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*ESRC Research Methods Festival, St Catherine's
College Oxford, 30th June to 3rd July*

Session 11: Systematic reviews (1)

Critical appraisal and qualitative research: exploring sensitivity analysis

Angela Harden

**Methods for Research Synthesis Node,
ESRC National Centre for Research
Methods**



Background



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- **SRs of qualitative research an emerging type of review**

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PLOS MEDICINE

Patient Adherence to Tuberculosis Treatment: A Systematic Review of Qualitative Research

Salla A. Munro^{1,2,3*}, Simon A. Lewin^{3,4}, Helen J. Smith⁵, Mark E. Engel^{1,6}, Atle Fretheim⁷, Jimmy Volmink^{1,8}

¹ South African Cochrane Centre, Medical Research Council of South Africa, Cape Town, South Africa, ² Primary Health Care Directorate, University of Cape Town, Cape Town, South Africa, ³ Health Systems Research Unit, Medical Research Council of South Africa, Cape Town, South Africa, ⁴ Department of Public Health and Policy, London

Lay Understanding of Familial Risk of Common Chronic Diseases: A Systematic Review and Synthesis of Qualitative Research

Int Soc. Pol., 35, 1, 21–37 © 2005 Cambridge University Press

doi:10.1017/S0047279405009360 Printed in the United Kingdom

Qualitative Research and the Evidence Base of Policy: Insights from Studies of Teenage Mothers in the UK

Integrating qualitative research with trials in systematic reviews

James Thomas, Angela Harden, Ann Oakley, Sandy Oliver, Katy Sutcliffe, Rebecca Rees, Ginny Brunton, Josephine Kavanagh

An example review from public health shows how integration is possible and some potential benefits

The value of including data from different types of

“...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



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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



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- **SRs of qualitative research an emerging type of review**
- **Debates around quality assessment**
- **Impact of study quality on results?**

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Sensitivity analysis



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“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>

- **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**

- **Analysis of 62 studies across five reviews**
 - Children and young people's health

The reviews*



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- 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/> for the full reports of all reviews

Thematic Synthesis*



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

***See: Thomas J, Harden A (2007) Methods for the thematic synthesis of qualitative research in systematic reviews. *NCRM Working Paper Series* Number (10/07)**

Critical appraisal



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- **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)**

- **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 syntheses when high quality or low quality studies removed

Results of analysis one



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- **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

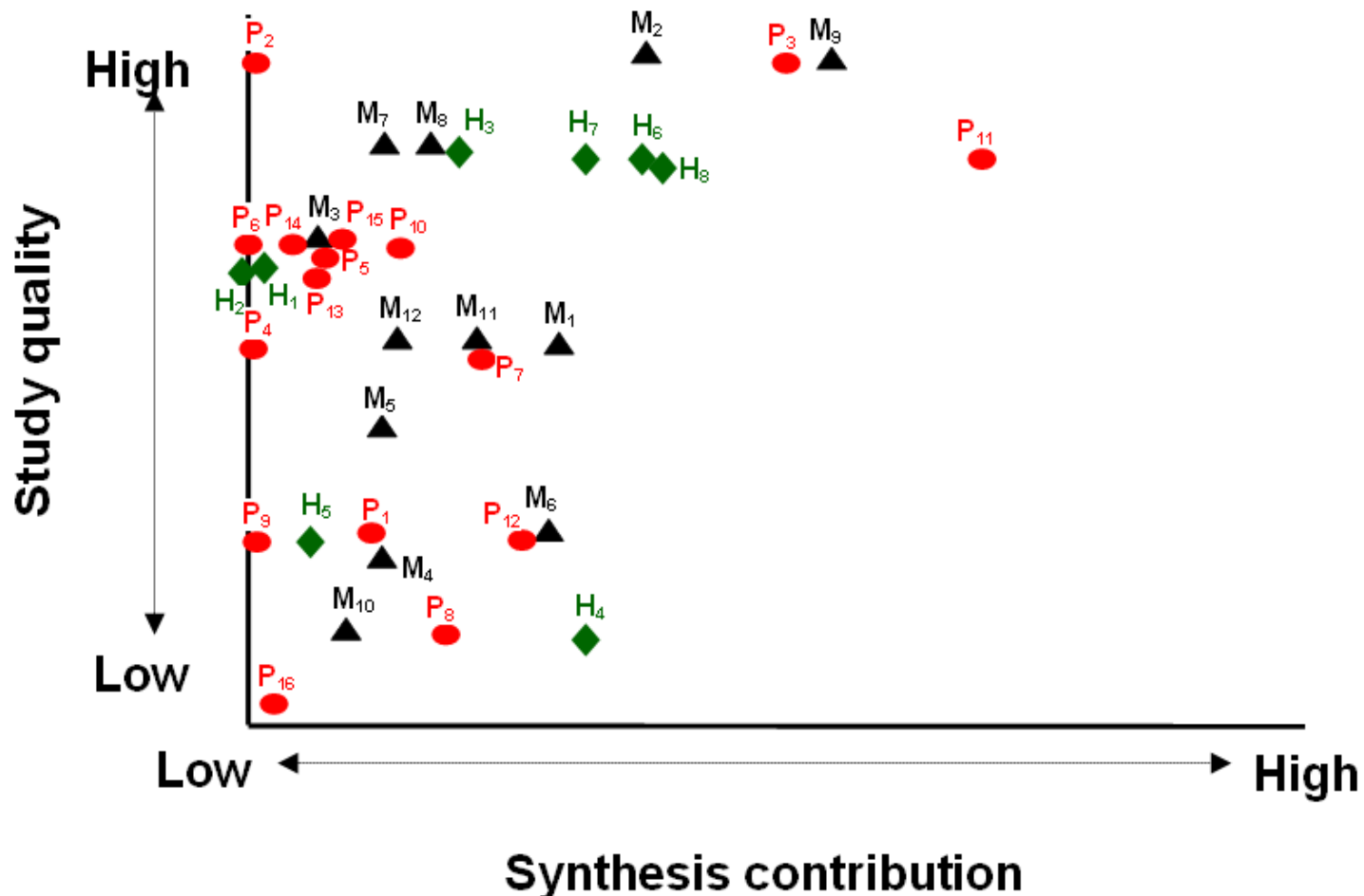
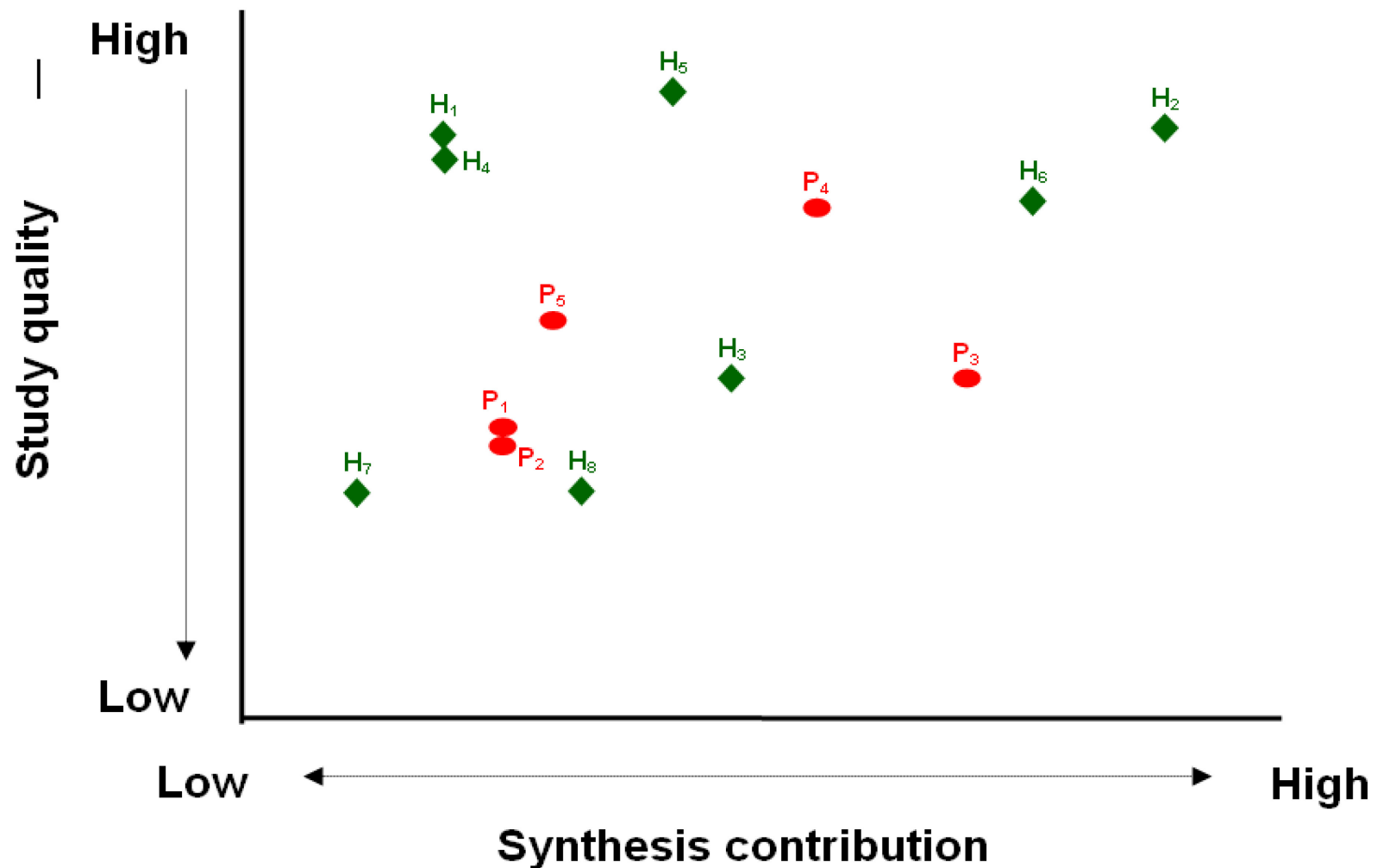


Figure 2: The relationship between the quality of ‘qualitative’ studies of children’s perspectives and experiences and their contribution to two syntheses on physical activity and healthy eating



Results of analysis one



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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



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- **Sensitivity analysis – what happens to results when low quality or high quality studies are removed?**

Table 1: Unique findings by study quality



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	No. unique findings (no. of studies)		
	High quality studies	Medium quality studies	Low quality studies
Young people and mental health	29 (n=6)	17 (n=4)	2 (n=3)
Young people and physical activity	16 (n=9)	2 (n=2)	5 (n=5)
Young people and healthy eating	10 (n=6)	0 (n=0)	6 (n=2)
Children and healthy eating	6 (n=5)	0 (n=1)	0 (n=2)

**Understandings
of healthy eating**

**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

Chosen foods

**Influences on
foods eaten**

**Food in the
school**

**Provided
foods**

**Food in
the home**

**Synthesis
results:
children &
healthy
eating**

Some limitations



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- **Assessment of synthesis contribution too simplistic?**
- **Retrospective analysis**
- **The importance of the ‘form’ of findings and relevance**

- **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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