



How to Conduct Research for Service Improvement:

A Guidebook for Health & Social Care Professionals

EDITED BY MICHAEL BYRNE

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TABLE OF CONTENTS

	Contents	i
	List of tables	ii
	List of figures	iii
	Foreword	iv
	Executive summary	v
	About the contributors	1
PAPER 1	How to apply for research funding	5
PAPER 2	How to match research designs to organisational issues in health & social care	18
PAPER 3	How to conduct a literature review	34
PAPER 4	How to design quantitative research in applied settings	49
PAPER 5	How to conduct qualitative research in health & social care settings	59
PAPER 6	How to practice ethically sound research	78
PAPER 7	How to analyse quantitative data	85
PAPER 8	How to analyse qualitative data	92
PAPER 9	How to conduct a service evaluation	107
PAPER 10	How to write for publication	119
APPENDIX A	Embracing Lenus – the Irish health repository	129
APPENDIX B	What is HSELand?	135

LIST OF TABLES

No.	Title	Page
PAPER 1 How to apply for research funding		
1.	An example of a budget within a research funding proposal	11
2.	An example of a Gantt chart mapping the timeframe of a proposed study within a research funding proposal	12
PAPER 3 How to conduct a literature review		
1.	Some psychology and mental health-related publications	36
2.	Some literature searching methods	38
3.	Some databases that can be accessed through the HSE library	41
4.	Dimensions of research papers that need to be considered	42
PAPER 4 How to conduct quantitative research in applied settings		
1.	Common quantitative research designs	54
PAPER 7 How to analyse quantitative data		
1.	Definition of Type I and Type II error	86
2.	Definitions of main types of data	87

PAPER 9 how to conduct a service evaluation		
1.	Dimensions of health care quality	111
2.	Methodology examples for evaluation	114
3.	Steps to conducting a service evaluation	116
PAPER 10 how to write for publication		
1.	The practical aspects of writing for publication	127
APPENDIX B What is HSELand?		
1.	Online learning hubs available at HSELand	139
2.	Core competencies	143
3.	Additional Information about HSELand	142

LIST OF FIGURES

No.	Title	Page
PAPER 1 How to apply for research funding		
1.	How to apply for research funding	16
PAPER 2 How to match research designs to organisational issues in health & social care		
1.	Ensuring rigour in matching research designs to research problems	19
2.	Different research models, what they aim to achieve, and their most associated research objectives.	21
3.	Identifying research questions at each stage of the applied research process	24
4.	Deriving action from knowledge	32
PAPER 3 How to conduct a literature review		
1.	Summary of steps to conducting a literature review	46
PAPER 4 How to conduct quantitative research in applied settings		
1.	The interaction of intuition, authority, logic and empiricism in research	49
2.	Flowchart of the general research process	50
3.	Stages of quantitative research design	52
PAPER 6 How to practice ethically sound research		

1.	Four key domains of ethical research	78
2.	Visual representation of important ethical issues.	83
PAPER 7 How to analyse quantitative data		
1.	The influence of type of data on selection of analysis techniques.	88
2.	Common methods for parametric analysis of group differences	89
3.	Common methods for non-parametric analysis of group differences	90
PAPER 8 How to Analyse Qualitative Data		
1.	Methods of qualitative data collection	93
2.	Framework for categorising qualitative analysis techniques	95
3.	Key stages of discourse analysis outlined	96
4.	Key stages of coding in grounded theory	98
5.	Key phases of thematic analysis	99
6.	Key steps for content analysis	101
7.	Key steps in qualitative analysis	102
PAPER 10 How to write for publication		
1.	Key Issues in authorship	121

FOREWORD

It gives me great pleasure to introduce this guidebook commissioned by the Health and Social Care Professions (HSCPs) Education and Development Unit.

As highlighted in the 2011 *Survey of the Research Activity, Skills and Training Needs of HSCPs in Ireland*, there is a growing need to evaluate whether our health services are operating efficiently, whether they are engaging in evidence-based practice and whether they are meeting performance goals such as achieving desired treatment outcomes. Our front-line health and social care professionals (HSCPs) are well-placed to actively lead such enquiry in our complex and sometimes hard-to-define 'real world' health services.

Complete with practical guidance on how to manage the various elements of the research methodology continuum, this first edition will contribute to the skill development of our HSCPs. I hope it inspires purposeful research activity. The newly constituted HSCP Education and Development Advisory Group Research Sub-group and the newly launched HSCP hub on HSELand will also be key to this.

This guidebook is also a clear manifestation of what can be achieved when our HSCP clinicians and academics work together towards a common goal. Such mutually beneficial academic-clinician research interaction is a model that has the potential to produce high quality research output and associated service provision improvements.

I wish to thank all the contributors for their time and energy, and to acknowledge the pivotal role played by Principal Psychologist Manager, Dr. Michael Byrne, who worked with the contributors in developing their papers.



Tony O'Brien
Deputy Chief Executive/Director General Designate
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EXECUTIVE SUMMARY

Conducting research is a complex process that involves many steps and a range of competencies (see Figure 1). The purpose of this guidebook is to help HSCPs navigate these steps effectively. To this end, it boasts contributions from esteemed researchers from various fields in health and social care who share their knowledge on a range of topics.

The reader is taken on a journey from the initial steps in research such as formulating research designs, applying for research funding and conducting a literature review, through to the ethical approval process, the analysis of both quantitative and qualitative data, and finally to the output and publication phase. How research is applied to the 'real world' is also addressed in articles that examine organisational issues surrounding research and the conducting of service evaluations within health settings. Although subsequent editions of the guidebook will address additional issues, the reader is provided with an overview of what it takes for health-orientated research to work, from start to finish.

Building on recommendations from the 2011 *Survey of the Research Activity, Skills and Training Needs of HSCPs in Ireland*, the guidebook aims to develop and enhance the research competencies of HSCPs and to ultimately progress a research appreciative culture whereby research is prioritised and used to drive service innovation. In the long term, the aspiration is that national and regional research infrastructures will be established so that research activities of

strategic priority within the health service can be driven. This is especially relevant in a time of limited resources.

This guidebook complements our inaugural HSCP annual research conference scheduled for February 2013, as organised by our recently established Research Sub-group of the HSCP Education and Development Advisory Group. This conference will include inter-disciplinary practise-based workshops, and oral and poster presentations. Alongside this, an online HSCP hub (that includes a research section) has been launched on the web portal HSELandD (profiled in Appendix B). Also profiled in the guidebook (in Appendix A) is the online health repository, 'Lenus' which is an important resource for HSCPs. All of these initiatives aim to inspire HSCPs to increase their research activity so that together we can drive evidenced-based practice and make real changes in the delivery of our health and social care services.

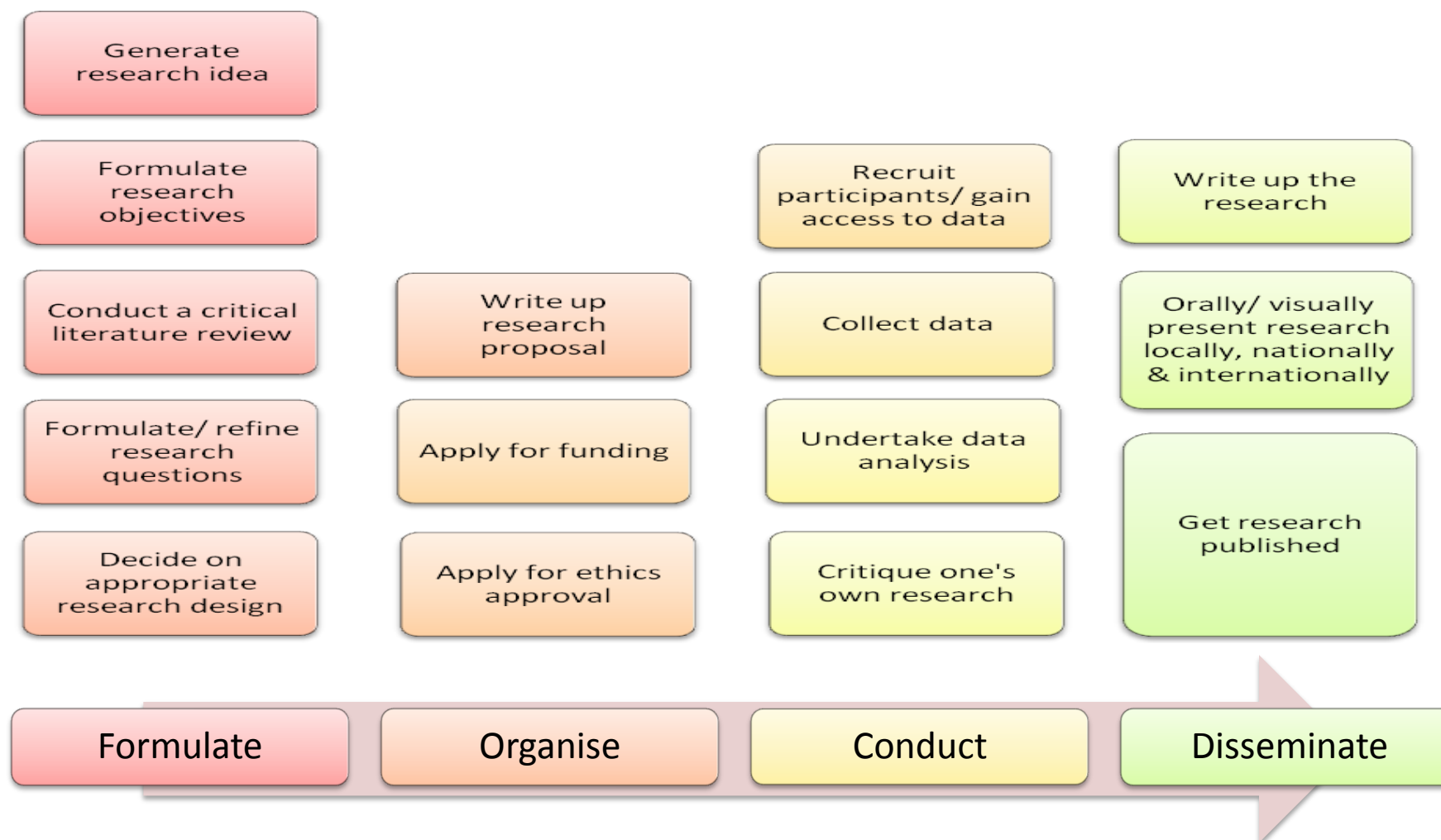


Figure1. The steps involved in conducting research.¹

We wish to thank Conal Twomey (Research Assistant, Roscommon Health Service Area, HSE West) for producing this figure.

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HOW TO APPLY FOR RESEARCH FUNDING

MOLLY BYRNE

Introduction – Why do research?

Research is essential to ensure that the services provided by health and social care professionals (HSCPs) are evidence based and cost effective. In a recent survey of research activity, skills and training needs of HSCPs in Ireland, respondents identified that one of the primary barriers to conducting research was a lack of skill and knowledge in the area of applying for research funding (McHugh & Byrne, 2011). The aim of this article is to provide some advice to assist HSCPs to secure research funding.

Choose your area of interest

The first step is to select your area of interest and to come up with some research ideas. This will ideally be dictated by the area you work in. HSCPs often have good clinical experience, which ideally places them to identify good research ideas. Once you have selected your broad area, you then should refine your research question by reviewing the literature and finding out what is already known in the area. The key goal to your literature review is to identify a gap, which your research can fill.

Select and know your funding agency

Once you have decided on your research focus, then you need to select your funding agency. A recent summary of research funding opportunities in Ireland has been published (Waldron & Byrne, 2011). The Health Research Board (www.hrb.ie) is the principal funder of health related research in Ireland. They focus particularly on population health science, patient oriented research and health services research. They have published a strategic plan for 2010-2014, which highlights their priority areas of research (Health Research Board, 2009). The Department of Education and Science provides funding for health related research to the Higher Education Authority and to the Irish Research Council for the Humanities and Social Sciences (IRCHSS <http://www.irchss.ie/>) and the Irish Research Council for Science, Engineering and Technology (IRCSET <http://ircset.ie/>). These bodies focus primarily on post graduate and post doctoral fellowships. Many Irish universities also offer research funding opportunities to support postgraduate research; information is available on university websites.

European health research funding is available as part of the 7th EU Framework Programme: (FP7; <http://www.fp7ireland.com/>). The Wellcome Trust funds biomedical research in the Republic of Ireland, under the auspices of the SFI-HRB-Wellcome Trust Biomedical Research Partnership (<http://www.wellcome.ac.uk/>).

Many registered charities are members of the Medical Research Charities Group (MRCG <http://www.mrcg.ie/>) and

are committed to supporting research in their specific areas. For example, the following organisations provide research funding:

- Irish Cancer Society (<http://www.cancer.ie/research/>),
- Irish Heart Foundation (http://www.irishheart.ie/iopen24/-t-13_41.html)
- Diabetes Federation of Ireland (<http://www.diabetes.ie/>).

If you are interested in conducting research in a particular disease area, you should check if there is ring-fenced money available through the relevant charity organisation. 'Genio' (<http://genio.ie>) fund research projects in the areas of disability and social inclusion.

Regardless of where you are seeking funding, the key thing is to choose your funder carefully and to know exactly what they want. It is always a good idea to speak to somebody within the funding organisation to check that your project idea fits within their agency priorities and remit. Once you have decided on the funding agency, it is critical to get all the information available of the funding call. Thoroughly read the application form, the application guidelines, FAQs, terms & conditions and any other relevant documentation. The importance of following instructions given by the funders cannot be overemphasised: if you ignore these, your application is likely to be rejected before it reaches the review process.

A primary aim for the Health Research Board is to increase the number of clinicians and health professionals conducting research (Health Research Board, 2009). The Health

Research Board acknowledges that health professionals working in the Health Services may have fewer opportunities for research training, less research support available and less time to engage in research than their counterparts working in universities. However, the Health Research Board believes that the engagement of health professionals in research is essential to strengthen the evidence base in health and social care. Therefore, the Health Research Board has a number of funding calls specifically targeting health professionals, such as HRB Clinician Scientist Award, Clinical Research Training Fellowships in Nursing and Midwifery, HRB-SFI Translational Research Awards and Research Training Fellowships for Healthcare Professionals.

What makes a successful funding proposal?

A good research idea is the first step to a good funding proposal. You need to convince the reviewers that your proposed research is important and novel. Ideally your proposal should be creative and exciting. Your proposal should include a clear and realistic methodology, and the entire application should be well written and focused. When competition for funding is tight, it is often the presentation of the funding proposal which will determine which good research ideas get funded and which do not.

The visual impression of your funding proposal is very important. Clear headings and as much white space as possible make the proposal seem less dense and easier to read – remember, most reviewers will read your application on a computer screen so these measures greatly increase readability. Reviewers should be easily able to find important

sections of your application, so organise your sections in a logical way and clearly label them. If your research design is complex, it may be useful to create a diagram or graphic to represent the various steps.

You should write your proposal as if you are speaking to an 'informed stranger'. If you work in a highly specialist area, reviewers of your proposal may not be experts in your precise field. You should avoid unnecessary specialist terminology or jargon, and should clearly explain aspects of your proposal which may not be accessible to non-experts in your area.

Often, grant applications are organised under standard headings. These are usually:

1. Summary/abstract

This is the first section the reviewers will read, and sets the tone for the whole application. It is usually the last section written and it is worth spending time on it. It should be clear, strong and detailed enough so that the reviewer has a good idea of what you're proposing from the outset. It should also convince the reviewers of the importance of your research and its potential application.

2. Background/literature review with references

This should be a structured critical review of the literature, logically organised to lead the reviewer to the gap(s) in the literature and your proposed research question. The literature review should be comprehensive and include all significant research in the area with the most up-to-date references available. It is possible that experts in the area

may be reviewing your application, therefore it is important not to miss critical references. If you have conducted previous research in the area, it is important to build this into your literature review and clearly outline how you are planning to develop this research. It is important to be balanced in your review: don't misrepresent literature in an attempt to sway the reviewer, as bias will be obvious to an informed reviewer. Make sure when listing your references that they are in the correct format and are accurately cited.

3. Statement of study aims and objectives

The study aim is a statement of what you want to achieve overall in your research. The objectives are specific steps to be taken to achieve your aim. Your aims and objectives should be clear, realistic and achievable. It is important that they fit together (i.e. your objectives really should achieve your aim) and logically follow on from the gap(s) in the literature you have identified. To allow the reviewers to understand the remainder of your proposal, this section is critical. Objectives or research goals as bulleted lists are much easier to digest than blocks of text.

4. Proposed methodology: including design, participants, data, procedures, and statistical techniques

This section is often the longest one in the proposal. The research methods you describe should relate directly to your objectives. Ensure that you accurately describe the design of your research. Provide as much detail as possible about your participants: the population (e.g. all people with depression in Ireland); the sampling frame (all patients in general practice with a diagnosis of depression); the sample (a random sample

of patients in general practice with a diagnosis of depression selected from a nationally representative sample of general practices). You should provide detail about your sample characteristics, including sample size and how this has been calculated. Participant exclusion and inclusion criteria should be specified and justified.

Pre-empt challenges and difficulties which you are likely to encounter in your research. This reassures reviewers that you are realistic and prepared to deal with setbacks. If you have a particularly hard-to-access population, successfully completing a pilot study of participant recruitment will assuage reviewer concerns that your project is untenable. Describe in detail what data you plan to collect (with references for standardised measures) and what interventions or procedures you plan to use. Again, indicating alternatives and justifying your selection shows that you are informed and have given some thought to your decisions. A general rule of thumb for this section is to identify the potential pitfalls before the reviewer can!

One of the most common flaws in funding proposals is that the applicants do not seek statistical advice to write the application. Many research proposals should have a statistician as a core member of the research team. Many universities now have a Research Support Centres (for example the HRB funded Clinical Research Facility at NUI, Galway), where you can get advice on accessing statistical support. Your research proposal should include a detailed plan for data analysis.

5. *Study team (usually principal investigator, co-applicants and collaborators)*

A funding proposal always has a principal investigator, who leads the application and takes ultimate responsibility for the application and, if funded, the research project. Usually, a proposal will also have co-applicants, who are core members of the study team and who will support the principal investigator in writing the application and conducting the research. Often, a proposal will also have collaborators, who are more marginally involved in the research, and who usually bring a specific set of skills which can assist the research team. You are likely to be asked to describe your plan for project management and governance. The principal investigator always has ultimate responsibility for the research, and can be supported by other team members by a project management committee, a study steering committee and a scientific advisory committee. Check with your funding agency to see if they have requirements about committees and their constitution. You are also required to indicate what proportion of time each applicant will be able to devote to the project (e.g., a co-applicant may promise to commit 2.5% of their time to the project, whereas a principal investigator may be expected to commit 5%). Time commitments indicated should be realistic in light of other work and responsibilities.

It is important to identify what expertise is required to successfully conduct your research and demonstrate that your research team can provide what is needed. You need to convince reviewers that you and your collaborators are qualified to conduct the research, by explicitly detailing all *relevant* expertise and skills within the research team (be

selective, don't just list *all* their skills and experience, otherwise the relevant bits get lost in a sea of irrelevant information). Remember, you may consider it obvious that your research team is excellent and the best people for the job, but you need to *persuade* the reviewers that this is the case by providing concrete examples of their appropriateness and the complementarity of their skills. If you and your collaborators have already published research in a particular area, you are much more likely to be successful in obtaining research funding in the same area.

Often, collaborators need to sign an agreement form, so find out well in advance if this is the case to ensure all forms are ready when submitting your application. The Health Research Board and other funding bodies are becoming increasingly concerned that research findings can be successfully translated into practice; therefore it is advisable to involve key stakeholders from policy and practice domains in your funding proposal. If possible, you should invite such people to join your study steering committee. A letter of support from key stakeholders to include with your application is often a strong indicator that you are capable of engaging with the relevant parties to ensure the results of your research will be put to good use.

6. Potential benefits and applications of your research

In this section you need to convince the reviewer that the output from your research is likely to further the mission of the funding organisation. You need to show that your research is likely to have an impact. For example, if you are testing an intervention for improving educational outcomes

among children with learning disabilities, you need to be able to show that the findings from your research will actually have the potential to impact on practice in this area. Also, make your research as pragmatic as is scientifically possible, for example, the inclusion of a cost effectiveness analysis in your research can greatly enhance the chances of a successful intervention being adopted into practice. To guarantee that your research will impact on practice, you need to develop a plan for disseminating research findings to service providers and communities.

7. Budget

Researchers often find the budget a challenging aspect of a funding application. It is worth trying to get support from an experienced research funding applicant or a research accountant (most universities have research accountants working in their research offices) to complete this section if possible. The funders are likely to provide detailed instructions on this section (e.g., salary scales to be used, guidelines on inclusion of pension and related salary costs) and these should be followed exactly. Budgets often include the following sections: salary and related costs; student fees and stipends; research equipment; consumables (e.g. paper, phone costs, printing questionnaires); and travel and dissemination (including research related travel and travel to conferences/events to disseminate research findings). You should think of all the possible costs to your project and ensure they are included in the budget. It is important to find out how much of an overhead your organisation will take from your budget: universities will commonly take around 30%, but health services usually require less. All costs need to be

justified, so be clear about why you are asking for a specific amount (for example, if you are budgeting for a post-doctoral researcher, you need to justify why a researcher is required at this level, and why a less qualified person would not be suitable for the job).

An example of a research funding proposal budget can be seen in Table 1. In this study, the applicant was proposing that a post doctoral researcher and a PhD student would be employed to conduct the research.

8. Gantt chart

The Gantt chart is a diagrammatic representation of your research work plan. Remember to include all steps on the Gantt chart, such as applying for research ethical approval and recruiting research personnel. It is also a good idea to map key outputs into the Gantt chart, as an output focused application is reassuring for reviewers.

An example of a Gantt chart for inclusion in a funding proposal can be seen in Table 2.

Table 1: An example of a budget within a research funding proposal.

	year 1	year 2	year 3	
Salary				
Post doctoral researcher, point 1, Post doctorate researcher scale, as per IUA	37,750.00	37,750.00	37,750.00	113250
Employers PRSI				
Research associate PRSI	4058	4058	4058	12174
Employers Pension contribution	0	0	0	0
Research associate pension	0	0	0	0
Student stipend				
PhD student	16000	16000	16000	48000
Student Fees				
PhD student (Faculty of Arts, 2008/2009 rates)	4275	4275	4275	12825
Running costs - Consumables				
2 x Dell Latitude E641 laptops at E740 each plus 21% VAT	1790	0	0	1790
School letters (stationary, postage, photocopying etc)	1000	0	0	1000
Parent questionnaire postage and reminders	2000	0	0	2000
Telephone costs	500	500	500	1500
Printing questionnaires/Full report	2500	0	1750	4250
Costs associated with pilot intervention, including data collection tools	0	0	9000	9000
Running costs - travel				
Project related travel	2000	1000	1000	4000
Study steering group meetings (travel, room hire)	2300	1000	1000	4300
Travel/expenses reimbursement for stakeholders participating in intervention development meetings	0	0	1000	1000
Running costs - Other				
Statistical consultancy fees	2000	2000	2000	6000
Administrative support	2000	2000	2000	6000
Dissemination Costs				
Dissemination meetings nationally	0	1000	1000	2000
Conference (3 Irish/1 European)	800	800	3000	4600
Total before overhead	78,973.00	70,383.00	84,333.00	233689
Total before overhead minus student fees	72908	66108	80058	219074
Overhead at 30% of total (minus student fees and equipment)	21872.40	19832.40	24017.40	65722.20
Overall total with overhead	100845.4	90215.4	108350.4	299411.20

Table 2: An example of a Gantt chart mapping the timeframe of a proposed study within a research funding proposal.

	Month											
Project set up	1	2	3	4	5	6	7	8	9	10	11	12
Recruit research associate												
Recruit PhD student												
YEAR 1	1	2	3	4	5	6	7	8	9	10	11	12
Phase 1: PhD literature review and data collection preparation												
Research ethical application												
Prepare and pilot data collection materials												
Recruit and prepare schools for data collection												
Administer student and parent surveys												
School assessment: structured interviews with school principals and assessment of school infrastructure												
YEAR 2	1	2	3	4	5	6	7	8	9	10	11	12
Objective physical environment data collection (PhD student data collection)												
Data analysis from phase 1												
Phase 2: Intervention development & piloting												
YEAR 3	1	2	3	4	5	6	7	8	9	10	11	12
Phase 2: Intervention development & piloting (cont'd)												
PhD write-up												
Report preparation and study finding dissemination to key stakeholders												

Key outputs by end of year:

Year 1	<ul style="list-style-type: none"> University Research Ethics Committee Approval.
Year 2	<ul style="list-style-type: none"> Publication in peer reviewed journal of findings from Phase 1 Findings from Phase 1 presented at international and national conferences Publication of international comparisons from Phase 1 (with Australian comparison data).
Year 3	<ul style="list-style-type: none"> Following phase 2, a study report will be published specifying recommendations for policy development in this area, targeted at stakeholders in policy and practice. Application for financial support for full-scale implementation of the intervention in a controlled trial. PhD completed, and resulting papers for publication in peer reviewed journals.

Using theory in your funding proposal

Even if you are not explicitly stating a theoretical framework in your research plan, you have an implicit theory which is guiding the way you design and plan your research proposal (Herek, 2011). Your proposal will be stronger if you explicitly state your theory, and show how you are planning to measure the various constructs within the theory. This way, you will not only find out *if* something works, but you will be able to say something about *how* it works. Using theory in developing interventions is good scientific practice, as it shows you are not reinventing the wheel and it also allows findings to progress scientific knowledge in an area which can be generalised to other situations.

Make sure your research proposal is ethical

You should show an awareness of ethical issues in your proposal and address any potentially ethically challenging issues which may arise. These may include issues such as data confidentiality or participant consent. You should clearly outline how you plan to address these, as well as giving details about how you will obtain ethical approval for your research.

The 'Data protection Guidelines on research in the Health sector' produced by the Data Commissioner of Ireland in 2007 (<http://dataprotection.ie/>) should be consulted and referred to as the definitive guide to addressing ethical issues in relation to management of patient data in health services research.

Adding the finishing touches...

Make sure you have plenty of time before the submission deadline to review your application. Ideally, you should give your proposal to three people to read: (1) Someone with specialist knowledge in your research area, to check accuracy; (2) Someone without specialist knowledge in your research area, to check clarity; (3) Someone to proof read the whole application for spelling mistakes and grammatical errors. This person should also be able to advise on readability, clarity and layout.

If your organisation has a research officer, they may be willing to read your final application (indeed, they usually have to sign off on each application), and advise you on fine tuning your application. This person will be ideally placed to help you write the section on research supports within your organisation. Make sure you get all the necessary signatures from people within your organisation in plenty of time for submission before the deadline (usually applications should be signed by an Institutional Research Officer and a Research Accountant).

How are funding proposals reviewed?

Funding agencies differ in their review process, but usually applications will be sent to a number of peer reviewers with expertise in the area of research. Reviewers usually mark applications independently, using specific assessment criteria. They may then attend a review committee meeting, where applications are discussed and funding decisions finalised. With each funding call, assessment criteria are specified. For example, a funding call may allocate 40% of the marks for

the research proposal, 30% for the research team and 30% for the potential of the research to enhance health. You should find out the assessment criteria for your funding call and write your application with this in mind.

Some funding agencies ask for suggestions for reviewers for your application. Choose carefully: the reviewer should be someone you can rely on to engage with the review process and ideally you should suggest someone whose research you have cited in your application. Also, ensure that you provide their correct contact details.

Getting started...

If you have relatively little experience of research or applying for research funding, it is likely that the process sounds daunting. If you are a novice, the best thing you can do is to find a more experienced researcher working in your area and ask them to act as your research mentor. Ask your mentor (and others if you can) for copies of successful and unsuccessful grant applications which they have previously submitted. This is extremely useful in getting ideas about what makes a successful application.

A great first step is to be a collaborator on a research funding application. You are likely to have some unique skill or contribution to make to your mentor's research (for example, providing access to a client group or sharing ideas about potential interventions to be tested). By this process, you will have the opportunity to be part of a research team and take part in the process of applying for research funding, without the responsibilities associated with being a principal applicant.

This way you can build your skills, experience and confidence. Remember, very few researchers have all the skills required to complete a research project alone, so collaboration is key. You could also find out if there are early career awards or scholarships available – these are designed to support inexperienced researchers to build their expertise.

If you fail, then try again...

Competition for research funding can be stiff and, therefore, failure common. The Health Research Board, for example, funds an average of 25% of the funding applications they receive. For some funding calls, the proportion of funded applications is even lower. Usually, when a funding application has been unsuccessful (a gentler word than a failure!), the applicants will receive feedback from the reviewers. This feedback is precious - it allows you to assess just how close you were to success. If the feedback is damning, you may choose to park your research idea and move in another research direction. However, more usually, the reviews will be mixed, containing some praise and some concerns. You may choose to address some of the concerns and rewrite your funding proposal to submit to the next similar funding call, or to an alternative funding call. If you are resubmitting to the same funding agency, it is a great idea to outline the feedback which you have received and show how you have addressed these concerns in the revised application. Research funders love when their advice is taken on board. This process is likely to actually improve the quality of the research when you are (hopefully and finally) successful.

Conclusion

In summary, research is essential to provide a strong evidence base for health and social services. Services which are evidence based are more likely to be funded in times of retracting health spending. There is currently a move towards encouraging health and social care professionals to engage in research, and there are several targeted research funds available to support them. Grantsmanship involves several skills, all of which can be learned. Successful funding applications are written by strong research teams and ask important, novel research questions, which can be answered by the proposed research methodology. Grantsmanship is all about revising and re-revising your application to make it clearly written, focused, easy to read and understand, persuasive and accurate. The steps involved in applying for research funding are summarised in Figure 1.

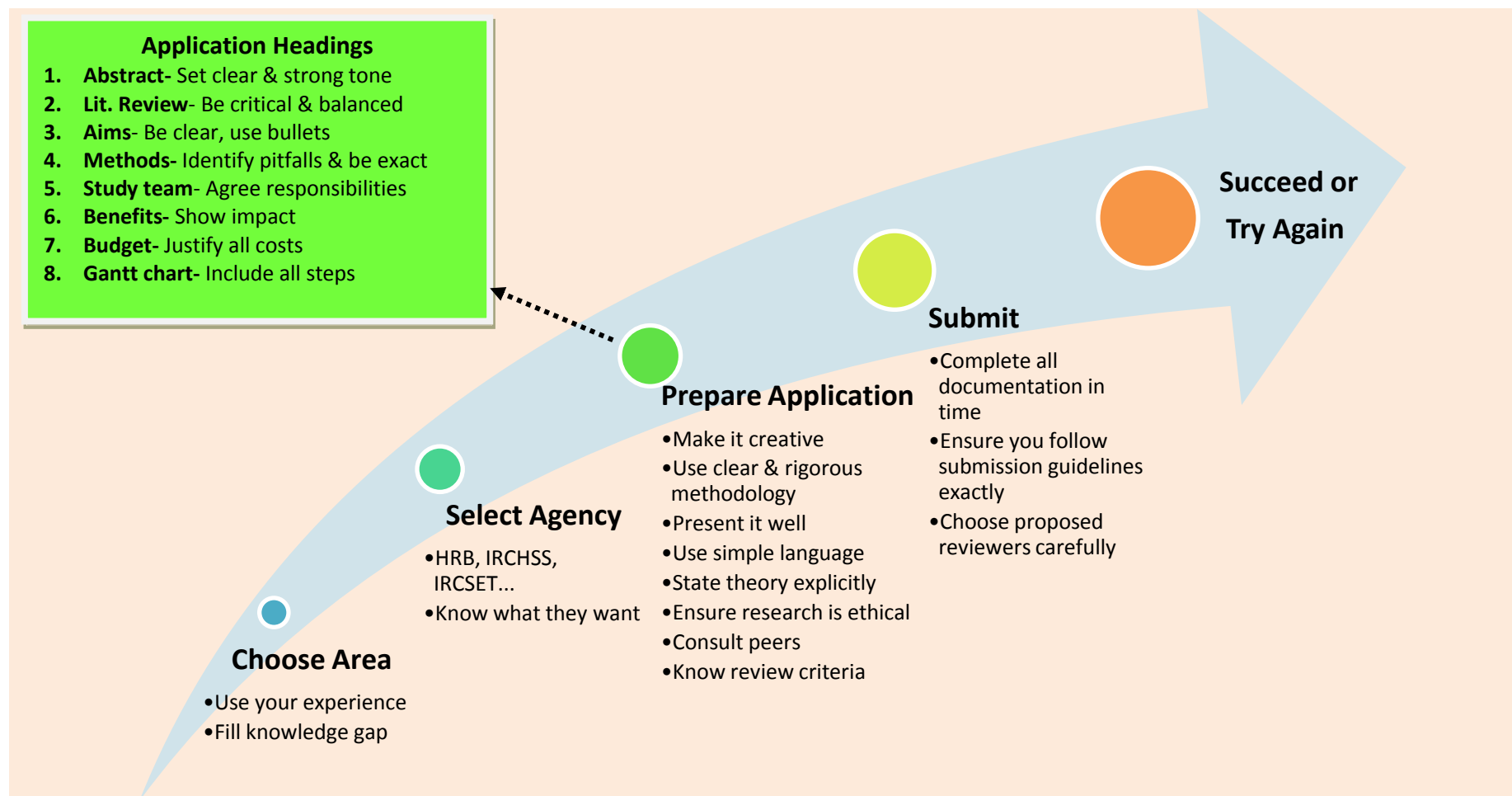


Figure 1: How to apply for research funding.²

² We wish to thank Conal Twomey (Research Assistant, Roscommon Health Service Area, HSE West) for producing this figure.

Recommended reading:

Document on the HRB website 'Preparing a good grant application': <http://www.hrb.ie/research-strategy-funding/how-to-apply/using-egrants/preparing-a-good-grant-application/>

Guidelines on the UCC Research Support Service website 'How to write a successful proposal': http://www.ucc.ie/research/rio/applying_funding/guide1.html

Crombie, I. K., & Du Ve Florey, C. (1998). *The pocket guide to grant applications: a handbook for health care research*. London: BMJ Books.

Pequegnat, W., Stover, E., & Boyce, C. A. (2011). *How to Write a Successful Research Grant Application: A Guide for Social and Behavioral Scientists* (2nd edition). London: Springer.

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HOW TO MATCH RESEARCH DESIGNS TO ORGANISATIONAL ISSUES IN HEALTH AND SOCIAL CARE

MANDY S. LEE

Abstract

This paper provides an overview of the key considerations we need to take into account when deciding on a suitable research design for addressing particular service issues in health and social care, with emphasis on the task of identifying research questions at each stage of the applied research process. I present a model for determining research rigour in health services research and a model for defining research questions for each stage of the applied research cycle, from problem specification through to outcome assessment. The paper concludes with a check-list of the key issues we need to consider when designing a health services research project.

Introduction

In an era of evidence-based healthcare, health and social care professionals (HSCPs) are increasingly required to rely on robust evidence to inform their decision-making, not only regarding their clinical practice, but also in the organisation

and delivery of their services. While the use of clinical evidence has long been part of standard practice in the work of HSCPs, many are not as familiar with the use of organisational research evidence as compared with the use of clinical evidence (Vella et al., 2000), or with conducting research themselves to address service priorities (McHugh & Byrne, 2011). This article aims to help professionals identify the most appropriate research designs in tackling different types of organisational issues in health and social care.

For healthcare decisions to be based on sound evidence, we need to first understand the criteria upon which the robustness of evidence is determined. It has long been recognised by health and social care researchers (Littlejohns & Chalkidou, 2006; Glasziou et al., 2004; Faulkner & Thomas, 2002) that the 'hierarchy of evidence' model used in distinguishing the quality of clinical evidence under the banner of 'evidence-based medicine', cannot be applied unproblematically and unreflexively to deal with organisational issues in health and social care.

Indeed, over the past decade researchers have increasingly raised our awareness regarding the danger of unexamined assumptions when we import one model of research into another, warning researchers of the peril in ignoring the complex social-embeddedness of healthcare in our aim to achieve evidence-based policy and practice (Lambert et al., 2006; Gambrill, 2006). Rather than assuming that evidence can be hierarchically ranked according to their robustness when addressing the huge diversity of research questions

when setting health service priorities, researchers have argued instead for a *typology* of evidence when determining the quality of different types of research evidence in answering particular kinds of research questions (Grypdonck, 2006; Petticrew & Roberts, 2003).

Matching Research Designs to Research Problems

In evidence-based *healthcare* rather than evidence-based medicine, research objectives go beyond simply determining the efficacy of an intervention (for which evidence from well-designed and executed randomised control trials [RCTs] remain the gold standard), but incorporate such myriad aims as needs analysis, service development, organisational change and stakeholder engagement, each of which require robust evidence that cannot be generated by RCTs alone.

This is especially true when it comes to questions concerning the management and organisation of health and social care services, which encompasses a wide variety of research problems. The ways these research problems are defined and specified however represent the very first starting point towards designing investigations that can generate robust data in answer to the study aims. Rigour is defined not so much by the type of evidence that a study generates, but is determined by the *degree of fitness* between each component of a research design, from research objectives and research questions, through to research outputs (i.e. data) and outcomes (i.e. implications). Figure 1 below provides a graphical overview of the levels of consideration we need to

apply in determining the robustness of a particular research design in health services research.

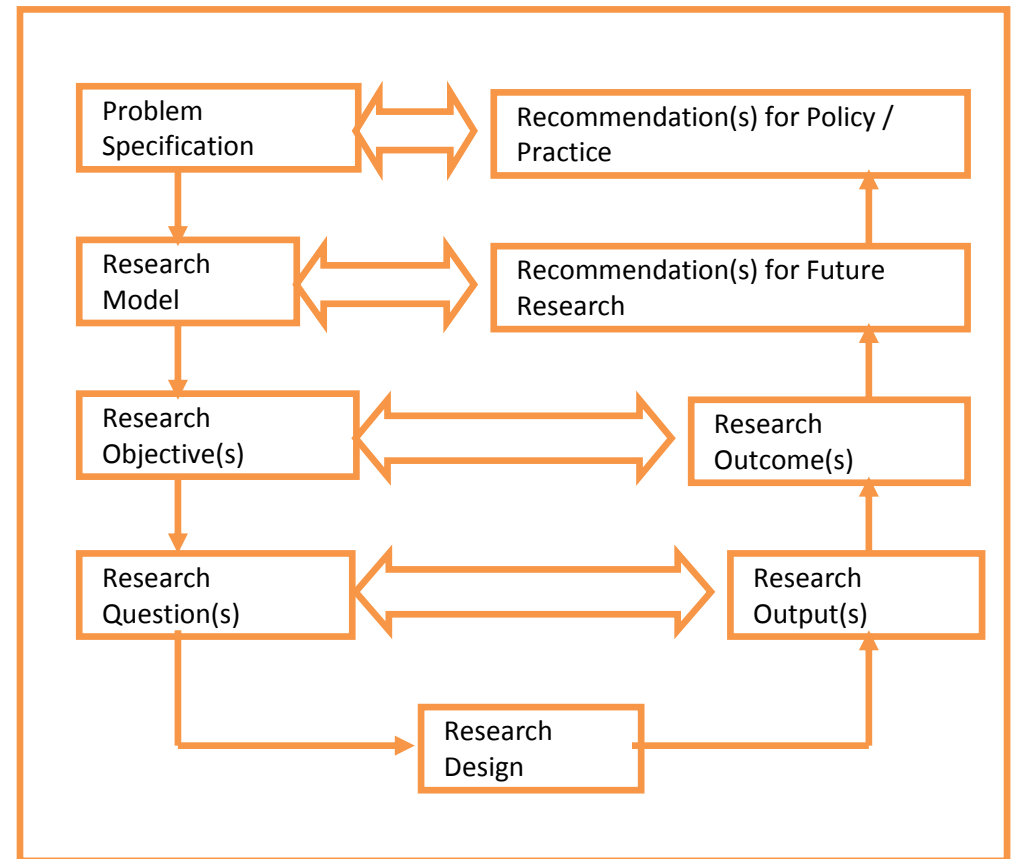


Figure 1. Ensuring rigour in matching research designs to research problems

Figure 1 illustrates how, for a given research design to be considered fit for purpose, there must be logical linkages between its components at each level of formulation of the research project, so that the means chosen are appropriate to the specified ends. Seen in this light, the type of research design being chosen is not the key determinant of robustness at all, but only in its ability to generate appropriate answers for a given research question.

At the most basic level, the way a research problem is defined must align with the intended nature of policy or practice that the research is expected to contribute towards. This is not to say that a researcher makes an *a priori* judgement on policy recommendations; rather, the researcher needs to understand what *kind* of policy or practice is at stake, so as to ensure the way the research problem is framed actually matches up with policy or practice goals. For example, it would neither be helpful nor appropriate to generate evidence on staff retention in a service experiencing high staff turnover, if the problem is actually framed as one of staff recruitment. Whilst recruitment and retention may well be inter-linked problems, or different aspects of the same problem (i.e. inadequate staffing levels); they are not the same issue, and investigating recruitment issues when one is hoping to resolve retention problems would mean that the generated evidence will never be valid given the overall aim of the research, no matter what research design is used and how competently the study was executed.

Even when we have correctly identified the content of the issue to be addressed by research, we must also be careful in determining the nature of the problem, so as not to confuse, for instance, a retention issue that warrants exploration (e.g. why do people choose to leave the service?), versus one that requires description (e.g. how many people are actually leaving, which categories of staff are experiencing high turnover and at what rate compared to others?), or indeed one that demands evaluation (e.g. to what extent is high staff turnover impacting on service provision, does a newly-developed staff retention initiative actually help to reduce staff turnover?, etc.).

The particular research model – descriptive, exploratory, evaluative, etc. – that we adopt for a particular study should be determined by the nature of the problem we are hoping to address, given the time and resource constraints of a specific project. Figure 2 below illustrates the five key research models that are relevant to health services researchers.

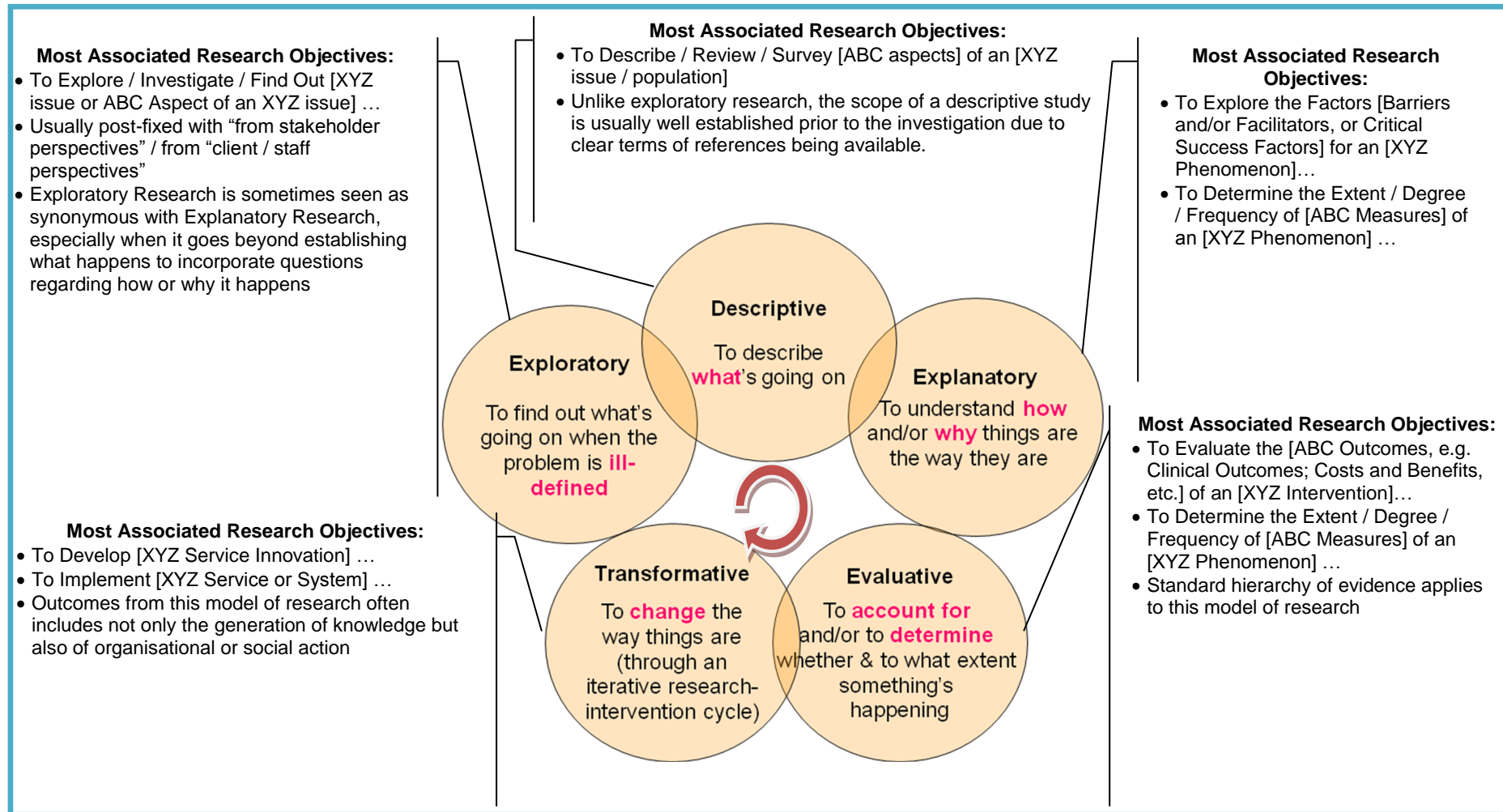


Figure 2. Different research models, what they aim to achieve, and their most associated research objectives.

Knowing the research model(s) we are going to employ for a particular study also helps us to relate our findings to the extant literature and identify gaps for further investigation by future researchers. In a topic area where previous researchers have already established robust evidence relating to the extent, nature, and causes of a problem, it will be more useful for new investigators to conduct transformative research focusing on service development, or to evaluate new interventions designed to tackle various aspects of the issue. On the other hand, when a new phenomenon arises such that there is only anecdotal evidence but no systematic knowledge regarding the topic, it would be a more fruitful use of resources to first establish the extent and nature of the phenomenon through exploratory or descriptive research, before trying to test out interventions to address an issue that may be little understood, or may in any event turn out to be a transient or local issue.

In fact, the maturity of a research topic can be gauged in part by examining the type of research investigations that have been conducted so far. On a nascent topic on which little is known, lots of exploratory research will need to be done to determine the nature and the extent of the problem, often using qualitative methods because of the importance of understanding the issue from those who have first-hand experiences of it. At this stage, it is often inappropriate to use quantitative measures (unless the attributes of the phenomenon are inherently quantitative), because we do not yet have a sense of what might be considered appropriate definitions of terms – in fact, often the key research output is

to arrive at operational definitions of concepts – and so the numbers we obtain from conducting surveys at this stage may often mislead rather than enlighten.

Yet once the broad parameters of a phenomenon are known, we can proceed with more systematic descriptive and explanatory research and to begin exploring the causes that underpin such a phenomenon. Here, both qualitative and quantitative research play crucial roles, and the choice of methodology often depends on the level of analysis desired (i.e. the higher the level of analysis, the more quantitative the research design becomes in order to allow for objective comparisons; while lower levels of analysis requires interpretive understanding to include contextual information relating to the particular team or organisation).

When there is a corpus of evidence on the nature, extent, and factors relating to a research topic, the ground is ripe for evaluative research that examines the efficacy of interventions designed to address various aspects of the issue. In answering the 'What works?' question, standard hierarchy of evidence applies and experimental research that could objectively and unambiguously isolate the cause-effect link are extremely valuable in providing evidence-based recommendations for population-level interventions. National guidelines can be safely established based on such evaluative evidence, whether we are concerned with clinical or non-clinical outcomes (e.g. social gains), as long as objective, validated measures are used.

However, evaluation is not the end of the research cycle, especially when it comes to human, as opposed to robotic, organisations. The question that naturally follows 'What works?' is 'How do we implement?' The recent rise of 'Implementation Science' is testament to the importance of this 'How to' question in health and social care, which is best addressed through action-oriented research methodologies, allowing organisational members to engage in an iterative cycle of action and reflection (or intervention-and-further-research), not only to ensure that the intervention is adapted to local needs, but to also engender local ownership of the problem as well as the solution.

Therefore, unlike clinical research, which predominantly focuses on measuring outcomes at the population level, health services research not only concerns itself with a macro level of analysis (e.g. the performance of the health system as a whole), but also at the meso (organisation or service) and the micro (team or individual) levels, depending on the specific aims of a study. No one single study, however well-resourced, can answer all the questions arising from a particular organisational issue. Therefore one must be very clear about the particular aspect of a problem that is being tackled in a research project and at what level of analysis. A clearly delimited research study with unambiguous terms of references about the issue domain as well as level(s) of analysis, will generate much more robust evidence than a study with poorly identified aims and ill-defined parameters, even if the latter has a much larger scope and has more resources thrown into it.

As can be surmised from the above discussions, even though sample size is often cited as one of the key factors in determining the robustness of a study, this is not necessarily the case at all in research that tries to address questions relating to service development or problem specification. When addressing issues of organisational change, it may sometimes be far more appropriate to adopt small sample qualitative research to gauge the varying interests and perceptions of different stakeholder groups, as a large survey which may yield only superficial evidence due to the lack of appropriate measures on people's tacit assumptions and beliefs.

Depending on time and resources available, sometimes it makes sense to tackle a number of issues together within a single programme of research (e.g. questions relating to both staff recruitment and retention, if the overall aim is to address severe staff shortages), or to address different aspects of the same issue in one project (e.g. not only exploring the causes for staff turnover but also to develop approaches addressing them). Whether we are focusing on one single issue or several, or one aspect of an issue or several, the key concern remains the same: we need to be very clear what precise issue(s) we wish to address through the use of research, and why.

Specifying research objectives that outline clearly the content and nature of the issue domain to be investigated is thus the first and most crucial step in the design of a research study. It is through research objectives that we delimit the scope of

a research project, so that the outcomes of a study actually match up with its aims (and by 'outcomes' I mean the *implications* of study findings in general, rather than just the outcome measures of an evaluation). As can be seen in Figure 2, research objectives are best defined by using verbs that are clearly linked to a specific research model (e.g. 'to explore', 'to evaluate', 'to describe', 'to develop', etc.). Each specific aspect of the issue covered in an investigation needs to be identified as a distinct research objective; and each research objective should ideally be associated with at least one specific research question.

Determining Research Questions for Organisational Studies in Health and Social Care

We have seen how different research models (descriptive, exploratory, evaluative, etc.) are intimately linked to specific kinds of research objectives, and how these are in turn linked to specific kinds of research questions (what, why, how and to what extent, etc.). Accepting the fact that different kinds of questions exist in health and social care research is key to appreciating the reason why we cannot rely solely on a predefined hierarchy in determining the robustness of research evidence. While randomised control trials are indeed the 'gold standard' for answering questions of the 'Does it work?' variety, i.e. determining the efficacy of an intervention at the macro, population level; it is often unsuited to answering the 'How?' questions, especially in explaining phenomena that have already happened in the field (as opposed to those that can be experimentally-designed and controlled), and when that question is directed at the micro or

meso levels of a particular team or organisation, rather than the service as a whole³.

The type of research questions we ask also has a direct bearing on the type of research outputs – i.e. actual data – to be generated from a study. For instance, the 'why' question at the micro and meso levels requires *understanding* as a research output, encompassing contextual and subjective information in addition to objective data about the phenomenon (e.g. understanding why individuals leave their posts requires experiential information from departing staff as well as trend data on staff turnover). On the other hand, answering the 'why' question will not help us estimate the extent of a problem, which requires answers to 'What' questions (e.g. what categories of staff are experiencing high turnover, what is the attribution rate of the whole service in general and in specific disciplines, etc.).

The below model in Figure 3 may be useful when determining the kind of questions we should ask at each stage of the applied research cycle. It shows how the various stages of an applied research process, from problem specification, through intervention development, to outcome assessment, carry distinct types of research questions.

³ Antonakis et al. (2010) have also provided a thorough discussion as to the precise conditions under which it would be appropriate to use experimental methods to arrive at causal explanations for a phenomenon. The problem, as they see it, is that researchers are often careless about applying quasi-experimental reasoning for causal explanation when such explanations are not actually warranted given how the conditions of the field violated key design assumptions.

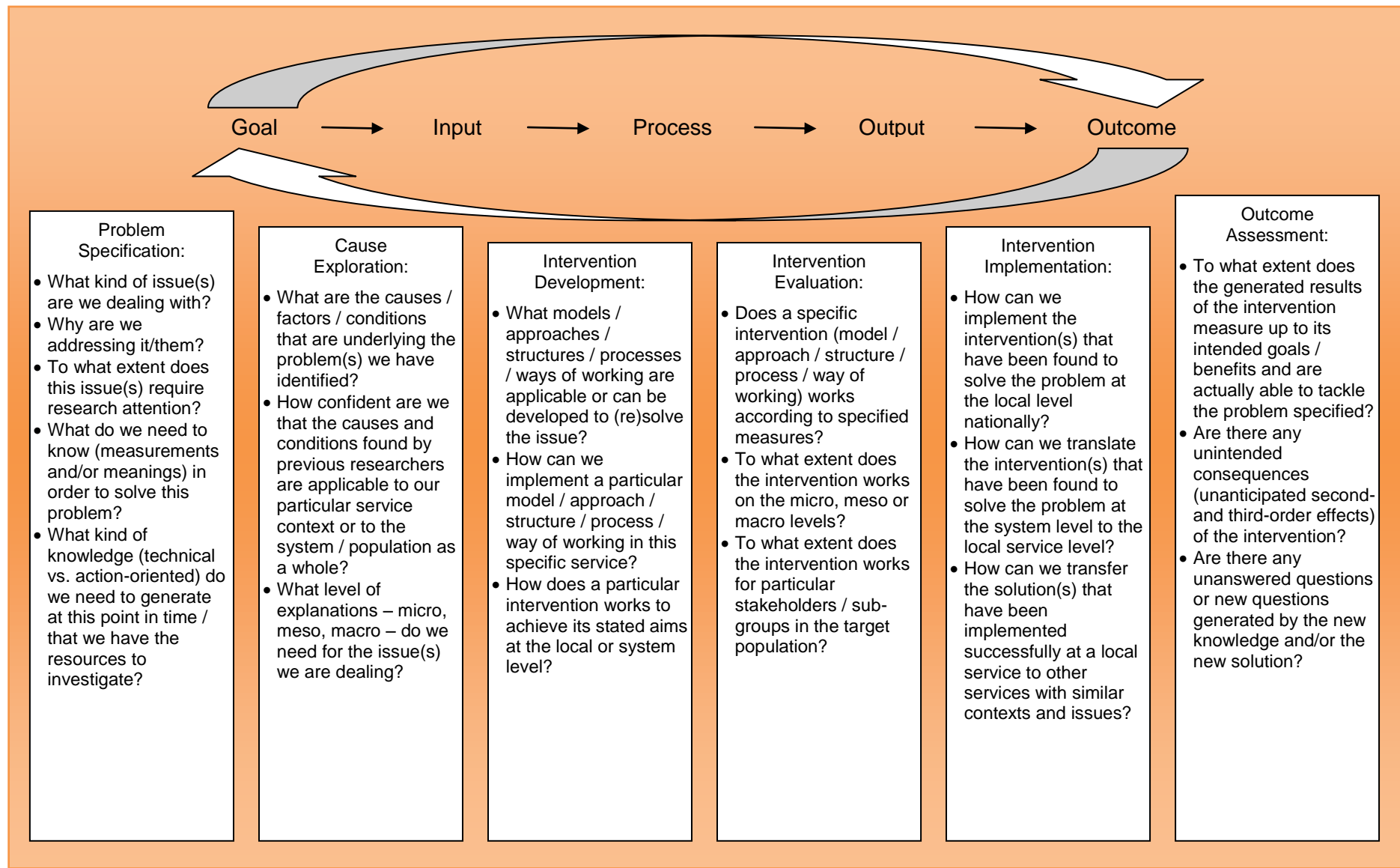


Figure 3. Identifying research questions at each stage of the applied research cycle.

1. *Problem specification*

How we conceptually frame and perceive an issue for research is often itself worthy of investigation (Alvesson & Sandberg, 2011). Problem specification is about setting the terms of reference for a particular research project. In applied research, how we define problems depends not only on what 'facts on the ground' there may be, but also on our mental models and value systems – in fact, it is our interpretation of these 'facts on the ground' that first gives rise to the identification of a problem. Therefore, specifying the content and the nature of a problem for investigation can often become political in a process that is meant, and often assumed to be, objective. As such, it is important to be clear about *why* we are researching into a particular issue, to make explicit those tacit assumptions that we inevitably hold in framing a particular organisational problem prior to research. It is thus at this initial stage of the research cycle that discussions with stakeholders and not just gatekeepers is extremely important, to help ensure our problem definition is not biased by a dominant perspective or the status quo.

When no established consensus exists amongst the range of stakeholders on the nature and/or content of the problem, it is precisely the occasion for using exploratory, participant-led research approaches, where the research question becomes that of finding out the different aspects of the phenomenon from stakeholders' perspectives, particularly from those groups that might have been previously marginalised. On the other hand, the parameters of a problem may be adequately-defined by previous researchers, but there may be

disagreements amongst stakeholders as to the extent of the problem happening in the local / Irish context, or only anecdotal evidence exists that point to the existence of the issue. In such scenarios, descriptive research that utilises objective measurements provides the most appropriate basis for informing decisions.

2. *Cause Exploration*

Once a phenomenon has been understood as to its nature or at least have its parameters (both indicators and extent) clearly specified, the next set of questions is concerned with exploring its causes and conditions, or what are referred to as 'antecedents' of a phenomenon. Factors underpinning an issue could be grouped according to whether they are enabling or disabling ('facilitators' or 'barriers'); or if they are primary or secondary causes; and/or by levels of analysis (e.g. individual-, team-, organisation-, and system-level factors). These could be explored qualitatively or quantitatively, depending on the level(s) of analysis desired.

Qualitative research designs may be appropriate when we are trying to find explanations for the phenomenon at the local level where contextual information is needed, and where we adopt the view that individuals are agents of organisational action, and that their experiential knowledge of the situation and their own interpretations of what is going on are important to account for how and why a problem occurred. On the other hand, at higher levels of analysis when explanations are sought that could explain variations at the population level, it would be more appropriate to explore

causal factors quantitatively using cross-sectional or time-series data, which help to uncover naturally occurring patterns of correlation and causation.

Experimental and quasi-experimental designs also play a crucial role at deriving causal explanations by testing hypotheses that researchers have developed regarding the causes of a phenomenon, which are theorised either inductively (from participants' accounts) or deductively (from extant literature). Here, referring to the work of previous researchers in terms of both evidence as well as theory base is important in guiding the direction of our own investigation, although we need to be quite discerning regarding the level of robustness of existing data, as well as degree of applicability of extant data to our focal population or service context.

Causal explanations that have been found in other settings using qualitative research cannot be applied to one's local service without judging the degree of transferability of insights given the existence of contextual similarity or lack thereof. Causal factors that have been quantitatively uncovered for one population cannot assume to automatically apply to another population without first determining their generalisability. Not only do we need to take into account a sample's representativeness of the underlying population, but in the case of international comparisons we also need to be cautious about the extent to which there is comparability across population profiles and history of health systems development.

3. *Intervention Development*

Where there is already a consensus on the issue to be tackled and indeed a body of literature established on the subject that gives robust evidence on its causes and conditions, the next set of research questions to be tackled are of the "how" and "what works" variety. Whilst intervention studies form the bulk of published health services research, unfortunately they are often poorly-designed in the sense that quasi-experimental research designs are assumed, by themselves, to be able to guarantee research rigour without considering the appropriateness of the design to the study aims. In many cases, even the design itself is suspect (e.g. the hundreds of post-intervention studies that are conducted without baseline and without controls).

This state of affairs may be due to health service providers skipping Stage 2 in terms of causal exploration, and jumping straight into intervention development based on little more than a good hunch. Instead of examining how an intervention works to address the causes of an issue, some researchers may decide to 'evaluate' an intervention using little more than a perfunctory survey with a few outcome measures, as a 'quick-and-dirty' method of determining whether the proposed intervention works. Not only will such studies be of little value from the standpoint of research design (since post-test intervention studies without baseline or control tell us little about whether an intervention really works even at the local level), but there is also a lack of deliberation regarding how the proposed intervention is meant to address the causes of a problem, and whether the

indicators used to measure the intervention's efficacy are indeed appropriate.

While there is nothing wrong with piloting interventions based on a good hunch derived from one's close observations of practice; however, these studies should only be regarded as proofs-of-concept exercises even when quasi-experimental designs are used. A case-control study may be sufficient for determining whether an approach makes a difference in outcomes at the local level, but without randomisation to weed out setting-specific or subject-specific factors, it cannot claim to generate evidence that will have generalisability for the system as a whole.

Moreover, without considering how an intervention actually generates the observed beneficial outcomes, there is little sense in applying the same intervention elsewhere when one cannot assume that the 'intervention' is indeed what was behind the changes in the observed outcomes. Positive outcomes may simply be down to the team being given an opportunity for reflective, collaborative practice in the course of designing and implementing the intervention, which create spaces for more open communication among team members. Improved outcomes may therefore not necessarily be observed in other services where professionals are not given similar room for reflective practice, but are simply told to implement 'best practice guidelines' that are based at best on incomplete evidence.

Thus, in answering the 'How' question of intervention development, approaches that combine both intervention

evaluation and reflective practice may be the most appropriate.

4. *Intervention Evaluation*

Measurement is one of the principal activities of science, and is of vital concern across a broad range of social research contexts (DeVellis, 2003). In health services research, this is especially true for studies that are aimed to evaluate interventions. If issue specification, antecedents and processes are all adequately addressed by the extant evidence base, we can then begin evaluative investigations into which approach best tackles the problem by comparing the efficiency and efficacy of different interventions at different levels of analysis. Here, experimental and quasi-experimental designs are the most appropriate in providing robust objective evidence we need for systemic evaluation, and so randomised control trials remain the 'gold standard' in giving us the answer regarding 'what works'.

However, the validity and reliability of evidence does not depend only on the research design chosen, but also on the appropriateness of indicators used to measure the service's outputs and outcomes. Whilst quasi- and true experimental designs such as RCTs, pre- and post-test intervention studies etc. (see Fulop et al., 2001 for a brief overview) provide the rigour needed for summative evaluations of health services interventions, the indicators used to determine the efficacy of an intervention must also be subject to scrutiny. Output indicators should not be confused with outcome indicators, even though politicians and the media often conflate them for self-serving rhetorical purposes, as a way to show that

'something is being done' rather than demonstrate that what is being done is indeed beneficial to the patients and the general public.

Outputs are service-related indicators, which are broken down into those that measure efficiency (e.g. number of care episodes processed, waiting time, length-of-stay, etc.); versus those that measure effectiveness, (e.g. number of appropriate referrals, etc., see Dlugacz, 2006 for a discussion of different types of measures used in evaluating service quality in healthcare). Outcomes, on the other hand, are patient- and population-specific (e.g. user-related/defined indicators, e.g. mortality, quality-of-life indicators such as QALYs, patient satisfaction, etc.).

Whilst a service may be efficiently-run in terms of its service outputs, it does not necessarily mean the system is *effective* in terms of patient satisfaction and population health outcomes (e.g. a high volume of throughput of acute care patients in factory-style clinical service lines may not be indicative of the well-being of individual patients nor of the population as a whole). In defining our research questions regarding 'what works', we must never confuse or conflate service-related outputs with outcome measures relevant to citizens' health and social well-being. There may be a tendency to become blinkered by the efficient functioning of the health service (i.e. targets-driven healthcare) and lose sight of the well-being of the end-users themselves (i.e. person- and people-centred healthcare). Where health and social gains and/or user-defined outcomes may be anticipated to differ for various groups of users/stakeholders, these

should be specified as part of the research questions so that appropriate research designs could be used to allow sub-group comparisons.

5. *Intervention Implementation*

Once a particular service intervention is shown to offer demonstrable benefits to a particular client group; or a particular teamwork model is shown to result in tangible positive outcomes at the team and individual levels, the natural desire is to ensure the implementation of such interventions across the system as a whole. Here, we again encounter the 'How' question, but instead of dealing with the 'How to develop' question under Intervention Development, we are concerned with questions regarding 'How to implement' – both for top-down implementation of system-wide guidelines at the local level; as well as to translate local 'success stories' for bottom-up implementation nationally or even internationally.

Unfortunately, both intervention *development* as well as intervention *implementation* are often neglected in the health services research literature, which is dominated by intervention evaluation studies answering the 'What works' question⁴. This situation is ironic, as service development and implementation are key issues in health services management, and these are best addressed by organisational research with a *process* focus. Process research pays

⁴ There are also stepwise evaluation research methodologies, popular within operations management research, which are concerned with investigating the efficacy of an organisational intervention at each step of its implementation. I group these methodologies under the banner of 'process research'.

attention to the mechanism of how something – whether an organisation as a whole or a particular model of operation – works to achieve its aims. It involves research questions regarding not only the objective steps involved in any work processes (tasks and activities performed, resources expended, personnel required, etc.), but also those questions that relate to the structure and culture of an organisation. We need to determine to what extent we require not just technical how-to knowledge, but also to translate said knowledge into meaningful action, and such implementation questions are best addressed by process research methodologies such as action research.

6. *Outcome Assessment*

No intervention takes place in a vacuum. Although we may be confident about the efficacy of an organisational intervention under experimental conditions (e.g. in RCTs), there will always be second- and third-order effects resulting from how such an intervention interacts with its surrounding social structure when implemented locally. Indeed, when an intervention has been implemented across the board such that it results in systemic change for the health and social care service as a whole, there will always be unintended consequences – both positive and negative – of organisational action that cannot be planned for *a priori*. Thus, once an intervention is introduced into a system, it behoves us to assess and re-assess its true consequences in the medium and long term, rather than assume that its outcomes will remain aligned with the original goals identified when it was first developed.

This is the reason why outcome assessments must be linked back to how we define and specify the problem back in Stage 1 of the applied research cycle. Unlike human biology, the underlying mechanisms of which may be relatively stable over centuries, organisational and social phenomena are comparatively fast changing, and we cannot assume that the knowledge gained about organisations – including health and social care services – even a few decades ago will still hold true for the present and future. Periodic assessments are therefore necessary not only of the outcomes of interventions, but also of our own ongoing needs and preferences, perceptions and beliefs. How we view the problem, our state of knowledge, indeed our social statuses and attributes, as well as structures and cultures, would have changed over time, and research must keep pace with the new questions that arise so that our theory and evidence base are continually updated to reflect such changes.

Conclusion

Regardless of which stage of the applied research cycle we are concerned with for a particular research project, in defining research questions we should always make reference to the overall goal of the applied research itself. Therefore, problem specification is always the primary determinant in any deliberation about the appropriateness of a particular research design. Research design then, is the means by which we find appropriate answers to particular research questions. In the context of applied research such as health services research, it is always aimed at generating evidence that can help us decide on policies and/or practices that

contribute towards specific health and/or social gains. In applied research, not only do we need to be cognisant of the type of knowledge being generated by a particular research design, but we also need to make explicit links to the kind of organisational actions it is aimed to achieve, as Figure 4 illustrates.

Research methodology should therefore always be seen for what it is – a means to a specified end. Rather than being led astray by fierce debates and polemics about the supposed superiority of one methodology over another (often in the context of so-called ‘paradigm wars’ in the methodological literature, see Morgan, 2007 for a summary review), we need to be pragmatic and choose research methods that are fit for our defined purpose. Instead of assuming that a ‘gold standard’ methodology such as RCT will by itself deliver ‘cast-iron’ evidence in health services research, we need to be critical about how well a particular methodology matches up with our research objectives for a specific project. Box 1 below summarises the considerations we need to take into account when choosing a research design appropriate for our particular purpose.

Box 1. Checklist for Matching Research Designs to Organisational Issues

To summarise, the questions we need to consider when choosing a research design, from both validity and feasibility/practicality perspectives, can be captured in the following:

1. *Research Objective* – Why are we doing this? Which specific issue we are trying to address through research? Do we need to explore the issue as to its parameters and/or its causes, or is it a question of developing, evaluating or implementing a solution aimed at solving the issue?
2. *Research Question* – What questions do we need to ask to achieve our specific research objective? (See Figure 2 on what questions are appropriate at which stage of the applied research cycle.)
3. *Research Sampling* – Which sources could give us the information we need to answer the Research Question?
 - a) Who can give us the information we need? (Target Participants); and/or
 - b) What can give us the information we need? (Databases and other Archival Materials)
4. *Feasibility* – How practical is it for us to get information from these sources?
 - a) Who are the gatekeepers or data controllers from whom we need to get permission to access the research sample?
 - b) What are the relevant ethical approval process and time-frames?
 - c) What are our resources (human, financial, technological) and time-frame for research completion?
5. *Critical Reflection* – Are our proposed means (Research Design) appropriate to the ends?
 - a) What are our intended research outputs (in terms of meanings or measurements)? Do they actually answer our research questions?
 - b) How well do our research outcomes (the implications arising from our findings) match with our stated research objectives?



Figure 4. Deriving action from knowledge

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HOW TO CONDUCT A LITERATURE REVIEW⁵

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AOIFE LAWTON

Introduction

A literature review provides a basis for consolidating research findings within a specific area into a cohesive document that gives a clear indication of current progress, limitations and future directions of the research stream. It allows both practitioners and researchers alike to keep abreast of the latest research findings (e.g., on evidence-based therapeutic interventions). The aim of this paper is to provide a practical overview of how to conduct and write-up a literature review. Further to discussing the practicalities of how to carry out a literature search, the structure and methodology of a review article are considered. Finally, the subjects of formatting and publication are examined.

⁵ This paper is largely based on 'Keary, E., Byrne, M. & Lawton, A. (2012). How to conduct a literature review. *The Irish Psychologist*, 38(9-10), 239-245' & has been reproduced with the permission of the Editor of the Irish Psychologist.

Questions to consider before you begin

1. *Who is your target audience?*

Having a clear idea for whom the paper is intended will help shape the style and content of the article. Hence, you need to decide who your target audience is. Is the review intended to influence senior managers who are involved in policy formation or implementation? Does it seek to influence senior operational managers as to how they may develop services or manage particular service provision challenges? Is the literature review aimed at influencing practitioners to work in a different way? Or its purpose could possibly be to champion service user perspectives.

2. *What publication do you intend to submit to?*

Determination of your target audience will influence what publication you are likely to submit to. Given the choice of psychology-related publications (see Table 1), it can be difficult to know where to begin in terms of submitting a literature review paper. If targeting members of a profession, that profession's newsletter or journal may be appropriate, even for high quality literature reviews that would most probably be accepted for higher status publications. Interestingly, if targeting senior health care managers, the ranking of a publication most likely will be considered secondary to being able to forward them a PDF copy of your published paper on a particular topic that is of interest to them. Hence, it may of benefit to choose a publication that most likely will accept your literature review submission in a timely manner.

If the purpose of your literature review is to add new knowledge to the existing literature base, you can ensure maximum effect by publishing in a journal with a high 'impact factor' (IF), especially one that your target audience holds in high esteem. The IF, a numeric value, is calculated each year by Thomson Scientific and is the average number of times papers in a journal have been cited in the previous 2 years (Dong, Loh, & Mondry, 2005). The higher a journal's IF, the greater its impact. Most academic libraries in Ireland have subscriptions to online resources such as Journal Citation Reports™ that gives the IF of journals in scientific and social science journals.

Another option is to consider publishing in an "open access" (OA) journal. Such journals make papers publicly, permanently and freely available. This means that your organisation or peers will not have to pay to access your paper when it is published. However, most OA journals require a standard article-processing charge. These fees may vary. A list of open access journals is available from the Directory of Open Access Journals (DOAJ) at <http://www.doaj.org>. You can search by subject and there are currently 53 journals in the area of psychiatry.⁶ There is clear evidence that free access increases the number of article downloads, although its impact on article citations is not clear (Davis & Walters, 2011).

If targeting a particular journal, you need to review its author submission guidelines. These detail the journal's content area

scope (e.g., psychotherapies, health services management) and the types of papers accepted (e.g., original papers, clinical case reports, brief research reports, review articles, perspective articles, historical papers, editorials, practice reviews, letters to the editor, book reviews). Some publications will prioritise and fast track original data papers, as they might shorter papers. So while details of the maximum acceptable length of each type of paper will also be typically profiled, it is advisable to use the minimum amount of words needed to write your paper.

While it is advisable to completely omit any formatting up until the final draft, the guidelines will also profile formatting requirements such as a title page, abstract (e.g., structured, unstructured), and key words, all of which may help future literature researchers. A common format for structured abstracts might include objectives, methods, results (or findings), and conclusions. Regarding referencing style, many psychology publications will adhere to the American Psychological Association (APA, 2009) style (i.e. alphabetised references), while other (typically medical) journals will require the Vancouver style where references are numbered in the order in which they appear in the text (International Committee of Medical Journal Editors, 1991). If the latter, unless you have software (e.g., Endnote) that automatically orders references numerically, it is best to use the APA style referencing for successive drafts and then convert to the Vancouver style for the final or submission draft of your paper. Guidelines will also provide details of how to present

⁶ <http://www.doaj.org> Accessed 09.10.11

tables and figures, the inclusion of which can provide a better balance to a paper and hence better engage readers.

Table 1. Some psychology and mental health-related publications.

Publication	Description
Annual Review of Psychology	Highest ranking psychology journal (IF=18.288)*
Annual Review of Clinical Psychology	Third highest ranking psychology journal (IF=9.743)*
Clinical Psychology Forum	The official monthly publication of the Division of Clinical Psychology on the British Psychological Society (BPS)
Irish Journal of Psychological Medicine	Ireland's only peer-reviewed psychiatry journal
Irish Psychiatrist	The official journal of the College of Psychiatry of Ireland
Psychological Bulletin	Second highest ranking psychology journal (IF=11.975)*
Psychology Review	Fourth highest ranking psychology journal (IF=7.784)*
Psychotherapy and Psychosomatics	Fifth highest ranking psychology journal (IF=6.000)*
The Irish Journal of Psychology	The peer-reviewed academic journal of The Psychological Society of Ireland (PSI)
The Irish Psychologist	The official newsletter of the PSI
The Psychologist	The monthly publication of the BPS

* Source: Journal Citation Reports;
http://www.rug.nl/bibliotheek/locaties/bibcmb/instructies_auteurs/top_25/index; Accessed 06.10.11

3. What is the timeframe in which you want to publish your review?

Engaging with the relatively lengthy submission / peer review / integration of feedback / resubmission process of peer-reviewed journals will invariably add to the quality of your published literature review and will heighten its status, especially among the academic community. However, if for example you want to influence policy formulation, your review will need to be published while the issue you are focusing on is still in the spotlight. Hence, if you want to publish in a peer-reviewed journal, you need to remain 'ahead of the curve' in anticipating 'hot' topics. This means being able to identify topics that will be of interest to policy makers and starting your literature review possibly up to a minimum of one year before the issue becomes a pressing concern for policy makers (and/or service providers). An alternative and easier option would be to submit to a non-peer reviewed and lower status publication where the submission process will most likely be quicker.

Creating and maintaining momentum in any research project is important. Hence, you (and other contributors) need to ring-fence protected time to ensure that subsequent drafts of your paper are produced and reviewed in a timely manner so that your projected submission deadline is met. It can be difficult to re-energise your literature review project if it stagnates or progress slows considerably.

4. Decide on your research team

Rather than going solo and conducting a literature review by yourself, this process and the quality of your final paper will probably benefit by asking others with knowledge of the content area to work with you. For example, an academic and/or a clinician with a working knowledge of a particular topic could provide guidance on how to conduct your literature search and to structure initial drafts of your paper, and review penultimate drafts of it. To avoid confusion, advance agreement is required regarding who is noted as first and subsequent authors. A good rule of thumb is to order authors, not based on seniority, but on the amount of work inputted into producing the literature review. It will also be important for you as lead author to drive the literature review process. You need to ensure that each contributor follows through in a timely manner on their input and to ensure multiple inputs are coordinated. To keep track of various drafts, it is advisable to insert the date of each as a header. You can track changes made to drafts by asking all collaborators to use the 'Reviewing' function in Microsoft Office Word, and then accept or reject these changes as appropriate. This function also facilitates the posting of comments throughout the text by each contributor.

Literature search

How to conduct a literature search

Before starting to search the literature, it is useful to spend a few minutes thinking about your search. To do this, begin by writing down your research question. Next highlight the subjects or keywords that are part of your question. Now

think about synonyms for these subjects. You also need to consider different spellings. The literature will contain both American and European spellings (e.g., 'Pediatric' and 'Paediatric'). To capture both sets of spellings you can use truncation and wildcards in your search. Each database differs in the symbol that it uses. For example, you could search for 'P*diatric' that would capture both variations of spellings. Alternatively databases are indexed using a thesaurus. You can search for your subject by clicking on the thesaurus and it will return the preferred heading – this will include alternate spellings. The Cochrane Library, PubMed and Medline all use the MeSH (Medical Subject Headings) thesaurus. Thesauri in other databases vary. PsycINFO uses subject headings from the Thesaurus of Psychological Index Terms. This controlled vocabulary, also known as 'index terms' or 'descriptors', is used by APA's indexers to describe the content of a document. Consult a librarian for further advice on other databases.

Table 2 outlines some literature searching methods. While many will be familiar with the use of Boolean operators, the 'PICO' method is promoted by organisations such as the Centre for Evidence-Based Medicine (CEBM) in Oxford. More evidence-based tools and tips for searching are available from the CEBM website. Developed by librarians at the King's Fund Library, the 'ECLIPSE' method may be useful for health management and policy searches (Wildridge & Bell, 2002).

Databases

You need access to databases in order to conduct a literature search. Within the HSE, databases can be accessed through the HSE Library (www.hselibrary.ie). You need an 'Athens' account to login to the online library. To set up one, go to the HSE Library page, click on the area in which you work and then go to 'Set up Athens account' on the left hand side of the page. Within 1-3 days your account will be activated. All staff directly employed by the HSE are eligible to apply for an Athens account – licences do not currently cover HSE-funded agencies and voluntary hospitals. In the disability sector there are consortia of intellectual disability and allied libraries called 'IDAAL' that have an online library available at <http://www.idaal.com>. The voluntary hospitals are linked to academic institutions with libraries onsite. Regardless of which Irish organisation you are working for, HSE libraries throughout Ireland operate an "open door" policy whereby you will be assisted with your research and given onsite access to libraries and online facilities. There are over 2,500 titles and over 50 databases that can be accessed from the HSE Athens Library. The full list of the databases can be seen by clicking on 'A to Z Journal List' and by going into the index. Table 3 lists some of these, including some that are specific to mental health.

Table 2. Some literature searching methods.

Searching	Some specifics of...
Boolean operators	<ul style="list-style-type: none"> • 'AND' – Narrows a search, making it more specific. • 'OR' – Broadens a search, making it more general. • 'NOT' – e.g., 'anxiety NOT depression' will return results of articles about anxiety only.
'PICO' method	<p>Break down the search into its components parts:</p> <ul style="list-style-type: none"> • P – Population / Problem • I – Intervention / Indicator • C – Comparator • O – Outcome
'ECLIPSE' method	<ul style="list-style-type: none"> • E (Expectation) – What does the search requester want the information for? • C (Client Group); L (Location); I (Impact) – What is the change in the service, if any, that is being looked for? What would constitute success? How is this being measured? • P (Professionals); S (Service) – For which service are you looking for information? For example, outpatient services, nurse-led clinics, intermediate care?

Google Scholar is also a useful point of reference when searching for literature. It is a web search engine that indexes many peer-reviewed journals across many disciplines. It provides a broader range of articles than the standard academic databases. However, not all publishers are accessible via Google Scholar which is why it is important to conduct a database search. There is minimal information about its content, such as publisher lists, journal lists, time span or the disciplinary distribution of records (Kousha & Thelwall, 2007). Although it provides an easy interface to search and locate literature, no serious researcher interested in current medical information or practice excellence would rely on it for up-to-date information (Vine, 2006). Many more of databases therein may be irrelevant, but it is quick, easy to use and can sometimes present an article you may have missed in your database search. To use it, go into Google, click the 'more' tab on the top the page and select 'Scholar'. Next select 'Advanced Scholar Search'. This will give you advanced search options where you can exclude terms 'without the words', search for phrases 'with the exact phrase', search for authors or within publications. There are more tips available from the 'Advanced Search Tips' link.

Google Scholar can also be accessed from the home page on the HSE library MyAthens website once you are logged into your Athens account. Like the other databases, you can also limit the time frame of your search. This means that you could limit the search to more recent literature (e.g. since 2006). To do this type your search term into Google Scholar and when the results appear, there will be a tab saying

'anytime' under the search box. This will allow you to select literature that has been published since a specific year and remove older articles from your search result. When selecting the papers to be included in your review, you might want to ensure that included studies have a reliable methodology (see Table 4) and add useful knowledge to the research area.

Another area that may be relevant when doing a literature review is to include a search for "grey literature". Grey literature is "that which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers" (New Frontiers, 1999). OA repositories, websites of professional groupings, clinical trial registries, theses and conference proceedings all constitute grey literature. The difficulty is that this type of research is tricky to locate. Generally, searching individual websites and using search engines (e.g., Google) will yield meaningful results.

In addition to the many journals and databases available, there are two unique online resources. Managed by the HSE, Lenus (<http://www.lenus.ie/hse/>) is an Irish internet-based repository for health care information (Lawton & Byrne, 2012). The materials hosted on this OA site include Irish publications on clinical research and evaluations of official policy. Another resource within the HSE is HSELand (www.hseland.ie). While this relatively new website is intended to support the training and development of staff working in the Irish health sector, it has the capacity to become an effective means of promoting and accessing

Table 3. Some databases that can be accessed through the HSE library.

Database	Description
American Journal of Psychiatry	<ul style="list-style-type: none"> The official journal of the American Psychiatric Association
CINAHL	<ul style="list-style-type: none"> Otherwise known as 'Cumulative Index to Nursing and Allied Health Literature' Full text of over 770 journals in the area of nursing and allied health.
Cochrane Library	<ul style="list-style-type: none"> Journals on mental health based on current empirical evidence for various audiences including researchers, policy makers, carers and service users
Dynamed*	<ul style="list-style-type: none"> Shown to be the most current point of care reference tool (Banzi et al., 2011)
Embase*	<ul style="list-style-type: none"> Coverage of over 7,500 journals. Largely a pharmaceutical database. Useful for toxicological research, adverse drug reactions information & clinical trial studies.
Lenus	<ul style="list-style-type: none"> An Irish repository for health care information and publications
OVID Nursing & Mental Health Collections	<ul style="list-style-type: none"> Database access to over 20 nursing & mental health journals
PsycINFO	<ul style="list-style-type: none"> Indexes papers from a range of peer-reviewed journals in the behavioural sciences and mental health Contains over 3 million records and summaries dating as far back as the 1600s
PsycARTICLES*	<ul style="list-style-type: none"> Fulltext companion to PsycINFO
The Journals of the Royal College of Psychiatrists	<ul style="list-style-type: none"> The British Journal of Psychiatry, The Psychiatrist, and Advances of Psychiatric Treatment
PubMed	<ul style="list-style-type: none"> Citations for biomedical literature from MEDLINE, life science journals, and online books
Psychology & Behavioural Science	<ul style="list-style-type: none"> Fulltext coverage of over 400 journals covering topics in emotional and behavioural characteristics, psychiatry & psychology, mental processes, anthropology, and observational & experimental methods
Uptodate*	<ul style="list-style-type: none"> Point of care clinical tool with evidence-based summaries.

*Databases may not be available in all HSE areas.

current and historic health care documents and publications (McHugh, Byrne, & Liston, 2012).

Literature review write-up

Introduction

The introduction of a literature review needs to be kept as concise as possible and use a minimum amount of words. It is advisable to start with a broader focus and become narrower and more specific as the introduction advances. The aims and objectives of the article also need to be laid out, as does the relevance of the review to the particular field. Is the review filling any gaps in extant literature or is it introducing something new (e.g., a theoretical model or an intervention)?

Body of text

The body of the text needs to be divided up into subsections that hit the key points as laid out in the introduction. Each subsection can be titled so that the reader can more easily locate specific information if they require it. When profiling the referenced studies, specific information needs to be supplied. Each piece of information can be used to assess the quality of located studies and their findings. This information can also indicate what future research can be undertaken to expand upon current findings. It may be useful to produce a table with all the studies included in the review. The headings of the table may vary depending on the publication source and the type of review being conducted but the key ones may include the author and year, the design of the study

(with the sample size and type included), the measures used in the study, and the findings (see Table 4).

Discussion

The structure of the discussion and/or conclusion section of a literature review is nearly the opposite of the introduction section in that the focus needs to be quite specific to begin with and then it can broaden out. Begin with information specific to the review and then expand upon how your review can be used to conduct further research in the related area. It needs to begin with a summary of the information presented in the body of the text. Further to outlining your findings, if some of these are inconsistent or incongruent with previous findings, you need to try to provide a viable explanation for such discrepancies. At this point, you may present a new theory or hypothesis to explain your findings. You then need to consider the limitations of your review. It is useful to provide some limitations. However, to demonstrate that these are not sufficient to discredit the value of your review, you also need to highlight the strengths of your review. Finally, on foot of your findings, it is worth considering the direction that future research in the area under study needs to take.

Table 4. Dimensions of research papers that need to be considered.

Information	
Sample size and type	<ul style="list-style-type: none"> • The sample size of the study needs to be given – were there a sufficient number of participants? • Can the findings of the study be generalised to a wider population?
Type of design	<ul style="list-style-type: none"> • The type of design used will have implications for how the findings can be assessed – was it an experimental, observational or longitudinal study?
Measures	<ul style="list-style-type: none"> • What measures were used – self-report, implicit, other report or observational measures? • The names and purpose of these measures need to be detailed. For example, the Beck Depression Inventory II (BDI-II) is a screening questionnaire for low mood
Setting	<ul style="list-style-type: none"> • Laboratory or in Applied setting? Confounding variables can be controlled within the laboratory but how applicable are laboratory results in real-life settings?
Effect size	<ul style="list-style-type: none"> • Measures the strength of a relationship between two variables and is a means by which the effectiveness of different studies can be compared.
Strengths and limitations	<ul style="list-style-type: none"> • Did the paper adequately achieve its aim? Was the methodology suitable? Did it produce findings that can be applied within the field?
Other potential methodological features	<ul style="list-style-type: none"> • Comparison group; Random assignment; Diagnostic homogeneity; Not on medication; Pre- and post-treatment assessment; Follow-up assessment at three months or later; Service user and significant other self-report; Therapist and researcher ratings; Assessment of clinical significance; Use of experienced therapists; Manualised treatments; Provision of therapy supervision; Monitoring of treatment integrity

Meta-analysis

You might consider conducting a meta-analysis if you want to compare the effectiveness of two or more clinical interventions in your literature review (e.g., CBT versus Psychoanalysis versus a Waiting List control condition). This statistical technique is commonly used to assess the performance and efficiency of health care interventions. It can provide information about the mean and variance of study populations, effect size variability and differences in moderator variables. Consult Field and Gillett (2010) for in-depth instructions of how to conduct a meta-analysis.

Publishing

Adhere to a publishing strategy

Haslam and Laham (2010) conducted a longitudinal study in which they evaluated the impact of two types of academic publishing strategies. They tracked the progression of 85 social psychology doctoral students for 10 years. The first strategy was named 'quality' that was defined as the mean IF and article impact score. The second was 'quantity' which was the mean number of articles published. They found that the impact of the scientist in her/his field was associated more with the quantity of articles s/he had published than the quality of articles s/he had published. They concluded that it is as important, if not more important, to publish frequently as it is to publish in higher ranked journals. They also indicated that if a scientist restricts his/her work to high IF journals, doing so may limit the amount of publications s/he achieves and could possibly damage their long-term career

prospects. Similarly, rather than papers being rejected due to their lack of quality, Hewlett (2002) posited that many rejections are due to a 'manuscript-journal mismatch' in which the submitted paper does not fit the perspective of the journal. Accordingly, submitting to a speciality journal may increase your chances of getting published.

Co-authorship within the field of psychology became increasingly common in the later decades of the twentieth century and is now considered quite typical (Cronin, Shaw, & La Barre, 2003). Indeed, research collaboration can be a fruitful research and publishing strategy within scientific disciplines and can lead to increased productivity in terms of number of papers published, time saving and increased access to limited resources (Francescheta & Costantinib, 2010). Despite potential associated disadvantages (e.g., divergent perspectives on what should be included and who should receive the most credit; Sonnenwald, 2007), collaboration is a useful consideration before commencing work on your paper.

The politics of publishing

In a widely-cited commentary on publishing in the field of science, Lawrence (2003) wrote that editors in highly rated journals may favour the 'safe and fashionable' articles over original pieces. This, he wrote, is due to the highly stressful environment in which editors have limited time to adequately read and review all the submissions they receive. This, he suggested, can lead to innovative research being rejected as editors are sometimes unwilling to risk publishing unfamiliar

and unprecedented papers. He also suggested that increasingly busy editors can find it difficult to review specialised research and therefore more editorial power is put into the hands of the reviewers. The latter could then lead to a situation where a scientist abuses the reviewing role by holding up a competitor or by having a favourable bias towards a known colleague. Lawrence also suggested that there is pressure upon authors themselves as they are being judged more on where they publish than the quality of their work. His editorial goes on to examine the means by which such politics can be remedied, the key to which is to diminish the fixation upon journal ratings. He also suggested that authors publish more in OA websites and specialised journals.

In another article reviewing publication procedures, Schwartz and Zamboanga (2005) presented a range of methods by which the editorial and reviewing processes of journals can be improved. These included editors giving authors feedback on their papers independent of the reviewers. They also advised that reviewers should not review the same paper more than once.

Resubmissions

Your submission may evoke at least 5 categories of response: Accept; Accept with revision; Revise and resubmit; Reject and resubmit; and Reject. Anything but a complete rejection can be seen as positive (Hewlett, 2002). It is advisable to embrace and integrate reviewer feedback, and resubmit your revised paper in a timely manner, complete with a separate document outlining your response to each point of reviewer

feedback (e.g., how you have integrated the feedback, or your rationale for not doing so).

Conclusion

A literature review can summarise a large volume of research within an area and provide a means to deliver a persuasive, evidence-based argument. It can be used to influence a variety of people, including managers, practitioners or service users. While conducting each literature review will present unique challenges, the process of doing so is similar for all reviews (see Figure 1). Before you begin your review, you need to determine your target audience. As it will influence the format and content of your paper, you need to know the type of publication you are writing for. If you are planning to impact policy making, you need to schedule projected publication while the targeted issue is still under consideration. You may consider working in collaboration with others.

There are many ways in which you can increase the range and specificity of your literature search. Being familiar with search methodologies can be useful in creating a stock of relevant literature for your review. It is also beneficial to use multiple databases when conducting your search. When writing up your review, a general introduction to the topic area needs to precede a consideration of more specific extant literature, and the key aims and objectives of the article. You need to review the identified research studies in the body of the text (see Table 4). Your discussion needs to consider

your findings, the limitations of your review and any suggestions for future research.

Formulated from the outset, you need to adhere to your publishing strategy, be it to submit to low or high IF publications. While both are open to biased or political interference, the process of submitting (e.g., peer review) to most publications will add to the quality of your paper and a better resource for colleagues and others



Figure 1. Summary of steps to conducting a literature review.⁷

⁷ We wish to thank Conal Twomey (Research Assistant, Roscommon Health Service Area, HSE West) for producing this figure.

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HOW TO DESIGN QUANTITATIVE RESEARCH IN APPLIED SETTINGS

SUZANNE GUERIN

Introduction

Research is a significant part of psychology, with the scientist-practitioner model being a key part of the discipline (Gelso, 1993). Landridge (2004, p. 4) defines research as “the systematic study of some topic in order to find answers to questions” and research in applied settings has numerous roles, including answering questions, informing practice and evaluating the impact of change. The growth of evidence-based practice (EBP) has increased the interest in research conducted in educational and health settings. EBP aims to bring together the knowledge or evidence gained from the process of systematic or scientific research and the process of decision making in practice (Sackett, Rosenberg, Muir Gray, Haynes & Richardson, 1996).

One of the strengths of research as a method of answering questions and informing practice is its focus on an empirical approach, one that is informed by gathering data on phenomena. This is in contrast to other methods of answering questions such as intuition, appealing to authority or logical argument (Hughes, 1999). However, it is important to recognise that these four methods of answering questions come together in the research process (see Figure 1).

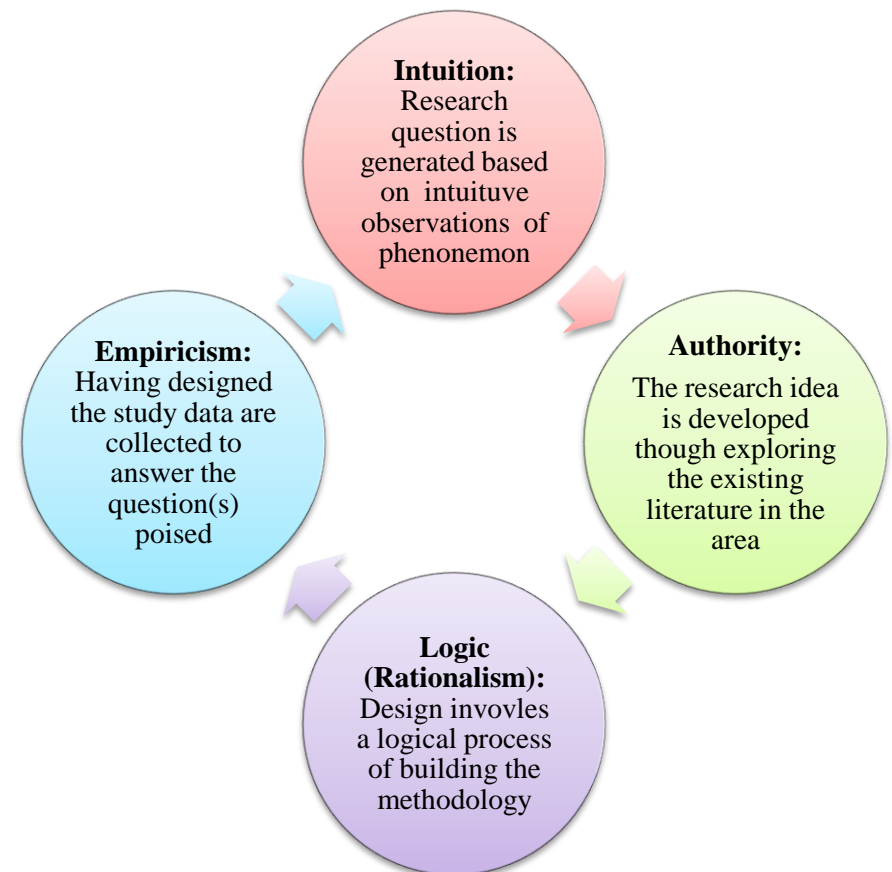


Figure 1. The interaction of intuition, authority, logic and empiricism in research.

Consider the example of a staff member in an intellectual disability organisation, who observes that service users’ behaviour appear to be influenced by levels of stress among the staff. In an effort to understand this issue she reviews

the existing literature, identifies that variables such as stress and job satisfaction have been associated with behaviour, designs a study to be conducted within her organisation whereby data are gathered on key variables. The data are then analysed to identify any relationships between the variables. If a relationship is identified, this may provide staff with an insight into their understanding of service users' behaviour.

Carlson, Martin and Buskist (2004) capture the research process in a little more detail, as outlined in Figure 2 below. Mapping the two models, the stage of consulting the literature (or appealing to authority) would parallel the development of the research questions in Phase 2. A central aspect of both models is that the process is continuous, and the outcomes of one research study (when disseminated) will drive further research in that area.

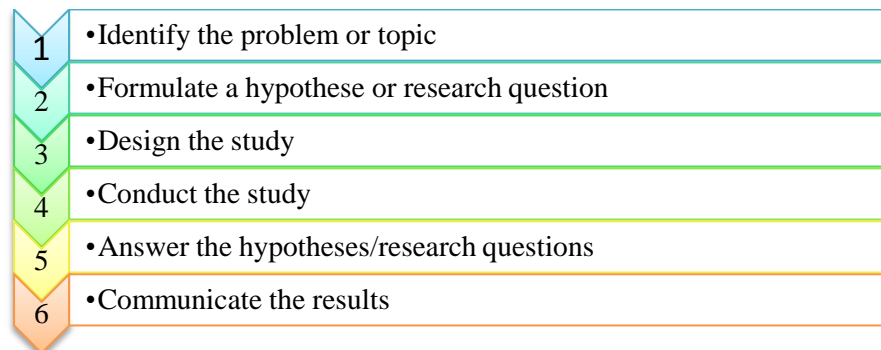


Figure 2. Flowchart of the general research process (Carlson et al., 2004).

The example above captures a typical research project in an applied setting. However research is not a unitary construct and instead is best considered as representing a continuum of practice that incorporates qualitative, quantitative and mixed methods research (Johnson, Onwuegbuzie, & Turner, 2007). Given that numerous text books have attempted to capture the nature of research methods in psychology and other health and social care professions this article will not attempt to capture the breadth of the area. Therefore the focus of this piece is on quantitative research design, focusing particularly on the nature of, challenges to, and solutions for quantitative research design in applied settings.

Understanding quantitative research design

One of the simplest definitions of quantitative research is offered by Landridge (2004, p. 13), who defines it as "research that concerns the quantity or measurement of some phenomenon." A more developed definition is presented by Carlson et al. (2004) who defines it as "the methodological approach which regards human behaviour as measurable and subject to statistical analysis" (p. 815). Interestingly, in his book *Real World Research*, Colin Robson (2002) frames this approach as using fixed designs, stressing the structured and pre-set nature of this type of research

The key characteristics of this approach includes that it aims to produce findings that are unaffected by external influences, that it is more concerned with being able to predict behaviours rather than simply describing them, and that it uses structured methods and experimentation. Quantitative

research adopts a nomothetic approach to understanding, whereby the “objective is to establish broad generalisations and ‘universal laws’ that apply to a wide population of organisms” (Shaughnessy, Zeichmeister, & Zeichmeister, 2000, p. 21). Therefore a central feature is the extent to which findings from the research can be generalised to other groups. However conducting research in an applied setting brings with it additional characteristics, including an emphasis on the real world which, according to Robson (2002) includes a focus on solving problems, an awareness of service users’ needs, and dealing with time and cost constraints.

Taking these characteristics into consideration, the process of research design (whether qualitative, mixed methods or quantitative) involves making decisions about specific elements of the research process. The next section will consider some of these decisions along with the challenges (and related solutions) researchers may face.

The Process of Quantitative Design

Individuals working in applied settings may choose to use quantitative research methods for a number of reasons. There is a view that quantitative research is more rigorous and valid than other methods, given its perception as scientific. Quantitative research is more prevalent in disciplines such as medicine, psychology and education (Alise & Teddlie, 2010) and anecdotally individuals are more likely to have been predominantly exposed to quantitative methods during their initial training, particularly those who have been working in applied settings for a number of years. Finally,

there may be a dominant view with the setting itself (e.g., a health service) that quantitative research is more appropriate. However it is essential that the key driver in the design process is the research question posed by the researcher, and when the question is quantitative in nature the design will follow.

Having selected a quantitative approach, the researcher must make decisions about the specific elements of the research, and Figure 3 outlines the key elements to be considered. In order to effectively build the design, the researcher must reflect on how the research question influences choice in each of these areas. Also despite the focus of this article on quantitative research, there are many possible choices at each stage. In order to reflect on these choices, each of these stages will now be considered in turn.

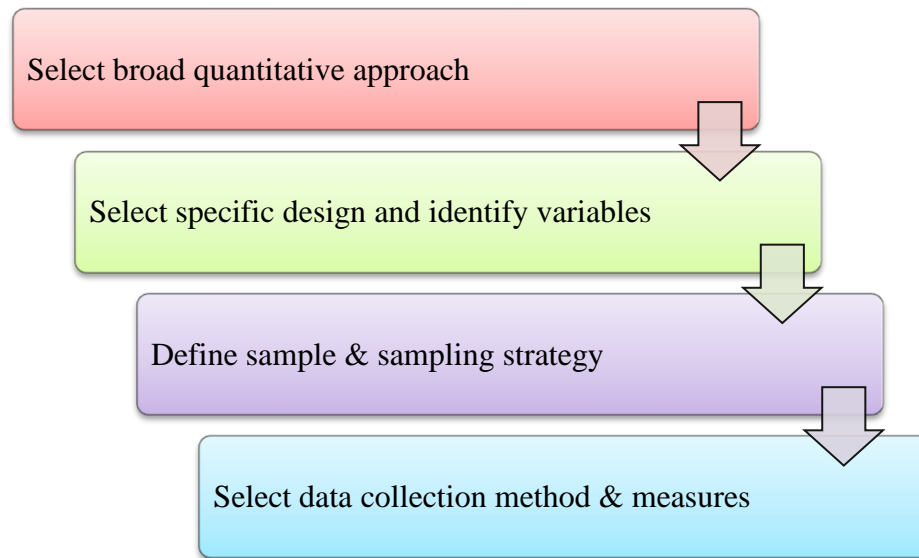


Figure 3. Stages of quantitative research design.

Selecting the broad quantitative approach

Quantitative research is often associated with the scientific or experimental method, which typically is seen to involve experiments conducted in laboratory settings (or otherwise controlled settings) whereby conditions are arranged or manipulated to examine the phenomenon the researcher is interested in (Shaughnessy, Zechmeister & Zechmeister, 2009). However quantitative research is not limited to traditional experiments, particularly when the research is being conducted in an applied setting (or 'in the field'). In addition to experimental designs, quantitative research may include quasi-experimental designs where comparisons are conducted between naturally occurring groups or conditions

(as opposed to artificially manipulated ones) and non-experimental designs, which include correlational and survey designs (see Shaughnessy et al. for a more detailed discussion of these broad approaches).

Pure experimental designs can be challenging to implement in an applied setting, and are more associated with initial laboratory testing. However the increased focus on evaluation in health and education has resulted in a growing interest in conducting randomised controlled trials in these contexts (Craig et al., 2009). A randomised controlled trial (RCT) is a design incorporating multiple conditions, sometimes called 'arms', which generally reflect different interventions or treatments. Participants are randomly assigned to one of these arms in order to test or compare the impact of the different conditions (treatments). The use of random assignment produces comparable groups, which allows the researcher to attribute any group differences to the different treatments being compared. However they are not without their challenges (see Clay, 2010) including in particular the ethical challenge of randomly assigning individuals in a service setting to treatment and no-treatment conditions (Solomon, Cavanaugh & Draine, 2009).

Quasi-experimental designs can be applied more easily in applied settings as they do not require the same level of artificial manipulation. For example, a health researcher may compare outcomes for service users who receive two different treatments. However, rather than randomly assigning service users to receive either Treatment A or Treatment B, a quasi-

experimental study would involve comparing groups who are receiving these treatments anyway. However, it is important to remember that drawing a conclusion as to whether observed changes are due to a specific treatment is easier in experimental designs such as RCTs as it is assumed that other factors that might have influenced the choice of treatment and the outcomes themselves, are controlled by the random assignment of individuals (Shaughnessy et al., 2009).

While there are pros and cons to choosing either experimental or quasi-experimental approach, non-experimental approaches are also common in applied settings. As mentioned above these may include correlational studies, which explore the relationships between key variables (such as in the example presented earlier), or survey designs, which aim to describe a particular phenomenon in detail. An example of a survey design may be a study that aims to identify the most common stressors reported by staff in a healthcare setting. Correlational designs are limited in their ability to determine if the relationships observed (e.g., between staff stress and service user behaviour) are causal and if so, which variable is the cause and which the effect. However, before conducting a more experimental study, it is important to establish at least a correlation between the variables (Shaughnessy et al., 2009). Survey designs also do not aim to determine causal relationships, but their strength lies in the ability to gain an insight into a phenomenon by gathering data systematically on the issue (Langdridge & Haggard-Johnson, 2009). Again the researcher must return to

the research question and reflect on what is being examined and use this to inform the choices being made.

Select a specific design

Within the framework of experimental, quasi-experimental and non-experimental approaches, a number of specific designs are available to researchers (see Shaughnessy et al., 2009). These are represented in Table 1 below. While correlational and survey designs are generally non-experimental, independent group (IGD), within group (WGD) designs and complex designs may be experimental or quasi-experimental, depending on whether the key variables are manipulated by the researcher (e.g., whether the participants are randomly assigned to a particular intervention or a control condition) or whether they are naturally occurring (e.g., comparing males and females, or people with mental health difficulties and those without).

In addition to the task of selecting a specific design, it is also important that the researcher is clear on the variables being examined. In the standard terminology, a dependent variable (often referred to as the DV) is generally the variable of interest and the researcher hopes to examine this variable under different conditions, within different groups, over time or in relation to other variables.

An independent variable (commonly called the IV) is one which the researcher believes is influencing the dependent variable. For example, in a study where a researcher wants to compare compliance with an exercise regime in men and

women, the dependent variable is compliance and the independent variable is gender. Being able to name the key variables is central to selecting and naming your research design but it is also important to consider how these variables are operationalised. In the exercise example, compliance may be operationalised as the number of weekly sessions the participants have attended and this might be expressed as a proportion of the total number of sessions that should have been completed. It is important that the way in which a researcher defines the key variables within a study is grounded in previous literature, and this will support the validity of the study.

Define sample and sampling strategy

The majority of research is conducted with samples, which are selected to be representative of a population (Shaughnessy et al., 2009). A well-crafted research question will specify the population of interest, e.g., do adults with an intellectual disability (ID) who has lost a parent in the last 12 months show evidence of complicated grief? This question focuses on adults (i.e. those 18 years and older), who have received a diagnosis of an ID and who have experienced a parental bereavement within a defined timeframe. The specificity of the population can have implications for the process of selecting a sample – a broadly defined population can offer little guidance as to the process of findings potential participants, while a very narrowly defined population can be hard to find.

Table 1. Common quantitative research designs.

Design	Key criteria	Common uses
Independent group/ Between group design	Separate groups are compared on key criteria.	Comparison of males and females.
Repeated measures/ Within group design	A single group is compared under different conditions.	Comparison of a group overtime
Complex design	Combines elements of both IGD and WGD	Examine changes overtime in groups receiving or not receiving a treatment.
Correlational design	Examination of multiple variables within one group.	Examines relationships between factors within a group.
Survey design	Detailed examination of key criteria within a sample or group.	Large scale surveys.

With the example above a researcher accessing possible participants through a disability service provider will find it relatively simple to identify whether a potential participant has lost a parent, but if the sample were required to have a very particular type of disability this would limit the potential

participants and may make it difficult to secure an adequate sample.

Whatever the nature of the population, a key aspect of quantitative research is the process of selecting the sample. Random selection would be seen as a gold standard (Shaughnessy et al., 2009) as it would be assumed that the randomness of the process would control for possible biases or systematic deviation in the sample. However random selection may not be feasible in an applied setting, and also the voluntary nature of research participation can undermine a random sample. Robson (2002) discusses a variety of sampling methods, including techniques based on random and non-random processes. Within applied settings, there are practices that can assist with sampling, such as the use of large, organisational databases to assist with sample selection. A well-developed database offers the potential for a stratified random sample, while service units may offer meaningful clusters within which to sample.

Whatever sampling method is used, it is important that the researcher is aware of the strengths and limitations of the final sample (e.g., high levels of participants declining to participate), and considers these when extrapolating the findings. Likely limitations include the possibility that units represent biased clusters, or poor administration of databases undermining the extent to which they accurately represent the population within the organisation. There is also the need to recognise that single setting studies (e.g., those conducted in only one organisation) may not represent the broader

population if there is a reason to expect that the organisation is not typical of others in the wider area. For example a disability service with a strong social-model orientation may not represent a more medically-oriented service. Despite these limitations, applied settings still offer opportunities to develop studies that can provide insights beyond the boundaries of an individual organisation.

Select data collection methods and measures

Having decided on the design of your study and the target population and sampling methods, the next key area is the selection of data collection methods and specific measures. In quantitative research there are many methods of collecting data including gathering biomarkers (e.g., saliva, blood pressure, etc.), behavioural measures (e.g., counts of target behaviours, time spent involved in particular activities) and most notably, self- and informant-report measures. Clearly this is something that is dependent on the population, particularly in terms of issues such as literacy, communicative ability, etc. However the area of quantitative data collection and particular measures can be further complicated.

The first complication is the language used. Langdridge and Haggart-Johnson (2009) note that self-report and informant measures (which they refer to as questionnaires) are methods of systematically gathering information in applied areas. When discussing text-based self-report and informant measures, a wide range of terms are used including surveys, questionnaires, scales, tests, and measures. However there is an important distinction to be made. While some of these

techniques aim to systematically gather information, others have a more structured intention to measure a particular construct. Consider the Census; the aim of this tool is to gather population-based information on demographic profile (age, gender, occupation, etc.). In contrast, consider a typical research measure, the Beck Depression Inventory (Beck, 1964); the aim of this tool is to capture a valid and reliable measurement of depression-related symptoms, and this is where the distinction is to be made. Some tools simply aim to gather information, others aim to measure. It may be helpful to think of the first as surveys and the second as questionnaires or scales.

Even with a (nominally) agreed language, there are some points to remember about using these tools. As already mentioned, the population of interest will determine what is appropriate in terms of relevance and accessibility. The selection of appropriate measures will also be influenced by the way in which the researcher defines his or her key variables, as the measures will need to reflect the variables as they have been defined. In selecting measures, it is essential that researchers consider the validity and reliability of the tools. In the case of scales and questionnaires, Vogt and Johnson (2011) define validity as “the degree to which an instrument or test accurately measures what it is supposed to measure” (p. 415), while reliability is “the consistency or stability of a measure or test or observation internally from one use to the next” (p. 336). This information is generally available in the manual for the instrument or in previously published articles. However, it is important that there is

evidence that these criteria are met, and that evidence exists for their use with the target population, particularly with any standardised or diagnostic instruments. Issues of reliability and validity also hold for more survey-based measures. However, this is generally driven by evidence of the suitability of the language and structures used, rather than statistical checks.

Robson (2002) presents a detailed consideration of issues in using these quantitative data collection techniques. These tools are very flexible in that they can be used as both self- and informant-report. In addition, valid and reliable measures exist in the research literature for a huge range of concepts, behaviours and experiences relevant to applied research. Appropriately designed or adapted these tools can be used for most groups of participants, and they are flexible in terms of delivery, with options for postal surveys, group completion, online presentation and use in the context of a structured interview. However as with many methods, there is the scope for bias and contamination, and particular challenges include unclear language, low response rates and inappropriate use of these tools (e.g. using tools designed for adolescents with younger children within validation). Nevertheless, when these methods are used on the basis of strong evidence for their suitability with the target population, and in the context of the research question, they can be a very effective tool for data collection.

Final Thoughts

This article has attempted to capture some of the key stages of the quantitative research design process, with a particular emphasis on the applied setting. Quantitative research has a rich tradition in psychology, and there is no doubt that it has significant potential to assist psychologists and other health and social care professionals doing research in applied settings to systematically address key questions. However, as with any technique, there are potential challenges. In order to respond effectively to these challenges, research must be carefully planned in advance, with due consideration given to the design, sample and measures used in the research, and the choices made in these areas must balance the evidence from previous research and the specific nature of the context in which the research is done.

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HOW TO CONDUCT QUALITATIVE RESEARCH IN HEALTH AND SOCIAL CARE SETTINGS

MANDY S. LEE

Abstract:

This paper provides an overview of qualitative research, focusing on key methods and approaches that would be useful for conducting exploratory investigations into service delivery and organisation in health and social care. We start with a discussion of the rationale for conducting qualitative research in health services, and proceed to cover two data collection methods most used in qualitative studies: interviews and focus groups. In addition to providing practical tips on how to collect data using these two methods, the discussion will centre on the theoretical and practical considerations that need to be taken into account when choosing between methods and approaches for one's research project. Reference will be made to some exemplar studies done by qualitative researchers, to illustrate how such approaches contribute to our understanding on issues relevant to health and social care professionals in both policy and practice.

Introduction: Why Qualitative Research?

In a previous paper as part of this research methodology series, I have outlined the rationale for matching research designs to particular research problems (Lee, 2012). To recap that discussion for the purpose of this paper, I argued, among other things, that research problems that require exploration rather than evaluation are more amenable to be investigated through participant-led, qualitative approaches; and that such problems are often found at the beginning of a research cycle, when issues remain ill-defined, or when their parameters and terms of references are being contested by different stakeholder groups. Additionally, when the causes and conditions that result in the observed phenomenon remain little known or understood at the micro or meso levels, qualitative investigations can generate insights that have a real impact on the successful development and implementation of healthcare policy and practice locally:

Qualitative design can lead us to underlying behaviours, attitudes and perceptions that underline health outcomes; it can help us explain social and programmatic impediments to informed choice or the use of services; it can shed light on the success of our interventions; it can facilitate better understanding of the policy, social and legal contexts in which health choices are made (Ulin et al., 2005: xix).

Underpinning the above claimed contributions of qualitative research is the focus on *meanings* rather than measurement, either because it is not yet possible to devise appropriate measurements for the phenomenon as so little is yet known

about it, and/or because it is actually not desirable to stop only at objective measures and ignore the subjective and contextual information that are also needed to arrive at an informed understanding of the issues at the local level. Qualitative research contributes to our understanding of healthcare problems because it “emphasizes *depth* more than breadth, *insight* rather than generalisation, illuminating the *meaning* of human behaviour.” (Ulin et al., 2005, p54, emphases added).

Meanings become the focus of qualitative research because qualitative studies are mainly based on an *interpretivist* research paradigm (Gubrium & Holstein, 2003). Management scholars have long argued that investigations into organisations and organising processes must be based on a recognition that these are not closed, mechanical systems operating in a stable vacuum, but rather open, *interpretive* systems operating in complex, changing environments (Aldrich, 1979; Daft & Weick, 1985; Hasselbladh & Kallinikos, 2000; Kohn, 2000; Hatch & Yanow, 2003). Based on a conception of organisations as composing of reflexive individuals who are agents of their own action, rather than as robotic automatons merely performing assigned functions, individuals’ interpretations and the meanings they hold of their social world are therefore seen as foundational blocks of organisational action⁸ (Thompson, 1967; Blumer, 1969

⁸ Stanovich’s (2011) work on the debate between rationality and irrationality as the basis for human action and scientific knowledge is very pertinent here. Neither the ‘panglossian’ (‘humans are inherently rational who react rationally to objective conditions most of the time’) nor ‘apologetic’ (‘humans are inherently

[1998]; Giddens, 1984). As the sociologist Herbert Blumer pointed out: “[Interpretation] should not be regarded as a mere automatic application of established meanings but as a formative process in which meanings are used and revised as instruments for the guidance and formation of action” (Blumer, 1969 [1998], p.5).

In the healthcare literature, there is an additional recognition that qualitative insights are crucial to ensuring the ethic of care and compassion remains current in an era of evidence-based medicine (Tucker, 1997; Tschudin, 2000; Grypdonck, 2006; Lawrence and Maitlis, forthcoming). Effective clinical knowledge itself “consists of interpretive action and interaction—factors that involve communication, opinions, and experiences” (Malterud, 2001, p.397), and effective clinical practice relies on a narrative approach that resists reducing patients to impersonal clinical data, but recognising and restoring patients as people (Hurwitz, 2000). Whilst data from randomised control trials provide robust measurements that establish the relationship between treatment and effects, they are however unable to answer questions that relate to differences in values and goals (Grypdonck, 2006), such as the disparity in clinical foci and objectives amongst health and social care professionals, or the differing priorities between

irrational who mostly act according to heuristics and biases’) responses are appropriate for the building of scientific knowledge about human action. But the ‘meliorist’ response, which acknowledges that neither rationality nor irrationality is an *essential* human condition, but that education and information can improve reasoning in human endeavours, can be a viable basis for the pursuit of scientific knowledge about human action.

patients and their carers. Instead of ignoring or dismissing these difficult, value- and meaning-laden questions as being irrelevant to an evidence-based healthcare system, they should be appropriately and rigorously investigated using qualitative research approaches.

The search for meaning in organisation studies is also due to the recognition that healthcare organisations, like other human systems, are complex adaptive systems (Begum, Zimmerman & Dooley, 2003; Plsek & Greenhalgh, 2001; Plsek & Wilson, 2001; Brown & Eisenhardt, 1997). Whilst a merely complicated system can be understood by breaking it up into component parts and examining each part separately as one would a mechanical object, requiring only *aggregative* knowledge; a complex system is composed of interacting units such that 'the sum is more than the parts', with emergent system behaviours that cannot be studied in isolation from the interacting agents, and which require holistic, *integrative* knowledge. Specialisation and the creation of hierarchies of knowledge in a complex system could thus lead to partial and even misleading understanding of the phenomenon. In the worst cases, such specialisms create 'apartheids of knowledge', so that an integrative understanding of the whole – be it at the individual, group or system level – becomes near impossible.

The danger could become so acute that one might end up inadvertently "cutting the patient to pieces" (Tucker, 1997; Bauman et al, 1998) according to one's disciplinary training, and creating a health system riven with fragmentation where

'joined-up' thinking and working seldom occur (World Health Organisation, 1996; Department of Health & Children, 2001). By seeking to understand how diverse organisational stakeholders socially construct the worlds in which they act and interact (Astley, 1985; Gibson & Zellmer-Bruhn, 2001; Suddaby & Greenwood, 2005; Bryant, 2006; Green, Li & Nohria, 2009), qualitative research can generate integrative, cross-disciplinary knowledge seldom possible in other research designs (Malterud, 2001).

Sorensen and Iedema (2009)'s study is an example of such integrative knowledge made possible in healthcare management research using qualitative methods. Using a multi-method qualitative design that included open-ended interviews with clinical doctors and managers, and focus group research with nurses, they illuminate the 'professional fractures' that exist between medics and nurses in their care-giving roles and their differing responses to the challenges posed by the emotional labour in their daily work with patients.

Qualitative research is, however, a very broad label applied to a number of social science research methodologies where textual data are collected and analysed. While I only have the space to cover a couple of key qualitative research methods in this paper in a practical manner, and cannot delve into the theory and philosophy behind key traditions of qualitative inquiry, I must mention the strong link that exists between standard qualitative research approaches and action research (in fact, action research is often considered as part

of the family of qualitative methodologies alongside others such as ethnography and phenomenology)⁹. Organisation development scholars have long argued that the asking of open questions – the essence of a qualitative research inquiry – may by itself constitute an organisational intervention, in that it allows members to think and reflect on an issue without prejudice and in a non-threatening context, something they may not have otherwise done in the course of their organisational life. And thinking and reflecting – particularly of the depth that qualitative research requires – are themselves the germ of organisational change.

Thus, even a standard qualitative research project, when properly conceived and executed, can help to engender change by bringing into open hitherto tacit assumptions and neglected stakeholder voices, fulfilling an emancipatory purpose not possible with research designs that are oriented towards measurement rather than meaning (Bryant, 2006). As such, although qualitative research has often been disparaged as the production of long-winded descriptive accounts dressed up with fanciful words, its value and

usefulness in enabling meaningful stakeholder engagement must not be overlooked. As a public health journal editor commented about the value of qualitative research in the context of service development:

[Our] editorial policy is to appreciate *research that is linked to action*, that is, in which the results of the study are used to benefit the participants and others in similar circumstances and not research done for its own sake or to benefit mainly the researchers. *A research team may not be in a position itself to carry out an action component, but it can work with others who can.* (Berer, 2005, p194, emphasis added).

Key Qualitative Data Collection Methods

The quest for meaning rather than measurement has direct implications for how we collect data in qualitative studies. Typically, qualitative researchers endeavour to shape their investigations to include the following:

- Local, contextual information – In contrast to “context-independent” population-level measures used in quantitative research, qualitative researchers are predominantly interested in understanding local *cases* rather than the population as a whole. As such, local contextual information is always included in case descriptions, as an aid for better interpretations of participants’ meanings uncovered through the course of research.

⁹ Carter and Little (2007) identified five methodological traditions or ‘strategies of inquiry’ under the broad label of qualitative research. They are, in summary: (i) grounded theory approaches; (ii) life-history or narrative approaches; (iii) ethnographic approaches; (iv) participative action approaches; and (v) case study approaches. Each of these have their own distinctive line of inquiry and knowledge claims, which filters through to the way data are collected, analysed, and presented. Although it is beyond the scope of this paper to discuss the epistemological bases of these different methodologies, readers are directed to the ‘further reading’ list at the end of this article for a number of resources that provide guidance on the key qualitative methodologies.

- Valued perspectives from multiple stakeholders – In contrast to quantitative research that subscribes to a “value-free” research paradigm seeking to minimise bias, qualitative researcher recognise that subjective biases – or in other words, valued rather than neutral perspectives – are the key to understanding the social meanings held, shared and/or contested by individuals and groups. Qualitative researchers seek to understand rather than minimise biases, and use them as a resource to arrive at a polyvalent interpretation of the issue, by making explicit tacit assumptions held by diverse stakeholders.
- Open-ended, participant-led inquiry – In contrast to researcher-predefined, closed questions used in measurement-based research, qualitative research allows participants to share their experiences and viewpoints in their own words through open-ended questioning, rather than requiring them to fit their narratives within the strict conceptual schema predefined by researchers based on extant literature. More often than not, the direction of research inquiry itself is led by participants rather than predetermined by the researcher, due to the recognition that participants are experts in their own right regarding their own circumstances, as they are the persons who have first-hand experience of the phenomenon rather than the researchers themselves. The research objectives are therefore defined jointly with participants, whose ‘insider knowledge’ (Coghlan & Brannick, 2009) is considered a valuable resource in determining which issues and questions are considered important to address. In the

context of health services, qualitative research was instrumental in contributing to our understanding of patients’ self management of diseases and to helping us move towards recognition of patients as “experts” especially in regard to chronic illnesses (Emanuel & Emanuel, 1992; Charmaz, 2000; Coulter & Fitzpatrick, 2000; Clark & Gong, 2000; Deyo, 2001).

Several data collection methods are strongly associated with qualitative research precisely because they allow investigators to gather data that fulfil the above research requirements. The two key methods I will cover in this short paper are interviews and focus groups. Within each method, there are different approaches a researcher could use depending on particular theoretical, ethical and practical concerns. I will discuss the general rationale for choosing one approach versus another, in the hope that readers may find it easier to discriminate between different approaches when it comes to designing their own research inquiry. Although space will not permit me to cover issues of sampling and data analysis here, it is widely recognised that “the separation between ‘sampling’, ‘data collection’, ‘data analysis’, ‘interpretation’ and ‘presentation of findings’ is rarely clear, nor necessarily desirable in qualitative studies” (Fulop et al, 2001, p.203).

Interviews

Interviews are the most commonly-used data collection method in qualitative research, whereby the researcher conducts a dialogue with selected participants, often on a one-to-one basis, on a chosen topic of research interest. The

difference between an interview and a normal conversation is that the direction of dialogue is mindfully guided by the investigator in accordance with specific research objectives, either with explicit, ordered questions, as in a structured interview; or with assurances and prompts, as in an unstructured interview. Most often, qualitative research interviews are conducted in a semi-structured manner, with pre-ordering of topics and key questions prepared by the researcher before the interview, but allowing the researcher and the participant flexibility on the ordering of the actual questions in the flow of dialogue, and the opportunity to expand on certain topics as deemed appropriate by the researcher in the course of the interview.

Common to all qualitative interviews, whether structured, unstructured, or semi-structured, is the predominant use of open-ended, rather than closed questions. Even in a highly structured interview where the researcher is required to stick religiously to the prepared protocol in terms of question order and the exact question phrasing (and indeed acceptable re-phrasings of key terms are often thought of beforehand by the researcher and included in the interview guide), participants are still required to formulate their responses in their own words, rather than use a 'tick-box' approach as in a questionnaire survey. Structured interviews are typically used in the context of an interview survey, where research objectives call for population-level explanations. The questions remain open-ended, allowing participants to relate their views and experiences in their own words; however, the manner in which questions are asked are kept consistent

across all sampled individuals. See Box 1 and 2 for more information on interview surveys.

In unstructured interviews, the questions themselves become more free-form, such that they are more often assurances, probes and prompts, rather than actual questions per se. In-depth, unstructured interviews are typically used in phenomenological research, which focuses on the lived experiences of the research participants who have first-hand knowledge of the phenomenon of interest. The job of the researchers in this instance is to enable participants to articulate and share their views and experiences, thus the interview is led by the participant's narrative rather than dominated by researcher questions. Researchers conducting unstructured interviews will typically start the discussion with a very open-ended question, usually on an easily describable part of the experience, as a way to help the participant to 'open up'. Rather than relying on a prepared script to interview participants, researchers conducting unstructured interviews will use several elicitation strategies to obtain relevant research information, depending on the way participants tell their stories in the course of the interview. Such elicitation strategies typically fall under the categories of assurances, probes, and prompts:

(a) Assurances – In enabling participants to share experiences, the key thing a researcher needs to do is to assure or reassure the participant that s/he has a sympathetic ear, which is best communicated not in the form of a question, but by a sympathetic, non-judgemental comment

(e.g. 'Yes that must be very hard indeed', 'I know what you mean', 'Yes I see where you're coming from', etc.), or by simply re-stating a previous comment made by the participant to encourage him/her to discuss further (e.g. 'So you were told to come to the appointment on Thursday and didn't get to see anyone', 'You were saying they asked you about that question in front of everyone', etc.). Rather than firing one question after another in a mechanical manner, (re)assuring comments are more effective in enabling people to feel comfortable and valued enough to want to share their views and experiences with the researcher, who is often a stranger to the participant and needs to build up rapport with the interviewee to elicit story-telling relevant to the research objectives.

(b) Probes – Although unstructured interviews are participant-driven in terms of narrative, it does not mean that the researcher gives up totally his/her role in guiding the conversation. Experiences are multi-faceted and some aspects of participants' experiences are more relevant to the goals of a particular study than others, and the researcher's job is to remain vigilant to those aspects of a participant's narrative that are more revealing about the phenomenon under investigation, and to probe further into those areas to elicit a fuller, richer description from participants. The researcher can do this by asking the participant to clarify certain aspects of his/her views and experiences (e.g. 'Can you explain a bit more to me what happens when...'), or by paraphrasing the related experience in the researcher's own words, not only to check if the researcher's interpretation is

correct, but also to tease out a fuller account of those aspects of a phenomenon that are of research interest (e.g. 'So if I understood you correctly, you are required to do XYZ when ABC comes? Is that always the case?'). Direct questions may be used to open up a topic area for discussion, but it is the reassuring comments and probes which do the bulk of the 'questioning' work in unstructured and semi-structured interviews in helping participants articulate their own experiences.

(c) Prompts – Sometimes, neither (re)assurances nor probes are able to get at those aspects of experience that are of research interest to the investigator, perhaps because the participant feels a little awkward in conversing freely about those aspects with a stranger; or because the participant goes off on unrelated tangents during the interview. In such cases, qualitative researchers may use prompts to ensure that a proper research interview can still get off the ground and/or stay on track. There are ways in which a participant can be prompted to share their experiences without asking leading questions, such as by stating what has been known about the phenomenon so far, and asking the participant if these actually reflect their own experiences. One can also draw the participant's attention to other aspects of an issue that has yet to be mentioned by him/her, but which has been reported

Box 1. Interview Survey vs. Questionnaire Survey

Question:

How does an interview survey differ from a questionnaire survey?

Answer:

Surveys seek to generate comparable data across individuals in a population. Most often, in order for comparisons to be objective, questionnaires are used, which is an instrument comprising mainly of closed questions – i.e. where responses to questions are pre-formulated by the researchers and the participants simply respond to the choices available (thus the people who take part in these studies are correctly labelled as ‘respondents’). The measures are specifically designed and validated to allow for robust, objective comparisons to be made across the whole population of interest.

However, sometimes researchers interested in systematic comparisons do not wish to prejudge what the participants’ responses are going to be, and/or they want to get more nuanced information from the participants than a mere tick-box approach would allow. In such cases, an interview survey might be used, where highly structured interviews – i.e. interviews with a strict question order, and strict question phrasing – will be conducted that allow participants to answer questions in their own words, but where there is no deviation whatsoever in *how* the participants are asked from person to person, as the research objective remains the systematic comparison of cases across the whole population. Although sometimes a semi-structured interview format is used for interview surveys, strictly speaking this should be frowned upon as this dilutes further the basis for systematic comparisons across the whole population. The word “survey” should only be used when one is clearly interested in generating explanations at the population level, and should not be abused as a catch-all term to describe any kind of data collection.

Box 2. Interview Survey vs. Interviewer-Administered Questionnaire Survey

Question:

I had an interviewer knocked on my door with a questionnaire and went through a survey with me verbally, was that not an interview survey? I was being interviewed, wasn't I?

Answer:

No, you were not taking part in an interview with the researcher, but rather verbally completed a questionnaire administered by him/her. If an interviewer went through a questionnaire with you, whereby you were asked to respond primarily to closed questions, e.g. to pick one or several choices from a check-list of options called out to you; to say you ‘strongly agree’, ‘agree’, ‘disagree’, or ‘strongly disagree’ with certain statements; to indicate on a scale from 1 to any number on your perceptions or beliefs on certain issues, etc., then strictly speaking, you were not involved in a research interview but a ‘spoken’ questionnaire. If your ‘interview’ consists primarily of you responding to predefined choices put to you (with the ability to indicate ‘other’ and elaborate only as an extra option), rather than to talk freely about your views and experiences in your own words, then you were simply given a questionnaire survey verbally. Telephone surveys using questionnaires are therefore not “interview surveys” *per se*, even though they might be colloquially referred to as such. They are still questionnaire surveys, albeit administered by trained operators over the telephone, rather than paper questionnaires sent to the public for completion themselves. The term ‘interview’ should be used only when the data collection consists primarily of open-ended questions; and the term ‘questionnaire’ should not be used as a catch-all term to refer to any research instrument. Open-ended questions prepared in advance by the qualitative researcher to guide his/her research interviews should be referred to as ‘interview protocol’, ‘interview guide’, or ‘interview schedule’.

or theorised elsewhere, and asking if they are relevant to his/her own experience. Prompts can also take the form of hypothetical questions to clarify underlying mechanisms or processes, once the participant has given a basic picture of their own experience (e.g. 'So what will happen when a person do UVW instead of XYZ?'). The purpose of prompts is to help the researcher reveal any potential blind-spots or knowledge gaps that might exist in individual participants' conceptions of the issue, a function of the disciplinary and/or positional constraints that necessarily limit each individual's understanding of the issue as a whole.

By using assurances, probes and prompts judiciously in semi-structured or unstructured interviews, qualitative researchers can uncover the limits of an individual's bounded rationality (Simon, 1976; Weick, 2001), and even bounded emotionality (Mumby & Putnam, 1992; Thagard, 2007), which help to generate an overall integrative understanding of issues within a complex system such as health and social care.

One study that employed the interview method to great effect is a piece of research conducted with parents and children on their views regarding the children's quality of life after a heart transplant (Green et al, 2009). The researchers developed separate interview guides for parents and children, and interviewed them individually at a time and location chosen by the participant, usually at the participant's home or in a private location at the hospital. Children's interviews "were initiated by asking them to draw a picture of themselves on a good day to establish rapport and facilitate a more natural

conversational flow" (Green et al, 2009, p.50); and interviews were conducted on a semi-structured basis that "allowed [participants] to tell their stories in the manner they chose" (Green et al, 2009, p.50). The parents' interview guide consists of a handful of open-ended, 'lead-in' questions of the 'Tell me about your experience of X' variety, which were enough to enable the researchers to conduct interviews that lasted between 1.5 to 2 hours, eliciting in-depth qualitative data that illuminate parents' and children's experiences post heart transplant operation. As we have previously discussed, in semi-structured and un-structured, in-depth interviews, it is assurances, probes and prompts, rather than questions per se, that are most helpful in enabling participants to share their experiences with the investigator. Such rich data focusing on individual experiences would not have been as easily elicited using measurement-based methods based on researcher-predefined response categories.

Another study, this time focused on the meaning of professional practice for occupational therapists, similarly employed semi-structured interviews for its data collection, as the research objectives called for flexibility and open-endedness to allow participants to articulate different dimensions and 'modes of being' in their professional role. Focusing on the lived experiences of the participants, Smith and Kinsella (2009) developed an interview guide "through an iterative process that drew on a review of the literature, reflection on the key questions of the study, and Wilcock's (1998) framework of being, doing, becoming, and belonging" (Smith & Kinsella, 2009, p.301). Similar to the study by

Green et al. (2009), the researchers prepared only a handful of open-ended questions under each mode of experience. In addition to asking about participants' direct experiences (the 'best' and 'worst' examples of X, etc.), the researchers also asked questions about the participants' ideal work environment, to better interpret the values that individual participants put on different aspects of their professional life. Like other studies that employed the semi-structured format, participants "were informed that they were free to discuss ideas and situations beyond those initiated by the interview questions" (Smith & Kinsella, 2009).

Whilst these studies cannot and do not claim to provide data that would be generalisable beyond their study settings, nevertheless they provide important insights into the experiences of patients and healthcare professionals that are useful to the development of local policies and practices in enhancing patient-centredness or professional support, and may also be *transferable* to other contexts in which the described experiences found resonances in others' own circumstances. At a minimum, such qualitative accounts sensitise readers to the existence of differing viewpoints and experiences that might not have otherwise surfaced and given voice if not for such qualitative investigations.

Focus Groups

Another key data collection method employed by many qualitative researchers is the focus group, which refers to group discussion sessions facilitated by the researcher on a topic of research interest. Focus groups should be

distinguished from group interviews because the latter posits an interaction that is still primarily between the researcher and the individual participant, even if these individual participants now sit in a group rather than talk to the researcher on a one-to-one basis. Focus group discussions are discussions primarily held *between participants*, with the researcher acting merely as the discussion leader-facilitator. In fact, a focus group discussion is often deemed to have failed if it degenerates into merely a dialogue between the researcher and individual participants, rather than as a multi-voiced discussion with focus group participants building on and responding to each other's contributions.

As such, focus group discussions can never be highly structured, but should be facilitated to encourage a free flow of exchanges amongst participants. There are primarily two types of sampling of focus group participants, *viz.* homogeneous sampling, which is used to recruit participants with similar backgrounds to encourage group sharing of experiences (similar to what happens in patient or peer support groups); and heterogeneous sampling, which is used to recruit participants from diverse backgrounds, for the purpose of gauging their differing perspectives on a common issue. As the data collection involves a group of participants rather than just one person, researchers using the focus group method have a lot more to consider, from the selection of venue to seating plan to the actual management of discussions.

The first consideration is to ensure accessibility of the venue to all individual participants, as well as to ensure that the venue is considered neutral ground as far as practicable for all participants concerned, especially when recruiting heterogeneous members to a focus group discussion. The room must be considered private and neutral enough for all participants to feel comfortable conversing on the topic(s) of interest. It is prudent to invite a couple more people than is strictly required, due to the fact that there will always be last-minute drop-outs, and the researcher needs to ensure that, on the day, there is a critical mass in the number of participants to enable a viable discussion amongst group participants.

To enable optimal discussion amongst group members, focus group researchers also spend time thinking through the seating plan. Beyond simply organising circular or semi-circular seating to ensure direct eye-lines amongst all participants, researchers also try to enable maximum discussion amongst a group of relative strangers by judicious planning of seating arrangements. If there are focus group members who are already known to, and friendly with, each other, they should be asked to sit across from each other and dispersed across the seating plan, so that individuals' contributions, which are usually directed towards a friendly face, will be directed at and heard by all focus group members, rather than only to their seatmates.

The focus group discussion guide itself should not be conceived of as simply an interview guide multiplied by X

number of people. It should provide guidance not only on the desired topics of discussion, but also on the elicitation of group responses, including initiation and transitioning prompts, and the points at which the researcher hopes to gauge consensus or dissensus (i.e. diversity of views and perspectives) from the group. In addition to using open-ended questions, sometimes researchers may use a vignette describing an archetypal aspect of experience to get the conversation going amongst focus group participants, usually in the form of a short video or a short pamphlet that the participants may view or read prior to the start of a focus group discussion.

The focus group session is at a minimum audio-recorded if not video-recorded, and the facilitator is usually supported by at least one other scribe or note-taker, who takes an observing role during the session to help record the interactions amongst participants. At the end of the focus group discussion, a debriefing session amongst the research team can be held on the contributions that were made by the participants and the way the discussion was handled, which would help to yield not only the first sensitising categories for later interpretations of data, but could also help the facilitator to fine-tune the prompts and questions used to manage the discussion for subsequent focus group sessions, as part of a grounded theory strategy in ongoing data collection (Encandela et al., 2003, p.421).

Whilst the above are tips on the practicalities of organising interviews and focus groups for qualitative research purposes,

researchers must first clearly identify the purpose for which they are using these as methods of data collection. As already stated at the beginning of this paper, research designs must be matched to particular questions. Qualitative research, as we have seen, is suited to exploratory investigations that focus on the meanings held, shared, and/or contested by individual and groups of organisational stakeholders. However, methods suited to exploring meanings should not be employed to gauge measurement. A research scientist working for the World Health Organisation's Special Programme of Research, Development and Research Training in Human Reproduction (HRP), has commented on the research proposals he had reviewed over the decades that contain qualitative elements:

The single fatal flaw in any proposal is to set forth incorrect research methods to meet the stated objectives. We have received submissions proposing the use of FGDs [focus group discussions] to measure the prevalence and incidence of contraceptive use or violence... These proposals were not approved because FGDs are not suitable to measure prevalence or incidence. On the other hand, proposals that have suggested using FGDs to ascertain normative patterns, to develop a survey instrument, or to explain or expand on survey findings have frequently been approved. Also reviewed favourably are FGD proposals to *understand community norms and attitudes* towards specific reproductive health issues (Shah, 2005, p.64, emphasis added).

Within the spectrum of qualitative research methods, focus group discussions are indeed particularly suited to

investigating *social*, as opposed to personal, meanings. Instead of the researcher interviewing participants individually and then analysing their collective responses based on the researcher's own interpretations, focus groups allow comparisons across individual viewpoints to be made by participants themselves, which happen organically in the course of the group discussion. By giving space to participants to juxtapose their views and experiences with each other in real time, focus groups have an advantage over interviews when researching into issues that require the comparison and contrast of multiple stakeholder perspectives.

A focus group study that has successfully utilised the method to investigate social meanings held by diverse participants in the context of healthcare is done by Encandela and his colleagues (2003) on exploring mental health management of people with severe mental illness (SMI) for HIV/AIDS prevention. Target participants were all case managers drawn from agencies within a 15-county region of western Pennsylvania, but they were purposively sampled for the focus group sessions "to ensure a mix of ICMs [Intensive Case Managers] and RCs [Resource Coordinators] from rural, small-town, and urban communities, as well as women, men, and racial minorities" (Encandela et al., 2003, p.420). The sessions were deliberately held "away from case managers' work sites" to ensure a degree of privacy and comfort for participants to share their views and experiences relating to their role in providing behavioural support to people with SMI in the context of HIV-prevention. The only exception "involved a rural, hard-to-reach location, where the focus

group met within the agency after work hours and consisted of a mix of ICMs and RCs from this single agency" (Encandela et al., 2005, p.421). In this way the researchers were able to identify a number of barriers and facilitators to HIV-prevention services based on these diverse case managers' experiences and perspectives.

On the other hand, there may be research topics that are more amenable to be explored within a homogeneous rather than diverse group, especially if there may be keenly-felt status differences amongst participants such that a heterogeneous focus group may generate little useful data than merely 'official speak', as individuals aligned with the status quo may have a disproportionate influence on the direction of the group discussion despite the best efforts of the facilitator. In such instances, it may be more appropriate to employ homogeneous focus groups, whereby participants with similar backgrounds and/or statuses are brought together to share their views and experience, with each individual feeling safe to contribute in the knowledge that the other participants are in similar circumstances as himself or herself.

One example is a study which employed ten homogeneous focus groups, five of which are composed of older people and the other five composed of health professionals, conducted by Giummarra and her colleagues (2007) when investigating the concept of health in older age. The researchers recognised the need to listen to older people's views and experiences separate from those of health professionals, because of the

way health in older people has been historically "conceptualised from a medical perspective", and the impetus for the research was precisely to move beyond the medical perspective towards exploring health as "a positive concept that emphasises social and personal resources" in addition to physical and mental capacities (Giummarra et al, 2007, p.642). The research team therefore developed separate, but complementary, focus group questions for service users and service providers, for use in separate focus group discussion sessions, concentrating on the participants' meanings and beliefs regarding concepts of health and well-being, as well as their beliefs on factors that influence older persons in looking after their health (Giummarra et al, 2007, p.643).

The researchers also took care to recruit older people with a range of health profiles. Recognising that "focus groups are more likely to be attended by healthy older people", the research team therefore recruited participants from two falls clinics in the targeted geographic regions "in an aim to recruit participants with more complex health concerns" (Giummarra et al, 2007, p.644). The sessions were held at a venue of convenience to the participants as far as possible, such as within a community or health setting where the services were located, from which the health professional participants were drawn; or at a centre where an existing support group usually met, from which older person participants were drawn. Using such clearly-defined focus groups with complementary discussion guides, the researchers were able to distil concepts of health that are shared across older people and health

professionals on a number of dimensions important to successful ageing from participants' perspectives.

There are also studies that employed a mixture of homogeneous and heterogeneous sampling of focus groups in the context of health services research. For example, Sofaer and her colleagues (2005) conducted a total of 16 focus groups with a sample of healthcare consumers in four US cities, with the aim of using the data generated from these discussions on domains of hospital quality to guide the further development of the Consumer Assessments of Healthcare Providers and Systems (CAHPS) Hospital Survey. The focus groups as a whole "were structured to be homogeneous with respect to type of healthcare coverage (Medicare, non-Medicare), and type of hospital experience (urgent admission, elective admission, maternity admission, no admission)" (Sofaer et al., 2005, p.2018). Within each focus group, there is a heterogeneous mixture of participants in terms of their demographic profile. Using open-ended questions about items that are considered important to participants regarding hospital quality but without providing any suggestions or examples, the research team was able to identify domains of hospital quality that were hitherto not included in the standard CAHPS Hospital Survey, such as communication with "all hospital staff", which is the most mentioned domain of hospital quality by 15 out of 16 focus groups (Sofaer et al., 2005, p.2024).

Conclusion

As can be seen from the foregoing discussions, in general, there are theoretical, ethical and practical considerations that need to be taken into account when choosing between particular research methods to fulfil the goals of an investigation. Box 3 below provides a brief summary of these considerations when choosing between interviews and focus groups as a data collection method when conducting qualitative research.

Box 3. Interviews vs. Focus Groups

Question:

When should I use interviews or focus groups when doing qualitative research?

Answer:

The answer to the above question can be considered from three perspectives: theoretical, ethical, and practical. Theoretical considerations are mainly to do with your research topic and research objective(s). A research topic may lend itself more readily for discussion in private or in a group situation, depending on the participants in question and your relationship with them. Sometimes, if you have a different background from the research participant, you may get better information from running a homogeneous focus group, bringing together participants with a similar background and allowing them to spark off each other's storytelling and experience-sharing in a supportive group context, than by you conducting interviews with them on an individual basis. On the other hand, your research objective may call for comparison of perspectives from all stakeholders, and you may find individual stakeholders more forthcoming with information if you interview them on a one-to-one basis.

Ethical considerations are mainly to do with your non-research relationship(s) with the target participants, and whether it may be considered appropriate for you to collect data from interviewing them on a one-to-one basis. If you are a manager of a service, it is often considered inappropriate for you to interview staff and clients even if your target participants are those with whom you do not have a direct working or serving relationship. In such instances, it may be more acceptable to research ethics committees if you propose a focus group discussion where your research role is merely to facilitate discussions; or for you to serve only as a note-taker in a focus group discussion and have a neutral third party to conduct the focus group discussion on your behalf.

Practical considerations are mainly to do with the feasibility of carrying out the research given the resources available to you and the availability and preferences of the participants themselves. Are your intended focus group participants actually available on the same date at the same time? If not, you may have to resort to conducting individual interviews even if you feel that ideally you would like the participants to share their viewpoints and experiences amongst themselves in real time. Similarly, you may not be able to secure a neutral venue accessible to all, in which case you may still have to use interviews at least as a supplementary data collection method to cater to those who could not attend the session. On the other hand, you may simply not have the time and resources to conduct and analyse individual interviews by yourself, and a focus group discussion is often used as a more expedient way of collecting qualitative data from a number of participants at the same time, provided there are no major theoretical or ethical considerations that would require individual interviews to be undertaken.

In conclusion, there is no one-size-fits-all answer to the above question, but the researcher needs to tailor the method to suit the particularities of his/her research project and participants.

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HOW TO PRACTICE ETHICALLY SOUND RESEARCH

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A very important aspect of carrying out research is to do so in a way which is ethical and which respects the dignity and welfare of the research participants. Most institutions involved with research, such as health and human care services and educational institutions, now require researchers to seek ethical approval before commencing their research. The ethical guidelines and procedures of each institution will vary in their detail, but this paper aims to provide an overview of common ethical standards to assist the researcher in considering the ethical aspects of their research. In providing this overview, researchers should also be mindful of local guidelines, policies, legal frameworks and discipline-specific ethical guidelines as they apply to the profession of the principal researcher. They should also be aware that there are ethical concerns associated with all forms of clinical research, from clinical trials to service-based evaluations.

In considering the ethical aspects of research, four key domains warrant attention (see Figure 1): (1) the scientific design and methodology of the research; (2) the manner in which participants will be recruited and assuring their safety

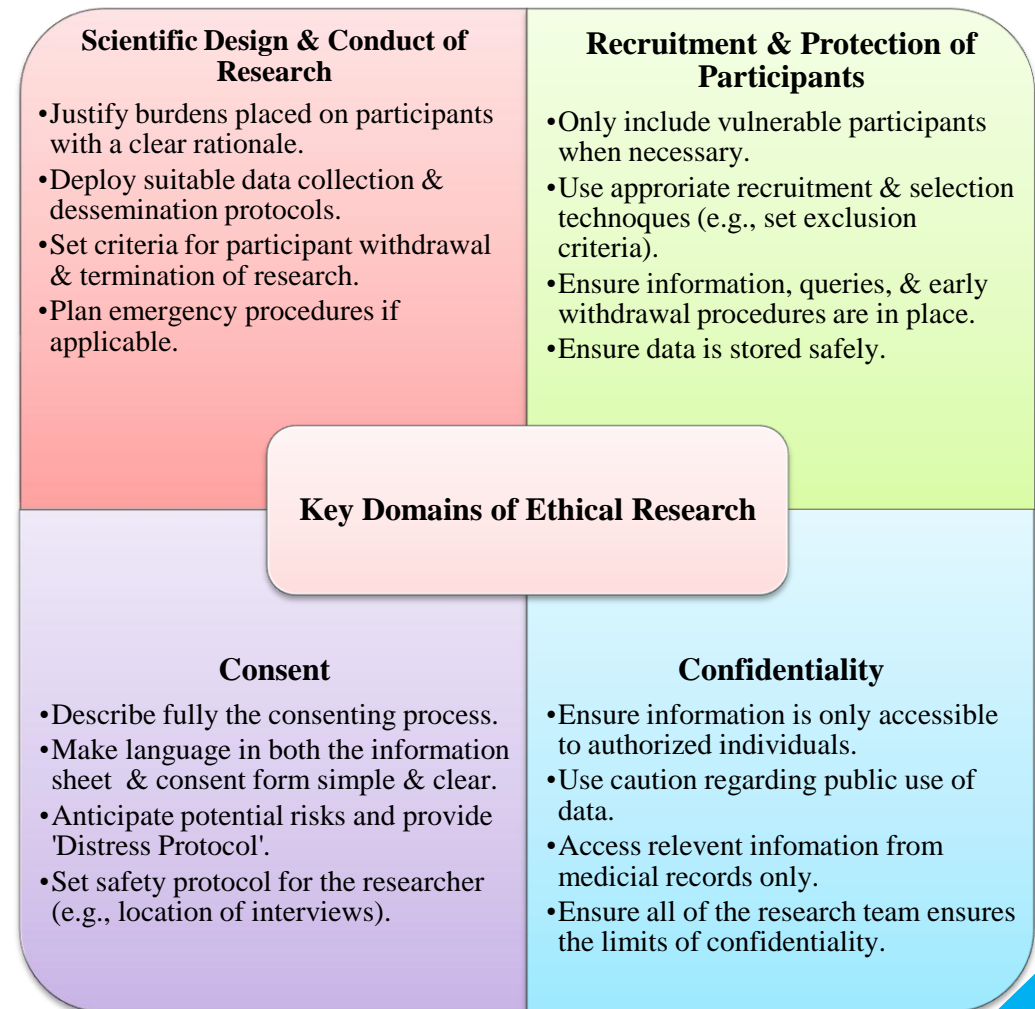


Figure 1: Four key domains of ethical research

(including psychological and emotional wellbeing); (3) informed consent and procedures for explaining the research in a way that will enable potential participants to make a fully informed decision; and (4) protection of research data.

Each of these domains will be considered in greater detail below. Researchers should, for each point, consider the extent to which their research proposal addresses the specific point:

(1) Scientific design and conduct of the research:

- Clear rationale and justification for the research – almost all research places a degree of burden on participants – thus there is an ethical obligation on the researcher to ensure that the burden is justified.
- The research design can realistically address the research question and has an adequate sample size to detect the variables of interest.
- Suitability of the protocol and the data collection forms.
- Justification of predictable risks and inconveniences versus anticipated benefits for participants / volunteers and the general community.
- Criteria for prematurely withdrawing participants / volunteers from the research.
- Criteria for suspending/terminating research.
- Adequacy of provisions for monitoring and auditing the conduct of the research, including data safety.
- Adequacy of the site including support staff, available facilities and emergency procedures where applicable.

- The manner in which the results will be reported and published.

(2) Recruitment and protection of research participants

- Characteristics of population and justification for selection - 'Non-competent' or vulnerable participants should be included only when necessary, and must be justified. There is a special onus on the researcher to protect vulnerable participants.
- Method by which initial contact and recruitment made and appropriateness of this contact (bearing in mind that access to contact details of potential participants can in itself raise ethical issues).
- Method by which full information will be conveyed to participants and the method through which consent will be obtained.
- Inclusion and exclusion criteria with justification for same.
- The safety of any intervention used.
- Suitability of the investigator (qualifications/experience).
- Queries and complaints procedure.
- If applicable, plans to withdraw standard therapies or treatments as part of the research protocol and justification for this.
- If applicable, adequacy of support during and after the study.

- Procedure for participants early withdrawal (as decided by the participant) or termination from the study (as decided by the researcher).
- If appropriate, procedure for informing participant's GP or other health care providers of their involvement in the study and circumstances under which research data may be disclosed to GP or others (for example, if a health problem was detected during the research).
- A description of any financial costs to participant.
- The rewards and compensations (if any) for participants and justification for same. Rewards must not be so strong that they compromise real choice about whether to participate. [Note: many educational institutions have a 'Course credit' system for students to participate in research – this raises ethical issues in terms of voluntariness – one strategy to deal with this is to provide students with an alternative method of gaining course credit].
- Provisions for compensation / treatment in the case of injury/disability/death.
- Insurance and indemnity arrangements covering liability of investigator.
- Description of payments to researcher to conduct study.
- Who will have access to personal data?
- Measures taken to ensure confidentiality and security of personal data.
- Extent to which the information collected will be anonymised.

- How samples/data will be obtained and the purpose for which they will be used.
- How long will samples/data be kept (standard is 5 years).
- Who will store the data and how will it be stored.

(3) Consent

- Full description of consenting process.
- Adequacy, completeness and understandability of written and oral information given.
- Content and wording of Participant Information Sheet – ensure language is clear and minimises use of jargon. Most Ethics Committees have a template available.
- Procedure for informing participants who are not literate.
- Content and wording of Informed Consent Sheet and provisions for those incapable of giving consent personally.
- Justification for including individuals who cannot consent and full account for arrangements in obtaining consent.
- Assurances that participants/volunteers will receive any new (relevant) information that becomes available during the course of the research.
- Careful and realistic consideration of potential risks, adverse effects, physical or psychological discomfort to participants, likelihood of occurrence, and steps taken to deal with risk.
- Provision of a "Distress Protocol" for responding to participants who may be distressed by the content of

the research (bearing in mind that support may range from direct access to the researcher to provision of contact information for support services and that some research may be done at a considerable geographical distance, for example, online survey respondents may from other countries).

- Where indicated, there may be a safety protocol for the researcher. This includes items like:
 - The researcher will inform his/her supervisor specifically when and where interviews will be conducted and will report in on return from each interview.
 - The researcher will carry a mobile phone at all times.
 - All interviews will be conducted during daylight hours.
 - The researcher will be dressed appropriately for the interviews.
 - Interviews will be conducted in open areas where possible, and near domestic housing and/or populated areas.

(4) Confidentiality

- Ensuring that information is accessible only to those authorized to have access to it (specified members of the research team).
- Precaution regarding the public use of audio, video, visual materials if confidentiality and anonymity were guaranteed.

- Where the research involves access to medical records – only material relevant to the study must be accessed.
- Where there are research assistants, the main investigator has responsibility to ensure that others observe the limits of confidentiality.

Research with Children and Vulnerable People.

- Generally speaking, the primary ethical challenge regarding risk is to ensure protection of individual children participating in the research while making sure that the research improves the situation of children as a group (Kopelman, 2000).
- Children may give assent to participate – assent is defined as ‘a child’s affirmative agreement to participate in research’ (HHS, 2005, p. 1). A child’s assent needs to be complemented by a decision of a ‘legally recognised surrogate decision-maker’ (Baylis *et al*, 1999). This position is based on an assumption that children or adolescents are not yet fully competent to make such decisions, especially not decisions that might involve some risk of harm.
- The researcher needs to be familiar with the needs and characteristics of children of different age groups, and especially of the particular population to be included in the research (Broome et al, 2003; Holaday et al, 2007).
- It is recommended to involve children themselves in the development of informed consent material (Ford et al, 2007).

The process of conducting ethically sound research is clearly multifaceted and at times challenging. However, keeping ethical principles at the forefront of research planning will help to ensure that the research activity is carried out in an ethical manner. Figure 2 illustrates the various ethical issues that have been raised in this paper.



Figure 2*: Visual representation of important ethical issues.

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HOW TO ANALYSE QUANTITATIVE DATA

SUZANNE GUERIN
BRENDAN ROONEY

Introduction

Statistical analysis is often seen to be synonymous with quantitative research; however for many researchers it is an area where they feel least confident. Langdridge and Hagger-Johnson (2009) refer to this in their introduction to statistical analysis, noting research that has been conducted on the topic of mathematics anxiety. Developments in quantitative and statistical analysis can mean that the basic courses many professionals take during their training cannot not equip researchers with the full range of techniques used in research. However, the basic understanding of statistical assumptions and common techniques that they provide, represent an important foundation upon which to build a more developed understanding. An important starting point is to recognise that statistical techniques represent a set of tools available to the researcher, and as with all tools, success is a function of picking the right tool for the job at hand. In light of this, the aim of this article is to reflect on the analysis of quantitative data, examine some of the common methods reported in published research, and to examine the process of selecting appropriate method of analysis.

A Note on Invaluable Resources

Unless you are regularly using them, most researchers do not remember all the intricacies of quantitative and statistical analyses. However many researchers will have favourite books, which act as a key resource in the process of research and analysis. In our experience it is not unusual for researchers to be most comfortable with the statistics textbook that they themselves studied in training. What is essential is that you are comfortable with the style of the textbook and familiar with its content. Having said that, there are some eminently useful texts that the reader might be interested in, the first of which we liberally refer to in this article: Vogt and Burke Johnson's (2011) *Dictionary of Statistics and Methodology*. With the subtitle of *A Nontechnical Guide for the Social Sciences*, this accessible text presents the reader with a literal A to Z of what can be (in articles and indeed other books) impenetrable jargon relating to research and statistics. A comprehensive online resource is Andy Field's humorously entitled website www.statisticshell.com/ which offers guides to statistics at different levels of expertise, lists of further resources and an FAQ section.

General Approaches to Quantitative Data Analysis

To begin it is important to recognise that quantitative analysis is an umbrella term for a wide range of approaches and techniques. Utts (1996) captures this with her definition of statistics as "a collection of procedures and principles for gaining and processing information in order to make decisions when faced with uncertainty" (p. 4). The procedures are

varied and include simple techniques for capturing the nature of a data set such as descriptive and frequency analysis, as well as more advanced inferential statistics, which allow for making inferences about a population based on the data collected from a sample. Langdridge and Hagger-Johnson (2009) note that a key feature of inferential statistics is that patterns are assessed for statistical significance to ensure that findings are not due to chance or error.

The wide range of procedures and techniques available is the main strength of quantitative analysis; however it is also a challenge. For example, researchers may decide to conduct multiple analyses in order to identify the most relevant findings. Conducting multiple analyses like this can be problematic as it might increase the probability that you will find a significant effect in your sample, that is not true for your population. This point is about the likelihood of making Type I and Type II error (which are summarised in Table 1). Trochim (2006) makes the same point and links it with the idea of conclusion validity. Trochim describes conclusion validity as the extent to which conclusions drawn from analysis are valid.

The development of computer-based analysis programmes such as Stata, R, and the widely used SPSS (Statistical Package for the Social Sciences, IBM, 2012) have added to the ease with which researchers can conduct multiple analyses. However in this way their development has also contributed to the problems of multiple analyses.

Table 1: Definition of Type I and Type II error.

Error		Definition
Type (Alpha)	I	"An error made by wrongly rejecting a true null hypothesis. This might involve incorrectly concluding that two variables are related when they are not, or wrongly deciding that a sample statistic exceeds the value that would be expected by chance." (Vogt & Burke Johnson, 2011, p.407- 408)
Type (Beta)	II	"An error made by wrongly accepting (or retaining or failing to reject) a false null hypothesis." (Vogt & Burke Johnson, 2011, p.408)

In order to minimise the challenges associated with this issue, it is essential that the analysis of any data set is driven by the research questions or hypotheses posed at the outset of the study. The research questions or hypotheses are an essential guide in the process. For example different techniques will be required depending on whether the researcher is interested in exploring relationships, group comparisons or more complex effects or trends. Additional choices regarding analysis procedures will be driven by the specific design of the research (and we explore some of these issues below).

The focus of the rest of this article is on the process of deciding on the appropriate method of quantitative analysis for a study. However before considering this decision making process, researchers should initially consider the nature of their data, particularly in terms of the type of data gathered

and whether assumptions can be made about the normality of the distribution.

Identifying the nature of quantitative data

It is important that a researcher reflect on the nature of the data they have collected as this influences the types of analysis procedures available to them. Table 2 summarises the four scales of measurement that are commonly represented in research data. Nominal data includes categorical measurement such as gender, handedness or political affiliation. Ordinal data is also categorical but with a clear hierarchy and includes data such as first, second and third in a race, or categorising participants as children, adolescents and adults. Interval and Ratio data are similar in that they both have fixed intervals between adjacent data points. The difference here is the presence or absence of a true zero point (where zero is the absence of the phenomenon being measures). In quantitative analysis interval and ratio data are treated the same and are sometimes referred to jointly as scale data.

As well as identifying the type of data gathered, the main implication of this process is the impact it has on the choice of data analysis methods (see Figure 1). Generally speaking Nominal and Ordinal data are analysed using non-parametric techniques. These are techniques that do not assume a normal distribution. However, it would not be correct to assume that Scale data by comparison automatically allow the researcher to use parametric analyses (which draw on the properties of a normal distribution). It is possible that scale

data are not normally distributed and it is important that the researcher reflect on the assumption of normality in the population or (where the sample is large enough) test for normality in the sample. This can be done by either examining levels of skewness and kurtosis in the sample or conducting a statistical test such as the one sample Kolmogorov-Smirnov test, which determines whether a given distribution differs significantly from normal (Vogt & Burke Johnson, 2011).

Table 2: Definitions of main types of data (from Vogt & Burke Johnson, 2011)

Error	Definition
Nominal Data	"numbers stand for names but have no order or hierarchy" (p. 252)
Ordinal Data	"ranks subjects (puts them in order) on some variable. The differences between the ranks need not be equal" (p. 271)
Interval Data	"the distance between any two adjacent units of measurement (or 'intervals') is the same, but ... there is no true zero point" (p. 186)
Ratio Data	As with interval data though there is a true zero point

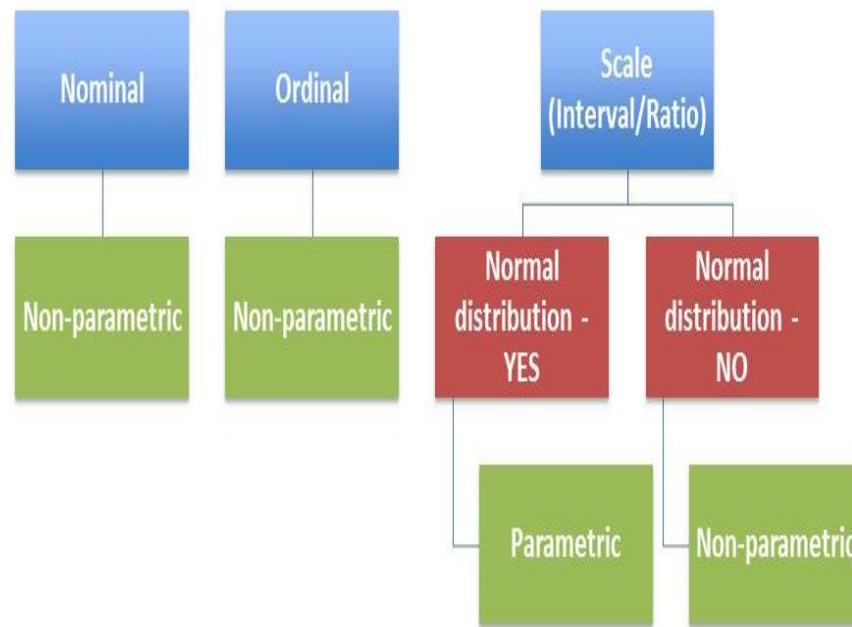


Figure 1: The influence of type of data on selection of analysis techniques.

A Note on Hypothesis Testing

As mentioned above the research questions and hypotheses proposed by the researcher have a key role to play in informing the analysis procedures used. This is particularly true with hypotheses, which can be tested using statistical analysis. Quantitative researchers will be familiar with the concept of the alternative hypothesis, which is used to capture the differences or relationships the researcher expects

to find in the data. In comparison the Null hypothesis proposes that there is no difference between the parameters of the groups or no relationship between the target variables. Many statistical analysis procedures (whether parametric or non-parametric) focus on testing the researcher's hypotheses by seeking to reject or failing to reject the Null hypothesis, with Type I and Type II error representing the problematic outcomes that can occur (see Table 1 above). As Vogt and Burke Johnson (2011) summarise, when testing hypotheses the Null is rejected if the significance level is lower than the present alpha level, which is typically set as 0.05 in social science research.

Selecting Statistical Tests

The remainder of this article examines the decisions involved in selecting tests. We will consider three groupings of tests; test of relationship, tests of difference and complex analyses.

To begin, test of relationship generally take the form of correlations, and both parametric and non-parametric tests of correlation are available. One of the most widely used tests of correlation is the Pearson Product Moment Coefficient (normally called simply Pearson's correlation). This is a parametric test that examines the direction (positive or negative), magnitude (from 0 to 1, with higher values indicating stronger relationships) and statistical significance of the relationship between two variables (both Scale data). The non-parametric correlation is the Spearman's Rho, which also establishes magnitude, direction and significance. However correlations are limited by their bidirectional nature and

procedures such as linear and logistic regression, which examines the predictive nature of the relationship, may be needed to move beyond the relatively simplistic findings of the correlation techniques.

Moving on to tests of difference, Figure 2 and 3 capture the main methods of comparing groups, with Figure 2 detailing the options for parametric analyses and Figure 3 non-parametric analyses.

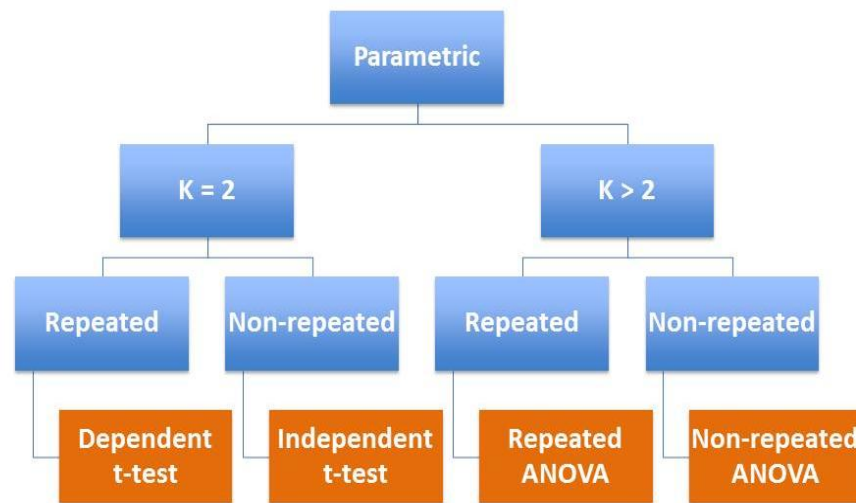


Figure 2: Common methods for parametric analysis of group differences.

The key decisions highlighted in these decision trees are the number of levels of the independent variable (group or condition), which are represented by K and whether the independent variable is repeated or non-repeated. For example, a researcher looking at gender differences in IQ would note that IQ is normally distributed, thereby requiring parametric analyses, gender has two levels (male and female) and that these are non-repeated (participants belong to one group or the other). Therefore an independent t-test would be most appropriate in this instance. By comparison a researcher examining change over the course of a treatment or intervention at three time points (pre, post and follow-up) and using a non-standardised outcome rating may opt to use the non-parametric Friedman's Analysis of Variance (ANOVA). It is important that any researcher identifies these elements of the analysis based on the research questions that drive the research.

The final category of analysis considered is the broad area of complex analyses, by which we refer to analysis techniques which move beyond the single independent, single dependent variable methods described above. We have already noted the role of regression methods as a way of building on simple correlations, and there are more complex methods available to further examine group differences. Complex ANOVA methods allow researchers to examine the interaction of multiple independent variables, for example randomised control trials comparing change overtime in a treatment and a control group may use a two-way mixed model ANOVA to look at the interaction of Time (e.g., pre- and post-treatment) and

Group (Treatment vs Control). Additional complex analyses using ANOVA method include Multiple Analysis of Variance (MANOVA) which allows the researcher to examine multiple (related) dependent variables and Analysis of Covariance (ANCOVA), which “provides a way of statistically controlling the effects of variables one does not want to examine in a study” (Vogt & Burke Johnson, 2011, p. 9) For example, a researcher may decide to use ANCOVA methods to control for the age of participants in an outcome study.

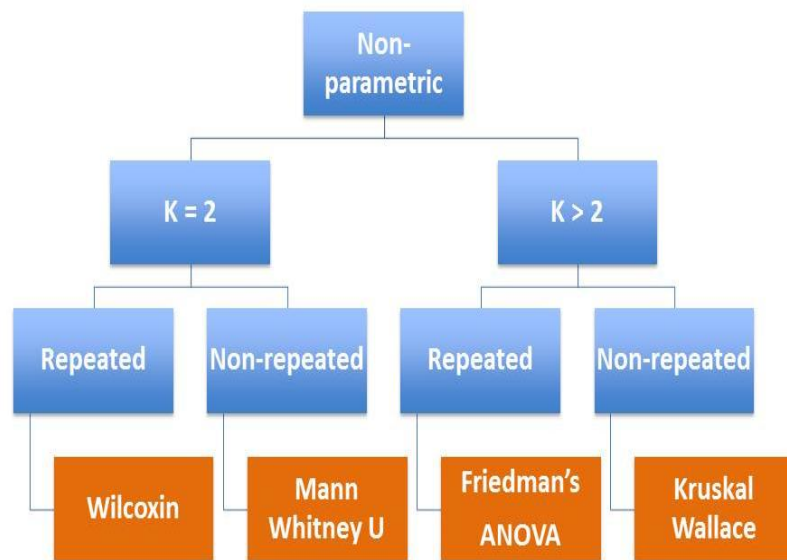


Figure 3: Common methods for non-parametric analysis of group differences.

In addition to these methods, recent developments in statistical modelling have introduced a range of additional techniques in health and social science research. Structured equation modelling (SEM) which Vogt and Burke Johnson (2011) define as “a sophisticated statistical method for testing complex causal models in which the dependent and independent variables... are latent” (p. 384), with latent variables defined as variables that cannot be directly observed and have to be inferred from observed variables. For a further consideration of these complex techniques we recommend Tabacnik and Fidell (2007).

Conclusion

In summary there are some key messages to remember. First and perhaps most importantly, remember analysis of data needs to be driven by your research questions or hypotheses and this helps avoid fishing for findings from multiple analyses. Secondly, it is important that you are clear on the effect your question explores; ask yourself are you interested in the presence of a relationship, a group difference, or something more complex? Finally if possible, translate your question into variables, and, where possible, for each one identify the answers to the following questions:

- What is the nature of your data, can you identify the data as nominal, ordinal, etc?
- Can you identify elements as independent and/or dependent variables?
- For independent variables, what are the levels (K) and how many levels does it have? Is it a repeated or non-repeated variable?

- For the dependent variable, can you assume it is normally distributed in the population (e.g. what does the literature say?) and/or is the sample large enough to test the distribution for normality

This paper has considered a range of common analysis techniques used with quantitative data. We have noted the risks of multiple analyses, and indeed that the flexibility of computer-based programmes makes multiple analyses easier to conduct. The variety of methods available and the potential for multiple analyses highlights the need for analysis to be driven by the focus of a given study, and in particular by the research questions the study seeks to answer.

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HOW TO ANALYSE QUALITATIVE DATA

SUZANNE GUERIN

Introduction

Analysis of any form of data represents a key component of research, and in some ways data analysis constitutes the meaning making part of the process. For many researchers a key aspect of qualitative research is that the analysis process is guided less by the expectations of the researcher in advance of the analysis and more by their reaction to and engagement with the data during the analysis phase. However the process of analysing data is influenced by a multitude of factors including the methodological framework adopted by the researchers, the research questions that guide the study, the methods of data collection used and the nature of the data collected using these methods. It is also likely that the researchers' own background, training and preferences will be influential in how they approach this key aspect of the research process.

Recognising this, the aim of this article is to reflect on the analysis of qualitative data and to consider the nature of qualitative analysis, examine some of the common methods used in published research, and to examine use of computer programmes in qualitative analysis. The procedures for ensuring the credibility of the analysis will also be considered

before the article concludes with some general recommendations.

General Approaches to Qualitative Data Analysis

The aim of qualitative research is "to understand and represent the experiences and actions of people as they engage and live through situations" (Elliot, Fisher, & Rennie, 1999, p. 216) and in adopting this methodological approach researchers use a variety of methods of data collection. The most common form of data collection in qualitative research is the interview; however as Figure 1 presents, there are a range of methods that may be used, each capturing and indeed generating data in different ways, which may have implications for the process of analysis.

Interviews, focus groups, diary entries and written communication such as letters generally result in text-based data, although both interviews and focus groups allow for analysis techniques that draw on the audio or video recordings of the data collection. The use of visual methods such as drawings and photography are becoming increasingly popular in research, particularly with children. DiCarlo and colleagues (2000) argues that drawings represent a universal activity that does not require literacy skills, while Walker (talking about photographs) argues that these methods "find ways of thinking about social life that escape the traps set by language" (1993, p. 72). The type of data generated may have implications for the method of analysis the researcher plans to use. It is particularly important to recognise the types of data you are working with when deciding on a method of



Figure 1. Methods of qualitative data collection

analysis, particularly when a study has multiple sources or forms of data (e.g., focus groups where both the content of the discussion and the interactions of the group are analysed).

Before we move on to consider some specific methods of qualitative analysis, it is possible to reflect on some of the general aspects of qualitative analysis. To begin, like the term quantitative data analysis, qualitative data analysis includes a broad range of methods, with variants reflecting different epistemological and methodological positions. However, there can be a challenge determining the exact differences between the various approaches and this can create difficulties for the researcher who needs to choose a method of analysis. Colin Robson (2002) captures the situation well saying that there is “there is no clear and accepted set of conventions for analysis” within the qualitative approach (p. 456). However, this process is made more complicated (and perhaps unnecessarily so) by the use of what Elliot and Timulak (2005) refer to as ‘brand names’ whereby common aspects of the methods are combined in ways that are presented as unique. Elliot and Timulak go on to describe this practice as “confusing and somewhat proprietary” (p. 148), stressing the benefit instead of a more generic approach. Given the variation and debate in this area, the challenge is to make sure that the procedure by which the researcher makes sense of the data is systematic and transparent, to allow the reader to understand, evaluate and indeed replicate it.

Recognising the concerns of Elliot, Timulak and others, there are a number of methods of analysis regularly used by researchers. Despite the branding issue noted above, examples include Interpretative Phenomenological Analysis, Discourse Analysis, Grounded Theory, Narrative Analysis, Thematic Analysis and Content Analysis. Robson (2002) captures the range of methods using four categories, which are represented in Figure 2.

This categorisation considers whether the method uses deductive techniques (whereby the themes or codes are determined based on previous research or theory) or inductive techniques (whereby the themes are determined based on engagement with and interpretation of the data gathered). It also reflects the continuum of methods from structured techniques to unstructured techniques.

Considering Specific Analysis Methods

It would be impossible to consider all of the named methods used in published research. However, this article will examine four methods: Discourse Analysis, Grounded Theory, Thematic Analysis and Content Analysis. This section will consider the nature of these methods, and aims to highlight the similarities and differences in the techniques, before drawing on Elliot and Timulak’s (2005) generic approach to highlight key elements of the process of analysing qualitative data. Specific resources will be mentioned in the sections below. However, for a very helpful introduction Howitt’s (2010) ‘Introduction to Qualitative Methods in Psychology’ considers a number of common techniques.

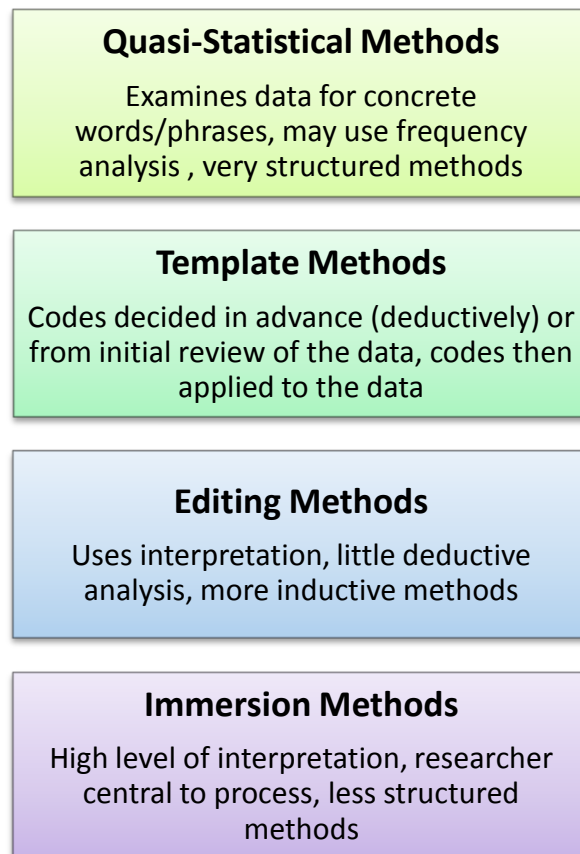


Figure 2. Framework for categorising qualitative analysis techniques from Robson (2002)

Discourse Analysis

To begin with a somewhat circular definition, discourse analysis is concerned with analysis of discourses, which can be defined as written or verbal interactions or

correspondences. Jonathan Potter and Margaret Wetherell have written extensively on the topic of discourse analyses (see for example Potter & Wetherell, 1994) and describe the key features of this approach such as recognising discourses as social practices and examining both the topic and the linguistic form of the discourse. Howitt (2010) also captures key elements that include recognising that we use language to construct versions of our reality, and therefore examining the data to identify what reality may be represented in the discourse.

Looking to some of the building blocks of discourse that can be examined by the qualitative researcher, Silverman (2001) identifies a number of elements including interpretative repertoires, which are related sets of terms that may represent idealised concepts the speaker aims to present, and scripts, which represent ways in which participants construct events they are talking about and typically reflect routine constructions of a narrative. Another key concept highlighted by Howitt, Potter and others is that of the stake. This represents the vested interest held by the speaker and Silverman argues that knowing the 'stake' a person holds in what they are saying can help us to interpret the discourse, which may be structured to minimise or maximise the stake. Looking to the mechanics of discourse analysis, Howitt (2010) captures and summarises the key steps (based on Potter, 2003). A summary of each of these stages are presented in Figure 3 below, though the reader is referred to Howitt's more comprehensive consideration.

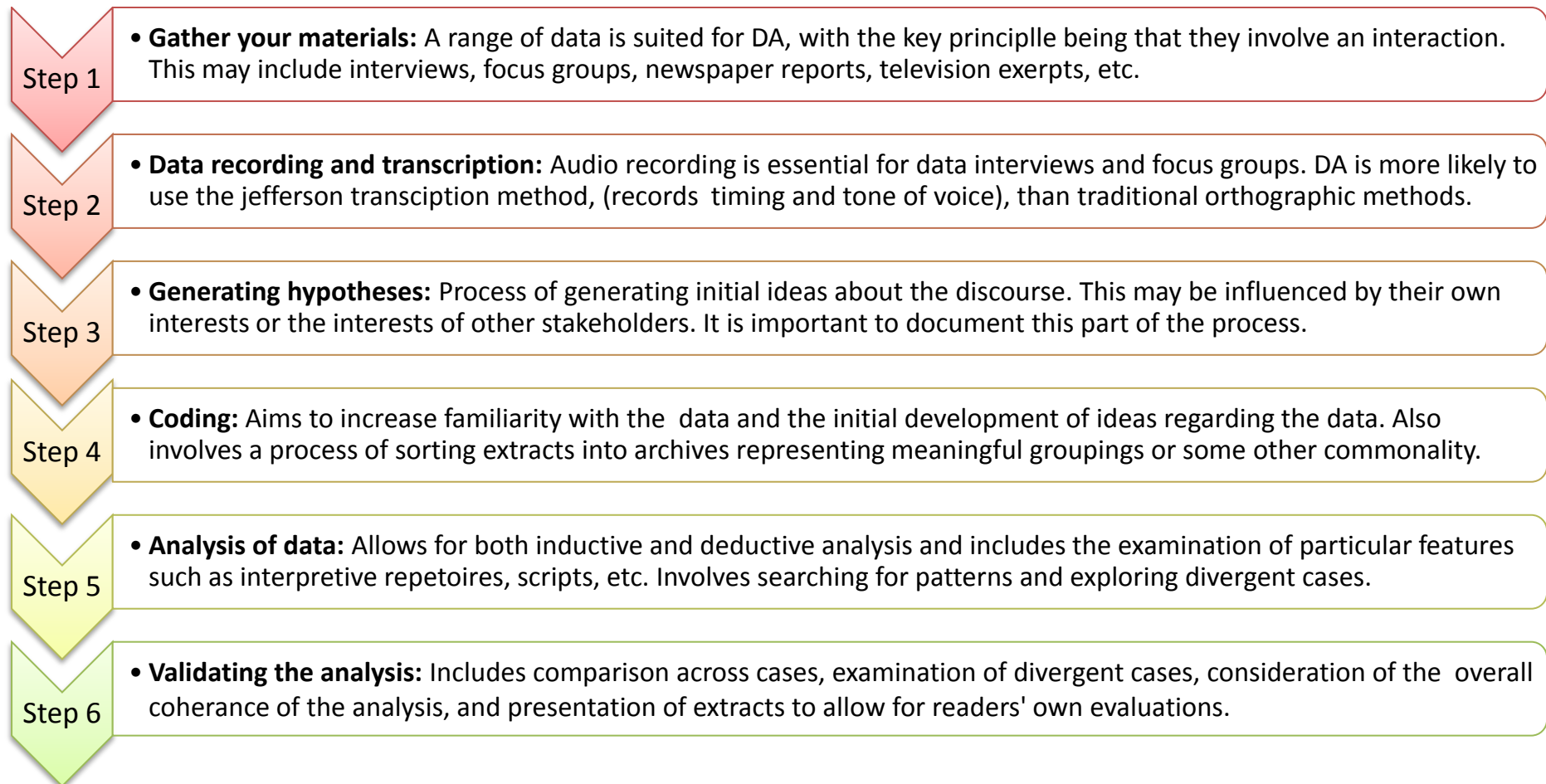


Figure 3. Key stages of discourse analysis outlined by Howitt (2010; after Potter, 2003)

An example of this method can be seen in Lindgren, Oster, Astrom and Graneheim's (2012) study of interactions between women who self-harm and their paid caregivers. This study used observations and informal interviews of women in inpatient wards and their caregivers and the analysis involved the identification of interpretative repertoires. The findings highlighted different repertoires for each group: victim and expert for the self-harming group, and fostering and supportive for the staff group. In addition to providing an insight into the process of discourse analysis, this paper also provides an example of a clear description of the method of analysis presented.

Discourse analysis has become a popular method of analysis in health and psychology, with a literature search for the method highlighting its application to a wide range of subjects. It offers a clearly theory-driven approach to understanding discourses and provides researchers with a way to examine the complexities of those same discourses. However, as with all methods, there are limitations to be considered. Landridge and Hagger-Johnson (2009) reflect on the strengths and limitations of this approach, noting criticisms such as the risk that the person at the centre for the discourse is lost as a result of the focus on the discourse itself, and the discussion regarding the individual as an 'active language user' (p. 441). Nevertheless discourse analysis offers a unique method for the consideration of verbal and text-based interactions, though a researcher considering using the approach may need to reflect on the unique nature of the

approach and its implications. Next, we move on to consider another well-developed method of analysis, grounded theory.

Grounded Theory

Developed in the 1960s by Glasser and Strauss (1964, 1967) grounded theory was perhaps the first formal qualitative analysis technique (Howitt, 2010). Simply put, this approach "involves establishing a set of inductive strategies for the analysis of data" (Carlson et al., 2004, p. 56). As with discourse analysis the term covers a range of techniques, based on variants that have developed since the 1960s. However, in contrast to discourse analysis this method is not strongly theory driven, and indeed for some proponents however the intention with this inductive, bottom up method is to develop a theory that explains the data.

The process of analysis used in grounded theory has been described in different ways, though a key component is the coding of data and a common framework for this element is presented in Figure 4 below, outlining the nature of open, axial and selective coding. In addition to these stages, the constant comparison method is a central component of this approach. According to Landridge and Hagger-Johnson (2009), this involves the examination of similarities and differences, between and within categories and cases. The researcher also aims to find negative cases, which provide an insight into the complexities of the data. Howitt (2010) also stresses the importance of going beyond the categories highlighted by the coding to test the findings against those identified in other data sets and settings so as to develop "a

formal theory about a particular phenomenon” (p. 206). It is interesting to note that Howitt feels that this stage of the process is not common in research using grounded theory.

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including its contribution as one of the first well-developed qualitative analysis techniques and the fact that it presents as its foundation an approach to testing hypotheses and developing theory that is appropriate for qualitative research. In contrast, Landridge and Hagger-Johnson (2009) note that the ongoing debates about the approach represent a challenge, which may tie into the earlier quote from Robson (2002) regarding the lack of accepted conventions in qualitative analysis. Another significant limitation noted by the authors is the failure to consider the role of language, which is a key feature of the previously considered method of discourse analysis.

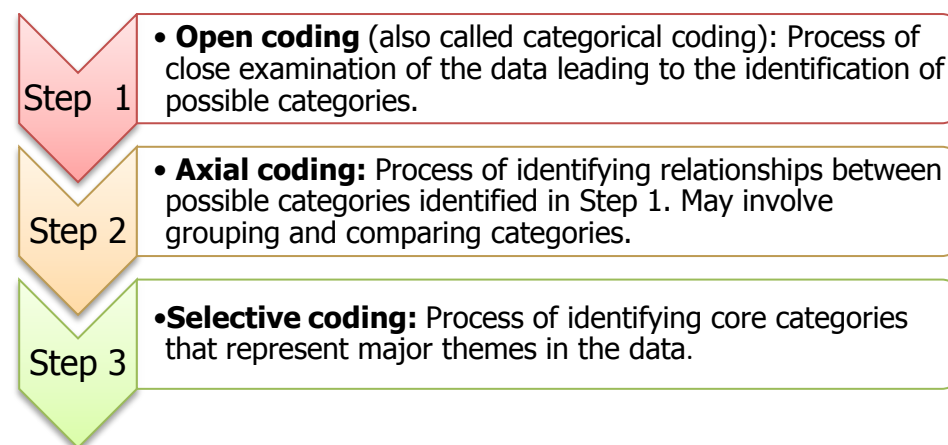


Figure 4. Key stages of coding in grounded theory as outlined by Howitt (2010)

Despite the ongoing debate and discussion, grounded theory *is* a very common method, and indeed in comparison to

discourse analysis one might argue that the coding process is more concrete and therefore practical for the researcher working in an applied context. The preceding methods have an established identity as forms of qualitative analysis; however the same cannot be said for the following methods. The next section considers thematic analysis, which has been and continues to be the subject of debate as to its contribution to qualitative data analysis.

Thematic Analysis

Thematic analysis has been defined as “a method for identifying, analysing and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail” (Braun & Clarke, 2006, p.79) and the authors go on to clarify that “a theme captures something important about that data in relation to the research question, and represents some level of *patterned* response or meaning within the data set” (p. 82).

In discussing this method, Howitt (2010) highlights some of the debate regarding the use of thematic analysis, noting a “lack of complexity” (p. 164), while Braun and Clarke (2006) note the lack of clarity regarding the method. However, Howitt sees its simplicity as a positive, with the method being suitable as an introduction to qualitative analysis, while Braun and Clarke support its use as a pathway into other methods. The interested reader is directed to Braun and Clarke’s (2006) useful article, which captures the development, foundations and elements of this method. For the purpose of this article,

Figure 5 captures the key stages of thematic analysis as outlined by Braun and Clarke.

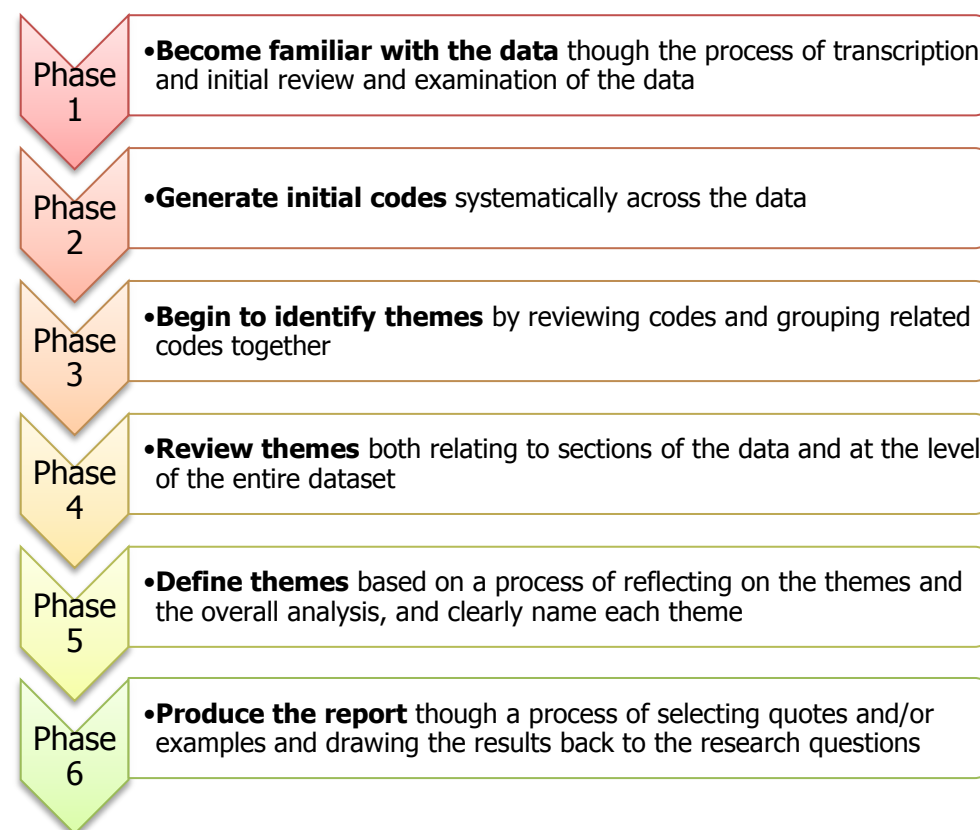


Figure 5. Key phases of thematic analysis from Braun & Clarke (2010)

There are a number of similarities and differences between thematic analysis and the preceding methods. For example

both grounded theory and thematic analysis refer to the collapsing of initial codes into more refined themes or concepts. Braun and Clarke also comment on the use of thematic analysis in cases where there is a guiding thematic framework and where there is not, suggesting the use of inductive and deductive methods, similar to discourse analysis but distinct from grounded theory.

Commenting on the strengths of this approach, Howitt (2010) notes that it is more accessible than other methods, particularly for novice researchers, the public, and indeed policy development. However, he does also note the challenge presented by variation in the use of the title thematic analysis, and particularly the variation in quality that can be seen in studies using this method. The issue of quality is one that is central to any method of analysis and Braun and Clarke (2006) provide a very helpful 15-point checklist that researchers should use to ensure that they are applying this method consistently and to a high standard.

Content Analysis

The final specific method of analysis considered is content analysis, yet it is interesting to note that this approach is not always seen as a method of qualitative data analysis. Indeed Elo and Kyngas (2007) provide an overview of its quantitative foundations and stress its flexibility as a method. They note that it can be used with either qualitative or quantitative data, with a range of types of data including interviews, documents and images, and that it allows for both inductive and deductive analyses. Simply put, content analysis involves

establishing a set of categories/themes and applying these categories to the data (Robson, 2002). Robson goes on to stress that the categories must be clear and precise and also mutually exclusive

There are different descriptions of content analysis in the literature. For example, Elo and Kyngas (2007) outlined three phases; the preparation phase, the organising phase and the reporting phase. Figure 6 below outlines the stages of content analysis as used by Guerin and Hennessy (2002) in their analysis of children's definitions of bullying. Central to these steps is the consideration of sections or topics within the dataset. The aim here is to create a structure within which the key findings can be identified.

Many of the strengths noted for thematic analysis can be applied to content analysis, particularly its simplicity and its accessibility. It is similar to both grounded theory and thematic analysis in the process of refining themes, and as with other methods, allows the researcher to examine the data for the presence of particular themes (deductive) and/or allows the emergence of inductive themes. However, Elo and Kyngas (2007) note that it is seen as too simplistic, and the quantity of information involved can also be challenging. A final challenge noted by these authors is the difficulty in moving beyond a consideration of categories to isolate more abstract findings. Nevertheless, the use of content analysis in many studies highlights its potential as a method of analysis.

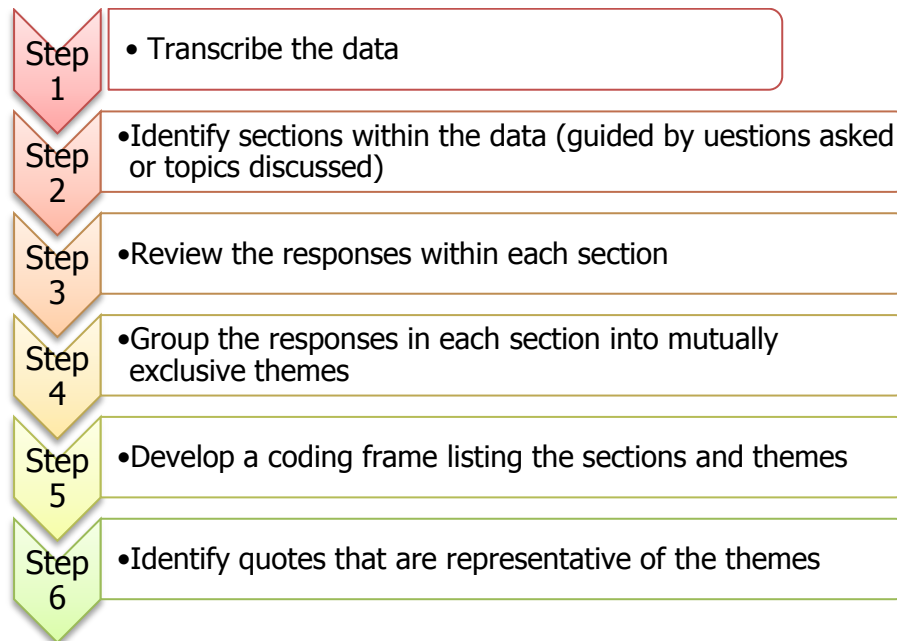


Figure 6. Key steps for content analysis from Guerin & Hennessy (2002)

Moving Beyond Brand Names

Having considered a number of types of qualitative data analysis, this article returns to the point from Elliot and Timulak (2005) considered earlier, the challenge of branding in qualitative analysis. As noted earlier, they stress the benefits of a more generic approach. Figure 7 below outlines the key stages of this approach.

Reflecting on these stages in the context of the previous discussion of the different methods of analysis earlier in this

article, the commonality of the stages proposed by Elliot and Timulak is clear. Clearly the preparation and initial review of data is a key aspect of analysis, as is the generation of initial codes or categories. It is interesting that this framework stresses the abstraction of findings, an issue that content analysis has been criticised for. As part of this generic approach Elliot and Timulak stress the importance of validating the analysis and this issue is considered in more detail later in this article.

A Note on Computer-Assisted Qualitative Data Analysis

In recent years there has been an increase in interest in, and programmes available for, conducting computer-based analysis of qualitative data. Programmes are available for analysing text and video-based data and include NVIVO, Hypertext, Atlas TI and Observer Pro. One of the most comprehensive resources for researchers interested in computer-based analysis is the CAQDAS project, which stands for Computer Assisted Qualitative Data Analysis Software (<http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas/>). This project provides training and information on different programmes and issues in computer-based analysis.

A key debate in relation to the use of computer programmes is whether they represent an element of the analysis process or simply a tool to support the management. Bourdon (2002)

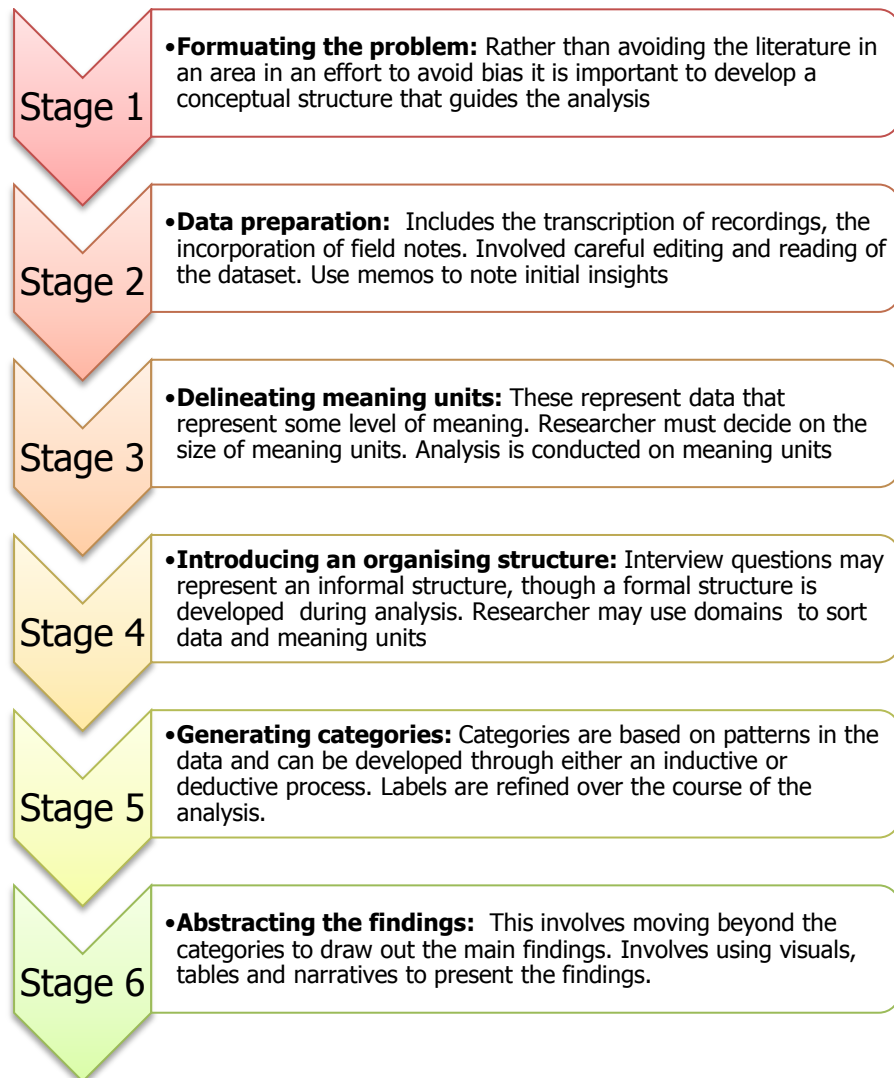


Figure 7. Key steps in qualitative analysis based on Elliot & Timulak (2005)

discusses this distinction in some detail and considers some of the situations that are suitable for computer-based analysis. Looking at the strengths and limitations of computer-based analysis, Welsh (2002) considers the example of NVIVO, a widely used programme. She notes some of the critiques of computer-assisted analysis such as creating a distance from the data, and encouraging a more quantitative approach and also notes the demands of developing competence with these programmes. However, Welsh also stresses NVIVO's contribution in terms of generating a more reliable picture of the data and the flexibility to allow for both inductive and deductive analysis. The debates regarding computer-assisted qualitative data analysis continue and it is the choice of the researcher as to whether it is appropriate or effective for a particular study.

Rigour in Analysis

Having considered a number of different approaches to qualitative analysis, the final section of this article reflects on a key aspect of analysis. Whether we refer to reliability, validity, trustworthiness or credibility, the debate regarding methods of ensuring rigour in qualitative analysis is central to qualitative research. Morse and colleagues (2002) note that some researchers have debated the relevance of these concepts to qualitative research. However Madill, Jordan and Shirley (2000) refer to the perception that "qualitative approaches can be criticised for the space they afford the subjectivity of the researcher" (p. 1).

As a result of this debate many researchers have reflected on techniques which may address these concerns. Examples include the use of respondent validation (Elliot & Timulak, 2007), triangulation (Barbour, 2001) and methods for checking the reliability of coding (Guerin & Hennessy, 2002). Elliot and Timulak recommend an audit process throughout the analysis, with a major audit following the completion of the draft of the analysis. However, Barbour (2001) councils against 'the tail wagging the dog' (p. 1115), and considers the use of coding and inter-rater reliability to be potentially problematic to a certain extent, noting concerns such as economy and resources and the tendency to focus on agreement rather than learning from disagreement.

In considering the need for checks and balances in qualitative analysis, the reader will find Elliot, Fisher and Rennie's (1999) excellent article on the publication of qualitative research studies a useful checklist. This article considers criteria that can be used to ensure the quality of research and a number are relevant to data analysis. For example, in discussing criteria for both qualitative and quantitative research, the *specification of methods* stresses the need for methods of data collection and analysis to be clear and transparent. Looking to Elliot et al.'s specific criteria for qualitative research, a number have implications for analysis. The need to own one's own perspective focuses on the researcher recognising their influence in the research process, and clearly the analysis process is one where this influence could be problematic. A criterion that is directly relevant to analysis is *grounding in examples*, which stresses the need for quotes

and other supporting examples. These examples help the reader assess the appropriateness of interpretations made. The criteria also stress the need to *provide credibility checks* such as triangulation with other methods or with the participants themselves. Finally researchers need to consider the *coherence of the analysis*, and this relates to the way in which the researcher balances the nuances of the data with an integrated framework or model representing the findings.

Despite the debates regarding the subjectivity (inherent or not) of qualitative research in general, and qualitative data analysis specifically, an awareness of rigour and credibility checks can only contribute to the research process. The challenge for the researcher may be to identify a method of enhancing credibility that is in line with their own approach to qualitative research and the method of analysis used.

Recommendations for Qualitative Data Analysis

Having reflected on methods of analysis and associated issues of credibility, this article concludes with a number of recommendations for researchers using qualitative research methods. A key requirement is that the analysis method chosen must be appropriate to the data gathered and the research questions posed. A method such as discourse analysis will only be suitable for particular questions, while thematic or content analysis may represent more flexible methods. Researchers should also be aware of the strengths and limitations of particular approaches, as already discussed above. For example, discourse analysis may place too much

emphasis on the interpretation of language, while the requirement for those using grounded theory to minimise expectations and biases can represent a challenge.

Perhaps the most important element of the analysis process is the choice, and indeed the informed choice, of a model of analysis. However, recognising Elliot and Timulak's (2007) concerns around brand names, it may not be a simple case of selecting a named method and perhaps the most effective model is the one that can be clearly described for the reader, whether the reader is a reviewer, an examiner, or an interested practitioner. Nevertheless, the methodological literature contains a range of resources that can guide the researcher in these key decisions.

The final recommendation relates to the challenge of subjectivity noted above. Given the nature of both qualitative research and qualitative data analysis specifically, it is essential that those taking part in research consider the factors that may undermine the research or indeed may contribute to the credibility of the process. Again there are a range of methods available to the researcher including triangulation and reliability checks. However, again the choice of verification techniques should be a considered and informed choice. One relatively simple solution may be a focus on transparency, both in conducting the analysis and reporting the findings, along with a commitment to provide examples that allow the reader an insight into the process of analysis and interpretation.

Conclusion

As stated at the outset of this article, the process of analysing qualitative data represents a complex process with few accepted conventions. Navigating the range of techniques and debates evident in the methodological literature may represent a challenge to less experienced researchers. However the solution to this challenge is informed choice and transparency.

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HOW TO CONDUCT A SERVICE EVALUATION¹⁰

PATRICK MCHUGH
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Introduction

Clinical services are increasingly required to provide evidence demonstrating that they are meeting the highest standards of quality while providing value for money. This evidence is required for Senior Managers, Government Departments (i.e. funders) and an informed public. A key challenge for health services is to develop the widespread capacity to gather this evidence, and report and act on it in a credible and authoritative way. There needs to be a transition within the health services from a reliance on anecdotal testimony and simple statistics (e.g., HealthStats), to the use of formal service evaluations that provide comprehensive and reliable information (www.apcrc.nhs.uk). Such information can be invaluable in bringing about improvements and efficiencies, while those valuable and cost-effective aspects of our services are not unnecessarily modified as a token gesture of change. The objective of this paper is to provide a practical overview of the formulation and execution of a service evaluation, and

in doing so improve the preparedness of services for conducting evaluations in the future.

Before providing an overview of the typical stages of a service evaluation, it is worth noting the similarities and differences between clinical research and clinical service evaluation. A clinical research project will tend to focus on a narrow set of research questions, yielding a report that is tightly focused around the answers to these questions. With a service evaluation, there will be a range of performance indicators covering many domains of service activity. Some of these domains may be inter-related while others may be independent. The task of the evaluator is to systematically examine each domain, and to draw conclusions and develop recommendations dealing with each. Thus, the breadth of the task is typically much wider for clinical service evaluation than it is for clinical research, and partly explains why experienced researchers often struggle with the task of evaluating a service. A further distinguishing property relates to the control of contextual variables. Specifically, clinical research will attempt to control for contextual variables in order to increase the internal validity of the results, while a service evaluation typically will not. Hence, a service evaluation examines how a service operates under naturalistic conditions, rather than under controlled or idealised conditions.

Service evaluation process

This practical introduction to service evaluation will discuss the stages of a service evaluation, from the initial planning

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and design concerns to the production of the report. The various theoretical and practical challenges that may emerge during the course of an evaluation are also discussed.

1. Choose the dimensions of evaluation

There are multiple dimensions of quality on which a service can be assessed (see Table 1). The dimensions chosen will be influenced by factors such as the underlying motive for the evaluation, and the priorities of the service. For example, an evaluation aimed at justifying resources will be focused on the dimensions of effectiveness and efficiency, while a service that promotes service user involvement will be particularly concerned about acceptability. Ideally, an evaluation will assess a service across a range of dimensions. Unidimensional evaluations may promote unidimensional improvements at the expense of the functioning of the service as a whole. Kelly and Hunt (2006) have identified 5 dimensions of health care quality (see Table 1). Each dimension could, alone, be the focus of a service evaluation. Yet a comprehensive service evaluation would require consideration of all applicable dimensions.

2. Determine type of evaluation

There are three general levels on which a service can be evaluated; (1) Is a service meeting its performance goals? (2) Is a service achieving its desired outcomes? and (3) Do the internal processes of a service facilitate the achievement of (1) and (2)? These three categories give rise to three types of evaluation, referred to respectively as goal, outcome and process evaluation (McNamara, 2002).

The performance goals of a service may be identifiable through an Operational Plan, Customer Charter or other official documentation where the service has articulated its mission statement and objectives. If no clear goals have been formally established for a service, then they can be agreed upon at the outset of the evaluation through consultation with stakeholders, funders and service providers (Rees, Stride, Shapiro, Richards, & Borrill, 2001), as well as being cognisant of the literature in that area (Worrall et al., 2002). The standard may also be based on the performance of another service (i.e. benchmarking), and this may provide a more achievable goal (Hermann, Chan, Provost, & Chiu, 2006).

Ideally, goals should be specific (clearly defined), measurable, achievable, relevant (i.e. aligned with strategy) and time-framed (SMART; Armstrong & Baron, 2005). Nonetheless, it is important not to bias the evaluation towards goals that meet these criteria, but that may not be particularly meaningful in the context of the service. For example, an excessive focus on administratively convenient factors (e.g., waiting times) may lead to a distortion of clinical priorities, excessive rigidity in organisational routines, and the misrepresentation of performance (Goddard & Smith, 2001).

An outcome evaluation examines the benefits that users gain from the service. For example, while a goal of a service may be to 'assess all new referrals within 5 working days', an outcome of achieving this goal may be increased service user

satisfaction. Like goals, outcomes need to be clearly defined and easily measured. Given the increasing complexity of mental health services, the functioning of a service will not be adequately evaluated by assessing just one outcome (Hansson, 2001). Rather a combination of outcomes (e.g. psychopathology, quality of life, social functioning) needs to be assessed.

Both goal and outcome evaluations may provide somewhat of a 'black box' approach in that they do not examine the factors underlying the achievement of the associated goals or outcomes (Robson, 1993). A process evaluation aims to shed light on these intervening factors, usually through qualitative methods. Often the views and experiences of service users and service providers will be obtained to gain an insight into the subtleties of service functioning.

To provide a comprehensive analysis of a service, a combination of the three types of evaluation may be conducted. A service evaluation that combines goals, outcomes and processes would have the potential to establish quantifiable information that could be interpreted in the context of the service provided on the ground. Thus, combining the different types of evaluation can interactively facilitate the interpretation of the data produced.

3. Decide if prospective or retrospective

A service can be analysed either as it functioned, or as it is functioning. These two types of approaches are referred to as retrospective and prospective, respectively. The former

involves the evaluator looking back at the performance of the service between two specified points in time. Here the evaluator is hostage to the quality of the data routinely held by the service, and the ability of service users and providers to accurately report events within that time period. With a prospective evaluation, the data is collected as the service operates. Here the evaluator and the service need to agree on a number of goals prior to the evaluation, including the method of data collection and the time-frame. Increasingly, voluntary groups are making provision for evaluation costs in funding applications for their services. When awarded, such funding allows the evaluation to be conducted prospectively. Prospective evaluations are also becoming a requirement for many EU-funded projects.

4. Decide scope

The potential scope of the evaluation may be limited by a number of factors. For example, the topic chosen will often be based on data that is easiest to access (Gilbody, House, & Sheldon, 2002), such as that which is available in local (e.g., that which is routinely collected) and comparative databases. Here, the evaluator needs to consider whether such readily available data can answer questions about the service that are of meaningful significance. If the available data does not permit an adequate service evaluation, the service needs to

Table 1. Dimensions of health care quality (Kelley & Hunt, 2006)

Dimension	Description
Acceptability	<ul style="list-style-type: none"> • The degree to which a service provides a positive experience for users / carers. • Indicators include: Satisfaction surveys; Service user involvement in service planning; Management of service user complaints or feedback.
Accessibility	<ul style="list-style-type: none"> • The ease with which health services are reached. May relate to difficulties with physical, financial or psychological access. • Indicators include: Size of waiting list across different care groups, socio-economic areas and geographic regions.
Effectiveness	<ul style="list-style-type: none"> • The degree to which a service is achieving its strategic goals. • Indicators include: Achievement of desired intervention outcomes; adhering to best-practice guidelines.
Efficiency	<ul style="list-style-type: none"> • The system's optimal use of available resources to yield maximum benefits or results. • Indicators include: Human, technological or monetary resources needed to produce a given output (i.e. throughput).
Equity	<ul style="list-style-type: none"> • The extent to which a system deals fairly with all concerned. • Indicators include: Distribution of service users based on factors such as their socio-economic, geographic, or diagnostic profile; success in dealing with vulnerable users or those living in outlying areas.

consider future strategies to expand the data that is routinely collected.

The resources available will also restrict the breadth and complexity of data that can be collected. For example, service pressures will restrict the time clinical staff can spend engaged in research, while funding pressures may limit the technology that can be accessed and the extent to which external supports can be provided (e.g. statisticians). When faced with such limiting factors, it is important that the evaluation is kept to a level of simplicity that allows the key question to be adequately addressed (U.S. Department of Health & Human Services, 2010).

Another factor that will influence the scope of an evaluation is the target audience. For example, if the evaluation is designed to inform a key decision maker (e.g., a HSE Senior Manager), the evaluator will often seek some level of consultation with that individual. In such cases this individual may request a report from the evaluator based on a narrow set of performance indicators. Alternatively, an evaluation targeting a broader audience will likely cover a wider range of dimensions. In all cases, it is important to seek input from the various stakeholders or power brokers in determining the scope of the evaluation (i.e. 'have many fingerprints on it').

5. Consider the service context

Contextual factors need to be considered when planning an evaluation. For example, how could the evaluation impact funding and resources, will it raise politically sensitive issues

etc. It is important here to get all stakeholders involved so that any such issues can be discussed before the evaluation proceeds. It is also important to consider whether service staff may be reluctant to openly discuss potentially controversial topics, such as caseloads or relationships with management. In such cases, an experienced external evaluator can have particular utility.

6. Decide who evaluates

Service and project evaluations are most appropriately executed by an individual or individuals with 1) with knowledge in the area of service-evaluation 2) who can objectively gather and interpret evidence 3) has knowledge of the real-world clinical context. Where no individual within the service meets these criteria, then the evaluation is most appropriately out-sourced to an external agent with evaluation expertise. Experienced external consultants are often in a better position to produce a balanced, evidenced-based report (U.S. Department of Health & Human Services, 2010), especially in a period where external criticism of the service is high. It is important however, that external consultants work closely with service staff in completing the evaluation.

7. Formulate methodology

The methodology used will be influenced by the type of evaluation. For example, the indicators for both goal and outcome evaluations will tend to be quantitative, given the importance of selecting a definable and measurable indicator (see Table 2.). However, in certain cases where the goal or

outcome is more experiential (e.g. 'Provide a user-friendly service'), a mixture of quantifiable (e.g., satisfaction questionnaires) and non-quantifiable (e.g., interviews) data may be used. The measures chosen for an evaluation need to be suited to the service being implemented (Berghmans, Berg, van den Burg, & ter Meulen, 2004). For example, a measure of mental health symptoms may be appropriate for evaluating a service that uses primarily drug therapy, while a more wide-ranging measure like the Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM; Evans et al., 2000) may be more appropriate for evaluating services based primarily on psychological therapies.

To examine the subtleties of a service's functioning, a process evaluation will usually require qualitative data. Through various methods such as consultation, interviews, focus groups, diaries and case studies, the operation and evolution of a service in its natural context can be examined. Evaluators need to be aware of the limitations of such methods, such as the greater potential for researcher bias, and the difficulty of comparing results between two points in time.

8. Consider ethical issues

All the standard ethical considerations for research will also apply to service evaluation. However, service evaluations may often not require formal ethical approval (Brain et al., 2009). Specifically, research ethics committees may decide that service evaluations are outside of their remit. Given this differential treatment relative to standard research, the

evaluation team must avoid complacency in recognising the potential ethical risks in conducting an evaluation. For example, the evaluation team needs to be aware of their responsibilities should they encounter an instance of malpractice, or a service-user in need of intervention.

According to the Data Protection Commissioner, service staff can access service user data for evaluation purposes. However, health services need to advise all users, preferably at their point of entry (both in writing and verbally), that they can expect their anonymous data will be used for research and evaluation purposes. When the evaluation involves non-routine contact with service users or staff (e.g. interviews), the standard procedures for gaining expressed informed consent apply. For some of the more vulnerable service users, it is important to ensure that they have the capacity to consent. Where uncertainties exist regarding the use of service user data, direct contact should be made with the Office of the Data Protection Commissioner (www.dataprotection.ie).

Protecting the identity of service users is a key concern with regard to data management. In terms of confidentiality, service users can be assigned numbers within the data set, with these numbers only being traced back to the service user with their consent. In cases where an external agent is conducting the evaluation, only individuals working in the service can process the identifiable data. With regard to data storage, the raw data needs to be kept in an encrypted file and

stored safely by the evaluator for length of time agreed between the service and the evaluator.

9. Develop report

A draft report needs to be initially disseminated to establish the report's factual accuracy and identify other potential limitations. As evaluations are primarily designed for the decision-making community rather than the scientific community, the need for clarity of communication is paramount. It is good practice to include an executive summary to profile the important findings and recommendations. In instances where the report is directed at a key decision maker, a short report focusing on key performance indicators may be appropriate. A more descriptive report may be more suitable for a wider audience.

The recommendations of a report need to highlight the specific objectives for improvement (both short- and long-term goals), as well aspects of the service in need of further evaluation. The recommendations need to be aligned with the strategic aims of the service and be strongly grounded in the evidence of the evaluation. Speculative recommendations must be avoided, particularly for politically sensitive topics such as funding or the security of posts (Robson, 1993). Furthermore, recommendations of major changes to a service (e.g. redeployment) should not be made unless the data suggest substantial gains.

10. Disseminate report

The medium chosen to communicate evaluation findings needs to reflect the target audience. For example, if an evaluation is aimed at management-level staff, it may be useful to submit findings to a management journal provided they can be published within an appropriate timeframe. If the goal is to communicate findings to a broader audience within the health sector, staff websites like HSELandD (www.hseland.ie), the Irish health repository Lenus (www.lenus.ie/hse; Lawton & Byrne, 2012), and staff newspapers like Healthmatters may be appropriate.

11. Implement recommendations

Once an evaluation report and its recommendations have been accepted, a service needs to convene an implementation group comprised of key stakeholders that has the power to oversee implementation of recommendations. Their work will invariably include addressing potential barriers to change. A follow-up service evaluation needs to be conducted to assess the effectiveness of any implemented changes. Ideally this follow-up evaluation will be conducted prospectively, whereby the data is routinely collected. Without such a follow-up evaluation, the predicted positive effects of the recommendations cannot be confirmed.

Table 2. Methodology examples for evaluation types.

Goal and outcome	Process
<ul style="list-style-type: none"> • Surveys (hard-copy / online) of service users, staff or the broader public – to measure satisfaction with service, perceptions of service etc. 	<ul style="list-style-type: none"> • Interviews or focus groups can help understand factors that impacted on satisfaction with service (service users), that led to attitude formation (broader public), or promoted job satisfaction (staff).
<ul style="list-style-type: none"> • Analysis of data held on Information Management System (IMS) – potentially providing information on the profile of service users, numbers of service users entering and exiting the service, referral pathways etc. 	<ul style="list-style-type: none"> • Interviews with service staff, to aid interpretation of, for example, referral pathways. Case studies
<ul style="list-style-type: none"> • Work logs/work activity profiles – providing information on time spent on various clinical, research and administrative tasks 	<ul style="list-style-type: none"> • Interviews with staff and management will help interpret how work is allocated to staff members, and how this impacts on service provision.
<ul style="list-style-type: none"> • Financial accounts (for evaluating cost-effectiveness) 	<ul style="list-style-type: none"> • Interviews with service managers to understand resource allocation, financial decision making, and evolution of service.
<ul style="list-style-type: none"> • Other data held electronically or in hard copy – activity logs of staff, pre- and post-intervention clinical data etc. 	<ul style="list-style-type: none"> • Diary analysis or prospective diaries.

Conclusions

The objective of this paper is to present an overview of clinical service evaluation from an applied perspective. A brief step-by-step description of conducting an evaluation is presented below (see Table 3). What is evident from the discussion is that there is no rigid model of service evaluation with universal utility. Rather, a successful service evaluation requires adaptation to the context of the service and the various challenges that may arise.

In terms of providing accountability, services need to commit to an appropriate range of monitoring mechanisms including service evaluation. If a gap in productivity is found within health and social care professions, as has been the case in Northern Ireland (relative to England; Appleby, 2005), there is a danger of the monitoring process being imposed by external agents. It is far better if services can control how they are evaluated and are in a position to balance quality concerns with value-for-money considerations.

As the nature of healthcare evolves, the monitoring processes need to adapt to the changing services (Clarkson & Challis, 2002). For example, within mental health services there has been a shift from institutional care towards community care. Clearly, evaluating community care based on the traditional priorities of institutional care will provide somewhat of a distorted picture. Furthermore, as care becomes a more co-ordinated process across disciplines, process factors related to team working (e.g. decision making, conflict resolution) need to assume greater priority (Byrne & Onyett, 2010).

Table 3. Steps to conducting a service evaluation.

Step	Comments
1. Determine dimension(s) of evaluation	<ul style="list-style-type: none"> Effectiveness, acceptability, accessibility etc.
2. Determine the type of evaluation	<ul style="list-style-type: none"> Goals, outcomes, process or a combination of these
3. Decide if prospective or retrospective	<ul style="list-style-type: none"> Collect data as service functions, or as it functioned
4. Decide scope	<ul style="list-style-type: none"> What data collection do resources permit? Will collected data answer the evaluation question? What information does target audience require?
5. Consider the service context	<ul style="list-style-type: none"> Competition for funding, defensive evaluation etc.
6. Decide who evaluates	<ul style="list-style-type: none"> External or internal evaluator
7. Formulate methodology	<ul style="list-style-type: none"> Adapt methodology to type of evaluation
8. Consider ethics	<ul style="list-style-type: none"> Ensure appropriate procedures for gaining consent, confidentiality, data management etc.
9. Construct report	<ul style="list-style-type: none"> Recommendations need to be grounded in the evidence
10. Disseminate findings	<ul style="list-style-type: none"> Medium needs to reach target audience
11. Implement recommendations	<ul style="list-style-type: none"> Ensure follow-up evaluation to assess the effect of changes

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Further reading:

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HOW TO WRITE FOR PUBLICATION

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Why should health and social care professionals publish?

Writing for publication can seem a daunting prospect for health and social care professionals and is often only seen as the remit of those working in higher educational institutes. This is an unfortunate perception as case reports and original research articles based on current clinical practice and experience are often the most interesting and tangible for the clinical reader.

Health and social care professionals strive to achieve the best possible outcomes for their patients or clients by adhering to evidence-based practice. As part of this process, it is incumbent upon such professionals to add to the body of knowledge underpinning their specialist areas. Examples include the development of novel treatment techniques in radiation therapy, physiotherapy, speech and language therapy and occupational therapy or the development of advanced imaging practice in radiography. Therefore,

perhaps the question that should be posed at the introduction to this paper is not 'why publish?', but rather 'why not publish?'

Health and social care professionals have extensive clinical knowledge that is valuable to the development of their professions and should be widely disseminated.

What format should potential publications take?

There is a myriad of publication types that health and social care professionals can consider. The empirical research article is one such format, but as there are few full-time researchers in the health and social care professions in Ireland currently, other formats that can be considered include systematic reviews of the literature, articles based on educational theses, clinical articles and case reports or reviews. Regardless of publication type, the two most pertinent questions that should be considered at the outset of the writing process are:

1. What message do I want to convey?
2. To whom do I want to convey this message?

Identification of both the key message of your publication and the target audience are critical to its potential success. Hall (2011) summarises this succinctly by stating that you should have something to say before considering publishing. The message should be clear, concise and represent a significant addition to the body of knowledge on the topic in question.

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Which journal should be targeted for publication?

Selection of the journal to which the paper will be submitted is an important choice and requires due consideration. It is to be commended when health and social care professionals aim to publish in a high impact factor journal; however such ambition should be tempered with realism surrounding the quality and nature of the work. The impact factor refers to the average number of times papers in a journal have been cited in other peer-reviewed publications in the previous two years (Kuo, 2003). For example, if the audience that is to be targeted is fellow health and social care professionals employed in clinical practice, it would be prudent to select a journal most likely to capture this audience, instead of an academic journal, whose target audience may be quite different even though the journal impact factor may be higher. Ensuring the target audience is reached is the most important aspect to consider. Strict adherence to the journal's author submission guidelines is strongly advised. Each journal will clearly state the type of papers it considers for publication as well as the format the paper should take (although most follow the IMRAD format- Introduction, Methodology, Results and Discussion). Word count, line-spacing, page numbering, font size and style margin settings as well as specific criteria for the presentation of tables and figures must all be adhered to. The referencing system preferred by the journal should also be followed exactly. Most medical journals use the Vancouver system while those in the social care professions tend to use the Harvard style. It is strongly advised to use a referencing system such as Endnote, Zotero or Refwork to make the referencing process easier.

Such tools are available online and will manage your references in logical format from the beginning of your writing process. Formatting can be left until the paper has been written and this is discussed later.

Getting Started

Once it is ascertained that the message to be conveyed is suitable for publication and the target audience is known, the process of writing can commence. If this is the first time you have considered writing for publication, you may consider finding a suitable mentor to assist you. This mentor may be a colleague who has previously published or a past supervisor in a higher educational institute who publishes regularly. Having the experience of a mentor to guide you can be extremely beneficial in avoiding pitfalls of the publication process.

Authorship

Remember that if more than one author is contributing to the paper, the subject of authorship should be considered at the outset. To be named as an author on the publication, an individual should have made a significant contribution to the writing of the paper or to the research being reported in the paper. Most journals require authors to clearly state their role in the paper at the time of submission. The main author should be cited first while the author who next contributed most to the paper should be cited last. Other authors who may have contributed to a lesser degree should be cited in between. It is common to acknowledge individuals who may have helped with more minor areas of the work and not cite them as full authors. The corresponding author is usually the

first or last author and should provide their name, address, phone and fax numbers and email address. Remember that all authors should sign the covering letter accompanying the paper to avoid delays in the review process; again this will all be detailed in the submission guidelines. Some of the key issues concerning authorship are presented in Figure 1.

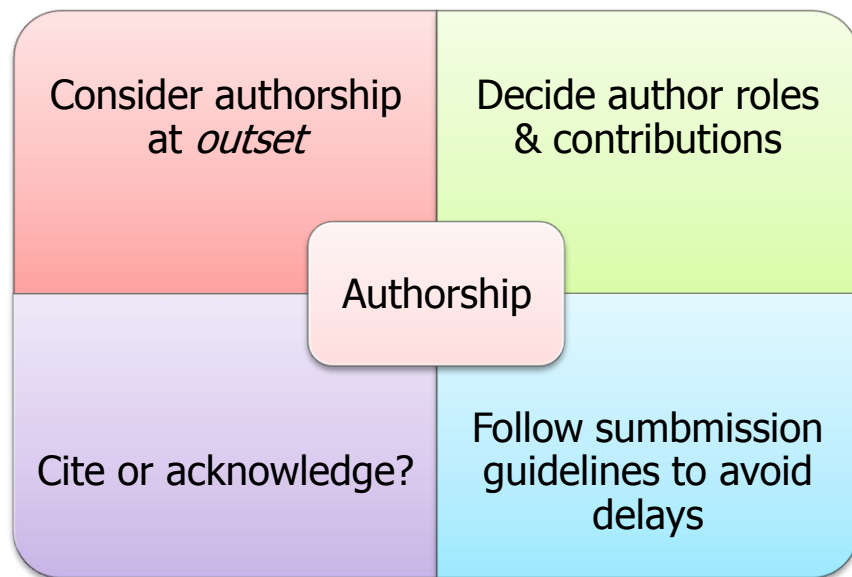


Figure 1: Key Issues in authorship.

How do I make time to write?

Writing for publication is difficult and so too is finding time to write. There is also a common misconception that you need to wait for a particular mood, idea or inspiration before you can start to write. This is not the case. Writing is an active process

and you must fully engage in it. You must make time for this process if you are to be successful in getting your paper started and finished.

You should not underestimate the level of commitment and effort that is required to take a body of research or topic to completion. Unless you are prepared to accept this commitment it will be very difficult to complete the process successfully. The writing process is unique for every writer but there are useful tips that can assist you in getting the process started.

Plan, revise and plan

There is a certain level of organisation and discipline required in designating a time period dedicated to writing. To get your writing started and to build your confidence as a writer it can be useful to write in short 'bursts' of 15-20 minutes where the focus is on generating text, try to temporarily postpone the question of quality. You should create a timeslot in your diary each day or week that you assign yourself the task of writing, for example 20 minutes each morning before work. By limiting the time of your writing session it can help sharpen the focus of your writing. When creating your plan take each heading and subdivide it into sub and sub-sub headings, allocate each one a time slot of its own and do what you can in each time slot. You need to set specific and achievable goals for each session (e.g. 300 words in 20 minutes); in this way you know exactly the focus and outcome of each session. Allocate the last time slot of the period to read through, assess and revise the content and plan your goals for the next period. As you

progress with your writing you will learn what timeslot, goals and plan works best of you. In the beginning be prepared for your plan to break down, but persevere! Breaking down your final goal of publishing a paper into a series of smaller plans with specific goals makes it more achievable.

Where to write?

If possible, try and avoid writing in the same physical space, this can lead to avoidance and excuses e.g. 'I can't make it to the library this evening so I can't write'. It can be more productive to write anywhere the opportunity might arise: on your daily commute, while waiting at an appointment or at lunch. For a portion of your writing you will require access to your results and other literature during these sessions, so it is more useful to have a base to facilitate this.

Ethics

It is recommended that the paper (if an original research article) contain an indication that your research was granted approval by the relevant research ethics committee prior to conducting the research process.

The writing process

Although many undergraduate and postgraduate degree programmers now incorporate modules on research methodology in their curricula, the skill of scientific writing is often overlooked. It can be incorrectly assumed that writing skills are an inherent ability of many health and social care professionals. However, with practice, these skills can be learned.

One of the most effective methods of improving writing skills is by increased reading of papers in highly ranked journals and examining the writing style adopted by successful contributors (Hall, 2011). Scientific writing should make use of careful word choices which aid clarity, simplicity and accuracy (Fahy, 2008).

Your paper has a message that you want to convey to the readers of the journal. How you write the paper can have a significant influence on whether or not you succeed in achieving this. To achieve clarity in a paper, the simplest and most accurate terms to describe the ideas of the paper should be chosen. This is in contrast to creative writing where much use is made of convoluted terminology to dramatic effect. Some overlap does exist between the two writing styles in that the importance of grammar and punctuation cannot be overstated. Poor grammar and/or punctuation will impact negatively on the reading of your article and the editor of the chosen journal may view this as carelessness, which will also call into question the care to which the work underpinning the paper was carried out.

Sections identify discrete areas within your paper and are helpful to the reader. The paragraphs within a section should be related to the section heading and the last sentence should provide a link to the following paragraph. Within the sections paragraphs could be considered as "a unit of thought" (Fowler, 1926) and should be clearly defined with one topic per paragraph. Moving from one topic or idea to another in any one paragraph makes the paper difficult to follow and

shows a lack of coherence. It is also useful to introduce the topic of the paragraph in the first sentence immediately capturing the attention of the reader. Individual paragraph should not be excessively long and should end with the end of the topic. Reading aloud gives you a sense of where the paragraph should end.

Sentence length is also important- too long and you lose the reader; too short and it can be distracting. The main subject should be at the beginning of the sentence gaining the attention of the reader and also helping with the grammatical structure.

Punctuation also impacts on the readability of your paper. Punctuation indicates a natural pause or stop in the flow of a sentence making it easier to read and understand. As with the paragraph, when you read your paper aloud you will hear where the natural pauses occur and you can evaluate the sense of your message and whether you are conveying it effectively. It is also useful to ask someone else to read it for you from this perspective.

The most commonly used punctuation marks are full stops, colons, semi-colons or commas and indicate where a pause occurs. The mark used relates to the length of the pause with full stops indicating the end of the sentence. Full stops are also used after abbreviations. A colon is commonly used to introduce a list and is often used at the end of a statement introducing a set of bullet points. A semi-colon is used to link to independent but usually related phrases. Commas are used

to indicate a short pause and also following a date, after place names and after suffixes in full names.

Be careful with the use of capitals. Capital letters are used at the beginning of sentences and to denote proper names. Job titles are not capitalised unless they are directly related to a person as part of their title. A good rule is if in doubt don't use capitals.

When you are using acronyms or abbreviations they must be defined the first time they are used in the paper. Acronyms are a compilation of the initial letters of a string of words, often the title of a group or company and can be useful particularly if the original name is long. However they should be used carefully and sparingly. It is very distracting to read lists of acronyms or abbreviations in a paper. A section at the front of your paper should give the acronyms used.

Charts and tables are a very useful means of presenting data. They should be clear and easy to understand. The main findings should be described in the text but it is important not to duplicate everything presented in the table or chart. You should take care with colour differentiation in charts as very few journals will reprint in colour. Charts that look very clear in colour may be completely lost in black and white and become meaningless to the reader.

Bullet points can be useful, they are easy to read, attract attention and remove excess unnecessary text. When using bullet points you must have an introductory sentence or statement and all bullet points should flow from this

statement. The bullet points should start with a noun or verb depending on the opening sentence. Where all the points are of equal importance use bullet points but if you want to indicate priority or ranking then use numbers. Bullets should be consistent in length and structure. If your bullets are phrases there should be no punctuation but if they are sentences use full stops. Ideally bullets should not be full sentences as they are designed to be short summary points. Always conclude the bullet list with a sentence.

If you are quoting from a book or another paper you may not want to use the full text. In these instances you can use an ellipsis which is three full stops (...) and indicates that something has been left out of the quote.

Structure of the paper

Dixon et al (Dixon, 2001) suggest writing a complete aspect of the paper from why you set out to do the work described in the paper through to asking what the benefits of the paper are for key stakeholders. This group then suggests basing the paper around these completed sentences within their discrete sections. Each section of the paper should include only material pertaining to that particular section.

Introduction

The introduction should 'set the scene; of the paper but should bring the reader's attention to the message of the paper almost immediately. A good introduction does not include unnecessary or irrelevant background information. For example, if discussing a novel radiotherapy treatment

technique in head and neck cancer, it is important to introduce the technique early on in the introduction instead of providing basic information on head and neck cancers, with which the reader will already be familiar.

Methodology

Clarity in the methodology section is critical. The methods used should be described in simple terms to ensure complete transparency. The reader of the paper must understand the methodology used to put the results into meaningful context.

Results

The results section should contain only the results of the paper. It is usual to present these using both text and tables or graphs as appropriate. No evaluation or analysis of the results should be given in this section. These are reserved for the discussion section.

Discussion

Here, results are analysed, evaluated and put into context by discussing them in terms of the existing literature on the topic. Conclusions are drawn. Presenting or repeating results in the discussion section is to be avoided and this can be the downfall of many novice authors. It is also worthwhile to acknowledge any limitations of your paper in this section.

Abstract

Write the abstract to your paper last. Ensure that the abstract is simple and to the point. Brevity is key. The purpose of an abstract is to present the main work of the

paper and to encourage the editor to read the manuscript itself. Abstracts themselves can be divided into sections: background, methodology, results and conclusions and indeed many journals now include this as a requirement.

Title

Selecting an apt title for your paper is essential. The title must be indicative of what is to follow. Use of bold or unusual titles is permissible but remember the title must be based on the research question and not just different for the sake of it! This is also important as readers searching for papers in this field may use certain key words in their search and you may want your paper to be included in the search results.

Be prepared for numerous drafts and re-drafts of your paper; it is highly unlikely that the first draft will be that which is submitted for peer review. It is common to go through five or more drafts before deciding that you have reached a version that is acceptable for submission. Before submitting, ensure that the manuscript is formatted correctly.

Proof reading and Formatting

Check spelling carefully when proof reading and do not overly rely on the computer spell check. Spell checkers literally check the spelling and one example of a common error that remains in papers that have not been carefully proof-read include 'form' instead of 'from'. The computer spell check may be programmed for United Kingdom English or American English and it might be useful to check which the journal

uses. It can be useful to ask someone else to read your paper from this perspective as they are more likely to pick up these errors.

Justification should ideally be left sided for the publishers and this also makes it easier for anyone with dyslexia, for instance, to read.

Reading and re-reading your paper is very useful and has several purposes. Reading the paper straight through from beginning to end helps you to clarify whether you have achieved your aim and your message is clear to the reader. However, when you are reading to check for errors, you need to read line by line. When you read your paper you should consider unnecessary words, sentences or paragraphs. Do they add anything to the paper, if they were removed would anything be lost? If the answer is no then delete them as this will make your paper more focused, easier to read and more likely to be published.

Some additional tips on formatting include:

- Do not adjust margins to try and keep the manuscript shorter (if given guidelines on the number of pages permissible). This only serves to condense the material and make it difficult to read and edit.
- Use double spacing, number your pages, figures and tables and ensure all are correctly labelled.
- Check that your citations and references match.
- Recheck that your use of the referencing system required is correct.

- Follow the journal's submission guidelines in relation in formatting.

Suggesting Reviewers:

Some journals will ask you to suggest reviewers for your paper at the time of submission. It is unethical to suggest a reviewer with whom you have worked previously or know on a personal level. It is best practice to suggest reviewers who are expert in the area on which your paper is based and who may have recently published on the topic in the journal to which you are submitting or another journal.

Publication Ethics

'Dual publication', that is, publishing the same data in more than one paper is considered unethical and should be avoided as a matter of principle. It is detrimental to your own curriculum vitae, your professional reputation and the reputation of your discipline to engage in this unethical practice. If found to have dually published, you will be censured from publishing in the future.

What happens after I submit my paper?

There are many different types of responses you can expect from the reviewers. The first option is that the paper is accepted as it was on submission or with some minor suggested changes only. This is a rare occurrence! More likely, is a chance to resubmit the paper addressing any issues raised by the reviewers in the first version submitted. In such instances, the editor may or may not indicate if the paper is likely to be accepted for publication following these changes.

A paper may also be rejected without any opportunity to resubmit an amended version offered. If this happens, do not despair. It has happened to almost everyone who publishes on some occasion. Try and take any feedback given as constructive and use it to work on a revised version for submission to another suitable journal ensuring that you follow the submission guidelines for that journal.

Conclusion

Health and social care professionals have a wealth of extensive clinical knowledge that can substantially add to the body of knowledge of their respective professions. This paper has highlighted some of the practical aspects that should be considered prior to embarking on the dissemination of this information through publication. Recommendations on how best to manage these practical aspects are summarised in Table 1.

Table 1: The practical aspects of writing for publication.

Aspect	Recommendations
Authorship	<ul style="list-style-type: none"> • Consider potential contributions at the outset. • Be aware of the commitment involved. • Write in 'short bursts' and have specific targets. • Vary where you write.
Ethics	<ul style="list-style-type: none"> • Indicate in your paper where ethical approval was granted.
The writing process	<ul style="list-style-type: none"> • Examine journals and scientific writing styles of others. • Use simple yet grammatically correct language. • Use sections to convey 'units of thought' and balance the length of your sentences. • Ensure appropriate use of punctuations. • Limit your uses of acronyms and capital letters unless necessary. • Present your data in charts and tables. • Use bullet points and quotations appropriately.
Structure of the paper	<ul style="list-style-type: none"> • Introduction- 'set the scene' quickly and exclude irrelevant background information. • Methodology- Describe in a simple and transparent manner. • Results- Report results here but do not analyze them. • Discussion – Evaluate and analyze results. Report any limitations of your study, • Abstract- Write last and ensure brevity. • Title- Relate this to your research question. Don't make it needlessly 'different'.
Proof reading and formatting	<ul style="list-style-type: none"> • Do not rely on the computer spell check. • Justify to the left side for the publishers. • Read and re-read your paper. • Keep margins as they are, use double spacing and ensure your referencing is correct.
Suggesting reviewers	<ul style="list-style-type: none"> • Do not suggest someone you know or have worked with before. • Suggest reviewers who are known experts in the field.
Publication ethics	<ul style="list-style-type: none"> • Avoid dual publication as it is unethical.

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Appendices

Appendix A

EMBRACING LENUS – IRISH HEALTH REPOSITORY¹²

AOIFE LAWTON
MICHAEL BYRNE

Abstract

Of relevance to healthcare professionals engaged in research and those who want to deliver evidence-based clinical care, this article describes a relatively new health repository called 'Lenus' (www.lenus.ie). While managed by the Health Service Executive (HSE), it is freely accessible on the World Wide Web. The benefits and functionality of the system are outlined and an appeal for content submission is made to all Irish health professionals, and in particular to psychologists and other Health and Social Care Professionals (HSCPs), who are engaged in research and/or publishing their findings.

¹² This paper is largely based on 'Lawton, A., & Byrne, M. (2012). Embracing Lenus – The Irish Health Repository. *The Irish Psychologist*, 38(6), 163-165' and has been reproduced with the permission of the Editor of the Irish Psychologist.

Introduction

At best, there is a weak health research culture in Ireland with the 0.06% spend on health research being only approximately half that of the OECD average (Health Research Board [HRB], 2009). Among practitioner psychologists it is also debatable whether the much vaunted scientist practitioner model has ever been enacted at the level of the profession. This model describes how professionals draw on and contribute to the research knowledge-base in their routine clinical work (Milne et al., 2008). In harvesting a myriad of health-related resources that are accessible via the user-friendly interface that is Lenus, it has the potential to provide a platform to embed such a scientist-practitioner culture.

Initiated and managed by the HSE's Regional Library and Information Service, Dr. Steevens' Hospital, Lenus is the national Irish Health Repository. It takes its name from the Celtic God 'Lenus' of health and well-being. This duality sums up what Lenus is about – it is Irish and it hosts information on healthcare. It is unique in the scope of its coverage. Materials include current official Irish health publications, policy evaluations and clinical research. It also contains an archive of previously unavailable digitised content including department of health reports and former health board minutes. In drawing on historical documents and the latest health-related publications, it is an invaluable resource for researchers and those who want to deliver evidence-based clinical care. Lenus also has a preservation function. It makes available and preserves the corporate memory of the

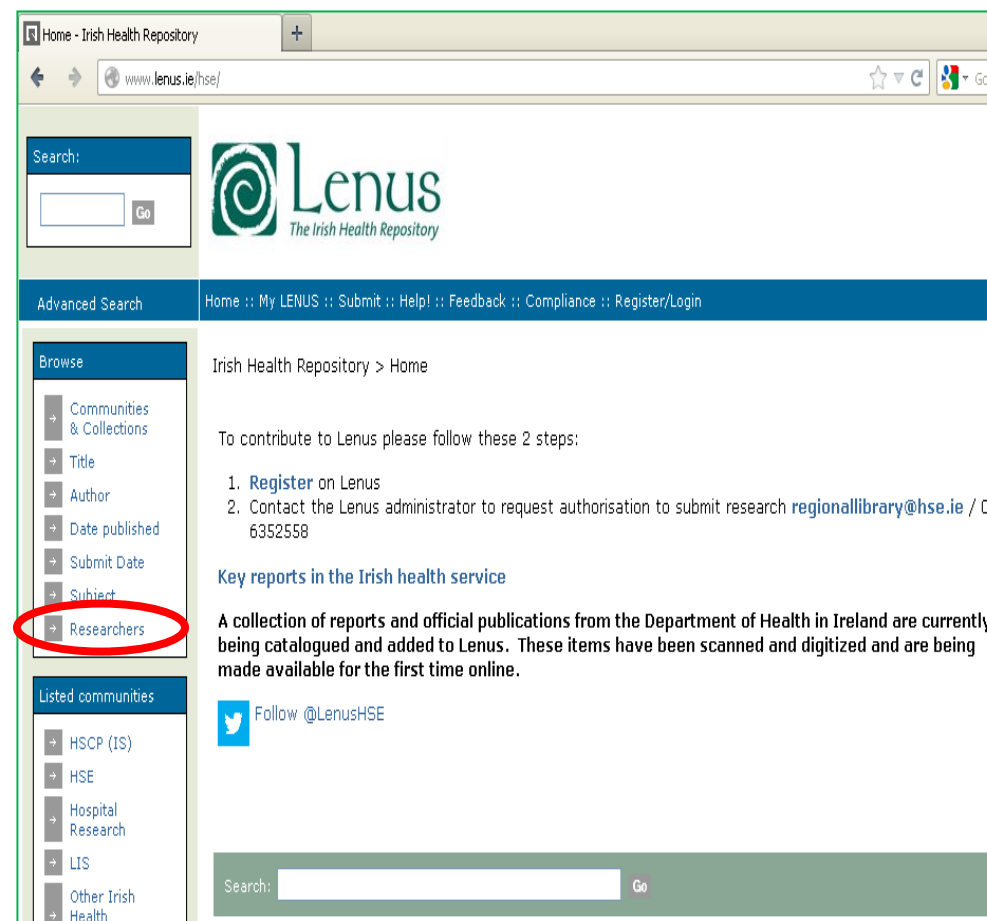
HSE and former health boards before it. The intellectual output of the organisation is made available in the form of published output for future generations to learn from and improve upon.

Website structure and scope

The Lenus Home page provides a number of functions. All publications are made available and do not require a login. There is a registration process which consists of entering a valid email address and thereafter accessing additional functions of the site using a password. Additional functions include setting up a researcher's page and submitting research. Requests to authorise submission of healthcare-related materials are sent to the Lenus Administrator (regionallibrary@hse.ie) who then posts materials. There are the standard 'Search' and 'Advanced Search' functions. The 'Browse by' function facilitates field-specific searching e.g., by 'Communities & collections', 'Title', 'Author', 'Date published', 'Date submitted', 'Subject', and 'Researchers'.

Inputting a surname followed by a forename under the 'Author' field accesses whatever materials an individual has submitted. The resultant list provides the issue date (or year of publication), the title of the material, and names of the author(s). As well as opening up either abstract (i.e. some publishers only allow abstracts to be posted) or full text material, details of how many times the material has been

viewed and downloaded is available, complete with a colour-coded world map indicating the geographical locations (by city and country) of those viewing and downloading the deposited material.



Registered users can also set up a 'Researchers' page. In addition to providing personal contact details, this page profiles research interests, links to published research and details of ongoing research. A benefit to the researcher is that his/her research activity becomes more visible. In so doing, these pages can facilitate inter-researcher communication.

The 'Listed communities' function allows searching and browsing by 'HSCP (IS)', 'HSE', 'Hospital research', 'LIS', 'Other Irish Health publications', 'Research articles', and 'Special collections'. Registered users can subscribe to individual collections to keep up to date with what is being published. For example, a psychologist could subscribe to the 'HSE Mental Health' collection as well as the 'HSE theses', 'Psychologists' and 'Research articles' collection. This means that each time a publication is added to any of these collections within Lenus, the psychologist would receive an email with an updated list and links to those publications either in fulltext or abstract format. There is also a 'Most viewed publications in *month*' (e.g., August 2012) that lists the 10 most popular publications viewed in the previous month. Additionally, there is a 'Latest submissions' function that lists the most recently submitted materials to Lenus.

Under the HSCP (Health and Social Care Professions) community there is a listing for 'Psychologists' as well as other HSCPs. The 'Psychologists' collection comprises of published abstracts and fulltext papers authored by psychologists working outside of a hospital setting in Ireland. Any research



The screenshot shows the Lenus website interface. At the top, there is a search bar and the Lenus logo. Below the logo, there is a navigation bar with links: Home :: My LENUS :: Submit :: Help! :: Feedback :: Compliance :: Register/Login. The main content area is titled 'Communities and Collections' and includes a sub-header 'Irish Health Repository > Communities and Collections'. Below this, there is a text block stating 'Shown below is a list of communities and the collections and sub-communities within them. collection home page.' and two buttons: 'Expand All' and 'Collapse All'. The list of communities and collections is as follows:

- HSCP (IS)
 - Dieticians [4]
 - Nurses & Midwives [71]
 - Occupational therapists [2]
 - Physiotherapists [1]
 - Psychiatrists [1]
 - Psychologists [19]
 - Radiographers & Radiation Therapists [86]
 - Social Workers [1]
 - Speech & Language Therapists [2]

On the left side of the page, there is a 'Browse' section with a list of categories: Communities & Collections, Title, Author, Date published, Submit Date, Subject, and Researchers. Below this is a 'Listed communities' section with a list of categories: HSCP (IS), HSE, Hospital Research, LIS, Other Irish Health Organisations, and Research Articles.

undertaken by health professionals affiliated to a hospital is found under the individual hospital collection.

Accessibility

The current information climate is a challenging one due partially to the speed of technical developments in the information sphere (e.g. the Internet). For any database to be visible and accessible, it needs to tick some boxes such as integration with other portals, interoperability and indexing. Lenus ticks all of these. It is fully integrated with two other research portals: namely Researchscope¹³ run by the Waterford Institute of Technology and the World Wide Science Alliance¹⁴ run by the Office of Scientific and Technical Information (OSTI), an element of the Office of Science within the U.S. Department of Energy. Better still, it is OAI (Open Archives Initiative) compliant. This is an initiative to develop and promote interoperability standards to facilitate the efficient dissemination of content and means that it is fully indexed and retrievable via big search engines such as Google. Hence, psychology-related research deposited on Lenus provides impressive exposure to the significantly large customer base of the big search engines.

Democratisation of information

The advent of the second version of the web, known as 'Web 2.0' has brought significant changes to the way the Internet works and more significantly the way people use the Internet.

When the Internet was launched in the 1990's websites were primarily static pages of text and information. As technology advanced, the Internet upgraded to a newer version. This second version of the web encourages social networking, collaboration and active participation. Participation ranges from authoring a blog to posting homemade videos for the world to see. The Internet has grown into a community of online users. In line with Web 2.0 Lenus includes features such as LinkedIn, Citeulike, StumbleIt, Facebook, Digg and others. Both organisations and individuals are currently contributing to Lenus to keep the content enriched and up-to-date. This assists with the democratisation of information as multiple authors and multiple institutions are invited to submit content and to provide feedback on the repository.

Promoting research

Lenus aims to promote 'open access' material so that its content is free from embargos and fees. Many journal editors and publishers have given permission to host full text articles. These include the *Irish Journal of Psychological Medicine*, the *Irish Psychologist*, *Clinical Psychology Forum* (of the British Psychological Society), the *Irish Medical Journal*, and others. Any article published in an open access journal (see Directory of Open Access Journals; <http://www.doaj.org>) is free to be hosted in Lenus. The types of content that would be suitable to submit include: theses, published articles, conference presentations, small scale research projects, systematic reviews, book chapters, official reports, and position papers. Where permission is not forthcoming to post full text articles and/or abstracts, individuals can still submit brief article

¹³ See www.researchscope.net

¹⁴ See <http://worldwidescience.org/alliance.html>

summaries that can then serve as a signpost for accessing the original articles.

The HSE is one of the many Irish organisations who have signed up to the recent 'National Principles On Open Access Statement' launched in October 2012 by Sean Sherlock, Minister of State Department of Enterprise, Jobs & Innovation and Department of Education & Skills with responsibility for Research & Innovation. This statement advocates that outputs from publicly-funded research should be publicly available to researchers and to potential users in education, business, charitable and public sectors, and to the general public. It also holds that open or free access to completed research adds value to research, to the economy and to society. The implications of this for health professionals employed by the HSE is that they should strive to comply with this statement by making their completed research freely available. A straight-forward way of achieving this is to firstly ensure that the final peer-reviewed author copy of the research article is kept and secondly to contribute that to Lenus. Most publishers will allow the final author copy to be made freely available in a repository such as Lenus. If in doubt Lenus library staff will check the copyright on the authors' behalf. For more information on copyright see <http://www.sherpa.ac.uk/romeo/> and for the national statement see <http://www.lenus.ie/hse/handle/10147/250255>

The potential benefits of Lenus will only materialise if psychologists (and other HSCPs) actively contribute to it. Their doing so will also increase the visibility of, and

accessibility to, psychology-related research. This is important as psychologists can demonstrate 'added-value' by disseminating high quality research output that appropriately reflects their typically well-advanced (though not necessarily well-practiced) research competencies. An increased volume of healthcare research (e.g., population health research) may also protect against reductions in funding in this area (Department of Health & Children, 2009).

Until such time as research becomes a competency that is assessed independently in national recruitment campaigns or research activity becomes a quality metric in future evaluations of health service providers, post-graduate psychologists may receive minimal reinforcement for engaging in research. However, in profiling one's work to a global audience, Lenus may provide some means of reinforcement for the research efforts of these busy practitioners.

That research by psychologists (and other HSCPs) tends to be isolated predisposes to it being weak (e.g., limited external validity). That Lenus has the potential to connect researchers provides opportunities for the development of preferably inter-professional research clusters or communities that draw on the unique strengths of both academics and clinicians, as proposed by McHugh and Byrne (2011). Such clusters are well placed to constructively address the 'research to practice gap' (HRB, 2009) and to consequently attract increased research funding. Among psychologists, an international online community would ease collaboration and help to bridge the scientist-practitioner divide (Walker, 2008).

Conclusion

Lenus has the potential to benefit researchers, the HSE and the Irish population at large. It is beneficial to any researcher to have freely and openly available information via www.lenus.ie and affords them the opportunity of submitting research and setting up a Researchers page. It facilitates inter-disciplinary working and facilitates the exchange of information between researchers. Lenus is beneficial to the HSE as an organisation as it provides a return on investment in its employees who have produced theses and research by capturing it in one place and preserving it for future generations. It benefits Irish society at large because it is making public domain information available in an easily accessible interface. This leads to a more informed citizenry.

Nurtured by conducting multiple types of research including effectiveness research (e.g., small-scale research projects) and more rigorous, efficacy style dissertations (Milne et al., 2008), psychologists' research competencies are typically highly developed. However, it is debatable whether they are consistently engaging in research activity (Dowd, Sarma, & Byrne, 2011). We would ask individual psychologists and Principal Psychologist Managers to re-consider investing in research activity and posting their findings onto Lenus. Doing so will increase the visibility of our profession and position us in leading efforts to embed a scientist-practitioner culture in our health services.

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Appendix B

WHAT IS HSELAND?¹⁵

PATRICK McHUGH
MICHAEL BYRNE
TONY LISTON

Introduction


Launched by the Health Service Executive (HSE) in 2007 and with more than 22 million hits from September 2011 to August 2012, HSELand is an online resource designed to support the training and development of staff working in the Irish health sector. Available to all health professionals in the HSE and those in Voluntary and Non-Governmental Organisations (NGOs), it can be accessed by registering at www.hseland.ie. HSELand has become the dominant online medium for developing e-training initiatives for health service staff in Ireland. As of the end of August 2012, more than 60,000 individuals (or approximately 43% of all health service staff) had registered with this site (i.e. HSELand). The level of engagement across the 4 HSE regions is relatively similar,

although hospital staff tend to show higher levels of usage than those in the community sector. The current article discusses the merits of online learning and how the various features of HSELand can advance professional development.


Advantages of online learning

As an online learning resource, HSELand provides a number of benefits compared to traditional face-to-face methods. By having constant access to the resource, individuals can use it at a time that is most convenient for them. This may be especially useful for healthcare staff whose schedules may not be suited to attend face-to-face learning opportunities, such as those working shifts. Indeed, it has been proposed that the increased flexibility provided by e-learning is one of its greatest benefits to learners (Childs, Blenkinsopp, Hall & Walton, 2005). The constant accessibility also allows staff to learn the material at their own pace. This is important as face-to-face learning, often under time pressure, may overload individuals with excess information in a given time period. Online learning also reduces many of the traditional costs of learning (e.g. workshop facilitator fees, travelling time and expenses), although the initial set-up costs can be substantial.

¹⁵This paper is largely based on 'McHugh, P., Byrne, M. & Liston, T. (2012). What is HSELand? *The Irish Psychologist*, 38(7), 188-192' & has been reproduced with the permission of the Editor of the Irish Psychologist.



Feidhmeannacht na Seirbhíse Slainte
Health Service Executive




hseland.ie
Cúram le Eolas


Home Help & Resources

Welcome to HSELand.ie, HSE's online resource for Learning and Development.

HSELand contains online learning programmes, resources, assessment & planning tools, to support you in your current job role and with your personal and professional development. Your skill and dedication is what really makes the difference.



Keep an online portfolio to document your personal development.



PERSONAL DEVELOPMENT

User Login


Username:

Password:

Log In

- Forgotten login?
- Create an Account
- Help

Have you used HSELand before? Enter your Username & Password, then click the 'Log In' button. If you do not have an account then click 'Create an Account' to create a free account.



Privacy / Site by Aurion Learning

An additional advantage of online learning is that it allows individual staff to develop skills as they require them. This just-in-time method not only provides a more efficient learning process, it also has the benefit of reducing the time-frame between the learning of knowledge and its application.

A further benefit is that a consistent learning environment is provided for all. Essentially, the quality of the learning experience ought to be the same for all staff, regardless of where they are working or the organisation they are working for. It needs to be noted however that there are limits to the potential of e-learning resources like HSELand. For example,

it has been suggested that e-learning may not be suited to the learning of advanced skills (Welsh, Wanberg, Brown & Simmering, 2003). Furthermore, e-learning can only provide declarative knowledge, so individuals will need to develop their procedural knowledge in practice. In summary however, the literature base suggests that e-learning can be as good, if not better, than traditional face-to-face methods of learning (Chumley-Jones, Dobbie & Alford, 2002).

Structure of HSELand

Ideally HSELand users should begin their learning experience with the 'Assessment and Planning' tools to first identify their developmental needs and goals. They can then engage in essentially three forms of learning. They can freely explore material in both the e-Reference and the Leadership, Education and Development (LED) section. More formalised learning can be engaged in through the 'Online Learning

Programmes'. If users want to engage in collaboratively learning, they can do so through the online 'Learning Hubs'.

Assessment of competencies

Within the 'My Personal Development Planning (PDP)' section of HSELand, healthcare staff can assess their areas of strength and weakness, and can plan for future development according to their profile. Thus, the PDP section is an important starting point for providing direction for the rest of the HSELand learning experience. The content of assessment focuses on general work-related management competencies (e.g. 'Evaluating information and judging situations') rather than profession-specific or technical skills. There are four categories of assessment: 1) Managing change; 2) Managing people; 3) Managing the service; and 4) Managing yourself. Assessment is completed using a rating-scale questionnaire with all items based on behavioural indicators or anchors (e.g., 'Empathises with staff and seeks to understand their frustrations'). From the results of these ratings, the system determines whether this is an area of strength for the individual or an area in need of development. The assessment for any individual can be carried out by self-ratings or via co-worker ratings. The latter may be particularly useful in areas that are difficult to assess from the first perspective (e.g., leadership qualities).

Setting development objectives

The 'My Plan' section of 'My PDP' is concerned with identifying developmental goals and the methods to achieve them. This section initially requires service users to specify their existing

work competencies and roles, as well as their developmental goals. Based on these factors, the individual then develops a plan to achieve the specified goals. Long-term goal achievement is emphasised by encouraging individuals to specify one- and three-year goals. Compared to other tools and resources within HSELand, 'My PDP' is highly personal in that while HSELand provides the basic structure, the user determines the content. Thus, a substantial degree of personal reflection is required.

Online learning programmes

Reflective of its primary purpose, there are currently about 70 online learning programmes available at HSELand covering a wide range of topics. Many of these programmes have been internally developed within the HSE with the help of subject matter experts. The programmes range from a mix of generic modules that are relevant to the majority of health care workers to more bespoke modules targeting certain types of professionals, or staff at certain levels of the HSE organisation. Examples of the former include those programmes related to basic work tasks (e.g., HSE Records Management), interpersonal skills (e.g. Communication), and basic technical skills (e.g., Word processing). Examples of programmes at the more specific level include 'Understanding the Mental Health Act Administrator Role' aimed at mental health staff and 'Service Planning' aimed at those with organisational and management roles within the health service. Completion of any of the programmes is recognised by the awarding of a certificate. As of the end of August 2012, the top four most popular e-programmes were

'Medication Management' (13,439 enrolees), 'Venepuncture' (5,592), 'Peripheral Intravenous Cannulation' (3,743) and 'Manual Handling' (2,935).

Collaborative learning hubs

HSELand has a number of discreet learning hubs which provide educational resources specific to various topics and which facilitate knowledge sharing between healthcare staff. As indicated in Table 2, there are currently eleven online learning hubs with the criteria for categorisation being quite diverse (e.g., type of work activity, area of healthcare etc.). Each hub has defined membership criteria and most are password-protected, thereby providing a secure and structured environment in which to exchange information.

As of the end of August 2012, the most popular hubs were that of the Change management Hub (3899 members), St James' Hospital Learning Hub (2378 members), Leadership Development Hub (2378 members), Health & Social Care Professionals Hub (600 members) and the Mental Health Services, Learning Hub (639 members).

Many hubs within HSELand may be described as micro-sites with a multitude of educational resources including e-learning programmes, case studies, interviews, policy documents, and news/announcements regarding past or upcoming events. Knowledge sharing is facilitated in a number of ways. For example, blogs may be used to make informative posts, such as an evaluative view of a certain issue or the presentation of research. Forums may be used to promote interactive debate

or informational exchange between healthcare staff. More direct contact can also be facilitated through the utilisation of user profiles and internal messaging between healthcare staff.

Table 1. Online learning hubs available at HSELand

1.	The Learning and Development Specialists Network	7.	Quality and Patient Safety
2.	The Integrated Discharge Planning Hub	8.	Health and Social Care Professionals
3.	St. James's Hospital Learning Hub	9.	Nursing and Midwifery Leadership
4.	Mental Health Services Learning Hub	10.	The Change Hub
5.	The Leadership Development Hub	11.	The SMe Learning Hub
6.	The Medical Education Training Hub		

Mental Health Services Learning Hub

The Mental Health Services Learning Hub originated from the recommendations made in the organisational learning

strategy of the Legal Activity Project Report published by the HSE in 2010. This report suggested the development of a dedicated mental health micro-site within HSELand that would provide mental health staff with an online space for learning, discussion and collaboration. This password-protected hub provides access to high quality educational and training resources to support mental health staff or any healthcare staff with responsibilities or interest in the area of mental health.

Within the hub there are a range of online educational and development tools (e.g. linkages to 'personal development plans' as recommended in *A Vision for Change* (Department of Health & Children, 2006)), as well as resources like research documents, policy documents and podcasts. Currently, there are four online learning programmes available relating to training on aspects of the Mental Health Act. A new module is currently under development which focuses on dealing with individuals with an intellectual disability and a mental health problem. It is expected to be available in autumn 2012. As with other hubs, there is an online space that facilitates discussion, knowledge sharing and collaboration. Thus, the hub may facilitate the development of communities of practice between mental health staff. Links are provided to other relevant sites such as the Mental Health Commission (MHC) website, the Irish College of General Practitioners (ICGP) website, the National Service Users Executive (NSUE) website and other HSELand micro-sites. Currently the hub has 570 registered members.

Health and Social Care Professionals' Hub

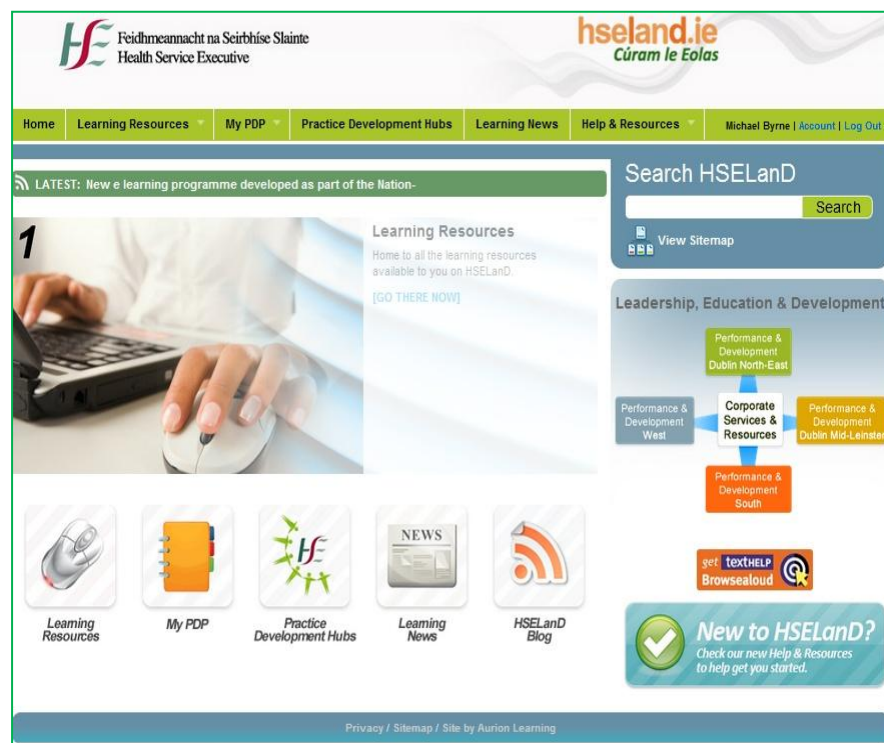
The HSCP hub was developed by a subgroup of the HSCP Education and Development Advisory Group and is managed by the HSCP Education and Development Unit. The topics covered within the Hub have direct relevance for a wide range of HSCPs. For those seeking professional development, resources are provided that facilitate the identification of competencies in need of development and the methods by which such competencies may be strengthened. For those seeking to maintain and improve standards of practice, resources are available that specify the required standards of practice for various professions (e.g., competencies required), the proposed training needs, and the methods for ongoing evaluation (e.g., audit). There is also a dedicated subsection on 'Practice Placement Education', such as in determining the appropriate standards for the pre-registration training of HCSPs. For those HSCPs interested in service innovation and improving the service user journey, the 'Initiatives' section provides a number of practical examples of how this has been achieved.

An important function of the HSCP hub is in supporting research activity. Currently within the 'Research' section of the hub, a number of documents are provided that profile existing levels of HSCP research activity, suggest future strategies for HSCP research, and provide guidance on conducting research. Regarding the latter, each article in this guidebook has been posted separately on the hub, as has been the entire guidebook. For those engaged in policy-related and organisational research, the HSCP hub also

provides a useful focal point for relevant literature. In the future it is envisaged that the HSCP hub will play an increasing role in the development of the HSCP research infrastructure. For example, based on the results of a recent survey of HSCP research activity, it was recommended that resources needed to be developed to allow HSCP researchers to better collaborate and coordinate with one another (McHugh & Byrne, 2011). Through various communication mediums (e.g., forums, user to user messaging etc.), the HSCP hub could become an effective resource in achieving this goal.

Development of Profession-Specific Online Resources

Given that most of the online resources in HSELand are either profession non-specific or focused at a broad level of healthcare (e.g., mental health), there would appear to be scope for developing profession-specific online resources. As an example, consider the profession of psychology. Similar to other professions (e.g., the Irish Society of Chartered Physiotherapists; ISCP), psychology could develop a bespoke eLearning site offering various courses focusing on priority areas for psychologists.



For example, with registration by CORU (the statutory registration council; www.coru.ie) pending, an obvious starting point would be a Continuous Professional Development (CPD) site that could facilitate all psychologists in developing their core competencies across different developmental levels (see Table 2; BPS, 2010; Fouad et al., 2009). Simpler initiatives could also be introduced to promote professional development through online resources. For example, consider the recent development whereby members

of the Psychological Society of Ireland can gain access to online modules of the American Psychological Association (APA) at a reduced rate. A number of such small initiatives may lead to significant developments in a profession.

Table 2. Core competencies

British Psychological Society	American Psychological Association	
	Foundational	Functional
Transferable skills	Reflective practice / Self-assessment / Self-care	Assessment
Psychological assessment	Scientific knowledge & methods	Intervention
Psychological formulation	Relationships	Consultation
Psychological intervention	Individual & cultural diversity	Research evaluation /
Evaluation	Ethical-legal standards & policy	Supervision
Research	Inter-disciplinary systems	Teaching
Personal & professional skills		Management-administration
Communicating & teaching		Advocacy
Service delivery		

A psychology-specific or more generic HSCP research site would also be beneficial. This could consist of learning modules (e.g., preparing proposals, methodology, applying for funding) and a forum where staff could post technical research queries with a view to eliciting help from those with more advanced research competencies. Consistent with the recommendations of McHugh and Byrne (2011), such a site could be structured to facilitate the development of collaborative links between researchers. More generally, other password-protected forums could provide a safe discussion space for care group-specific or more generic service provision challenges.

Conclusions

In conclusion, HSELand provides healthcare staff with a valuable online resource for training and development. It encourages wide-ranging professional development, from intra-personal skills to inter-personal skills, from basic technical skills to complex organisational skills. Online hubs such as 'Health and Social Care Professionals' not only connect individuals of different professions and locations together, valuable resources are provided for those engaged in specific activities (e.g., research, service innovation). Due to the long-term economic savings and increased flexibility that e-learning brings, HSELand and other online resources will likely play an increasingly important role in the ongoing education of health professionals. Perhaps online learning in the future may bring about cultural changes in the nature of professional training. For example, collaborative learning is easier to conduct online and this may facilitate a shift away

from competitive individual learning towards more team-based and inter-disciplinary learning.

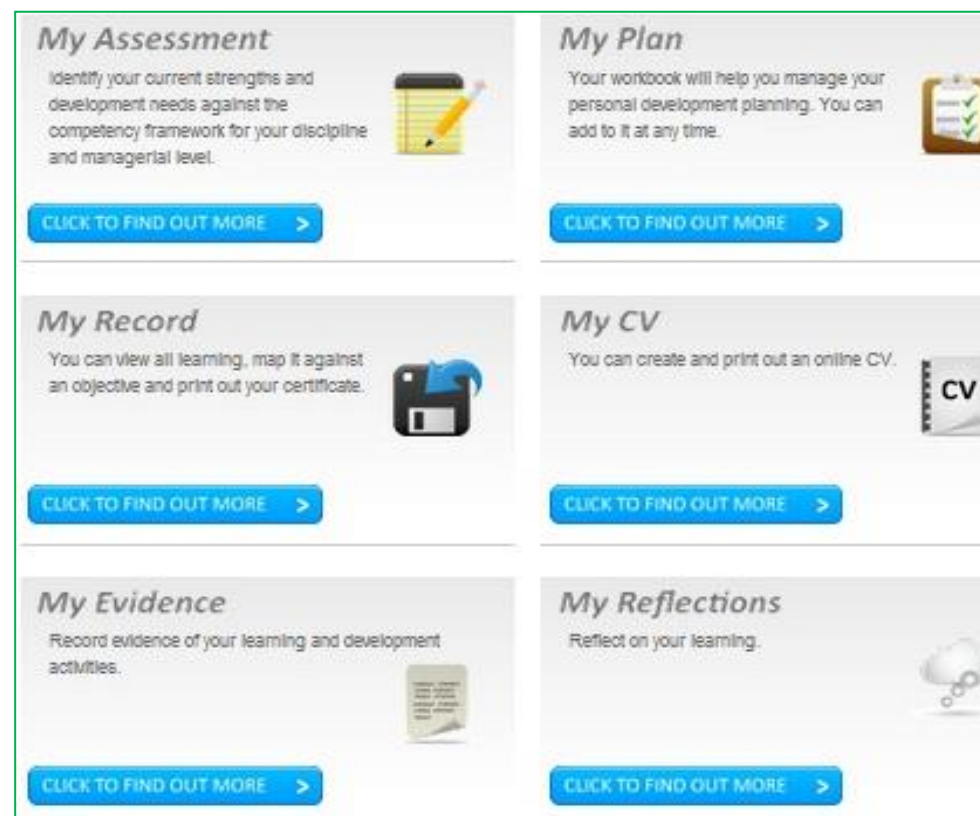
Other changes may be brought about by the increased flexibility of online learning including a potential move from the teaching of knowledge to the facilitation of learning. For example, there may be a requirement to engage in a pre-determined quantum of learning but the content of this learning would be determined by users' developmental needs. It would essentially be a more personalised learning model in comparison to a mass production teaching model. While psychologists may be late in coming to the party that is HSELand, there are many value-for-money opportunities available to our profession in embracing this new medium. Some additional information about HSELand is presented in Table 3.

Table 3: Additional Information about HSELand.

- **Wednesday** is the most active day of the week on HSELand.
- The least active day is **Sunday**.
- The most active time is from **2pm to 3pm**.
- The most active time outside of office hours is **12sm to 1am**.
- The most active months are from **September to November** inclusive.

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