NIHR | Research Design Service Yorkshire and Humber

CONTENTS

- TOP TIPS FOR QUALITATIVE RESEARCH
- TOP TIPS FOR QUANTITATIVE PROPOSALS
- TOP TIPS FOR SYSTEMATIC REVIEWS
- TOP TIPS FOR ECONOMIC EVALUATION
- TOP TIPS FOR PATIENT & PUBLIC INVOLVEMENT (PPI)

TOP TIPS FOR QUALITATIVE RESEARCH

1. **Identify whether the question is suitable for this approach.**

- Qualitative research aims to provide an in-depth understanding of experiences, perspectives and histories.
- It explores the understanding of individuals within their social contexts.
- The methods may appear unstructured but are not but they should be sensitive to the social context of the study.
- This may be about patient perspectives but may also explore professional perspectives too.
- The methods are iterative rather than deductive
- The data will be detailed, rich and complex
- Basically if you want to answer 'what is', 'how' or 'why' questions a qualitative approach will work well.
- Do not use qualitative methods to avoid using statistics!

2. **Has the work been done before?**

- Do a literature search to determine what is already out there
- You may find similar work in another population
- Is your population expected to have very different views and why?
- Remember to look at what is said and how it is said
- Careful reading provides evidence for the significance of your study for practice and policy This will also help with the next point

3. **Focus the question**

- In general
  - Make sure the research will be
  - Contributory (advance wider knowledge or understanding
  - Defensible (in its design by providing a strategy that can address your question)
  - Rigorous (systematic colleaction analysis and interpretation of data)
  - Credible (will provide plausible well-founded arguments about significance)
  - Involve patients in development of the question
- If you are generating your own area for research
  - Ensure your question is clear and justified
- If you are reacting to a funding call read the brief in minute detail to ensure
  - You understand the question
  - You are answering the question
  - Then make sure your question is clear and justified

4. **Don't adopt a theoretical perspective or framework that you don't understand or can't justify.**

   While you may have been doing well so far this is where inexperience will show especially in a proposal.

5. **Justify your sample**

- Purposive or theoretical sampling
  – The purpose of the sampling
  – Characteristics of potential types of persons, events or processes to be sampled
  – How decisions about sampling will be made.
- Sample size
- Estimates provided based on previous experience,

- pilot work, etc.
- Access and recruitment
- The point is you don't just go out and talk to people!
- It is also worth bearing in mind that people often forget or avoid looking at cultural diversity and engaging with social disadvantage

6. Make sure you understand the ethical implications of the work you want to do.

- Sometimes the types of questions qualitative research poses are difficult or uncomfortable
- This does not mean they should not be asked and people often enjoy the chance to explore such areas.
- What is important is to demonstrate that you have thought about any problems or difficulties that may arise from this.
- Are the population you propose to work with particularly vulnerable?
- There are problems for clinicians interviewing their own patient populations

7. Make sure you are fully aware of the potential costs involved

- Qualitative methods are not a cheap option
- The projects are time consuming in their recruitment, conduct and analysis
- Make sure you have costed in researcher time, travel, software, equipment, transcription etc tec.
- This is another area where inexperience shows.
- Experts will spot a naïve application as they often underestimate the work and costs involved.

8. Identify your analytical approach

- Make sure you have a clear choice of data management
- Analysis methods vary depending on qualitative
- Approach
- Add DETAILS and MORE DETAILS about how data will be gathered and processed *(procedures should be made transparent, not magical)*
- How will data be keep organized and retrievable?
- How will data be "broken up" to see something new?
- Convinces the reader that the researcher is sufficiently knowledgeable about qualitative analysis and has the necessary skills.
- Ask the experts! A lot of proposals fail as they give an inadequate account of how they are going to analyse and present their data.

9. Get an expert on board as soon as possible

- You wouldn't attempt multi-level modelling or a cost-effectiveness analysis without support
- Think of qualitative research in the same way
- Experts can help you construct a convincing case and ensure you don't underestimate cost, timing or complexity of the work.

10. Identify your dissemination plans

- Once you have all this rich, detailed information and assimilated your findings how and who will you disseminate it to.
- There are obvious routes but remember that it is good practice to disseminate your findings to participants.
- Don't forget practitioners, commissioners and policy makers as well as the academic routes of conferences and papers.
- This is another area where experienced qualitative researchers can help.
- Distilling qualitative research findings into a journal word limit is a real skill!

TOP TIPS FOR QUANTITATIVE PROPOSALS

- Refine your research idea by completing a review of existing evidence
  [See top tips for systematic reviews]

- Identify the team with required skills; this should include statistician, a health economist, public patient involvement (PPI), and other specialists relevant to the study e.g. a clinical pharmacist. **Don't** expect experts to give you all the information you need with a days notice – you are likely to end up disappointed and may not meet your deadline!

- Have a clear and focused question and be prepared to refine it so it is achievable.
  The following considerations should be made:

    - Consider what the intervention will be and how it will be implemented and what it will be compared with – what is standard practice?
    - Decide on the study design. If design involves other types of study e.g. economic evaluation or qualitative study then how these will be conducted should also be considered [See top tips for economic evaluations and qualitative studies]
    - Identify the study outcomes – these should be unbiased and robust. Consider how these will be collected, whether they are routinely collected or whether a questionnaire is needed. Decide what are primary and what are secondary outcomes.
    - Sample size – needs calculating for all primary outcomes. Where will the information for this come from e.g. existing literature, expert opinion? Be realistic about attrition and build this into the sample size calculation.
    - Make sure it is feasible to collect the information you need on an appropriate sample and that you will meet the recruitment numbers identified in the sample size calculation. Consider running a pilot study if it is practical to do so.
    - Make sure the statistical analysis is appropriate to the type of study you are designing.
    - If informed consent is needed design a patient information leaflet and include it (as an appendix) with your proposal. Involve PPI to help design this [See top tips for PPI].

- Identify an appropriate funding body and be clear of their requirements.

- Identify appropriate support bodies and involve/inform them early on, e.g. PCT's, CRN, academic partners, CTU. Remember a local unit might not always be the most appropriate one for your study as one further afield may specialise in the clinical area you are investigating.

- Don't leave study costings to the last minute, contact finance departments early on and establish when they need things for in order to approve costings. Remember to let collaborating institutions know when the deadline is too.

- Identify all ethic issues and consider how these will be accounted for in your study.

- Decide how data will be collected and who will be responsible for this process. Will a database need building? Who will entre the data? What data entry checks will be used? Make sure the data collection process and management is costed into your study. Don't forget NHS cost implications.

- Be realistic about deadlines and the length of time you give each phase of your study, if these seam unrealistic (either too little or too long your study may not receive approval).

TOP TIPS FOR SYSTEMATIC REVIEWS

Dos
1. Focus Your Question
2. Read (re-read) Briefs
3. Try to estimate volume of literature
4. Identify team with required skills and involve them early
5. Assume “neutral” writing stance

Don’ts
6. Don’t be tempted by Scope Creep!
7. Don’t use team of exclusively part-timers
8. Don’t confuse roles
9. Don’t forget software!
10. Don’t underestimate time/cost of searches and document delivery

1. Focus Your Question

- Successful search strategies are highly structured. Built around PICOS framework.
- Population Intervention Comparison Outcome Study design (PICOS) framework helps group search terms into topic groups.
- PICOS best where medical model of research typically defined by;
  - specific **P**opulation for example, children;
  - **I**ntervention, for example, exercise regime;
  - type of **C**omparison, for example, a control group
  - **O**utcome, for example, weight control.

Study design e.g. randomised controlled trial

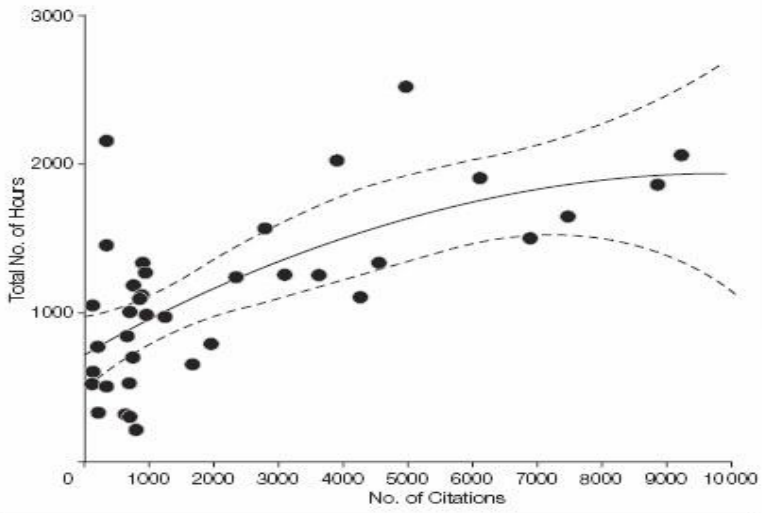
2. Read (and re-read) Briefs

- Read scoping document and associated guidance in *minute detail*
- Check you qualify
- Read it again and again
- What are funders’ priorities?
- Any pre-requisites required?
- Check recent bid history (via RDS)

3. Estimate volume of literature

- Subject experts tend to underestimate amount of relevant literature
- Rule of Thumb – do preliminary search on MEDLINE then divide hits by four and multiply by ten (e.g. 360 refs on MEDLINE probably means 360*10/4 = 900 refs to look through).
- Cp. Observed association between number of initial citations (before exclusion criteria are applied) and total time it takes to complete meta-analysis (Allen & Olkin, 1999).

Figure. Citations Retrieved for a Meta-analysis and Total Hours Required to Complete the Meta-analysis



Number of citations retrieved before any exclusion criteria are applied. Regression curve and 95% confidence intervals are shown.

Average hours for SR

- = 1139 (~6 months), range 216-2518 hours.
- Component mean times:
  - 588 hours Protocol development, searches, retrieval, abstract management, paper screening and blinding, data extraction and quality scoring, data entry
  - 144 hours Statistical analysis
  - 206 hours Report and manuscript writing
  - 201 hours Other (administrative)

Search Process Only

- EPPI-Centre documented time for experienced researcher to develop/implement Medline search strategy for sexual health promotion primary studies.
- **40 hours** Developing & testing sensitive search strategy for Medline
- **8 hours** Implementing search for most recent Medline period at time (Jan 1996-Sept 1997) and downloading citations
- **7 hours** Scanning through 1048 retrieved records
- If implemented over 30 years of Medline, retrieved records = approx 10,000. 70 hours needed to identify relevant citations. Medline search strategy would take approx **120 hours.**
- Preliminary literature search + contact with experts might help in calculating approximate time to complete review.

4. Identify required skills for team, involve them early

- **Subject Experts**
- **Information Specialist**
- **Health Service Researchers**
- *Statistician (e.g. Meta-analysis)*
- *Economist (e.g. Cost effectiveness)*
- *Qualitative Researcher (e.g. Acceptability)*

Bold = Essential; *Italic = Specific*

5. Assume "neutral" writing stance

- Systematic methods aim to minimise bias and maintain **neutrality** - **Don't prejudge** issue
- **Equipoise** [uncertainty principle] (c.p. RCTs)
- Consider **Declaration of Interest**
- Consider Use of **Reflexivity** in Qualitative Evidence Syntheses

6. Don't be tempted by Scope Creep!

- Often major problem - amount of evidence not precisely known at start.
- Subject experts want to know more, not less, thus expanding initial scope.
- *Suggestion:* Allow **Time** to develop scope and to become familiar with topic
- Clarify **Goals**, **Priorities** and **Boundaries**.
- Use **rational, stringent and efficient** approach for scope/literature review
- Reduce inefficient exploration of "next-best" evidence, **define minimum standards for inclusion criteria**

7. Don't use team of <u>exclusively</u> part-timers

- Need continuity for project
- Vast Knowledge Management undertaking
- Critical Dependencies
- However you can optimise utilisation of other roles e.g. Literature Requesting/ Reviewing / Report Writing

8. Don't confuse roles

- Project Team (Weekly)
- Internal Steering Group (Monthly)
- External Reference Group/ Advisory Group (Beginning/Middle/End)
- Stakeholder Involvement/Public Participation (Beginning? End?)

9. Don't forget software

- Reference Management (£/FREE)
- RevMan (FREE)
- Other Meta-analysis software (£)
- NVivo (£)
- Joanna Briggs Institute Software (FREE)

10. Don't underestimate time/ cost of searches/document delivery

- Conducting Searches
- Sifting
- Generating Requests
- Processing Requests
- Fulfilling Requests
- Verifying Exceptions
- …..expect the unexpected!
- Documenting Searches & References

Red = Dependent on External Resources

TOP TIPS FOR ECONOMIC EVALUATION

1. Have a focussed question.
2. Read the brief.
3. How big is the existing literature and has the question been addressed before?
4. Can you identify appropriate comparators?
5. What perspective will the study take?
6. How would you collect data?
7. What type of analytic approach will you take?
8. How will you deal with uncertain and/or missing values?
9. Get “the team” together ASAP
10. Ensure the team includes expertise appropriate to answer your question (this might include health economist, statistician, trialist, information specialist)

Focus your question

- Don’t try to answer too many questions
- For an economic evaluation, the question should be **well-defined and posed in answerable form**

Read the brief

- If you are reacting to a funding call read the brief in minute detail to ensure
  - You understand the question
  - You are answering the question
  - Then make sure your question is clear and justified

How big is the existing literature and has the question been addressed before?

- You may want to do a literature search to determine what is already out there
- Or get an information scientist to do a search for you
- You may find similar work already exists
- If so, how would your study be different and/or what would it add (there is little point in answering the same question again)
- How would you incorporate the existing literature into your study (eg formal evidence synthesis)
- Is the size of the literature manageable? How can it be limited if appropriate?
- If literature large, talk to experts! (this might be clinical experts or information scientists etc)

Can you identify appropriate comparators?

- Economic evaluation requires the comparison of costs and effects of **alternative strategies**
- **IE There cannot be a full economic evaluation without comparator(s)**
- It is important that these comparators are relevant and ideally the study should identify and incorporate **all appropriate** comparators (though this may not always be feasible)
- Appropriate comparators can be identified from clinical knowledge/experience, reviews of the literature

Perspective

- What is appropriate perspective?
  - Societal - Very broad but more difficult to conduct
  - NHS - Narrower perspective, easier to measure but may miss eg cost shifting between sectors
  - Other - In some instances it may be appropriate to consider perspective of particular groups or agencies but care should be exercised in choice of perspective

Data collection

- Several types of data collection used for economic evaluation
  - Patient/carer questionnaires
  - Medical records
  - Published estimates

- Most appropriate will depend on patient population/condition/type of study etc

Analytic approach

- What type of analysis would be best to answer the question?
  - Trial based cost-effectiveness evaluation?
  - Other trial based evaluation
  - Decision model
    Other approaches

Uncertainty and missing data

- Economic evaluation always conducted under conditions of uncertainty….how will this be dealt with?
  - Sensitivity analysis
  - Probabilistic sensitivity analysis
- What about missing data?
  - Multiple imputation?
    Other technique

The team

- Most important bit!
- Get the right team together early!!

TOP TIPS FOR PPI (PATIENT & PUBLIC INVOLVEMENT)

Top Tips to Facilitate Meaningful Patient and Public Involvement (PPI) in Health Research

1. Ensure that the reasons for wanting PPI in the research are well thought through
2. Ensure that appropriate people are approached to get involved in the research
3. Negotiate wherever possible with those providing a PPI perspective about their roles and responsibilities
4. Ensure one person in the research team has lead responsibility for PPI
5. Ensure that PPI activities happen as early as possible so as to maximise the impact of PPI
6. Ensure that researchers and other professionals have adequate training on PPI issues
7. Ensure there are at least 2 people providing a PPI perspective in any activity where they interact with other stakeholders such as clinicians and academics
8. Ensure that each person providing a PPI perspective has their individual support needs identified and addressed
9. Provide relevant training and support for each person providing a PPI perspective
10. Provide a glossary of key terms to each person providing a PPI perspective
11. Identify a mentor among the research team to provide personal support for each person providing a PPI perspective
12. Offer briefing and debriefing meetings for those providing a PPI perspective to discuss issues of concern
13. Ensure adequate payment and expenses are paid to those providing a PPI perspective and that issues relating to benefits are identified and addressed
14. Ensure that meetings with those providing a PPI perspective and other stakeholders are conducted in an atmosphere of mutual respect
15. Agree on ground rules for the conduct of meetings
16. Consider devising and using evaluation forms at each meeting to assess the PPI contribution at each meeting, and to monitor PPI contributions over time