Critical appraisal and qualitative research: exploring sensitivity analysis

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Background

• SRs of qualitative research an emerging type of review
“…the full contribution of qualitative research will not be realised if individual studies merely accumulate and some kind of synthesis is not carried out…there are generalisations to be made across qualitative research studies that do not supplant the detailed findings of individual studies, but add to them”

Britten et al. (2002)
“..the purpose of a qualitative synthesis would be to achieve greater understanding and attain a level of conceptual and theoretical development beyond that achieved in any individual empirical study”

Campbell et al. (2003)
Examples

Older people’s views of hospital discharge

Young people’s views on what impacts on their motivation to learn in the classroom

Lay experiences of diabetes and diabetes care

Experiences of being a teenage mother in the UK

Experiences of patients with coronary heart disease
Background

• SRs of qualitative research an emerging type of review

• Debates around quality assessment

• Impact of study quality on results?
Sensitivity analysis

“An analysis used to determine how sensitive the results of a study or systematic review are to changes in how it was done”

http://www.jr2.ox.ac.uk/bandolier/booth/glossary/sensanal.html
Aims

• To explore the relationship between the quality of qualitative studies and their contribution to syntheses

• To assess the feasibility and value of conducting sensitivity analyses in systematic reviews of qualitative research
Methods

• Analysis of 62 studies across five reviews
  – Children and young people’s health
The reviews*

- Young people and mental health
- Young people and physical activity
- Young people and healthy eating
- Children and physical activity
- Children and healthy eating

*See: [http://eppi.ioe.ac.uk/cms/](http://eppi.ioe.ac.uk/cms/) for the full reports of all reviews
Thematic Synthesis*

- Line by line coding
- Comparing & grouping codes
- Descriptive themes
- Analytical themes

Critical appraisal

- Quality of reporting (5-6 items)
- Sufficiency of strategies for ensuring rigour in data collection and analysis (2-4 items)
- Extent to which study findings were rooted in children’s and young people’s own perspectives (3 items)
Methods

• Analysis of 62 studies across five reviews
  – Children and young people’s health

• First analysis
  – ‘Synthesis contribution’ plotted against study quality
  – Examination of positive and negative cases

• Second analysis
  – Impact on synthesizes when high quality or low quality studies removed
Results of analysis one

• Relationship between study quality and systematic review results not straightforward!
Figure 1: The relationship between the quality of ‘qualitative’ studies of young people’s perspectives and experiences and their contribution to three syntheses on mental health, physical activity and healthy eating.
Figure 2: The relationship between the quality of ‘qualitative’ studies of children’s perspectives and experiences and their contribution to two syntheses on physical activity and healthy eating.
Results of analysis one

**High quality, low contribution**

- Study focus precise and narrow
- Methods well reported and rigorous, but not always appropriate
- Study findings precise and narrow, some conceptual depth and explanatory power

**High quality, high contribution**

- Study focus close match to review focus
- Methods well reported, rigorous and highly appropriate
- Study findings are detailed and wide-ranging with conceptual depth and explanatory power

**Low quality, low contribution**

- Study focus may or may not be a close match to the review focus
- Methods poorly reported, lack of rigour and not always appropriate
- Study findings sketchy, limited in depth and relevance

**Low quality, high contribution**

- Study focus a close match to review focus
- Methods poorly reported, lack of rigour and not always appropriate
- Study findings are detailed and relevant but limited in depth
Results of analysis two

- Sensitivity analysis – what happens to results when low quality or high quality studies are removed?
Table 1: Unique findings by study quality

<table>
<thead>
<tr>
<th></th>
<th>High quality studies (n=6)</th>
<th>Medium quality studies (n=4)</th>
<th>Low quality studies (n=3)</th>
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</thead>
<tbody>
<tr>
<td>Young people and mental health</td>
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<td>17</td>
<td>2</td>
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<tr>
<td>Young people and physical activity</td>
<td>16 (n=9)</td>
<td>2 (n=2)</td>
<td>5 (n=5)</td>
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<tr>
<td>Young people and healthy eating</td>
<td>10 (n=6)</td>
<td>0 (n=0)</td>
<td>6 (n=2)</td>
</tr>
<tr>
<td>Children and healthy eating</td>
<td>6 (n=5)</td>
<td>0 (n=1)</td>
<td>0 (n=2)</td>
</tr>
</tbody>
</table>
Synthesis results: children & healthy eating

Understandings of healthy eating

Chosen foods

Influences on foods eaten

Provided foods

Food in the school

Food in the home

Healthy eating concepts (understanding)

‘Good’ and ‘bad’ foods

Health consequences

Food preferences

Health benefits

Knowledge behaviour gap

Roles and responsibilities

Non-influencing factors

Limited choices

Eating to socialize

Contradictions

Food rules

Breaking rules
Some limitations

• Assessment of synthesis contribution too simplistic?

• Retrospective analysis

• The importance of the ‘form’ of findings and relevance
Conclusion

• The relationship between study quality and the results of SRs of qualitative research:
  – Difficult but possible to study
  – Not yet clear

• Some evidence that there may be little to gain from including lower quality studies

• High quality studies which display conceptual depth and rich description appear to be crucial
Thank you!

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