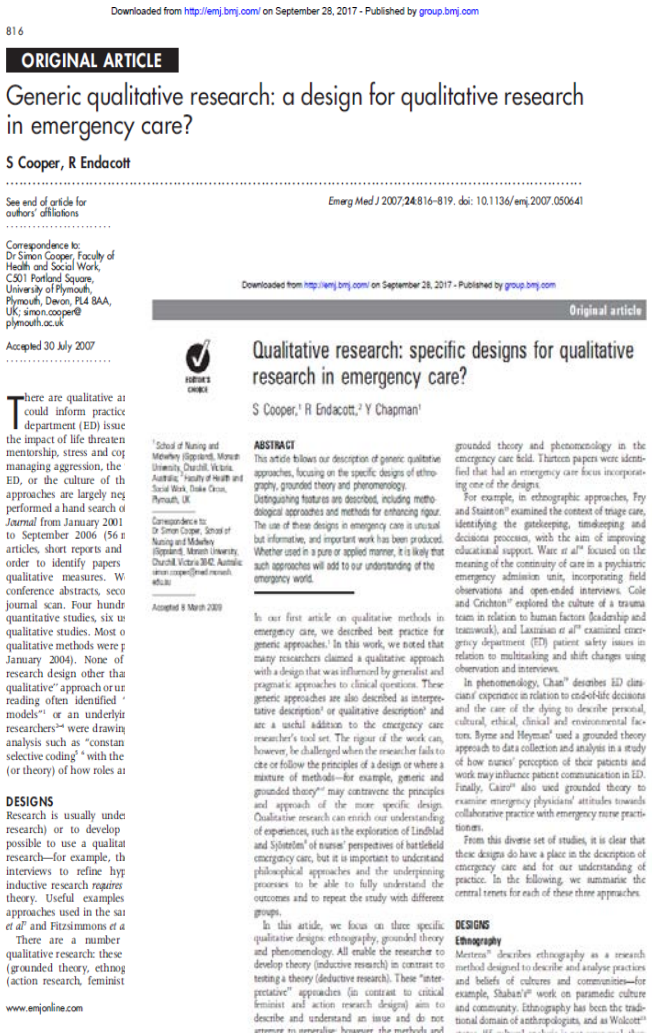
- When we undertake qualitative research, we examine:
  - Language, speech and text (e.g., through interviews or documentary analysis)
  - Images
  - Social practices (e.g., through observation)
  - Characteristics of the physical environment (e.g., through mapping)
  - Technologies and material artefacts (e.g., through drawings, images or acquisitions)

## How do we do qualitative research?

- Qualitative research is often emergent and inductive:
  - We frame the object of our research through an iterative process of ordering and narrowing (Neale, 2016)
  - Data collection, analysis and write-up often occur in tandem (Charmaz, 2006)
  - Analysis depends on the acuity (and sometimes creativity) of the investigator(s)

Preparation for data collection → Data collection → Data analysis → Write-up and publication

# Qualitative research in Emergency Medicine



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ORIGINAL ARTICLE

Generic qualitative research: a design for qualitative research in emergency care?

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See end of article for authors' affiliations

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*Emerg Med J* 2007;**24**:816–819. doi: 10.1136/emj.2007.050641

There are qualitative ar could inform practice department (ED) issue the impact of life threaten mentorship, stress and coj managing aggression, the ED, or the culture of th approaches are largely neg performed a hand search o *Journal* from January 2001 to September 2006 (56 n articles, short reports and order to identify papers qualitative measures. W conference abstracts, seco journal scan. Four hundr quantitative studies, six tr qualitative studies. Most o qualitative methods were p January 2004). None of research design other tha qualitative" approach or ur reading often identified ' models"[1] or an underlyir researchers[2–4] were drawin analysis such as "constan selective coding"[4–6] with the (or theory) of how roles ar

**DESIGNS**

Research is usually unde research) or to develop possible to use a qualitat research—for example, th interviews to refine hyp inductive research *requires* theory). Useful examples approaches used in the sa *et al*[7] and Fitzsimmons *et a*

There are a number qualitative research: these (grounded theory, ethnog (action research, feminist



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Qualitative research: specific designs for qualitative research in emergency care?

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**ABSTRACT**

This article follows our description of generic qualitative approaches, focusing on the specific designs of ethnography, grounded theory and phenomenology. Distinguishing features are described, including methodological approaches and methods for enhancing rigour. The use of these designs in emergency care is unusual but informative, and important work has been produced. Whether used in a pure or applied manner, it is likely that such approaches will add to our understanding of the emergency world.

In our first article on qualitative methods in emergency care, we described best practice for generic approaches.[1] In this work, we noted that many researchers claimed a qualitative approach with a design that was influenced by generalist and pragmatic approaches to clinical questions. These generic approaches are also described as interpretative description[2] or qualitative description[3] and are a useful addition to the emergency care researcher's tool set. The rigour of the work can, however, be challenged when the researcher fails to cite or follow the principles of a design or where a mixture of methods—for example, generic and grounded theory[4–7] may contravene the principles and approach of the more specific design. Qualitative research can enrich our understanding of experiences, such as the exploration of Lindblad and Sjöström's[8] of nurses' perspectives of battlefield emergency care, but it is important to understand philosophical approaches and the underpinning processes to be able to fully understand the outcomes and to repeat the study with different groups.

In this article, we focus on three specific qualitative designs: ethnography, grounded theory and phenomenology. All enable the researcher to develop theory (inductive research) in contrast to testing a theory (deductive research). These "interpretative" approaches (in contrast to critical feminist and action research designs) aim to describe and understand an issue and do not attempt to generalise; however, the methods and grounded theory and phenomenology in the emergency care field. Thirteen papers were identified that had an emergency care focus incorporating one of the designs.

For example, in ethnographic approaches, Fry and Stainton[10] examined the context of triage care, identifying the gatekeeping, timekeeping and decisions processes, with the aim of improving educational support. Ware *et al*[11] focused on the meaning of the continuity of care in a psychiatric emergency admission unit, incorporating field observations and open-ended interviews. Cole and Crichton[12] explored the culture of a trauma team in relation to human factors (leadership and teamwork), and Laxmisan *et al*[13] examined emergency department (ED) patient safety issues in relation to multitasking and shift changes using observation and interviews.

In phenomenology, Chan[14] describes ED clinicians' experience in relation to end-of-life decisions and the care of the dying to describe personal, cultural, ethical, clinical and environmental factors. Byrne and Heyman[9] used a grounded theory approach to data collection and analysis in a study of how nurses' perception of their patients and work may influence patient communication in ED. Finally, Cairo[15] also used grounded theory to examine emergency physicians' attitudes towards collaborative practice with emergency nurse practitioners.

From this diverse set of studies, it is clear that these designs do have a place in the description of emergency care and for our understanding of practice. In the following, we summarise the central tenets for each of these three approaches.

**DESIGNS**

**Ethnography**

Morrison[16] describes ethnography as a research method designed to describe and analyse practices and beliefs of cultures and communities—for example, Shaban's[17] work on paramedic culture and community. Ethnography has been the traditional domain of anthropologists, and as Wolcott[18]

Cooper and Endacott (2007) identify the following opportunities for qualitative research in Emergency Medicine:

- Patient experiences
- Impact of life threatening events on patients and families
- Lived experience of working in the ED (i.e. staff experiences)
- Culture of the ED community

Cooper, Endacott and Chapman (2009) allude to several domains of emergency medicine that may benefit from qualitative research, such as:

- Education and training needs
- Staff wellbeing
- Leadership and teamwork
- Policies and procedures (e.g., patient safety)
- Staff-patient communication

# When and why do we do quantitative research?

We undertake quantitative research when:

1. We think that at least some elements of human life can be understood by reducing them to numeric data

   e.g., knowledge, attitudes, biorhythms, physiology

2. We want to know the size or extent of a particular phenomenon and/or how it changes overtime

   e.g., prevalence of a disease or issue

3. We think that our research participants might not know the answer to our question

   i.e., questions not reliably known by sensory experience or introspection (e.g., biochemistry, diagnosis, cause and effect)

4. We want to know whether or not, and how, different variables are associated with each other

   e.g., is there an association between socioeconomic status and severity of presenting problem in an ED?

5. We want to know whether an intervention (e.g., treatment or programme) has had the desired effect (and not caused harm)

## When and why do we do quantitative research? ctd.

6. We want to standardise and generalise our findings

   e.g., we want to use similar techniques (and measures) as others so as to compare the findings from one study in one setting with similar studies from other settings to enable the production of more robust findings that have universal validity

7. When we want our findings to be reproducible and replicable (scientific virtues)

   i.e., others can reproduce our findings or replicate our study to see if our findings hold

8. When the existing literature supports it

   e.g., there is a strong body of literature that exists and on which basis we can develop and test hypotheses (predicted relationships between variables), validated instruments have been developed that we can use to investigate the phenomena we are interested in

9. When we have a large enough population (and response rate) to get meaningful results

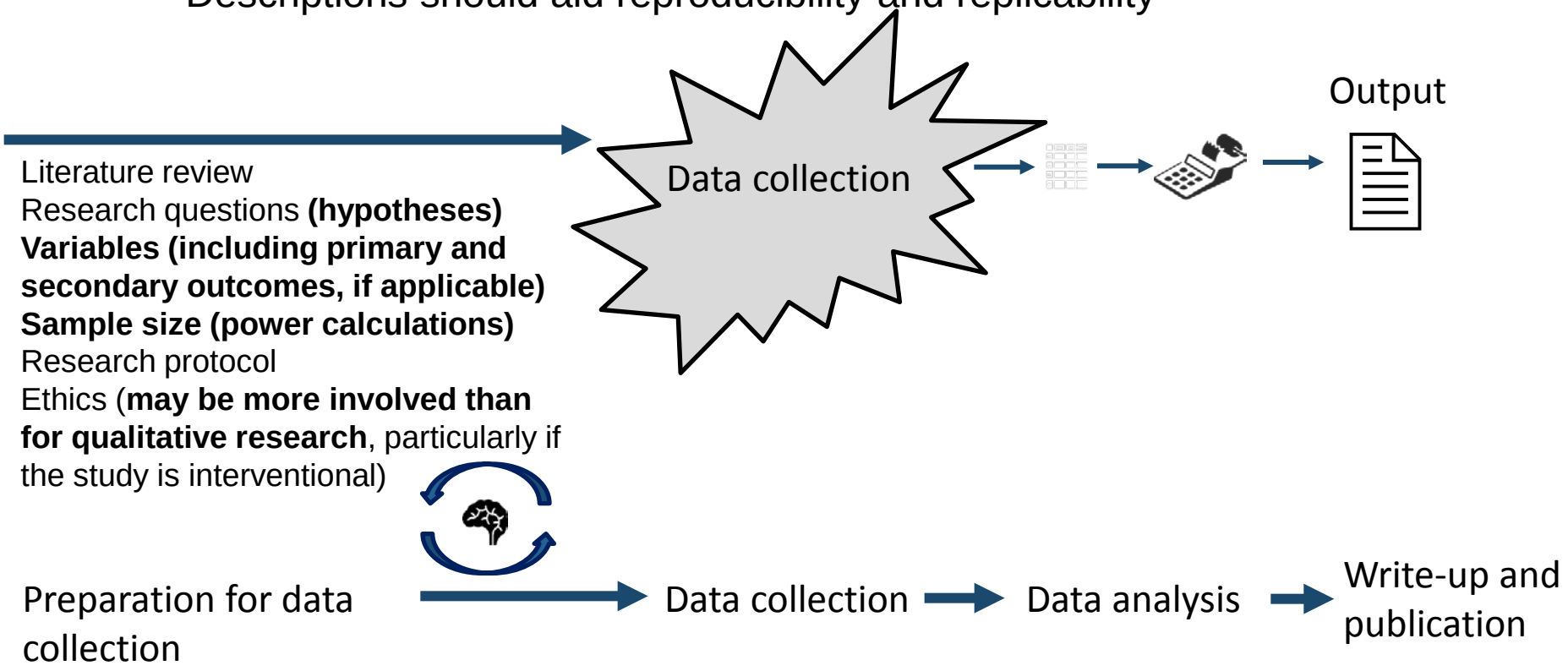
## What are our data in quantitative research?

- In quantitative research our data are the numeric data that we will analyse, though this may come from:
  - Questionnaires (including standardised validated psychometric instruments)
  - Literature (systematics reviews/meta analysis)
  - Existing datasets (e.g., service use and other administrative data)
  - Interviews
  - Observation
  - Biological specimens (potentially less important in HSR)
- The numeric data we collect have different properties that will influence that statistical techniques we can use in analysis (levels of measurement i.e., discrete, continuous) (Neuman, 2013)
- Our dataset will consist of variables (e.g., Age, Educational Level, Psychological Distress, Alcohol use) (Salkind, 2010)

  e.g., Independent variables and dependent variables, primary and secondary outcome measures

## How do we do quantitative research?

- Quantitative research is (mostly) linear and progresses through distinct stages
  - Specify our research questions, hypotheses, variables and outcomes in advance (based on clear conceptual and operational definitions)
  - Analysis is computational and foregrounded by research design and variable selection
  - Descriptions should aid reproducibility and replicability



# Quantitative research: an example

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Research paper

## Verbal abuse and physical assault in the emergency department: Rates of violence, perceptions of safety, and attitudes towards security

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ABSTRACT

*Introduction:* Emergency Department (ED) workers are prone to occupational violence, however the extent and impact of this may not be evenly felt across all roles in the ED.
*Aims:* Explore: 1) the rate of verbal abuse and physical assaults experienced by ED staff, 2) perceptions of safety, 3) attitudes towards security officers, and 4) formal reporting of incidents.
*Methods:* 330 ED workers were surveyed at four public hospitals in one metropolitan health service district in Queensland, Australia, including 179 nurses, 83 medical staff, 44 administration staff, 14 allied health, and 9 operational.
*Results:* Nurses were more likely to have been physically assaulted in the last six months and were less likely to feel safe. Most ED staff across all roles experienced verbal abuse. Nurses were better than medical staff at reporting instances of occupational violence although overall reporting across all roles was low. Staff who thought that security officers respond to incidents quickly and are a visible presence in the ED were more likely to feel safe in the ED.
*Conclusions:* Workers in the ED, particularly nurses, experience high rates of verbal abuse and physical aggression and there may be a case for having designated security guards in the ED.
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### 1 Introduction

Healthcare workers in a number of settings experience considerable rates of aggression and violence from patients [1–4]. However, workers in hospital emergency departments (EDs) are particularly prone to physical assault and verbal abuse [1,5–7]. A number of studies have found that healthcare workers view the ED as a stressful place to work [8]. ED staff often have a very high workload [9] and many feel underappreciated [8,10]. When combined with occupational violence, ED nurses are susceptible to experiencing burnout and may leave their profession as a result [11,12]. Given that many studies have found that physical violence and verbal abuse towards ED workers is prevalent, it is perhaps surprising that Gates et al. [7,12] found a weak correlation between the number of assaults and verbal abuse experienced by ED staff and their self-rated feelings of safety, but neither of those studies found any significant differences between doctors and nurses in terms of their feelings of safety, or in the number of assaults they experienced. On the other hand, Kansagra et al. [14] found that ED nurses were five times less likely than doctors to say they felt safe "most of the time" or "always", although the number of physical assaults experienced by ED staff did not their predict perceptions of safety. Only a minority of ED nurses in those studies felt unsafe, but a more recent survey of ED nurses at two Australian hospitals found that 90% had been physically assaulted in the last year, all had been verbally abused, and more than half felt "very" or "moderately" unsafe [15].

Partridge and Affleck (2017) examined verbal abuse and physical assault in the emergency department

- Survey used to quantify rates of violence
- Perceptions of safety
- Attitudes towards security

Found that:

- Nurses are more likely to be physically assaulted than other ED staff
- Nurses less likely to feel safe
- Occupational violence is under reported

qualitative

quantitative

## What approach should I take?

- Strengths of one approach are limitations of the other approach
  - This is why we have two traditions

- Ideally, in a lot of cases, we want to use both

- In practice we need to make a decision, based on:
  - The nature of our question (what I do I want to know?)
  - What is already known
  - Practicalities (including resources, competencies, access to populations/data, ethics etc.,)

# What do I want to know?

Do I want to:

- Understand consumer (or staff) experiences or narratives

  e.g., consumer journeys, satisfaction, barriers, facilitators

- Create user-centred (and usable) services and systems

  e.g., acceptability, feasibility, user-centred design, co-design, participatory action research

- Interpret what my (quantitative) results mean?
- Answer a specific question relating to my service or consumer group that I need to answer?

Do I have a small target population?

If you have answered ‘yes’ to any of these questions, consider whether qualitative research is the most appropriate approach to use

# What do I want to know?

Do I want to:

- Understand uptake or retention rates
- Know whether my service (or intervention) effective
- Understand who is using my service (or intervention)
- Understand the association between different variables of interest that are useful for improving my service
- Produce findings that are generalisable to other settings or populations?

Do validated instruments (e.g., K10, AUDIT) exist to measure the constructs that interest me?

Do I have well formulated hypotheses that I would like to test?

Do I have access to a large enough target population to make my results meaningful?

If you have answered ‘yes’ to any of these questions, consider whether quantitative research is the most appropriate approach to use

# Building qualitative research questions

There are some differences in how we craft good research questions, depending on whether we are doing qualitative or quantitative research

- Qualitative research questions can be ‘closer’ in form to the questions that are asked of participants
- Qualitative research questions tend to be more open ended and flexible
- ‘Parts’ of a qualitative research question are:
  - Features of human life to be examined (experience, narrative etc.,)
  - Context, issue or event to be examined (setting, service, event or place etc.,)
  - Population of interest (who is the research about?)

how do mental health consumers experience the transition from ED to in-patient wards?

Might ask consumers the question: what is it like leaving an ED and transitioning to an in-patient ward?

## Building quantitative research questions

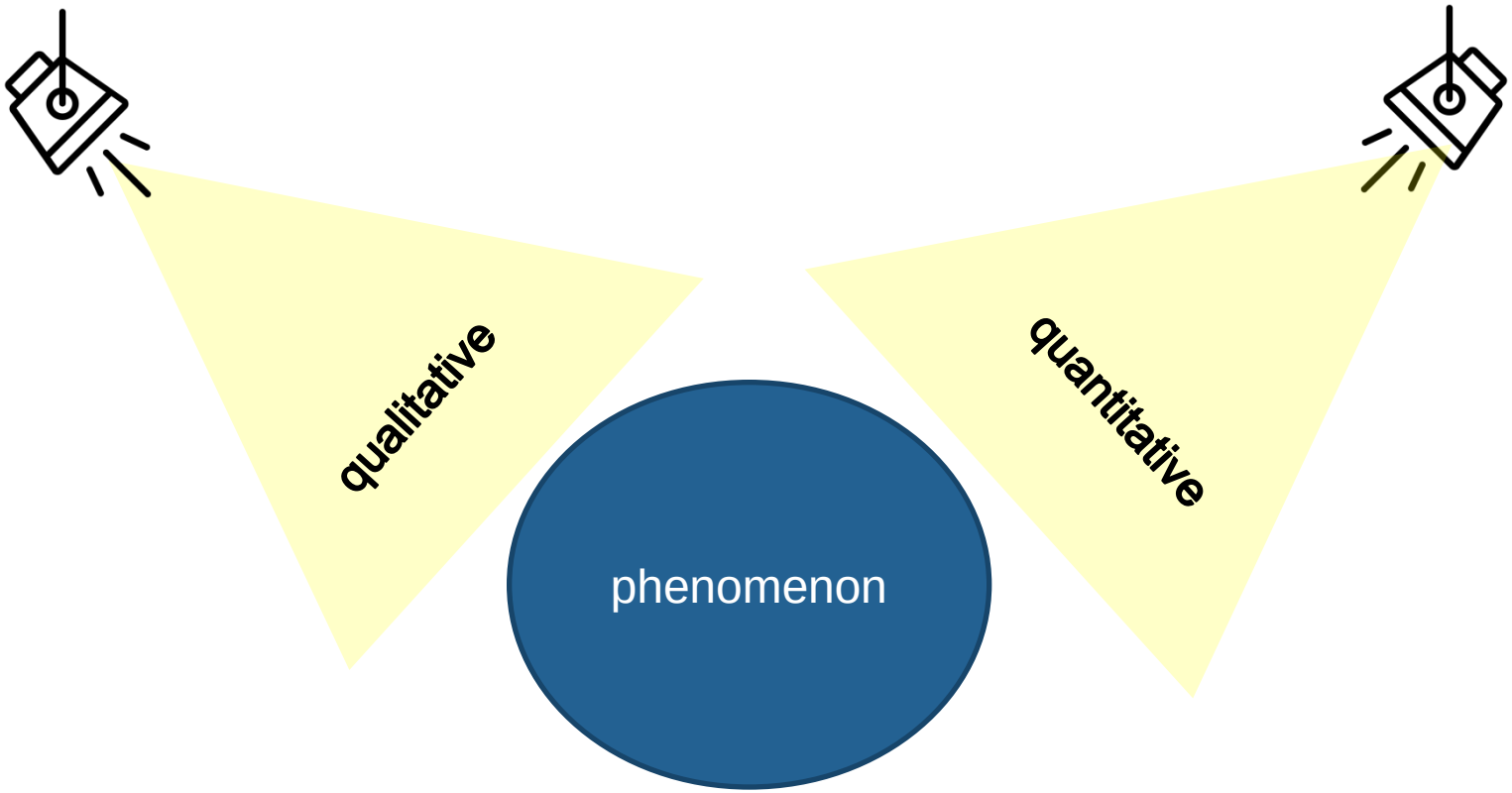
Quantitative research questions are more specific than qualitative research questions

- Questions should not change following data collection or analysis (*cf. p*-hacking)
- Through experimental design, we can ascertain information without asking directly
- Parts of a quantitative research questions are:
  - Population of interest
  - Variables of interest
  - Intervention of interest (if applicable)
- Clinical/experimental research may use the PICO guidelines:
  - **P**atient, problem or population of interest
  - **I**ntervention (or service)
  - **C**omparison, control or comparator (if applicable)
  - **O**utcome

Does providing research training to clinicians improve the confidence of in undertaking qualitative research?

# Mixing methods (extra for experts)

- Mixing methods are a good way to capitalise on complementarity of methods to get a more nuanced understanding
- Concept of triangulation
  - Using multiple methods to produce a better understanding of phenomena
  - Think dimensionally and holistically not reductively



# Mixing methods (extra for experts)

- There are different ways to mix methods
  - Can sequence and prioritise qualitative and quantitative research in a variety of ways (Morgan, 1998)

| | |
|---|---|
| qual → QUANT | quant → QUAL |
| QUANT → qual | QUAL → quant |

## Qualitative research in grant applications

- Alignment and consistency between aims, research questions and methods
  - How will qualitative research answer the question/problem that you have?
- Clarity and communication
  - Don't assume people will know anything about your approach – have a short description about what the method you are using is, and what it's good for
- Focus
  - Open ended ≠ anything goes need to be focussed about what you want to know
  - Can be tricky to sell open-ended, exploratory research, *cf.* structured research that builds on an existing corpus of research.
  - 'Grounded theory' is a common approach, but I try and avoid the term
    - Can be a catch all term taken to mean open ended, inductive research
    - Grounded theory approaches used in health research a great deal more structured than they are in sociology. I prefer the term 'pragmatic grounded theory' (Parker et al., 2016) when speaking about applied research
    - Structured qualitative research is still more unstructured than quantitative research
- Be pragmatic but reflexive
  - Qualitative research can be viewed with scepticism, consider who reviewers might be, and whether your application will get a fair shot
  - Think about these imbalances when you yourself review

## Final remarks

- Both approaches (qualitative and quantitative) have their strengths and limitations
  - Think about what you want to know
  - If you have the skill and resources, consider mixed methods approaches
  - Be pragmatic (research is the art of the possible)
- Good research is completed research - you can't do everything at once!
  - Get help at the beginning of your research project
  - consider partnering with universities and/or commissioning peer review of research protocol
- Even if you think you're a methods expert – look for field specific discussions
  - This will help you understand subtle differences in conventions that exist across fields and disciplines
- Limitations (of this presentation)
  - This is a quick tour, not exhaustive
  - In some cases, I've had to gloss over concepts (e.g., levels of measurement, variables and power calculations)

## Useful resources available online

- Sage Research Methods (methods.sagepub.com)
  - Excellent online resources, including dictionaries, encyclopedia and YouTube clips
- Online course providers (many are free)
  - edX (UQx) https://www.edx.org/
  - Khan Academy https://www.khanacademy.org/
  - Coursera https://www.coursera.org/
  - Stanford Lagunita https://lagunita.stanford.edu/
- Consumers Health Forum of Australia
  - The Real People Real Data Toolkit https://chf.org.au/real-people-real-data-toolkit
    - Narrative research interview template and visualisation tool
- BetterEvaluation (www.betterevaluation.org)
  - Australian-based resource
  - Advice on planning and executing evaluations
  - Provides information on a wide range of methodologies and methods
- Thebmj research methods and reporting (www.bmj.com)
  - “How to” articles on different methods

# References cited and other useful references


Charmaz, K (2006) Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis. London: Sage

Corbin J, Strauss A. (2008) Basics of qualitative research: Techniques to developing grounded theory. 3rd ed. Los Angeles, CA: Sage;

Cooper, S., & Endacott, R. (2007). Generic qualitative research: a design for qualitative research in emergency care?. *Emergency Medicine Journal*, *24*(12), 816-819.

Cooper, S., Endacott, R., & Chapman, Y. (2009). Qualitative research: specific designs for qualitative research in emergency care?. *Emergency Medicine Journal*, *26*(11), 773-776.

Crowe, M., Inder, M., and Porter, R. (2015) Conducting qualitative research in mental health: Thematic and content analyses. Australian and New Zealand Journal of Psychiatry. 49(7) pp. 616-623.

Dicicco-Bloom B, Crabtree BF. (2006) The qualitative research interview. Medical education. 40(4):314-21.

Hsieh HF, Shannon SE. (2005) Three approaches to qualitative content analysis. Qualitative health research. 15(9):1277-88.

*Eysenbach, G. (2004) Improving the quality of Web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). Journal of Medical Internet Research 6(3), e34.

*Jupp, V. (2006). *The SAGE dictionary of social research methods* SAGE publications Ltd doi: 10.4135/9780857020116

Kitto, S., Chesters, J., Grbich, C. (2008) Quality in qualitative research: Criteria for authors and assessors in the submission and assessment of qualitative research articles for the Medical Journal of Australia. MJA 188: 242-246

*Lingard L, Albert M, Levinson W. (2008) Grounded theory, mixed methods, and action research. BMJ. 337:a567.

McGhee G, Marland GR, Atkinson J. (2007) Grounded theory research: literature reviewing and reflexivity. Journal of advanced nursing. 60(3):334-42.

Morgan, D. Practical Strategies for Combining Qualitative and Quantitative Methods: Applications to Health Research. Qualitative Health Research 1998 8(3), 362-376

*National Health and Medical Research Council. (2015) *National statement on Ethical Conduct in Human Research.* Available online: https://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research

Neale, J. (2016) Iterative categorisation (IC): a systematic technique for analysing qualitative data. Addiction. doi:10.1111/add.13314

Neale, J., West, R. (2015) Guidance for reporting qualitative manuscripts. Addiction 110(4) 549-550.

# References cited and other useful references


*Neuman, L. (2013) Social research methods: Qualitative and quantitative approaches. 7th Edition. Pearson Education Ltd: UK.

Onwuegbuzie, A., Collins, K. (2007) A typology of mixed methods sampling designs in social science research. The qualitative report 12(2) 281-316

Parker, S., Dark, F., Newman, E., Korman, N., Rasmussen, Z., & Meurk, C. (2017). Reality of working in a community-based, recovery-oriented mental health rehabilitation unit: A pragmatic grounded theory analysis. *International journal of mental health nursing*, *26*(4), 355-365.

*Pinnock, H Barwick, M, Carpenter, C, Eldridge, S, Grandes, G, Griffiths, C et al. (2017) Standards for Reporting Implementation Studies (StaRI) Statement *BMJ* 356 :i6795

Pope C, Mays N (eds) (2006) Qualitative Research in Health Care. 3rd edn. Malden, Massachusetts: BlackwellPope, C., Ziebland, S., Mays, N. (2000). Analysing qualitative data. BMJ. 320(7227): 114-116

*Salkind, N. J. (2010).*Encyclopedia of research design* Thousand Oaks, CA: SAGE Publications Ltd doi: 10.4135/9781412961288

Teddlie, C., Yu, F. (2007) Mixed methods sampling: A typology with examples. Journal of mixed methods research 1(1) 77-100

Tong, A., Sainsbury, P., Craig, J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care. 2007. http://intqhc.oxfordjournals.org/content/19/6/349

Watling CJ, Lingard L. (2012) Grounded theory in medical education research: AMEE Guide No. 70. Med Teach. 34(10):850-61.


If you know of a particularly good methods reference for qualitative, quantitative and/or mixed methods research – please send it to me Carla.Meurk@health.qld.gov.au!