Health services research: using mixed methods for increased value, depth and impact

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Overview

This session will review the use of mixed methods within health services research projects. We will consider:

- The benefits and challenges of mixed methods research;
- The implementation, skill and organisational decisions required; and,
- How to present complex mixed method studies.
Benefits and challenges of mixed methods research

- Dr Nazlee Siddiqui
- Dr Anne Hogden
- Ms Sarah Low
What is mixed methods?

Mixed Methods (MM) refers to a research method that ‘combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques)’ (Johnson, Onwuegbuzie, & Turner, 2007, p. 123) for deeper understanding of the research phenomenon.

Co-joining qualitative and quantitative approaches without compromising unique proposition of each

Convergence

Contradictions

Benefit of MM: deeper understanding of the research phenomenon
Why and when to use mixed methods

✓ Overcome the limitations of a single method (Creswell (2014), Siddiqui and Fitzgerald (2014)):

- Quantitative: no context / setting
- Qualitative: biases, lack of statistical analysis

✓ Both quantitative and qualitative data is obtainable (Creswell 2013).

✓ The research agenda and resources allow deeper understanding of the problem using more than one method (Creswell 2013).

✓ Gaining popularity in health services research, social and human science, and education research (Creswell 2013).
## Types of mixed methods – qualitative and quantitative components

<table>
<thead>
<tr>
<th>Quantitative</th>
<th>Mixed Methods</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-determined questions</td>
<td>Both predetermined and emerging methods</td>
<td>Methods emerge from participants during the study</td>
</tr>
<tr>
<td>Instrument based questions</td>
<td>Both open and closed ended questions</td>
<td>Open-ended questions</td>
</tr>
<tr>
<td>Data sources: performance, attitude, observational and census.</td>
<td>Multiple forms of data drawing on all possibilities</td>
<td>Data sources: Interview, observation, document and audiovisual</td>
</tr>
<tr>
<td>Statistical analysis</td>
<td>Statistical and text analysis</td>
<td>Text and image analysis</td>
</tr>
<tr>
<td>Statistical interpretation</td>
<td>Interpretation across databases</td>
<td>Interpretation of themes</td>
</tr>
</tbody>
</table>

Different types of MM, depending on three dimensions:

- Timing of mixing;
- Emphasis of quantitative versus qualitative approach;
- Integration of quantitative and qualitative approaches.

(Adapted from Creswell 2013)
Integrating qualitative and quantitative approaches

What is required?

Quantitative and qualitative approaches are interdependent to the extent that one is helping the other, in as many research stages as possible, to generate a research outcome that is greater than what would have been possible by any one of the approach.

What is the significance of the dimension/issue?

The benefit of MM providing deeper explanation of the research phenomenon is dependent on the depth of integration (Bazeley, 2012; Heyvaert, Maes, & Onghena, 2013).
Integrating qualitative and quantitative approaches

What are the challenges?

Integration needs to be planned from the very beginning, in line with:

✓ Researcher’s guiding principles e.g. does the researcher believe in placing the two approaches side by side?

✓ Nature of the research questions e.g. are the questions having both quantitative and qualitative components?

✓ Researcher’s capability to synthesize well-developed quantitative and qualitative approaches that can involve a few critical steps:
  • Analysing the quantitative and qualitative findings at individual level
  • Developing a combined picture, putting the individually analysed quantitative and qualitative findings together for another level of analysis.
Collaborating for mixed methods research

**Single researcher (+/- supervisors)**
- eg PhD student, clinician researcher
- Learning qualitative and quantitative skills

**Research team**
- Comprised of qualitative and quantitative researchers
- Optimise methodological strengths and reduce methodological constraints
<table>
<thead>
<tr>
<th>Study, aim</th>
<th>Research team</th>
<th>Quantitative data</th>
<th>Qualitative data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mumford et al 2015</strong>&lt;br&gt;Aim: Develop audit tool and assess the costs of hospital accreditation in Australia</td>
<td>• Healthcare economics researchers&lt;br&gt;• Healthcare organisation &amp; services researchers</td>
<td>• survey design&lt;br&gt;• activity-based costs analysis</td>
<td>Focus groups for&lt;br&gt;• stakeholder analysis&lt;br&gt;• expert panel review of audit tool development</td>
</tr>
<tr>
<td><strong>Seagrove et al 2014</strong>&lt;br&gt;Clement et al 2017**&lt;br&gt;Aim: Capture views of patients and health professionals about drugs within the CONSTRUCT trial.</td>
<td>• 3 qualitative/15 quant researchers&lt;br&gt;• 1 patient representative&lt;br&gt;• Trials researchers&lt;br&gt;• Clinical researchers&lt;br&gt;• Statisticians</td>
<td>RCT</td>
<td>• Interviews with patients and health professionals embedded within RCT&lt;br&gt;• Framework analysis</td>
</tr>
</tbody>
</table>
Long term benefits of mixed method research

- Stronger funding applications
- Wider range of journals for publication
- Broader research networks
- Career development/employment opportunities
References


POLL #1

THE BENEFITS OF MIXED METHODS RESEARCH MOTIVATES ME TO USE THE APPROACH

POLL #2

THE CHALLENGES OF MIXED METHOD RESEARCH ARE DIFFICULT BUT I CAN OVERCOME THEM
Implementation, skill and organisational decisions

Dr Kerryn Butler-Henderson
Prof David Greenfield
# Implementation, skill and organisational decisions

<table>
<thead>
<tr>
<th>Issue</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods</td>
<td>survey, interviews, focus groups, expert panels, documents/database, observations</td>
</tr>
<tr>
<td>Implementation</td>
<td>time, resources, capacity and skill – individual and team</td>
</tr>
<tr>
<td>Analysis</td>
<td>Qualitative: thematic, narrative, content</td>
</tr>
<tr>
<td></td>
<td>Quantitative: descriptive and inferential statistics</td>
</tr>
</tbody>
</table>

[Source: Australian Institute of Health Service Management]
## Implementation, skill and organisational decisions

<table>
<thead>
<tr>
<th>Authors/Year</th>
<th>Study Overview</th>
<th>Study Design</th>
<th>Mixed Approach</th>
<th>Level of Detail</th>
<th>Take Away Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clendon et al 2016</td>
<td>Experiences and needs of older nurses in relation to flexible working.</td>
<td>Focus groups, interviews and policy review.</td>
<td>Mixed methodology.</td>
<td>Limited.</td>
<td>Mixed methods does not need to be a mixture of quantitative and qualitative, it can be a mix of qualitative methods.</td>
</tr>
<tr>
<td>Athié et al 2016</td>
<td>The perceptions of health professionals and managers about the integration of primary care and mental health.</td>
<td>Questionnaire (closed items) informs interview questions.</td>
<td>Mixed data collection and analysis approach.</td>
<td>Very detailed.</td>
<td>Results from a quantitative survey can inform the qualitative interview. Applies each method against the key research questions.</td>
</tr>
<tr>
<td>Giles et al 2016</td>
<td>Connectivity of the Nurse Consultant role across metropolitan and rural contexts.</td>
<td>Survey followed by focus group, no connection between each.</td>
<td>Mixed data collection approach.</td>
<td>Limited.</td>
<td>Can be separate quantitative and qualitative data collection methods. Article includes a flow chart diagram of the study design.</td>
</tr>
</tbody>
</table>
# Implementation, skill and organisational decisions

<table>
<thead>
<tr>
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<th>Mixed approach</th>
<th>Level of detail</th>
<th>Take away message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ladner et al 2016</td>
<td>Identify barriers, obstacles, and strategies and to analyze key concerns and lessons learned with respect to the implementation of HPV vaccination program in low- and middle-income countries.</td>
<td>Interviews informed survey development, which was then deployed.</td>
<td>Mixed data collection approach.</td>
<td>Detailed.</td>
<td>Results from a qualitative interview can inform the quantitative survey development.</td>
</tr>
<tr>
<td>Lewis et al 2016</td>
<td>Women’s experiences of maternity care in an urban tertiary obstetric setting, to gain insight into conceptualization of satisfaction across the childbirth continuum.</td>
<td>Questionnaire, which included invite to participate in interview. Interviews ceased at data saturation, but questionnaires continued.</td>
<td>Mixed data collection approach.</td>
<td>Very detailed.</td>
<td>Mixed methods occurring at the same time. This article provides definitions for what mixed methods is (First paragraph in methods).</td>
</tr>
</tbody>
</table>
### Implementation, skill and organisational decisions

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
Nurses aged over 50 and their perceptions of flexible working

JILL CLENDON RN, PhD 1,2 and LÉONIE WALKER PhD 2,3

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Aim To explore the experiences and needs of older nurses in relation to flexible working and the barriers and facilitators to implementation within workplaces. Background An ageing nursing workforce and anticipated nursing workforce shortages require effective approaches to workforce retention. Method A mixed method approach (focus group and individual interviews) with nurses aged over 50 (n = 46) combined with analysis of district health board (DHB) flexible working policies. Results Participants had a good understanding of flexible working and recognised the importance of balancing their own needs with those of their organisation. Participants had legitimate reasons for making requests and became frustrated when turned down. They recommended job sharing, shorter shifts, no night shift and greater recognition of their work to improve retention. There was discrepancy between organisational policy (where this existed) and implementation. Conclusion Organisations should review flexible working policies, ensuring these are understood and implemented at the unit level. Training of nurse managers is recommended. Implications for nursing management Nurse managers must recognise the individual needs of nurses, be cognisant of workplace policies regarding flexible working, ensure these are implemented consistently and make the effort to recognise the work of older nurses.

Keywords: flexible working, New Zealand, older nurses, retention, workforce
Implementation, skill and organisational decisions

Perceptions of health managers and professionals about mental health and primary care integration in Rio de Janeiro: a mixed methods study

Karen Athié1, Alice Lopes do Amaral Menezes2, Angela Machado da Silva2, Monica Campos3, Pedro Gabriel Delgado4, Sandra Fortes5 and Christopher Dowrick5

Abstract

Background: Community-based primary mental health care is recommended in low and middle-income countries. The Brazilian Health System has been restructuring primary care by expanding its Family Health Strategy. Due to mental health problems, psychosocial vulnerability and accessibility, Matrix Support teams are being set up to broaden the professional scope of primary care. This paper aims to analyse the perceptions of health professionals and managers about the integration of primary care and mental health.

Method: In this mixed-method study 18 health managers and 24 professionals were interviewed from different primary and mental health care services in Rio de Janeiro. A semi-structured survey was conducted with 185 closed questions ranging from 1 to 5 and one open-ended question, to evaluate: access, gateway, trust, family focus, primary mental health interventions, mental health records, mental health problems, team collaboration, integration with community resources and primary mental health education. Two comparisons were made: health managers and professionals’ (Mann-Whitney non-parametric test) and health managers’ perceptions (Kruskal-Wallis non-parametric test) in 4 service designs (General Traditional Outpatients, Mental Health Specialised Outpatients, Psychosocial Community Centre and Family Health Strategy)(SPSS version 17.0). Qualitative data were subjected to Framework Analysis.

Results: Firstly, health managers and professionals’ perceptions converged in all components, except the health record system. Secondly, managers’ perceptions in traditional services contrasted with managers’ perceptions in community-based services in components such as mental health interventions and team collaboration, and converged in gateway, trust, record system and primary mental health education. Qualitative data revealed an acceptance of mental health and primary care integration, but a lack of communication between institutions. The Mixed Method demonstrated that interviewees consider mental health and primary care integration as a requirement of the system, while their perceptions and the model of work produced by the institutional culture are inextricably linked.

Conclusion: There is a gap between health managers’ and professionals’ understanding of community-based primary mental health care. The integration of different processes of work entails both rethinking workforce actions and institutional support to help make changes.

Keywords: Mental health, Primary care, Collaborative care, Mental health matrix support, Integration, LAMIC, Mixed methods, MHGAP, Public health, Implementation science
Implementation, skill and organisational decisions

*Nursing and Health Sciences* (2016), 18, 154–162

**Research Article**

**Examining Nurse Consultant connectivity: An Australian mixed method study**

Michelle Giles, RN, CM, BBus MIS, PhD candidate,1,2 Vicki Parker, RN, BA, MN, PhD1,2 and Rebecca Mitchell, PhD3

1Clinical Nurse Consultant Research, Hunter New England Local Health District, James Fletcher Campus, 2School of Health, University of New England, Hunter New England Local Health District and 3School of Business and Law, University of Newcastle, Newcastle, NSW, Australia

**Abstract**

The nurse consultant (NC) role in Australia is a senior classification of advanced practice nurse has been described as enhancing health care outcomes largely through extensive collaboration with consumers, nurses, and other health professionals. However, little is known about the actual nature, amount, and quality of NC interactions. This study examines the connectivity of the NC role across metropolitan and rural contexts, using a mixed method sequential design with an online survey and focus groups with NCs and other stakeholders. Results demonstrated that NCs most commonly have high density connectivity patterns with other nursing colleagues, medical staff, patients/clients, and administrative staff. Position grade (1, 2 or 3) influences density of connectivity, as does location, with those based in metropolitan roles engaging significantly less with other clinicians.

Findings demonstrate that many NCs are highly collaborative and predominantly embedded into interprofessional practice models. This study provides valuable insight into the diverse and often complex NC role and the way in which NC expertise and influence is deployed and integrated across a large local health district.

**Key words** advanced practice nurse, collaboration, connectivity, Nurse Consultant.
Experiences and lessons learned from 29 HPV vaccination programs implemented in 19 low and middle-income countries, 2009-2014

Joël Ladner1, Marie-Hélène Besson2, Etienne Audureau3, Mariana Rodrigues2 and Joseph Saba2

Abstract

Background: Cervical cancer is the greatest cause of age-weighted years of life lost in the developing world. Human papillomavirus (HPV) infection is associated with a high proportion of cervical cancers, and HPV vaccination may help to reduce the incidence of cancer. The aim of the study was to identify the barriers, obstacles, and strategies and to analyze key concerns and lessons learned with respect to the implementation of HPV vaccination program in low- and middle-income countries.

Methods: The Gardasil Access Program (GAP) is a donation program established to enable organizations and institutions in eligible low-resource countries to gain operational experience designing and implementing HPV vaccination programs. This study used an online survey to capture the experiences and insights of program managers participating in the GAP. Different factors related to HPV vaccination program management were collected. A mixed-method approach enabled the presentation of both quantitative measurements and qualitative insights.

Results: Twenty-nine programs implemented by 23 institutions in 19 low- and middle-income countries were included. Twenty programs managers (97.7%) reported that their institution implemented sensitization strategies about vaccination prior to the launch of vaccination campaign. The most frequently reported obstacles to HPV vaccination by the program managers were erroneous perceptions of population related to the vaccine's safety and efficacy. Reaching and maintaining follow-up with target populations were identified as challenges. Insufficient infrastructure and human resources financing and the vaccine delivery method were identified as significant health system barriers. Coupling HPV vaccination with other health interventions for mothers of targeted girls helped to increase vaccination and cervical cancer screening. The majority of program managers reported that their programs had a positive impact on national HPV vaccination policy. The majority of institutions had national- and international partners that provided support for human resources, technical assistance, and training and financial support for health professionals.

Conclusion: Local organizations and institutions can implement successful HPV vaccination campaigns. Adequate and adapted planning and resources that support information sharing, sensitization, and mobilization are essential for such success. These results can inform the development of programs and policies related to HPV vaccination in low- and middle-income countries.

Keywords: Human papillomavirus vaccine, type 16 L1, 18, Vaccination, Preventive health services, Immunization uterine cervical neoplasms, Developing countries, Vaccines, Program evaluation.
Implementation, skill and organisational decisions

Gaining insight into how women conceptualize satisfaction: Western Australian women’s perception of their maternity care experiences

Lucy Lewis¹,², Yvonne L. Hauck¹,², Fiona Ronchi², Caroline Crichton² and Liana Waller²

Abstract

Background: The concept of maternal satisfaction is challenging, as women’s and clinicians’ expectations and experiences can differ. Our aim was to investigate women’s experiences of maternity care in an urban tertiary obstetric setting, to gain insight into conceptualization of satisfaction across the childbirth continuum.

Methods: This mixed method study was conducted at a public maternity hospital in Western Australia. A questionnaire was sent to 733 women two weeks post birth, which included an invitation for an audio-recorded, telephone interview. Frequency distributions and univariate comparisons were employed for quantitative data. Thematic analysis of interview transcripts was undertaken to extract common themes.

Results: A total of 54% (399 of 733) returned the questionnaire. Quantitative results indicated that women were less likely to feel involved if they did not have a spontaneous vaginal birth (P = 0.020); supported by a midwife if they had a caesarean (P = <0.001); or supported by an obstetrician if they had a spontaneous vaginal birth (P= <0.001).

Qualitative findings emerged from 63 interviews which highlighted the influence that organization of care, resources and facilities had on women’s satisfaction. These paradigms unfolded as three broad themes constructed by four sub-themes, each illustrating a dichotomy of experiences. The first theme ‘how care was provided’ encompassed: familiar faces versus a different one every time and the best place to be as opposed to so disappointed. The second theme ‘attributes of staff’ included: above and beyond versus caring without caring and in good hands as opposed to handled incorrectly. The third theme ‘engaged in care’ incorporated: explained everything versus did not know why and had a choice as opposed to did not listen to my needs.

Conclusions: Quantitative analysis confirmed that the majority of women surveyed were satisfied. Mode of birth influenced women’s perception of being involved with their birth. Being able to explore the diversity of women’s experiences in relation to satisfaction with their maternity care in an urban, tertiary obstetric setting has offered greater insight into what women value: a sensitive, respectful, shared relationship with competent clinicians who recognise and strive to provide woman focused care across the childbirth continuum.

Keywords: Maternal satisfaction, Mixed methods, Woman focused care
Implementation, skill and organisational decisions

BRIEF REPORT

Ethnic Differences in Social Support After Initial Receipt of an Abnormal Mammogram

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Fred Hutchinson Cancer Research Center, Seattle, Washington, and University of Washington

Michelle Nguyen
University of Washington

Bridgette H. Hempstead
Cierra Sisters, Seattle, Washington

Shauna Rae Weatherby
MultiCare Health System, Tacoma, Washington

Claire Dunbar
Seattle University

Shirley A. A. Beresford and Rachel M. Ceballos
Fred Hutchinson Cancer Research Center, Seattle, Washington, and University of Washington

Objectives: We examine access to and type of social support after initial receipt of an abnormal mammogram across non-Latina White (NLW), African American, and Latina women. Method: This cross-sectional study used a mixed method design, with quantitative and qualitative measures. Women were recruited through 2 community advocates and 3 breast-health-related care organizations. Results: With regard to access, African American women were less likely to access social support relative to NLW counterparts. Similar nonsignificant differences were found for Latinas. Women did not discuss results with family and friends to avoid burdening social networks and negative reactions. Networks' geographic constraints and medical mistrust influenced Latina and African American women's decisions to discuss results. With regard to type of social support, women reported emotional support across ethnicity. Latina and African American women reported more instrumental support, whereas NLW women reported more informational support in the context of their well-being. Conclusions: There are shared and culturally unique aspects of women’s experiences with social support after initially receiving an abnormal mammogram. Latina and African American women may particularly benefit from informational support from health care professionals. Communitywide efforts to mitigate mistrust and encourage active communication about cancer may improve ethnic disparities in emotional well-being and diagnostic resolution during initial receipt of an abnormal mammogram.

Keywords: race/ethnicity, social support, abnormal mammogram, breast health, disparities
Implementation, skill and organisational decisions

Breaking Up Sedentary Behavior
Perceptions From Cancer Survivors

KEY WORDS
African American
Breast cancer
Cancer survivorship
Quality of life
Sedentary behavior

Background: Limited data exist on the benefits of, barriers to, and potential strategies to break up time spent sitting in cancer survivors. Such data will be meaningful given the consequences of prolonged sitting. Objectives: The aim of this study was to conduct a mixed-method research study consisting of semistructured telephone interviews to identify recurrent themes associated with prolonged sitting in cancer survivors. Methods: African American breast cancer survivors ($N=31$) were recruited from a local tumor registry. Telephone interviews were conducted and group consensus processes were used to identify recurrent themes. The a priori categories were benefits, barriers, and potential strategies to breaking up prolonged periods of sitting. Results: Recurrent themes contributing most to prolonged sitting were leisure time interest (45%: eg, watching television and reading) and health challenges (27%: eg, pain and fatigue). Most (66%) women perceived improved health as benefits to breaking up time spent sitting. Nonetheless, many (41%) survivors reported health (eg, pain and fatigue) as the biggest challenge to interrupt time spent sitting. Engaging in light intensity activities (eg, staying active, keep moving) was the most commonly reported strategy for breaking up prolonged sitting. Conclusions: African American breast cancer survivors identified the benefits and barriers to breaking up time spent sitting as well as potential strategies to interrupt time-spent sitting. Implications for Practice: Clinicians are integral in promoting breaks from prolonged sitting throughout the initial phases of the cancer continuum. Successful studies will begin with early intervention in the clinical setting, with increasing intensity as survivors transition to the recovery phase.
References


POLL #3

MIXED METHOD RESEARCH REQUIRES CONSIDERABLE SKILL AND EXPERTISE

POLL #4

TO IMPLEMENT MIXED METHOD RESEARCH EFFECTIVELY, A TEAM APPROACH IS BEST
Presenting complex mixed method studies

Dr Kathy Eljiz
Dr Jacqueline Milne
Presenting complex mixed method studies

• Mixed methods studies need careful consideration for presentation.

• When the methods and the timeline over which data were collected is presented the study’s credibility and value is improved.

• To achieve this, both words and figures can be used to convey clarity.
Presenting complex mixed method studies

Curry et al. (2015) offer an example of how to convey meaning using multiple methods through a longitudinal intervention study that:

- Sought to shift organisational culture to improve performance;
- Focus on patient outcomes; and,
- Address mortality for patients with acute myocardia infarction (AMI).
Concretely, the intervention has three primary components:

1) annual forums to convene participants from ten intervention hospitals

2) semi-annual workshops with guiding coalitions at each hospital

3) continuous remote support across all ten hospitals through a web-based platform (Figure 2).

Curry et al (2015)
Presenting complex mixed method studies

✓ Tables are useful tools to present both qualitative and quantitative findings.

✓ The text compliments the table with a robust discussion.

Maben et al. (2015), a complex mixed methods study exploring the impact of: all single rooms on staff and patient experience; safety outcomes; and costs.

Method:
• pre/post ‘move’ comparisons within four wards in a single acute hospital with 100% single rooms;
• quasi-experimental before-and-after study with two control hospitals; and,
• analysis of capital and operational costs associated with single rooms.
Presenting complex mixed method studies

Table 1  Patient advantages and disadvantages of shared patient accommodation and single-room accommodation

Shared patient accommodation in an open ward

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Patient interview data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security—visibility and staff proximity</td>
<td>“You were so close to the station anyway so if something did go wrong you could call somebody. They didn’t draw the curtains so they could see you all night…they did keep a good watch on you” Patient, MAU (female—age 55)</td>
</tr>
<tr>
<td>Shared patient accommodation meant nurses’ station visible from patient beds:</td>
<td></td>
</tr>
<tr>
<td>(i) Enabled patients to see staff and evaluate staff competence, leading to a sense of safety</td>
<td></td>
</tr>
</tbody>
</table>

Table 3  Results of t tests comparing staff perceptions of the ward environment pre and post move

<table>
<thead>
<tr>
<th>Scale</th>
<th>Phase</th>
<th>Mean†</th>
<th>SD</th>
<th>t</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency of physical environment</td>
<td>Pre</td>
<td>2.81</td>
<td>0.67</td>
<td>−3.346</td>
<td>0.001*</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>3.24</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to deliver high-quality care</td>
<td>Pre</td>
<td>3.20</td>
<td>0.66</td>
<td>2.59</td>
<td>0.011*</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>2.88</td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Presenting complex mixed method studies

When outlining future mixed methods studies, it is necessary to communicate clearly the methods that might be used across various settings and time periods.

✓ Clear figures and graphs help.
✓ Advantages: compact, provides significant information, breaks up large amounts of text, more interesting.

Carson-Stevens et al. (2015) details a future cross-sectional study seeking to describe incidents reported from a general practice care setting.
Presenting complex mixed method studies

Carson-Stevens et al. (2015)
Table 1 Study sample described by report period and level of harm

<table>
<thead>
<tr>
<th>Reporting period</th>
<th>Group</th>
<th>Group size, N</th>
<th>Level of Harm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2005–2009</td>
<td>1</td>
<td>18 039</td>
<td>None (2162)</td>
<td>3639</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low (846)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Moderate (631)</td>
<td></td>
</tr>
<tr>
<td>2010–2011</td>
<td>2</td>
<td>12 660</td>
<td>None (2237)</td>
<td>3901</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low (894)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Moderate (770)</td>
<td></td>
</tr>
<tr>
<td>2012–September 2013</td>
<td>3</td>
<td>11 198</td>
<td>None (2292)</td>
<td>4960</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low (1721)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Moderate (947)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 500</td>
</tr>
</tbody>
</table>
Presenting complex mixed method studies

There are resources to help provide clear integration of the different parts of a complex research study.

Fetters et al. (2013) describe integration principles and practices at three levels in mixed methods research with illustrative examples.

Their ideas help researchers understand how publishing various parts of a study fit together.
Presenting complex mixed method studies

Figure 1: Example Illustrating Integration in an Exploratory Sequential Mixed Methods Design from the Survival after Acute Myocardial Infarction Study

- **Aim 1:** Generate hypotheses concerning hospital-based efforts that may be associated with RSMR
- Qualitative component connected to CMS national database to identify positive deviation sample (highest/lowest RSMRs) in 11 hospitals with 158 key hospital staff
- Analyze data and generate hypotheses

- Qualitative component describes features of high quality discharge processes that may be associated with better hospital care for patients with AMI
- In methods, connected to CMS national database for positive deviation sampling per Aim 1
- Resulting paper illustrates staged integration, and analysis expands qualitative findings by showing comprehensive discharge processes may reduce RSMR (Cherlin et al. 2013)

- **Aim 2:** Test hypotheses and determine hospital efforts that are associated with RSMR
- **Build** survey from qualitative data (68 items)
- Cognitive test and refine survey (n=8)
- Distribute survey (n=537 hospitals; 91% response)
- Analyze data and test hypotheses

- Qualitative paper describes influence of environmental context, e.g., organizational values and goals, senior management involvement, staff expertise, communication and coordination among staff, and problem solving and learning (Curry et al. 2011)

- **Build** survey from qualitative data (68 items)
- Cognitive test and refine survey (n=8)
- Distribute survey (n=537 hospitals; 91% response)
- Analyze data and test hypotheses

- Merge qualitative with quantitative findings. Resulting paper identifies predictors of AMI mortality rates (Bradley et al. 2012b)
- Through weaving narrative, integrate qualitative findings with quantitative findings that confirm factors influencing RSMRs, and impact on RSMR

- Qualitative approach describes the nature of the hospital-emergency services relationships in high performance hospitals
- In methods, connected to the CMS national database using identical positive deviation sampling per Aim 1
- Resulting paper illustrates staged integration and analysis expands previous findings by showing that high performing hospitals use multifaceted strategies to support collaboration with EMS in AMI care (Landman et al. 2013)
Presenting complex mixed method studies

Triangulation is common within many mixed methods studies (Hussein 2009).

A positive strategy to clearly communicate your findings is through using a triangulation matrix as proposed by O’Cathain et al. (2010).
Presenting complex mixed method studies

Example of a mixed methods matrix for a study exploring the relationship between types of teams and integration between qualitative and quantitative components of studies*22

<table>
<thead>
<tr>
<th>Study</th>
<th>Evidence of integration in report†</th>
<th>Types of publications emerging‡</th>
<th>Qualitative expertise on the team</th>
<th>Team working</th>
<th>Respect for team members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>5</td>
<td>Yes</td>
<td>Close and friendly</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>5</td>
<td>Yes</td>
<td>Single researcher</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>4</td>
<td>No senior qualitative expertise on team but project researcher worked hard at it</td>
<td>Integrated team. The qualitative and quantitative researchers were in same department</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>4</td>
<td>Yes. There was also expertise developing in mixed methods research</td>
<td>Integrated team. The lead researcher worked closely with qualitative and quantitative researchers</td>
<td>Initially some team members did not respect the qualitative research but learnt to as the study progressed</td>
</tr>
</tbody>
</table>

*SHOWS THE FIRST SIX CASES AND A SELECTION OF THEMES FROM THE FULL MATRIX. THE CONTENT OF SOME OF THE ORIGINAL CELLS HAS BEEN CHANGED TO INCREASE COMPREHENSION AND PROTECT CONFIDENTIALITY.

† 1=YES, 2=YES BUT MORE POSSIBLE, 3=NO.
‡ 1=NONE, 2=ONLY QUALITATIVE, 3=ONLY QUANTITATIVE, 4=BOTH PUBLISHED SEPARATELY, 5=MIXED METHODS ARTICLE.
Presenting complex mixed method studies

Fudge et al. (2008) offer an example of a study using participant observation, interviews, and collection of documentary evidence.

The study was designed to gain an understanding of how the policy of user involvement is interpreted and put into practice.

The study provides an example of a complex research project using multiple qualitative methods. The authors clearly present a summary of the data collected using a table format.
Presenting complex mixed method studies

Box 1: Summary of data collected

Participant observation and discussions with key informants
Four meetings to plan recruitment
Telephone contact and visits, with local voluntary and community organisations to assist with recruitment
Telephone contact with people who had had a stroke to invite them to take part in the programme

Semistructured interviews
Seven interviews with people who declined to take part in the programme
Nine interviews with people taking part in the programme
Three interviews with professionals (two programme staff and one general practitioner) working with service users on the programme

Documentary sources
Programme newsletter
Programme documents
References


POLL #5

CAREFUL PLANNING IS NECESSARY TO ENSURE THE CREDITABLE PRESENTATION OF MIXED METHODS RESEARCH

POLL #6

Learnings

Today we have had the opportunity to:

1. Identify and discuss the benefits and challenges associated with mixed methods research.

2. Recognise the implementation, skill and organisational decisions required for a successful project.

3. Know how to present complex mixed method studies.
## Contact details

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