Carrying out a qualitative evidence synthesis – Examples of method-specific data extraction and synthesis

Prof Jane Noyes

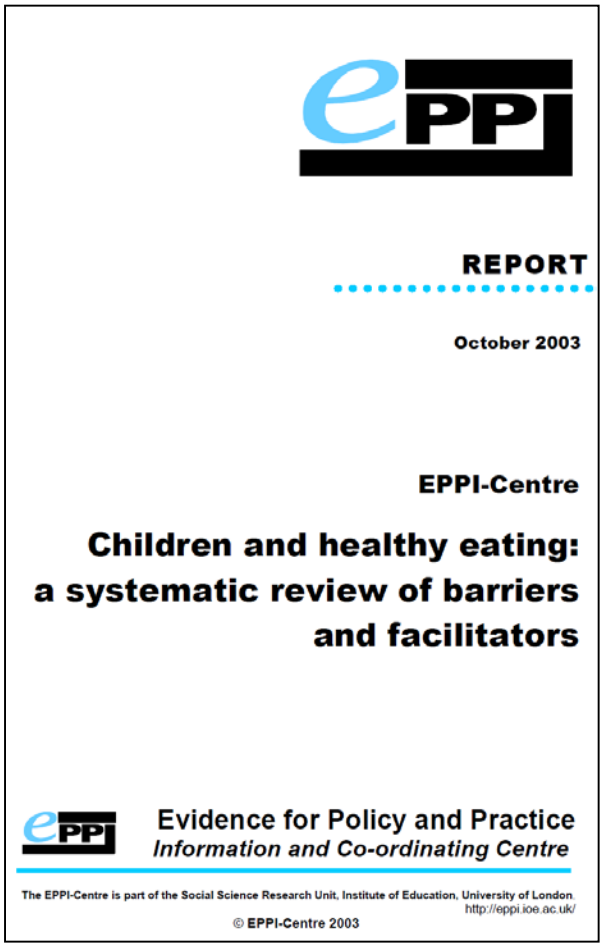
Acknowledgement Ruth Garside QIMG – sharing slides

Examples of data extraction and synthesis I: Thematic synthesis

- Echoes thematic analysis in primary qualitative research
- Several different types of thematic synthesis
- Data extraction approach needs to be appropriate for the specific type of thematic synthesis methodology

Origins

- Echoes thematic analysis in primary qualitative research
- May use line by line coding or extract themes before coding
- Codes often descriptive, but may build up to be more conceptual



REPORT

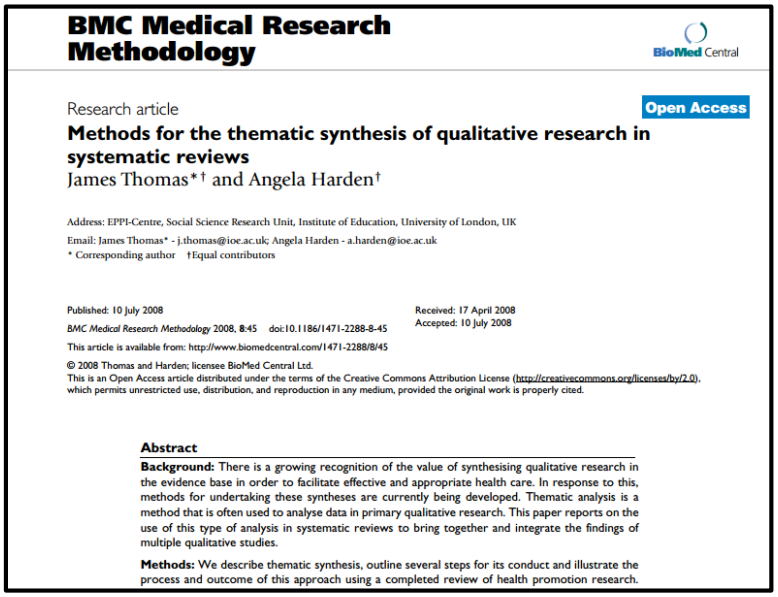
October 2003

EPPI-Centre

Children and healthy eating: a systematic review of barriers and facilitators

Evidence for Policy and Practice
Information and Co-ordinating Centre

The EPPI-Centre is part of the Social Science Research Unit, Institute of Education, University of London
http://eppi.ioe.ac.uk/



BMC Medical Research Methodology

BioMed Central

Research article

Open Access

Methods for the thematic synthesis of qualitative research in systematic reviews

James Thomas*† and Angela Harden†

Address: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, UK
Email: James Thomas* - j.thomas@ioe.ac.uk; Angela Harden - a.harden@ioe.ac.uk
* Corresponding author †Equal contributors

Published: 10 July 2008
BMC Medical Research Methodology 2008, **8**:45 doi:10.1186/1471-2288-8-45
Received: 17 April 2008
Accepted: 10 July 2008
This article is available from: http://www.biomedcentral.com/1471-2288/8/45

Abstract

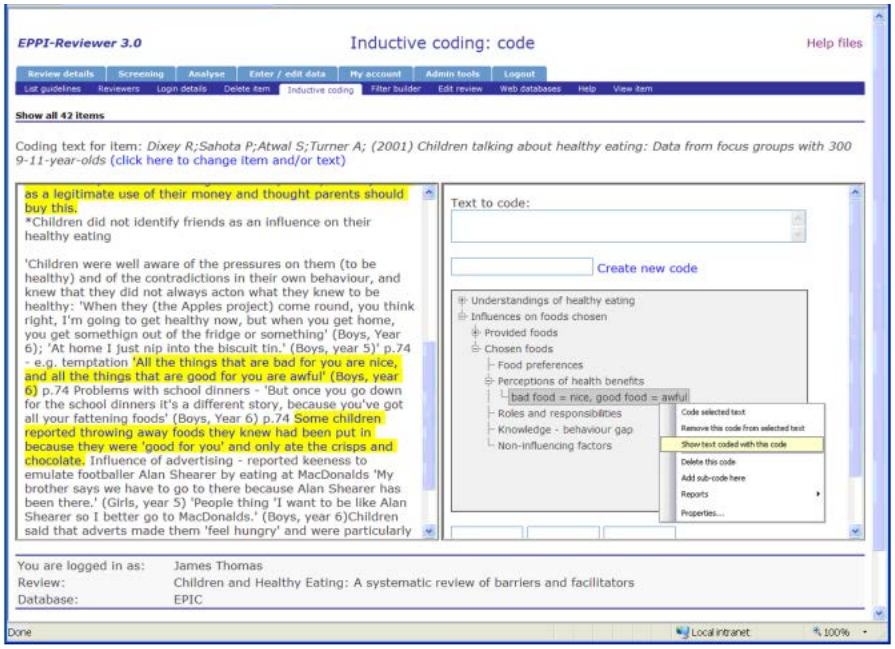
Background: There is a growing recognition of the value of synthesising qualitative research in the evidence base in order to facilitate effective and appropriate health care. In response to this, methods for undertaking these syntheses are currently being developed. Thematic analysis is a method that is often used to analyse data in primary qualitative research. This paper reports on the use of this type of analysis in systematic reviews to bring together and integrate the findings of multiple qualitative studies.

Methods: We describe thematic synthesis, outline several steps for its conduct and illustrate the process and outcome of this approach using a completed review of health promotion research.

http://eppi.ioe.ac.uk/EPPIWebContent/hp/reports/healthy_eating02/Final_report_web.pdf

Three analytic steps described

1. the coding of text 'line-by-line‘ (data driven codes);
2. the development of 'descriptive themes'; and
3. the generation of 'analytical themes‘ (theory driven codes).



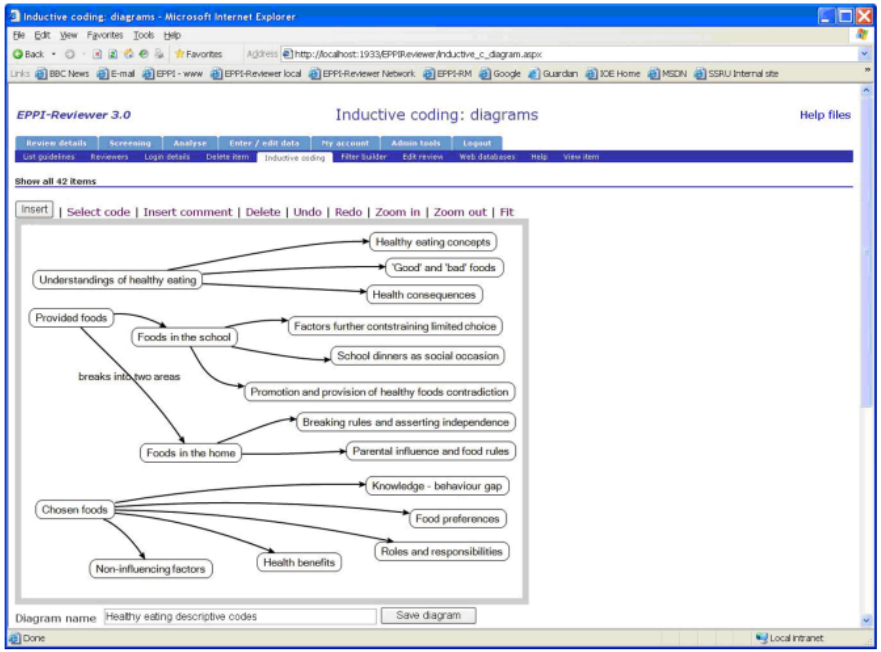


Figure 2
relationships between descriptive themes.

Synthesis approach

- Findings of each study examined in turn, each sentence or paragraph assigned a descriptive code – “line by line coding” (e.g. children prefer fruit to vegetables) (in NVIVO) 36 initial codes.
- Similarities and differences between codes sought to group them into a hierarchical tree structure.
- New codes were created to capture the meaning of groups of initial codes. 13 descriptive themes.
- A narrative summary of the findings across the studies organized by these 13 descriptive themes was then written.

Policy relevance?

- Reviewers inferred from these themes the factors that help and hinder healthy eating (analytic themes).

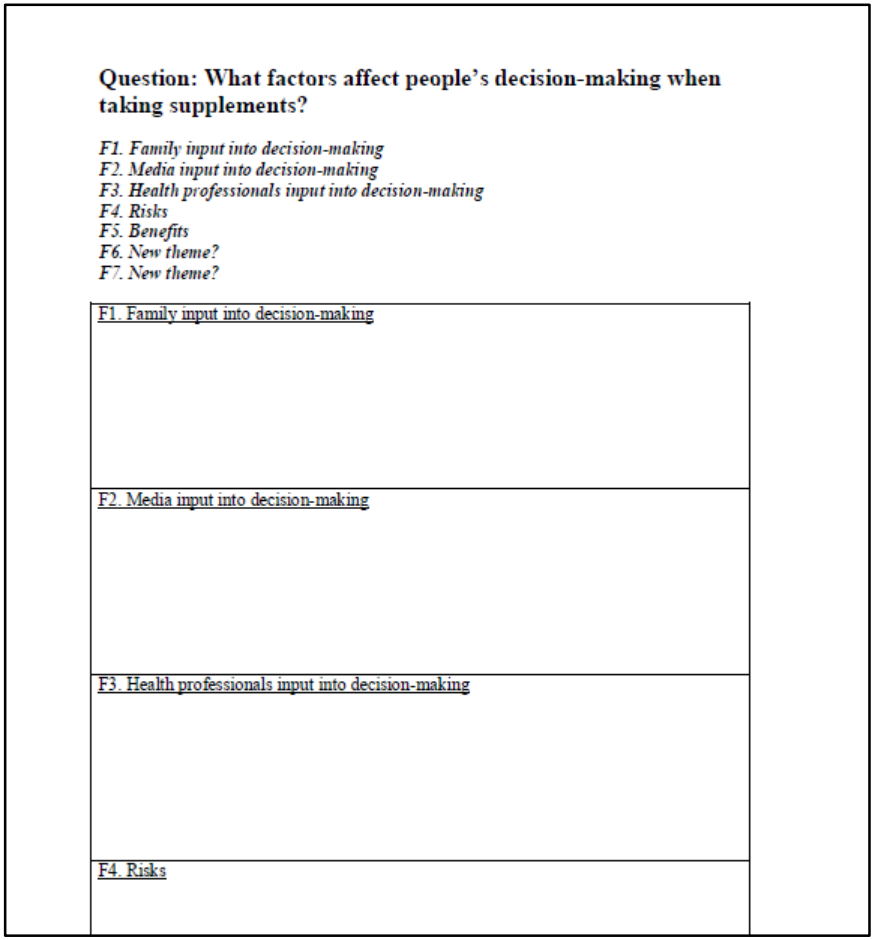
Another example of thematic synthesis: Framework synthesis – a priori coding framework

Table 5 Health Belief Model with Extended Analytic Themes

Health Belief Model category	Contributing themes	Subthemes
Perceived susceptibility		
Perceived severity	Cancer vs aging	
Perceived benefits		
Perceived barriers	Positive perceptions of a tan	Tans are healthy
		Tans are attractive
		Meanings of white skin
		Tans signify a good holiday
		Peers' views of tans
	Hassle of protection	Sunscreen
		Hats
		Long sleeves/ covering up
	Structural challenges	
	Adult responsibilities	Parents
		School teachers
		Teenagers vs younger children

You can design a review specific data extraction template

- Framework synthesis

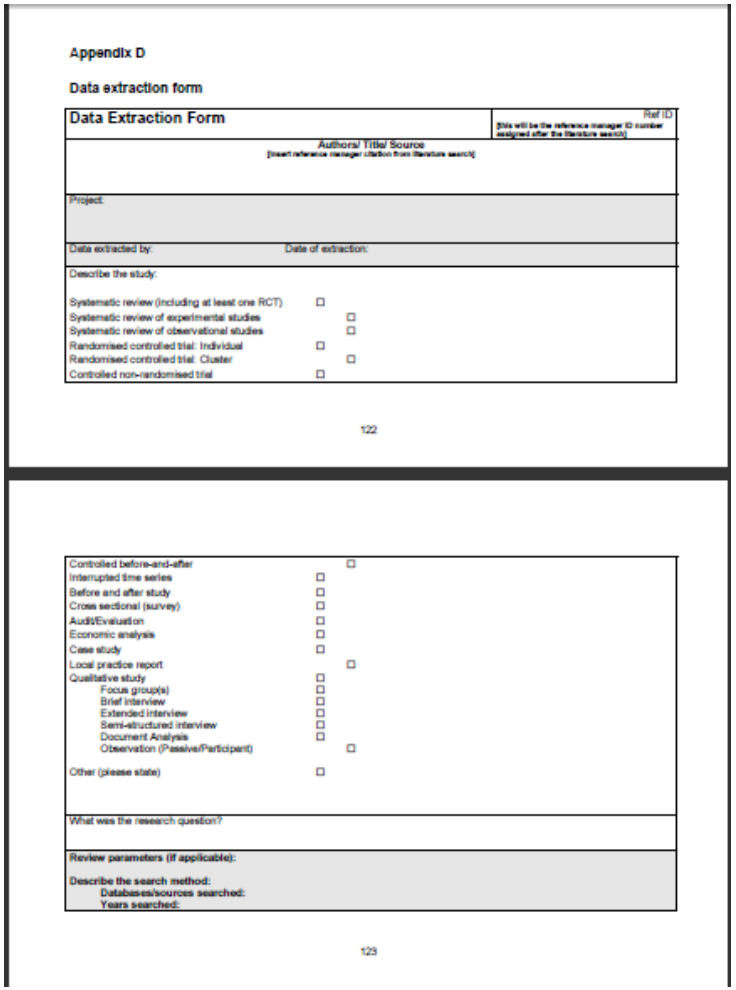


Question: What factors affect people's decision-making when taking supplements?

F1. Family input into decision-making
F2. Media input into decision-making
F3. Health professionals input into decision-making
F4. Risks
F5. Benefits
F6. New theme?
F7. New theme?

F1. Family input into decision-making
F2. Media input into decision-making
F3. Health professionals input into decision-making
F4. Risks

Other options: You can use a generic data extraction template



Appendix D

Data extraction form

Data Extraction Form	Ref ID [this will be the reference manager ID number assigned after the literature search]
Authors/ Title/ Source [insert reference manager citation from literature search]	
Project:	
Data extracted by:	Date of extraction:

Describe the study:

Systematic review (including at least one RCT)	☐	
Systematic review of experimental studies		☐
Systematic review of observational studies		☐
Randomised controlled trial: Individual	☐	
Randomised controlled trial: Cluster		☐
Controlled non-randomised trial	☐	
Controlled before-and-after		☐
Interrupted time series	☐	
Before and after study	☐	
Cross sectional (survey)	☐	
Audit/Evaluation	☐	
Economic analysis	☐	
Case study	☐	
Local practice report		☐
Qualitative study	☐	
Focus group(s)	☐	
Brief interview	☐	
Extended interview	☐	
Semi-structured interview	☐	
Document Analysis	☐	
Observation (Passive/Participant)		☐
Other (please state)	☐	

What was the research question?

Review parameters (if applicable):

Describe the search method:
Databases/sources searched:
Years searched:

122

123

Study selection criteria:
Inclusion:

Exclusion:

Number of studies and participants included:

What data was extracted?

How was the data synthesised?

Was there heterogeneity across studies?

Describe the method of analysis (meta-analysis/narrative synthesis etc):

Other study parameters:

Setting:
Geographical (City/country):
Social (school/workplace etc):
Date of study (to/from):
Resources (people/money/organisations etc):

Participants:
Number of participants/organisations etc enrolled:
Socio-economic data (if presented):

124

Were intervention groups balanced at baseline?:
Comments:

Unit of allocation/recruitment:
Individual ☐
Sex (%): Age (range or mean):
Group ☐
Describe:
Organisation/institution ☐
Describe:
Community/environment ☐
Describe:
Policy/socio-political ☐
Describe:

Method of recruitment/enrolment and response rate:

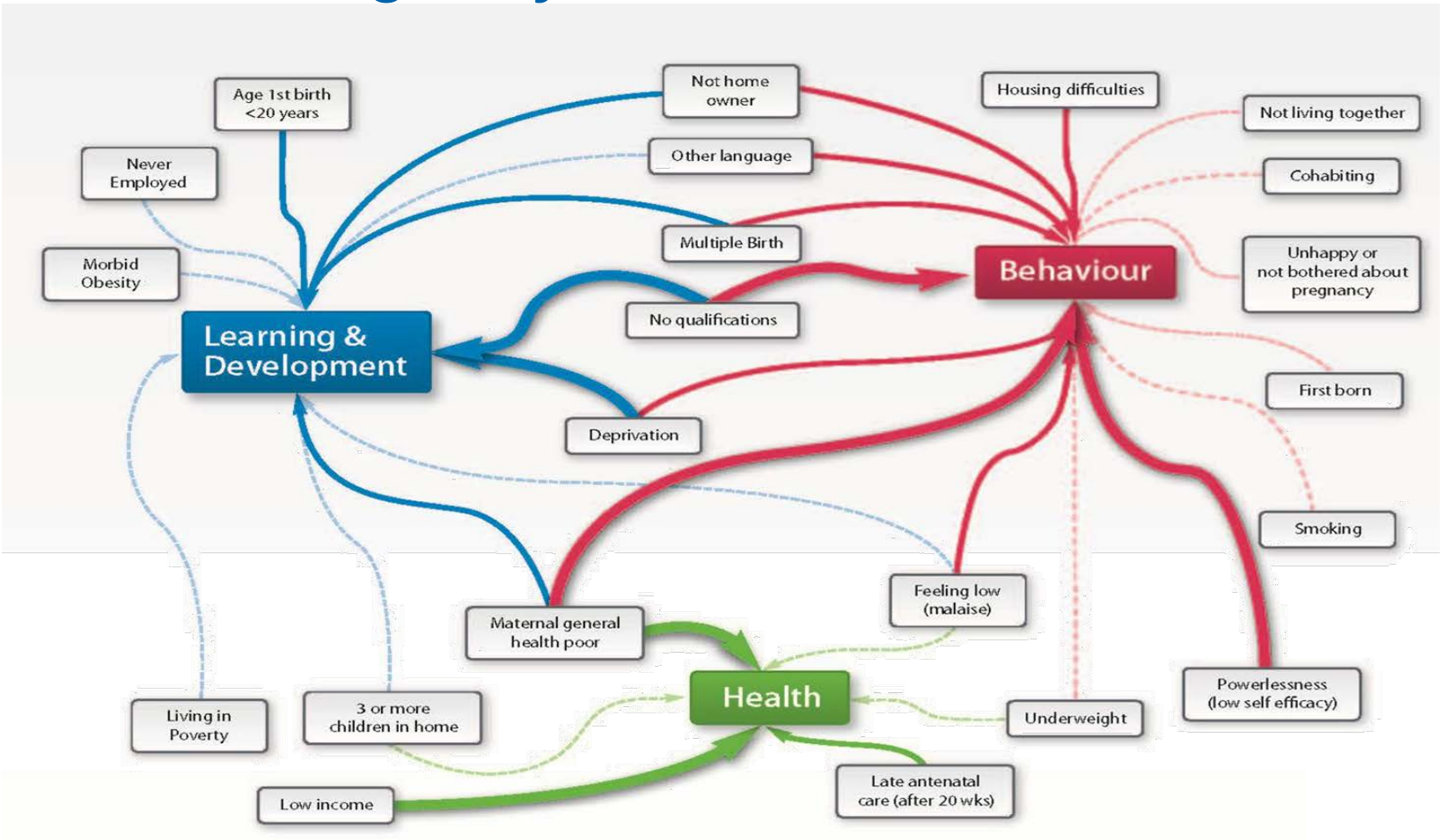
Method of allocation to intervention:
Was allocation concealed? Yes ☐ No ☐ Not clear ☐

Selection criteria:
Inclusion:

Exclusion:

Intervention:
Description of the intervention:

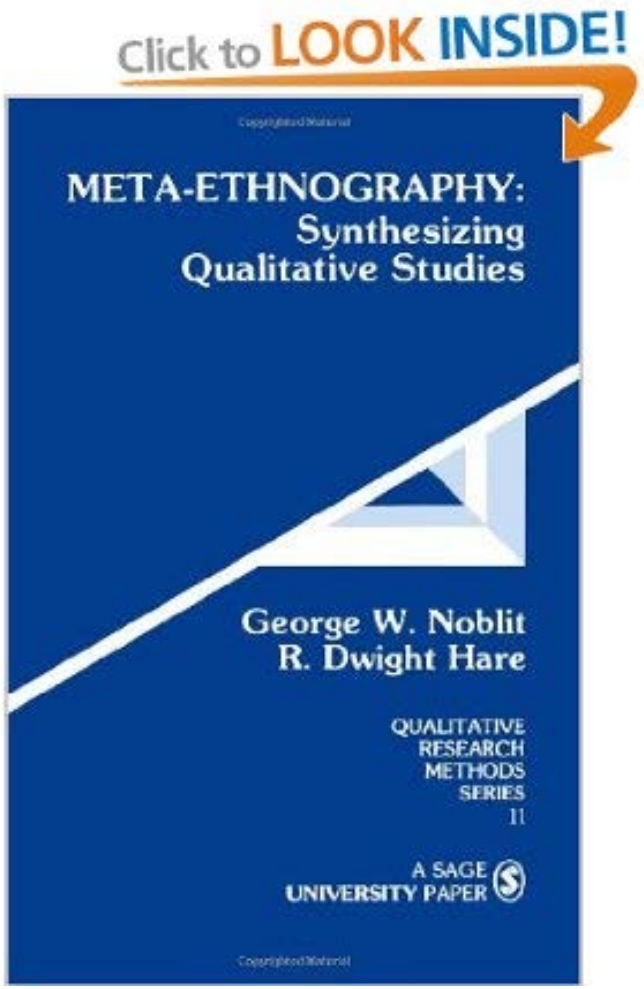
Maternal factors that impact on poor child outcomes age 5 years



You can extract evidence mapped against a logic model

Source: Using information and intelligence to improve local decision-making for high quality, cost effective services, Child and Maternal Health Observatory

Key text from1988



Picked up as a method of synthesis in 2002

JAN REVIEW PAPER

The experience of heavy menstrual bleeding: a systematic review and meta-ethnography of qualitative studies

Ruth Garside, Nicky Britten & Ken Stein

Accepted for publication 22 May 2008

Correspondence to R. Garside:
e-mail: R.Garside@exeter.ac.uk

Ruth Garside BA MA PhD
Research Fellow
PenTAG, Peninsula Medical School, Exeter, UK

Nicky Britten BA MSc PhD
Professor of Applied Health Care Research
Institute of Health Service Research,
Peninsula Medical School, Exeter, Devon, UK

Ken Stein MD DipRACOG FFPH
Professor of Public Health
PenTAG, Peninsula Medical School, Exeter, UK

GARSIDE R., BRITTEN N. & STEIN K. (2008) The experience of heavy menstrual bleeding: a systematic review and meta-ethnography of qualitative studies. *Journal of Advanced Nursing* **63**(6), 550–562
doi: 10.1111/j.1365-2648.2008.04750.x

Abstract

Title. The experience of heavy menstrual bleeding: a systematic review and meta-ethnography of qualitative studies.

Aim. This paper is a report of a systematic review and meta-ethnography of the experience of heavy menstrual bleeding.

Background. Heavy menstrual bleeding is common. Not all women seeking help have heavy menstrual bleeding as measured objectively and, conversely, some who do have this problem do not seek help.

Data sources. Seven electronic databases were searched in 2004 and updated in 2008, and supplemented with hand-searching.

Method. We identified four papers describing qualitative research among women with heavy menstrual bleeding. Key themes and concepts were extracted and synthesised using meta-ethnography, the key process of which is translation, identifying similar or contradictory findings in primary research. In the updated search three papers were identified.

Findings. Three papers were largely descriptive. These provided support for the

Definition of synthesis is explicitly interpretative

Activity or the product of activity where some set of parts is combined or integrated into a whole…

(Synthesis) involves some degree of conceptual innovation, or employment of concepts not found in the characterization of the parts as a means of creating the whole

Strike & Posner (1983) quoted in Noblit & Hare (1988)

Translation types I:

- Reciprocal translation - at conceptual level
  - “in an iterative fashion, each study is translated into the terms of the others and vice versa”
  - “attention to which metaphors, themes, organizers, enable us to fully render the account in a reduced form.”
  - Each study inductively coded sequentially

Reciprocal translation

- Similar to constant comparison
- Look for overlap, similarities, contradictions
- Are some concepts “better”? (scope, utility, explanatory power).
- Reviewer interpretation crucial (third order constructs/ concepts/theory)
- Different ways of extracting and juxtaposing concepts (coding original papers, tabulation, mind maps, colour coding, short text descriptions)

Translation types II:

- Refutational translation
  - “a specific form of interpretation”
  - Oppositional/ counter argument findings
  - Specific search for metaphors, themes, and concepts that oppose/ refute emerging patterns – extracted and interpreted

Translation types III:

- Line of argument
  - “What can we say about the whole?” (p. 62)
  - Development of a new model, theory or understanding through the synthesis

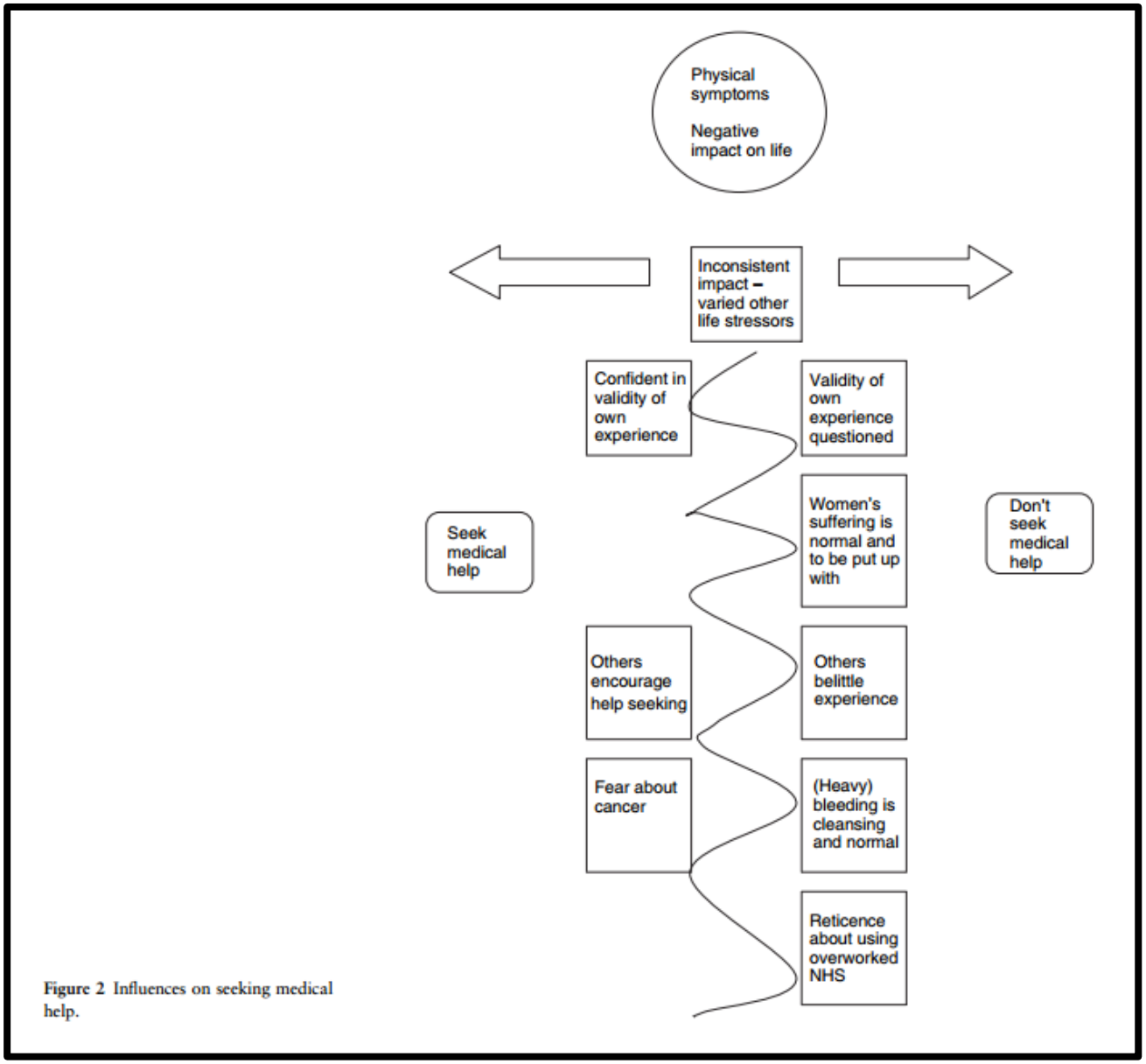


Figure 2 Influences on seeking medical help.

Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ

Allison Tong[1,2*†], Kate Flemming[3†], Elizabeth McInnes[4†], Sandy Oliver[5] and Jonathan Craig[1,2]

Abstract

Background: The syntheses of multiple qualitative studies can pull together data across different contexts, generate new theoretical or conceptual models, identify research gaps, and provide evidence for the development, implementation and evaluation of health interventions. This study aims to develop a framework for reporting the synthesis of qualitative health research.

Methods: We conducted a comprehensive search for guidance and reviews relevant to the synthesis of qualitative research, methodology papers, and published syntheses of qualitative health research in MEDLINE, Embase, CINAHL and relevant organisational websites to May 2011. Initial items were generated inductively from guides to synthesizing qualitative health research. The preliminary checklist was piloted against forty published syntheses of qualitative research, purposively selected to capture a range of year of publication, methods and methodologies, and health topics. We removed items that were duplicated, impractical to assess, and rephrased items for clarity.

Results: The Enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) statement consists of 21 items grouped into five main domains: introduction, methods and methodology, literature search and selection, appraisal, and synthesis of findings.

Conclusions: The ENTREQ statement can help researchers to report the stages most commonly associated with the synthesis of qualitative health research: searching and selecting qualitative research, quality appraisal, and methods for synthesising qualitative findings. The synthesis of qualitative research is an expanding and evolving methodological area and we would value feedback from all stakeholders for the continued development and extension of the ENTREQ statement.

eMERGe

Meta-ethnography
Reporting Guidelines

The eMERGe Project - Developing meta-ethnography reporting guidelines & standards

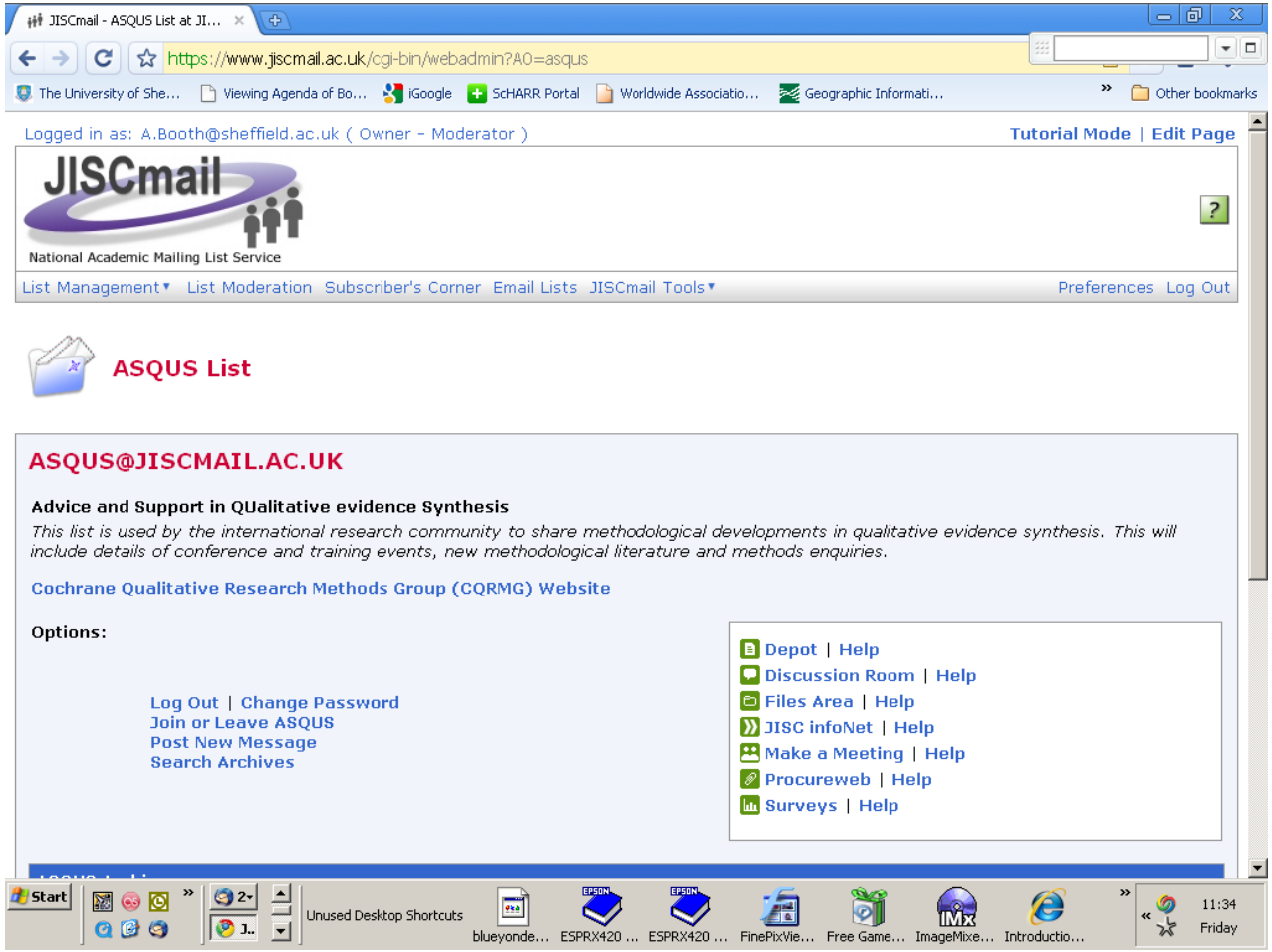
We want to ensure that the best use is made of research evidence for the benefit of people who use health and social care services; that is why we are carrying out the eMERGe project.

The NHS needs high quality research evidence to help it design health services and make decisions affecting

Stop, think and reflect

- What do you think about the data extraction and synthesis methods presented?
- Which one would you select for your review and why?
- If you have already used a particular method – how did it work?
- Talk to your partner.

ASQUS Discussion List



Twitter

@CochraneQual

http://www.jiscmail.ac.uk/asqus