

**Full Title:** Improving reporting of Meta-Ethnography: The eMERGe Reporting Guidance

**Running Head:** eMERGe Reporting Guidance

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**Conflict of Interest Statement:**

Catherine Pope is an author of the book Pope C, Mays N, Popay J. Synthesizing qualitative and quantitative health evidence: a guide to methods. Buckingham: Open University Press 2007 which discusses meta-ethnography; she receives royalties from this. Jane Noyes is a Journal of Advanced Nursing Editor. She was recused from the Journal of Advanced Nursing management of this paper. No conflict of interest has been declared by the remaining author(s).

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## **Abstract**

### *Aims*

To provide guidance to improve the completeness and clarity of meta-ethnography reporting.

### *Background*

Evidence-based policy and practice require robust evidence syntheses which can further understanding of people's experiences and associated social processes. Meta-ethnography is a rigorous seven-phase qualitative evidence synthesis methodology, developed by Noblit and Hare. Meta-ethnography is used widely in health research but reporting is often poor quality, and this discourages trust in, and use of its findings. Meta-ethnography reporting guidance is needed to improve reporting quality.

*Design* The eMERGe study used a rigorous mixed-methods design and evidence-based methods to develop the novel reporting guidance and explanatory notes.

### *Methods*

The study, conducted from 2015-2017, comprised of: (1) a methodological systematic review of guidance for meta-ethnography conduct and reporting; (2) a review and audit of published meta-ethnographies to identify good practice principles; (3) international, multi-disciplinary consensus-building processes to agree guidance content; (4) innovative development of the guidance and explanatory notes.

### *Findings*

Recommendations and good practice for all seven phases of meta-ethnography conduct and reporting were newly identified leading to nineteen reporting criteria and accompanying detailed guidance.

### *Conclusion*

The bespoke eMERGe Reporting Guidance, which incorporates new methodological developments and advances the methodology, can help researchers to report the important

aspects of meta-ethnography. Use of the guidance should raise reporting quality. Better reporting could make assessments of confidence in the findings more robust and increase use of meta-ethnography outputs to improve practice, policy and service user outcomes in health and other fields. This is the first tailored reporting guideline for meta-ethnography.

**Keywords**

Meta-ethnography

Reporting

Guideline

Qualitative Evidence Synthesis

Systematic review

Publication standards

Nursing

Qualitative Research

Research Design

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## **SUMMARY STATEMENT**

### **Why is this research or review needed?**

No bespoke reporting guidance exists for meta-ethnography, one of the most commonly-used yet often poorly reported, methodologies for qualitative evidence synthesis which could contribute robust evidence for policy and practice.

Existing generic guidance for reporting qualitative evidence syntheses pays insufficient attention to reporting the complex synthesis processes of meta-ethnography - tailored guidance should improve reporting and could improve quality of conduct.

Better reporting of meta-ethnographies will likely have greater impact on understanding of specific phenomena of interest which will subsequently inform intervention development and changes in policy and practice.

### **What are the key findings?**

Recommendations, guidance and good practice for conducting and/or reporting all seven phases of a meta-ethnography were identified for the first time, along with uncertainties and evidence gaps regarding good practices.

Nineteen reporting criteria were developed including detailed guidance on Phases 3-6: approach to reading/ extracting data; processes for/ outcome of relating studies; processes for/ outcome of translation and synthesising translations.

The analysis and interpretation of methodological evidence and novel development work underpinning this new tailored reporting guidance advances meta-ethnography methodology, e.g. to incorporate good practice in translation and synthesis.

### **How should the findings be used to influence policy/practice/research/education?**

Use of the guidance by researchers, peer-reviewers and journal editors to ensure complete and transparent reporting of meta-ethnographies will ensure their findings are optimised for use in policy and practice.

The guidance can be used to inform the design and conduct of meta-ethnographies because of the underpinning rigorous, comprehensive analysis, interpretation and synthesis of the latest methodological evidence.

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## **Impact Statement**

Evidence-based health and social care requires research syntheses. Meta-ethnography is one of the most commonly used, yet often poorly reported, methodologies for qualitative evidence synthesis which could contribute robust evidence for policy and practice. Using a rigorous, evidence-based methodology we developed the first, bespoke guidance to improve the completeness and clarity of meta-ethnography reporting. When used as intended the impact of the guidance, which advances the methodology, and its associated online training resources will:

- Raise the quality of meta-ethnography reporting
- Maximise the value and utility of meta-ethnography for informing intervention development and policy and practice decisions
- Guide researchers and students undertaking and reporting meta-ethnographies and thus could improve meta-ethnography conduct.

Ultimately, indirectly the guidance could help to enhance patient experiences and outcomes by facilitating the inclusion of qualitative research into the health-care evidence base.

## Introduction

The article is being simultaneously published in the following journals – BMC Medical Research Methodology, Journal of Advanced Nursing, PLOS ONE, Psycho-Oncology and Review of Education.

Evidence-based decision making for health services, policies and programmes requires qualitative and quantitative research; this is recognised by leading evidence-producing organisations including Cochrane, the Campbell Collaboration and the World Health Organization (Noyes et al. 2018, Uny et al. 2017). To make sense of large volumes of research, robust syntheses of all types of research are needed (Noyes et al. 2018). Syntheses of qualitative studies, such as meta-ethnographies, can be used to develop theory about how a service, policy, strategy or intervention works and how people experience these (Noyes and Lewin 2011); provide evidence of the acceptability, feasibility, and appropriateness of interventions or services (Booth et al. 2013, Glenton et al. 2016b, Glenton et al. 2016a, Gulmezoglu et al. 2013, Pearson et al. 2005); convey people's experiences of, for example, illness (Campbell *et al.* 2011, Pound *et al.* 2005); and inform the development, implementation and evaluation of complex interventions (Carroll 2017, Rycroft-Malone and Burton 2015).

### *What is meta-ethnography?*

Meta-ethnography is a seven phase, theory-based (Turner 1980) and potentially theory-generating, interpretive methodology for qualitative evidence synthesis developed by sociologists Noblit and Hare (1988) in the field of education. Meta-ethnography aims to produce novel interpretations that transcend individual study findings, rather than aggregate findings (Thorne 2015). Meta-ethnography involves systematically comparing conceptual data from primary qualitative studies to identify and develop new overarching concepts,

theories and models. It was designed to preserve the original meanings and contexts of study concepts (Campbell et al. 2011, Noblit and Hare 1988).

The originators of meta-ethnography developed a distinctive analytic synthesis process of 'translation' and 'synthesis of translations' (Noblit and Hare 1988), underpinned by the theory of social comparison (Turner 1980), which involves analysing the conceptual data, e.g. concepts, themes, developed by authors of primary studies.

#### *Why is reporting guidance needed*

Meta-ethnography is a distinct, complex and increasingly common and influential qualitative methodology. It is the most widely used qualitative evidence synthesis methodology in health and social care research (Dixon-Woods et al. 2007, Hannes and Macaitis 2012, Ring et al. 2011b) and is increasingly used by other academic disciplines (Uny *et al.* 2017). Many other qualitative evidence synthesis methodologies and methods are based upon or influenced by it (Dixon-Woods *et al.* 2006, Paterson 2011, Uny *et al.* 2017). A methodological evaluation of the effectiveness of meta-ethnography for synthesising qualitative studies in health and health care concluded meta-ethnography can lead to important new conceptual understandings of health care issues (Campbell *et al.* 2011) and high quality meta-ethnographies have informed clinical guidelines (Nunes 2009, Ring et al. 2011a). However, the quality of reporting in published meta-ethnographies varies and is often poor despite methodological advances (Campbell et al. 2003, Campbell et al. 2011, France et al. 2014, Britten et al. 2002, Hannes and Macaitis 2012). Adequate quality in reporting is one of several prerequisites to assessing confidence in meta-ethnography findings that could inform evidence-based policy and practice, for instance, in health and social care (Lewin *et al.* 2015).

Reporting guidance is commonly used in health and social care research and can raise publication standards (Plint 2006) . For systematic reviews and meta-analyses of quantitative studies the most commonly used guidance is Preferred Reporting Items for Systematic

Reviews and Meta-Analyses (PRISMA) (Moher *et al.* 2009). For reviews of qualitative studies, the most commonly used one is the generic 2012 ENTREQ (Enhancing transparency in reporting the synthesis of qualitative research) statement (Tong *et al.* 2012). Qualitative evidence synthesis methodologies differ greatly, therefore unique reporting guidance for meta-narrative reviews was recently developed (Wong *et al.* 2013). There is currently no guidance on reporting the complex synthesis process of meta-ethnography. Such guidance should improve the transparency and completeness of reporting and thus maximise the ability of meta-ethnographies to contribute robust evidence to health, social care and other disciplines, such as education. Although meta-ethnography continues to evolve, reporting guidance is needed currently for this complex methodology.

## **Methods**

The methods used to develop the eMERGe meta-ethnography reporting guidance followed a rigorous approach consistent with, but exceeding, good practice recommendations (Moher *et al.* 2010) and were published in a protocol (France *et al.* 2015). The research questions were:

1. What are the existing recommendations and guidance for conducting and reporting each process in a meta-ethnography, and why? (Stage 1)
2. What good practice principles can we identify in meta-ethnography conduct and reporting to inform recommendations and guidance? (Stage 2)
3. From the good practice principles, what standards can we develop in meta-ethnography conduct and reporting to inform recommendations and guidance? (Stage 2)
4. What is the consensus of experts and other stakeholders on key standards and domains for reporting meta-ethnography in an abstract and main report/publication? (Stages 3 & 4).

Details of the methods are given in supplementary file S1. Guidance development was

conducted by the grant project team (the first ten authors), in consultation with the one of the two originators of meta-ethnography, George Noblit, and supported by a multi-disciplinary project advisory group of national and international academics, policy experts, non-academic users of syntheses such as clinical guideline developers, and lay advisors, who had an active role in the development of the guidance and whose contributions were central throughout the project (the 11 authors from A. B. onwards were advisory group members). Guidance development took place over a two-year period from 2015-2017 and comprised four stages, outlined in Figure 1:

1. Identification of potential reporting standards to include in the guidance;
2. Development and application of potential standards to published meta-ethnographies;
3. Consensus on guidance content;
4. Development of reporting criteria for the guidance, and explanatory notes.

#### *Stage 1. Identification of standards*

Stage 1 was conducted by the grant project team who undertook a systematic review (PROSPERO CRD42015024709) of relevant methodological and reporting guidance on meta-ethnographies to identify potential reporting standards (France et al. 2015). From this review, we identified 138 recommendations for meta-ethnography standards on reporting from 57 included publications (see supplementary file S2).

#### *Stage 2. Development and application of the standards*

The grant project team reviewed 29 published meta-ethnographies (see supplementary file S3) from various academic disciplines and interviewed non-academic end users of meta-ethnographies to identify good practice principles and recommendations which we then developed into an audit tool of 109 measurable provisional standards. The 29 meta-ethnographies were chosen by academic experts who were asked to justify why they considered them seminal (i.e. they had influenced or significantly advanced thinking, and/or

were of central importance in the field of meta-ethnography) or relatively poorly reported, or meta-ethnographies were identified as poorly reported from published reviews. The team applied the provisional standards to a purposive sample of 40 published health and social care related meta-ethnographies (selected from 571 identified through comprehensive systematic searches to give variation in, for example, journal, academic discipline, topic, number of included studies and of authors – supplementary file S1 gives full sampling details) in a retrospective audit to determine the extent to which the standards were met ('not at all', 'in part' or 'in full'); and to identify ways in which the standards could be refined.

### *Stage 3. Consensus on guidance content*

From the results of Stage 2, the project team reviewed and refined the 109 provisional standards by clarifying ambiguous wording, merging duplicative standards and combining standards on similar processes to create 53 items which were discussed in an online workshop and tested in Delphi consensus studies (Linstone 2002) with academic and non-academic potential end users. Two parallel, online Delphi consensus studies with identical questions were conducted: one Delphi for international experts in qualitative methods (comprising editors or researchers with prior meta-ethnography/qualitative evidence synthesis experience); and one for professional/academic and lay people (potential end-users of meta-ethnographies). Sixty-two people (39 experts and 23 professional/lay people) completed all three rounds of the Delphi. Four items failed to reach consensus in both Delphi studies and so were excluded from the final guidance (these were: the abstract should ideally differentiate between reported findings of the primary studies and of the synthesis; state the qualitative research expertise of reviewers;<sup>1</sup> state in which order primary study accounts had data extracted from them; state the order in which studies were translated/synthesised). Participants reached consensus that 49 of 53 items should be included in the guidance, too

many for usable reporting guidance, therefore further steps were undertaken to condense these items into fewer reporting criteria.

#### *Stage 4. Development of the guidance*

To develop the final reporting criteria for the guidance, a project advisory group meeting was convened which had 26 attendees including expert academics, other professionals and lay members. The group discussed and agreed the structure of the guidance and the accompanying explanatory notes. Following this meeting the grant project team agreed which Delphi items should be merged to create usable guidance. The project advisory group then commented on the readability and usability of the guidance. Members of the grant project team then further refined the guidance and explanatory notes. The final guidance and explanatory notes were checked against the Delphi items to ensure content and meaning had been preserved throughout this iterative process. Members of the project advisory group and project team reviewed and agreed the final guidance table and explanatory notes.

Supplementary file S1 gives details of the methods which also appear in a published protocol (France et al. 2015) and funder's report (Cunningham et al. in press).

#### **How to use the guidance**

The eMERGe reporting guidance is designed for use by researchers conducting a meta-ethnography (referred to throughout as 'reviewers'<sup>1</sup>), peer reviewers, journal editors, and end-users of meta-ethnographies including policy makers and practitioners. The eMERGe guidance also provides a helpful structure for anyone contemplating or conducting a meta-ethnography. While the guidance was developed for meta-ethnography, some of the reporting criteria, such as those relating to stating a review question and reporting literature search and selection strategies, might also be applicable to other forms of qualitative evidence

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<sup>1</sup> The term 'reviewers' for people who conduct and report meta-ethnographies was the preferred term identified from the eMERGe Delphi studies in line with the increasing use of systematic review methodology for qualitative evidence syntheses.

synthesis and thus overlap with the generic ENTREQ guidance for reporting a wide range of qualitative evidence syntheses (Tong *et al.* 2012). In contrast to eMERGe, ENTREQ does not provide guidance regarding reporting of the complex analytic synthesis processes (Phases 4-6) in a meta-ethnography and did not follow good practice guidance for developing a reporting guideline (Moher *et al.* 2010), e.g. it was not designed with the consensus of a wider community of experts (Flemming *et al.* 2018, Cunningham *et al.* in press).

The eMERGe guidance consists of three parts:

- Part 1: Table of reporting criteria that are common to all meta-ethnographies,
- Part 2: Detailed explanatory notes on how to apply the common reporting criteria including supplementary detail of findings for phases 3-6 (see supplementary information table S1),
- Part 3: Extensions for reporting steps and processes which are not common to every meta-ethnography.

Readers should refer to and use all three parts of the guidance. Parts 1 and 2 of the eMERGe reporting guidance are organised by the seven phases of meta-ethnography. Suggestions are provided in the grey cells of the table in Part 1 for where specific reporting criteria could be reported under journal article section headings. Where appropriate, reviewers should also consider additional relevant guidance for reporting other common qualitative evidence synthesis steps and processes, such as searches for evidence. See for example the ‘STARLITE’ guidance (Booth 2006) and PRISMA (Moher *et al.* 2009) for reporting literature searches (refer to the EQUATOR Network for a comprehensive database of up-to-date reporting guidance <https://www.equator-network.org/>). Part 3 covers eMERGe extensions for: format and content of the meta-ethnography output (for example, of an abstract); assessment of methodological strengths and limitations of included primary studies;



and using the GRADE CERQual approach to assess confidence in findings from qualitative evidence syntheses (Lewin et al. 2015, Noyes et al. 2018).

Users of this guidance should note that meta-ethnography is an iterative process, and although the guidance is presented by meta-ethnography phases, we are not advocating a linear approach to meta-ethnography conduct. Furthermore, those conducting meta-ethnographies may need to be creative and adapt the methodology to their specific research/review question (Noblit 2016).

### **Part 1: Guidance Table**

<Insert Table 1 here>

### **Part 2: Explanatory Notes**

#### **PHASE 1 - Selecting meta-ethnography and getting started**

##### *Reporting Criterion 1- Rationale and context for the meta-ethnography*

Consider whether a meta-ethnography of this topic is needed (Finlayson and Dixon 2008, Kangasniemi *et al.* 2012, Toye *et al.* 2014), e.g. is there an existing meta-ethnography on the topic and if so, provide a reason for updating it (France et al. 2016), and describe the gap in research or knowledge to be filled by the meta-ethnography. This should include reviewers describing the availability of qualitative data which potentially could be synthesised and the context of the meta-ethnography, for instance, the political, cultural, social, policy or other relevant contexts; any funding sources for the meta-ethnography; and the timescales for the meta-ethnography conduct. Reviewers should consider referring to frameworks which provide guidance on how to specify context, such as Noyes *et al.* (2018).

##### *Reporting Criterion 2- Aim(s) of the meta-ethnography*

The intention of meta-ethnography is to produce a new configuration/interpretation, a new model, conceptual framework or theory, although ultimately this might not be possible, for instance, if no conceptual innovation had occurred since an early, conceptually-rich primary

study account (Atkins *et al.* 2008, Campbell *et al.* 2011, Malpass *et al.* 2009). The aim(s) of the meta-ethnography should be explicitly stated and should be compatible with such intentions. The aim may be refined after reading the literature and examining the available data (Booth *et al.* 2016, Campbell *et al.* 2003, Campbell *et al.* 2011, Finfgeld-Connett 2014, Finfgeld-Connett and Johnson 2013). If the initial aim(s) is (are) changed during Phases 1 and 2, give details of any refinements made.

#### *Reporting Criterion 3- Focus of the meta-ethnography*

The review question(s) should be explicitly stated and be congruent with the intention of meta-ethnography. If, during later phases, the initial review question(s) or objective(s) needed to be refined, give details of any refinements. A well-defined review question, specifying a precise focus, can lead to a more efficient synthesis and more useful output (Atkins *et al.* 2008, Finfgeld-Connett 2014, Finfgeld-Connett and Johnson 2013), for instance, by contributing to clear study inclusion criteria for Phase 2.

#### *Reporting Criterion 4- Rationale for using meta-ethnography*

Many qualitative evidence synthesis methodologies and methods exist (Booth *et al.* 2016). Unlike meta-ethnography, some of these are aggregative (e.g. thematic analysis, Joanna Briggs Institute methods), combine qualitative *and* quantitative data (e.g. critical interpretive synthesis, meta-narrative, meta-study, meta-summary, realist synthesis), or have a realist epistemology (e.g. thematic synthesis, framework synthesis) (Noyes and Lewin 2011, Booth *et al.* 2016, Paterson 2011). The rationale should be given for why meta-ethnography was chosen as the most appropriate methodology for conducting an interpretive synthesis (Toye *et al.* 2014). If reviewers made adaptations or modifications to Noblit and Hare's (1988) methodology or methods, state why meta-ethnography was still considered the most appropriate methodology and describe all adaptations and modifications made.

### **PHASE 2 - Deciding what is relevant**

### *Reporting Criterion 5 – Search Strategy*

Explain how the search strategy was informed by the research aim(s), question or objectives, and the meta-ethnography's purpose (Booth 2013, Finfgeld-Connett and Johnson 2013).

Reviewers should provide a rationale for whether the approach to searching was comprehensive (search strategies sought all available studies), purposeful (e.g. searching sought all available concepts until theoretical saturation was achieved), or a combination of approaches. Purposeful searches may be suited for theory-generating syntheses (Booth 2013, Finfgeld-Connett and Johnson 2013). In addition, provide a rationale for the selection of bibliographic databases and other sources of literature; when searching was stopped, if purposeful searches were used; and any search limiters (restrictions to the searches) such as the years covered, geography, language, and so on.

### *Reporting Criterion 6- Search processes*

Describe and provide a rationale for how the literature searching was conducted, following appropriate guidance for reporting qualitative literature searches e.g. STARLITE (Booth 2006), some journals may also require use of PRISMA (Moher *et al.* 2009).

### *Reporting Criterion 7- Selecting primary studies*

Describe the screening method, such as by title, abstract and/or full text review, and identify who was involved in study selection. Specify the inclusion and exclusion criteria for study selection, for example, in terms of population, language, year limits, type of publication, study type, methodology, epistemology, country, setting, type of qualitative data, methods, conceptual richness of data, and so on. Also describe any sampling decisions for study selection - were all relevant studies included or a purposive or theoretical sample of studies (Finfgeld-Connett and Johnson 2013, Suri and Clarke 2009)?

### *Reporting Criterion 8- Outcome of study selection*

Provide details on the number of primary studies assessed for eligibility and included in the meta-ethnography. Give reasons for exclusion, for example, for comprehensive searches provide numbers of studies screened indicated in a figure/flowchart; for purposeful searching describe reasons for study exclusion and inclusion based on modifications to the review question and/or contribution to theory development.

Outcome of study selection can be presented as a primary study flow diagram or narrative - reviewers should note publication requirements - many journals require a PRISMA type flow diagram (Moher *et al.* 2009). If comprehensive literature searches were conducted, reviewers should follow appropriate reporting guidance formats, such as PRISMA (Moher *et al.* 2009) and STARLITE (Booth 2006). If publication requirements prevent full reporting, reviewers should state where readers can access these data in full, e.g. on a project website, in online files.

### **PHASE 3 - Reading included studies**

#### *Reporting Criterion 9 – Reading and data extraction approach*

This is the phase where the clearest divergence can start to be seen from other types of qualitative evidence syntheses. As described in the original meta-ethnography text,

“... we think it is best to identify this phase as the repeated reading of the accounts and the noting of interpretative metaphors. Meta-ethnography is the synthesis of texts; this requires extensive attention to the details in the accounts, and what they tell you about your substantive concerns.” (Noblit and Hare 1988, p.28)

Reviewers should describe:

- the process and strategy for reading included studies to indicate how close (critical) reading was achieved and who was involved in reading studies.

- the strategy for extracting or recording data from included studies and state who was involved in this, whether processes were conducted independently by reviewers and whether data were checked for accuracy, and if so, how.
- the process for identifying and recording concepts, themes and metaphors from the primary studies (France *et al.* 2014). Indicate whether data were extracted from across the full primary study (desirable), or specific sections only e.g. findings (not recommended because conceptual data may appear throughout the account, and the primary study context could be lost (Noblit 2016, Toye *et al.* 2014)). Clarify which kind(s) of primary study findings were extracted, such as participant quotes, and/or concepts developed by authors of primary studies (sometimes called first and second order constructs respectively (Britten *et al.* 2002)) so that readers can follow reviewers' concept development.

Examples of how data extraction has been done include: create a list of metaphors and themes (Campbell *et al.* 2011), create a grid or table of concepts (Britten and Pope 2012, Erasmus 2014, Malpass *et al.* 2009), or code concepts in a software programme for the analysis of qualitative data such as QSR NVivo (Toye *et al.* 2014).

Reviewers should state what they mean by the terminology they have used for the units of synthesis, e.g. metaphor, concept, theme.

#### *Reporting Criterion 10- Presenting characteristics of included studies*

Provide a detailed description in narrative and/or table or other diagrammatic format of included studies and their study characteristics (such as year of publication, population, number of participants, data collection, methodology, analysis, research questions, study funder) (Britten and Pope 2012, Toye *et al.* 2014). If publication requirements prevent full reporting, state where readers can access these data in full, e.g. a project website, online files.

In addition, provide key contextual information about the primary studies and comment on their relevance to the context(s) specified in the meta-ethnography review question (Atkins *et al.* 2008, Thorne *et al.* 2004, Toye *et al.* 2013). Context of included primary studies can influence the analysis process (Atkins *et al.* 2008), for example, primary study accounts published after a certain date may reflect a change in health policy/practice such as the introduction of a smoking ban in enclosed public places. If two or more included primary study accounts, e.g. papers, were derived from the same primary study, this should be made explicit. Contextual information should include details about the primary study participants (such as their gender, age, socioeconomic status, ethnicity and so on); the setting such as a geographical setting (a country, region, city) or organisation (hospital, school, company, community); and key political, historical and cultural factors of relevance, for instance, the introduction of a major international guideline, which affected clinical care, preceded publication of included studies. If such contextual information is not available in the primary study accounts, reviewers should make this clear to readers.

<Insert Table 2 here>

#### **PHASE 4 – Determining how studies are related**

##### *Reporting Criterion 11- Process for determining how studies are related*

Reviewers should describe which aspects of the primary studies were compared, and why, to determine how they are related, bearing in mind the aim of their meta-ethnography. Aspects could include: (i) research design, such as the: study aims; contexts; type of studies; theoretical approach/paradigm; participant characteristics, for example, their gender, ethnicity, culture, or age; study focus, for example, a health or social issue, long-term conditions, other diseases or care settings; (ii) findings - the meaning of the concepts, metaphors and/or themes (Noblit and Hare 1988) ; the overarching storyline or explanation of a phenomenon from the primary study accounts (Noblit 2016) and (iii) other contextual

factors, such as the time-period, for instance, whether findings of primary study accounts differed because they were conducted in different time contexts. In addition, reviewers should describe how the studies were compared, that is, the methods and process of comparison.

There is a wide variety of methods for comparing studies; examples of how Phase 4 has been reported include: Campbell *et al* (2003); Atkins *et al* (2008); Malpass *et al* (2009); Beck (2009); Britten *et al* (2012); and Erasmus (2014).

#### *Reporting Criterion 12- Outcome of relating studies*

Describe how primary studies relate (i) to each other, (ii) to the review question and (iii) to the pre-specified aspects of context which were considered important, for example, do they relate reciprocally and/or refutationally, or do they explore different aspects of the topic under study (Atkins *et al.* 2008, Beck 2009, Britten and Pope 2012, Campbell *et al.* 2011, Erasmus 2014, France *et al.* 2014, Malpass *et al.* 2009, Noblit and Hare 1988)? When reviewers are reporting how studies are related they should also report ‘disconfirming cases’ (Booth *et al.* 2013, Thorne *et al.* 2004) that is, where one or more findings (e.g. metaphors or concepts) from a study differ from those of other studies for reasons that may be explained by differences in participants, settings or study design. Reviewers can describe how studies were related in narrative, tabular and/or diagrammatic form.

#### **PHASE 5 – Translating studies into one another**

##### *Reporting Criterion 13- Process of translating studies*

There is a variety of ways to conduct translation, therefore, reviewers should state their understanding and working definitions of reciprocal and refutational translation. Examples of approaches to translation identified by our systematic review are: Atkins *et al* (2008), Campbell *et al* (2011), Garside (2008), Toye *et al* (2014) and Doyle (2003). Examples of refutational translation include: Garside (2008) and Wikberg and Bondas (2010).

Reviewers should also:

- state who was involved in translation;
- describe how meaning was translated from one study into another, for instance, by reporting one or more examples of how this was done;
- describe how relationships between concepts within and across studies, were preserved in the translation, such as by drawing concept maps to show relationships between concepts (Malpass *et al* 2009; Kinn *et al* 2013) (grids, tables and other visual diagrams could also be used);
- describe how the contexts of the primary studies were preserved in the process of translation, for example, were sub-groups of studies translated according to a common health condition or time-period (Campbell *et al.* 2011)?
- clearly indicate whose interpretation is being presented (France *et al.* 2014) - that of the research participants, study authors, or reviewers (sometimes called first, second and third order constructs respectively) (Britten *et al.* 2002);
- describe how potential alternative interpretations or explanations were considered in the translation.

Refutational translation is often overlooked (Booth *et al.* 2013, Thorne *et al.* 2004); its purpose is to explain differences and to explore and explain exceptions, incongruities and inconsistencies (Barnett-Page and Thomas 2009, Booth 2013). An entire study could refute another study (Bondas and Hall 2007, Britten and Pope 2012) or concepts/metaphors within studies could refute one another (Bondas and Hall 2007, Britten and Pope 2012, Finfgeld-Connett 2014), in which case it may be possible to do both reciprocal and refutational translation in a meta-ethnography rather than one or the other. Reviewers should identify disconfirming cases that could inform or have an impact on translation and, subsequently, synthesis.



Some argue that synthesising a large number of studies might result in a superficial synthesis that loses its 'groundedness' in the studies (Campbell *et al.* 2011); too few studies might result in under-developed theory/concepts (Finfgeld-Connett 2014, Toye *et al.* 2014). There is no consensus over what constitutes too few or too many studies; perceptions of a 'large' number of studies varies from over 40 (Campbell *et al.* 2011) to over 100 (Thorne *et al.* 2004). The volume of data will also depend on the richness and length of those accounts and team size will affect the ability to manage the data. If a large volume of data was synthesised reviewers should explicitly describe how translation was achieved given this volume, for example, did they translate studies in smaller clusters to preserve conceptual richness and/or stay grounded in the data?

#### *Reporting Criterion 14- Outcome of translation*

Describe the interpretive findings of the reciprocal translation and refutational translation - including how each primary study contributed to the translation (Booth 2013) and describe alternative interpretations/explanations. Clearly document from which concepts in primary studies the reviewers' concepts are derived (Booth 2013). Reviewers need to differentiate between concepts derived from the participants of primary study accounts (sometimes called first order constructs) and those derived by the authors of the primary study accounts (sometimes called second order constructs). An example of how this has been reported is Britten *et al* (2002) and a clear table describing the different levels of constructs can be found in Malpass *et al* (2009). Descriptions of the study concepts and reviewers' concepts and their inter-relationships can be provided in table, diagrammatic or narrative form, with additional information in supplementary files. When quotes are used reviewers should state their origin - primary study participants, primary study authors, or the reviewers' own analysis notes. If any study was reported in more than one paper/account, describe how this was dealt with.

#### **PHASE 6 – Synthesising translations**

### *Reporting Criterion 15- Synthesis process*

There are two aspects of Phase 6: synthesising translations and line of argument synthesis.

The synthesised translations (concepts) represent the reviewers' interpretation of the translations and are referred to in Britten *et al* (2002) as third order constructs.

A line of argument synthesis aims to provide a fresh interpretation; it goes further than translation and puts any similarities and dissimilarities into a new interpretive context (Noblit and Hare 1988). George Noblit (2016) has more recently further defined a line of argument as the new 'storyline' or overarching explanation of a phenomenon. Reviewers should describe the methods used to develop synthesised translations and how the line of argument synthesis was conducted. If line of argument synthesis was not conducted, state why not. In addition, describe:

- how many and which studies were synthesised. Sometimes studies are excluded in Phases 5 and 6 (for instance, because they lack conceptual depth), so the number of synthesised studies may differ from the number of studies meeting review inclusion criteria.
- who was involved in the synthesis, and explain how synthesis findings have been considered from alternative perspectives (for example, from different academic disciplines) (Atkins et al. 2008, Bondas and Hall 2007, Garside 2008).
- how reviewers remained grounded with primary study data and avoided losing conceptual richness during synthesis, particularly if a large amount of data was synthesised. (See the discussion on volume of data to be synthesised in Phase 5).

### *Reporting Criterion 16- Outcome of synthesis process*

Describe the interpretive findings of the synthesis of translations, the line of argument synthesis, and any new model, conceptual framework or theory developed in a narrative, grid, table and/or visually, for instance, as an illustration, diagram or film. Any of these may be

considered to be a synthesis product and a single synthesis may have more than one product. Reviewers should show the inter-relationships between the data from the primary studies and the reviewers' new interpretations. If development of a new theory, conceptual framework or model was not possible, state why not.

Describe the context in which the new theory, model or framework applies, or not, based on the characteristics of included primary studies. For example, the new theory may have been based solely on studies of young, white women, or studies conducted in countries with private health care, or the included studies may be older and/or pre-date a significant development in the field.

### **PHASE 7 – Expressing the synthesis**

#### *Reporting Criterion 17- Summary of findings*

Relate the main interpretive findings to the synthesis objective(s), review question(s), focus and intended audience(s) (Atkins *et al.* 2008, Bearman and Dawson 2013, Noblit and Hare 1988, Bondas and Hall 2007, Campbell *et al.* 2011). Compare the concept, model, or theory generated in the synthesis to the existing literature, such as research and policy publications. Reviewers should consider the possible influence of findings from other authors (both from primary study accounts and the wider literature) on their own conclusions (Booth *et al.* 2013)

#### *Reporting Criterion 18 – Strengths, Limitations and Reflexivity*

Consideration of methodological and other strengths and limitations, and how they may influence the final interpretation, is key to meta-ethnography reporting. Reviewers should reflect upon and describe the effect of these on the synthesis process and outcomes because they may affect the credibility and trustworthiness (in other fields this is referred to as validity and reliability) of the synthesis findings.

Strengths and limitations of (i) the included primary studies, and (ii) how the meta-ethnography was conducted should be described. The latter are infrequently reported in

published meta-ethnographies. Reviewers should comment on how these aspects may have influenced or limited the synthesis findings:

- the characteristics, content and context of the primary studies, such as the temporal context, type of participant, cultural factors, study design.
- the conduct of the synthesis. Considerations include, but are not restricted to: the order in which studies were synthesised (France et al. 2014, Garside 2008), the impact of study selection and sampling, the number of included studies/ volume of data (may affect depth of analysis), the context of the synthesis, and any modifications made to Noblit and Hare's original methodology (1988).

Reflexivity – critically reflecting on the context of knowledge construction, especially the effect of the researcher on the research process - should include comment on how the reviewers influenced the interpretive process and synthesis findings (Walsh and Downe 2005), for example:

- the reviewers' background, perspectives and experience, such as, but not limited to, epistemological position(s), professional position(s) held, academic discipline, organisation(s) or professional bodies represented (Thorne et al. 2004);
- if the reviewers have a specific view, stance or personal interest, e.g. the reviewer's viewpoint on access to abortion care for a review about women's reproductive health care services.
- any influence of the funder of the meta-ethnography;
- any conflicts of interests of the reviewers, that is, any factor, e.g. financial, political, or organisational, which might influence the judgement of the reviewers when conducting the interpretation and synthesis.
- how each reviewer was involved and how their contribution to literature searching and screening, reading of studies, data extraction, translation and synthesis may

have influenced the interpretive process (Atkins et al. 2008, Bondas and Hall 2007, Garside 2008, Toye et al. 2014).

### *Reporting Criterion 19 - Recommendations and conclusions*

Describe the implications of the synthesis findings for policy, practice and/or theory. Policy and practice implications were particularly important to eMERGe non-academic and lay project advisors. Identify any areas where further primary or secondary research is needed.

### **Part 3: Extensions**

The first three extensions for reporting steps and processes that are not common to every meta-ethnography are available as supplementary material to this paper.

### **Discussion**

The eMERGe guidance is intended to increase transparency and completeness of reporting, making it easier for diverse stakeholders to judge the trustworthiness and credibility of meta-ethnographies and also intended to make the findings more usable and useful to inform services and interventions, such as in health, social care and education. The development of this guidance used methods following, but exceeding, good practice in developing reporting guidance (Moher *et al* 2010) incorporating systematic literature reviews; consensus methods; and consultation with one of the two originators of meta-ethnography, George Noblit. The team believe the guidance is unusual among current reporting guidance in the extent to which it has involved lay people in all aspects of the development (France et al. 2015).

This guidance is not intended as a detailed guide in how to conduct a meta-ethnography - some such publications exist (e.g. Atkins et al. 2008, Britten and Pope 2012, Campbell et al. 2011, France et al. 2016, Malpass et al. 2009) and others from the eMERGe project are in preparation (see <http://emergeproject.org/publications/>). The guidance is designed to raise the reporting quality of meta-ethnographies and thus to assist those writing, reviewing, updating and using meta-ethnographies in making judgements about quality of meta-ethnography

conduct and output. It might also help users of qualitative evidence syntheses to recognise other forms of qualitative evidence synthesis mislabelled as a meta-ethnography, a common occurrence (France *et al.* 2014). The guidance does, however, advance the methodology through its comprehensive analysis, interpretation and synthesis of methodological publications on meta-ethnography, published since Noblit and Hare's original monograph, which underpin the reporting criteria and explanatory notes.

Some might argue that the guidance is overly prescriptive and detracts from the original purposes of meta-ethnography and, indeed, qualitative research. It is our view and that of others (Thorne 2017) that conducting a meta-ethnography involves creative, interpretive, qualitative analysis methods; however, a creative and interpretive approach should not preclude describing clearly how the research was conducted and some guidance is required to avoid misuse or mislabelling of the methods (Thorne 2015) and poor or misleading reporting. In this guidance, definitions and requirements have not been imposed arbitrarily, unnecessarily or where consensus is lacking. Meta-ethnography has been described as an advanced qualitative research methodology (Toye *et al.* 2014, Campbell *et al.* 2011, Finlayson and Dixon 2008), probably reflecting its complexity as a methodology. Training materials to accompany this guidance including video clips and slides (available from <http://emergeproject.org/resources>) have been developed as part of the eMERGe project. This guidance has been designed to have the flexibility to be applied to diverse reporting formats with differing publication requirements (for example, journal articles, reports, book chapters) and this explains why some standards, which apply only to certain formats, are included as 'extensions' to the guidance. Publication requirements can limit manuscript length, therefore reviewers might need to provide some data in an alternative format, such as online, to achieve full reporting.

Methodological developments in meta-ethnography and in relevant qualitative evidence synthesis methodology generally will continue to occur. This guidance was created with an eye to accommodating these future developments which will be monitored through our discussion list: [www.jiscmail.ac.uk/META-ETHNOGRAPHY](http://www.jiscmail.ac.uk/META-ETHNOGRAPHY). Future research will investigate the impact of the eMERGe reporting guidance, for example, by updating our earlier systematic review of meta-ethnography reporting practices (France et al. 2014), with a view to updating the guidance and we regard this guidance as one baseline from which to track the evolution of meta-ethnography.

### **Conclusion**

This guidance has been developed following a rigorous approach in line with and exceeding good practice in creating reporting guidance. It is intended to improve the clarity and completeness of reporting of meta-ethnographies to facilitate use of their findings to inform the design and delivery of services and interventions in health, social care and other fields. Qualitative data are essential for conveying people's (e.g. patients, carers, clinicians) experiences and understanding social processes and it is important they contribute to the evidence base. Meta-ethnography is an evolving qualitative evidence synthesis methodology with huge potential to contribute evidence for policy and practice. In future, changes to the guidance might be required to encompass methodological advances and accommodate changes identified after evaluation of the impact of the guidance.

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Table 1 The eMERGe Meta-ethnography Reporting Guidance

No.	Criteria Headings	Reporting Criteria
<b>Phase 1 – Selecting meta-ethnography and getting started</b>		
<i>Introduction</i>		
1	Rationale and context for the meta-ethnography	Describe the gap in research or knowledge to be filled by the meta-ethnography, and the wider context of the meta-ethnography.
2	Aim(s) of the meta-ethnography	Describe the meta-ethnography aim(s).
3	Focus of the meta-ethnography	Describe the meta-ethnography review question(s) (or objectives).
4	Rationale for using meta-ethnography	Explain why meta-ethnography was considered the most appropriate qualitative synthesis methodology.
<b>Phase 2 – Deciding what is relevant</b>		
<i>Methods</i>		
5	Search strategy	Describe the rationale for the literature search strategy.
6	Search processes	Describe how the literature searching was carried out and by whom.
7	Selecting primary studies	Describe the process of study screening and selection, and who was involved.
<i>Findings</i>		
8	Outcome of study selection	Describe the results of study searches and screening.



<b>Phase 3 – Reading included studies</b>		
<i>Methods</i>		
9	Reading and data extraction approach	Describe the reading and data extraction method and processes.
<i>Findings</i>		
10	Presenting characteristics of included studies	Describe characteristics of the included studies.
<b>Phase 4 – Determining how studies are related</b>		
<i>Methods</i>		
11	Process for determining how studies are related	Describe the methods and processes for determining how the included studies are related:  - Which aspects of studies were compared. <b>AND</b> - How the studies were compared.
<i>Findings</i>		
12	Outcome of relating studies	Describe how studies relate to each other.
<b>Phase 5 – Translating studies into one another</b>		
<i>Methods</i>		
13	Process of translating studies	Describe the methods of translation:  - Describe steps taken to preserve the context and meaning of the relationships between concepts within and across studies.

		<ul style="list-style-type: none"> <li>- Describe how the reciprocal and refutational translations were conducted.</li> <li>- Describe how potential alternative interpretations or explanations were considered in the translations.</li> </ul>
<i>Findings</i>		
14	Outcome of translation	Describe the interpretive findings of the translation.
<b>Phase 6 – Synthesising translations</b>		
<i>Methods</i>		
15	Synthesis process	<p>Describe the methods used to develop overarching concepts ('synthesised translations').</p> <p>Describe how potential alternative interpretations or explanations were considered in the synthesis.</p>
<i>Findings</i>		
16	Outcome of synthesis process	Describe the new theory, conceptual framework, model, configuration or interpretation of data developed from the synthesis.
<b>Phase 7 – Expressing the synthesis</b>		
<i>Discussion</i>		
17	Summary of findings	Summarise the main interpretive findings of the translation and synthesis and compare them to existing literature.
18	Strengths, limitations and reflexivity	<p>Reflect on and describe the strengths and limitations of the synthesis:</p> <ul style="list-style-type: none"> <li>- Methodological aspects – e.g. describe how the synthesis findings were influenced by the nature of the included studies and how the meta-ethnography was conducted .</li> </ul>

		<ul style="list-style-type: none"><li>- Reflexivity – e.g. the impact of the research team on the synthesis findings</li></ul>
19	Recommendations and conclusions	Describe the implications of the synthesis.

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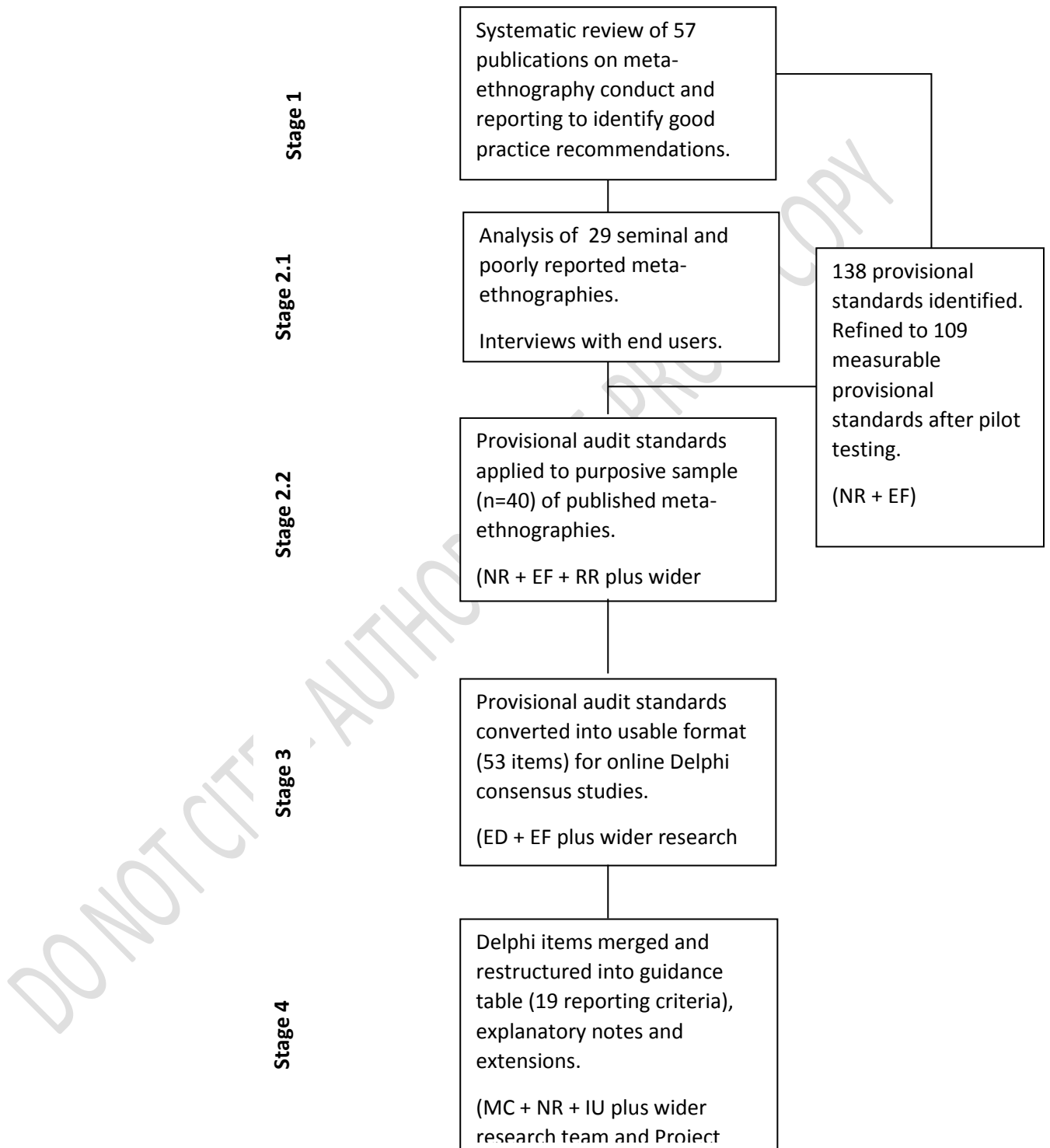


Figure 1 Guidance Development Flowchart

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### **Part 3: eMERGe Reporting Guidance - Extensions**

#### **Format and content of meta-ethnography outputs**

Published meta-ethnographies are often difficult to identify. One reason for this is that the term ‘meta-ethnography’ often does not appear in the titles or abstracts of journal papers or reports. In addition, our audit of published meta-ethnographies found that abstracts are often poorly reported and lack clarity for readers regarding their methods and findings.

Therefore, the following criteria should be considered:

- Include the term meta-ethnography in the title, abstract and/or keywords.

Reporting a meta-ethnography may take a number of formats including, for example, a journal paper, research report, policy document or film depending on the intended audience.

The abstract, lay summary and/or executive summary should be tailored to the intended audience. Ideally it should contain brief details of:

- the study’s background; aim and review question or objectives; search strategy; methods of selection, appraisal, analysis and synthesis of primary study accounts
- main findings including a description of the model, conceptual framework, or theory and the number of studies synthesised
- implications for policy, practice and/or theory.

Journal editors should note that reviewers might use a particular format, such as use of italics or alignment of text, to illustrate how the primary studies are related and it is important this is replicated exactly during the editing process as this affects interpretation of the material.

#### **Assessment of the methodological strengths and limitations of included primary studies**

Noblit and Hare (1988) did not consider the assessment of the methodological strengths and limitations of included primary studies in their original text. Whether to explicitly make such assessments remains a contentious issue amongst qualitative researchers partly because what is a strength in one type of qualitative research may be a limitation in another (Carroll and Booth 2015, Toye et al. 2014). Although many meta-ethnographies are commonly published without a formal appraisal of the methodological strengths and limitations of included studies (France et al. 2014), Campbell and colleagues identified important benefits when formal appraisal criteria were applied (Campbell et al. 2011). The appraisal process facilitated closer reading of studies to identify their methodological strengths and limitations, and aided interpretation of their potential contribution to the synthesis. Campbell concluded that ‘although there is an argument that including weak studies gives them an unwarranted credibility, such studies do not unduly distort a qualitative synthesis in the way that a poor-quality, highly biased quantitative study could influence a meta-analysis. In a qualitative synthesis, it is the power of ideas that matters.’ (Campbell et al. 2011, p.122).

If the findings of a meta-ethnography will be used in a decision-making context (such as an evidence-to-recommendation process undertaken by a clinical guideline development group) then an assessment of the methodological strengths and limitations of included studies is needed as part of an assessment of how much confidence can be placed in these findings (see GRADE CERQual extension below (Lewin et al. 2015)).

The Cochrane Qualitative and Implementation Methods Group provide detailed guidance on the selection and use of an appraisal tool for assessing methodological strengths and limitations (Noyes et al. 2018). The guidance covers key aspects of reviewer decision-making such as how and when to use the appraisal process to make inclusion, exclusion and sampling decisions relevant to the review question. In a meta-ethnography, appraisal of the methodological strengths and limitations of primary studies may also be carried out to

identify conceptually rich papers. Some meta-ethnographies include relevant studies irrespective of their methodological limitations so reviewers need to consider how to use study assessments when determining and interpreting findings.

Reporting of the assessment process should be transparent and document the rationale for decisions made. The following aspects should be considered:

- provide a rationale for conducting / not conducting an assessment of methodological strengths and limitations.
- identify the assessment tool.
- for each primary qualitative study, report in a table the assessment made for each domain of the tool used to assess methodological strengths and limitations. Consider including evidence (such as providing a succinct summary of each review finding) for these judgements.
- describe how the assessments were used in the meta-ethnography. For example: as a means of selecting primary studies, or as information to use when interpreting the findings etc.

### **Using GRADE-CERQual to assess confidence in findings from qualitative evidence syntheses**

If the findings of a meta-ethnography will be used to inform health care decision-making then an assessment of confidence in the synthesised qualitative findings is important (Lewin et al. 2015). The GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative research) approach includes four components: the methodological limitations of the individual qualitative studies contributing to a review finding; the relevance to the review



question of the individual studies contributing to a review finding; the coherence of the review finding; and the adequacy of data supporting a review finding. Detailed guidance on the application of CERQual is available elsewhere (Lewin et al. 2015), CERQual website: [www.cerqual.org](http://www.cerqual.org)).

There are however some important considerations when undertaking and reporting a meta-ethnography in a decision-making context. Meta-ethnography may produce two different levels of findings: in phases 3 to 5, metaphors, themes and concepts from across the included studies may be identified and synthesised in a reciprocal translation and refutational analysis. In phase 6 these themes and concepts are translated into one another to inform the development of broader concepts or theory. These different levels of findings may be useful at different stages of a decision-making process. For example, the broad concepts or theory emerging from a meta-ethnography may help shape a decision-making process by providing an explanation of a phenomenon or process, as experienced by stakeholders. The synthesised themes and concepts from the earlier phases of a meta-ethnography may inform specific decisions, such as whether an intervention is acceptable to stakeholders. In principle, CERQual can be applied to both levels of findings. The use of CERQual to assess more descriptive findings is now well established and guidance is available (Lewin et al. 2015). However, there is much less experience in applying CERQual to the broader concepts or theory that may emerge from a meta-ethnography and guidance on this is still to be developed.

When reporting the application of CERQual in a meta-ethnography, the following considerations are important:

- describe the meta-ethnography review question in detail, including the phenomena of interest and the relevant aspects of context (Noyes et al. 2018).
- undertake and report an assessment of the methodological limitations of the primary studies contributing to each finding, along with the assessments for the other three CERQual components.
- report the synthesised findings from primary studies, along with their CERQual assessments, in a Summary of Qualitative Findings Table. Examples can be found in Lewin et al (2015) and at the CERQual website.

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## Introduction

This supplementary file contains a summary of the design and research methods used in the eMERGe project for developing the eMERGe reporting guidance; full details are published in a National Institute of Health (NIHR) project report.(1)

## Research questions

The eMERGe project research questions were:

1. What are the existing recommendations and guidance for conducting and reporting each process in a meta-ethnography, and why? (Stage 1)
2. What good practice principles can we identify in meta-ethnography conduct and reporting to inform recommendations and guidance? (Stage 2.1)
3. From the good practice principles, what standards can we develop in meta-ethnography conduct and reporting to inform recommendations and guidance? (Stage 2.2)
4. What is the consensus of experts and other stakeholders on key standards and domains for reporting meta-ethnography in an abstract and main report/publication? (Stage 3).(1)

## Summary of design

The project included four main stages (see Figure 1 in the main article), conducted by the project team, in consultation with one of the originators of meta-ethnography, George Noblit, and a Project Advisory Group of national and international academics, policy experts and lay people.(1) The design followed recommended good practice for creating reporting guidelines.(2)

Summary of stages 1-4:

- Stage 1 involved a systematic review of methodological guidance to identify good practice principles and recommendations.
- Stage 2 (2.1a) a documentary analysis of a sample of seminal and poorly reported published meta-ethnographies; (2.1b) interviews with professional end-users on the usefulness of those meta-ethnographies for policy and practice; (2.2) an audit of published health or social care related meta-ethnographies to identify if/how they met the good practice principles and recommendations identified in Stages 1 and 2.1 (a) and (b). We created 53 possible reporting items for the Delphi studies.
- Stage 3 involved seeking consensus on the reporting items through (3.1) an online workshop and (3.2) Delphi consensus studies.
- Stage 4 was to develop the guidance table, reporting criteria, explanatory notes, extensions to the guidance, and user training materials.

## Stage 1 Methods

A methodological systematic review (PROSPERO CRD42015024709) was conducted to identify guidance and recommendations for the conduct and reporting of meta-ethnography.

## Systematic review search strategy

Comprehensive database searches and ‘expansive’ searches were conducted. Relevant seminal methodological publications known to the eMERGe project team and its expert academic advisors were subject to citation searching and reference list checking. Details of databases and other sources which were searched are shown in Figure 1 and the search terms are shown in Comprehensive database searches and expansive searches

Sixteen bibliographic databases were searched in July and August 2015. Reference lists of publications included in the review were hand searched. Academic expert project advisors and team members also suggested publications. Endnote<sup>®</sup> bibliographic software was used for reference management.

Table 1.

*Figure 1. Databases and sources searched in Stage 1 Methodological Review*

<p><b>Databases</b></p> <ul style="list-style-type: none"><li>• MEDLINE (1947 to 2015)</li><li>• Pubmed (inception to 2015)</li><li>• International Bibliography of the Social Sciences (inception to 2015)</li><li>• CINAHL (inception to 2015)</li><li>• SCOPUS (1987 to 2015)</li><li>• Web of Science Core Collection (inception to 2015)</li><li>• PsycINFO (inception to 2015)</li><li>• PsycARTICLES (inception to 2015)</li><li>• Sociological abstracts (inception to 2015)</li><li>• <b><i>Applied Social Sciences Index and Abstracts</i></b> (inception to 2015)</li><li>• ERIC-Educational Resources Information Center (inception to 2015)</li><li>• British Education Index (inception to 2015)</li><li>• Australian Education Index (inception to 2015)</li></ul> <p><b>Other sources</b></p> <ul style="list-style-type: none"><li>• CRD (Centre for Reviews and Dissemination)</li><li>• Cochrane Collaboration</li><li>• Open grey</li><li>• Campbell Collaboration</li></ul>
--

## Comprehensive database searches and expansive searches

Sixteen bibliographic databases were searched in July and August 2015. Reference lists of publications included in the review were hand searched. Academic expert project advisors



and team members also suggested publications. Endnote<sup>®</sup> bibliographic software was used for reference management.

Table 1. Example of search terms used (for Scopus)

	Scopus: >1987-Present Health Sciences/Social Sciences & Humanities TITLE-ABS-KEY
<b>1</b>	("qualitative synthes?s" or "qualitative systematic review*")
<b>2</b>	(meta-ethnograph* or metaethnograph* or meta-synth* or metasynt* or "line* of argument")
<b>3</b>	((("critical synth*" or "textual synth*" or "framework synth*" or "thematic synth*" or "grounded synth*" or "textual narrative synthes?s") W/2 (review*))
<b>4</b>	(metasynthes?s or meta-synthes?s or meta-stud* or metastud*)
<b>5</b>	((qualitative N/2 synth*) or ("third order" N/2 construct*) or (qualitative N/2 review*))
<b>6</b>	"knowledge synthes?s"
<b>7</b>	or/1-6
<b>8</b>	((method* or steps) W/2 (insight* or lessons or learnt or explor* or learned or conduct* or approach*))
<b>9</b>	"worked example"
<b>10</b>	((good or best or recommend* or quality or publishing or reporting) W/3 (guid* or design* or standard* or practi?e* or report* or method* or steps))
<b>11</b>	"Lessons learnt"
<b>12</b>	((challenges or steps) W/5 (synthesis* or qualitative or conduct* or report* or design* or method* or present* or practical*))
<b>13</b>	(practical W/5 (guid* or design* or standard* or approach* or framework*))
<b>14</b>	((methods or methodological) W/5 (guid* or design* or standard* or approach* or framework*))
<b>15</b>	<b>or/8-14</b>
<b>16</b>	<b>7 and 15</b>

### Screening and selection of publications

9,332 references were identified from searches resulting in 7,522 after de-duplication. 6,271 (84%), published from 2006 to 2015, were independently double screened. One reviewer screened the remaining references, published before 2006, due to resource restraints. Expansive searches were used to identify any relevant publications published prior to 2006. Publications were screened by title, abstract and, when necessary, full text against the inclusion and exclusion criteria shown in Figure 2. A PRISMA diagram is given in Appendix 1.

Figure 2. Inclusion and exclusion criteria for Stage 1 systematic review

Inclusion criteria	Exclusion criteria
--------------------	--------------------

<ul style="list-style-type: none"> <li>• Book, book chapter, journal article/ editorial, report or PhD thesis</li> <li>• Published after 1988</li> <li>• Reports on methodological issues* in conducting meta-ethnography OR is a reporting guideline for or provides guidance on reporting qualitative syntheses including meta-ethnography</li> <li>• Any language</li> <li>• Any discipline or topic (not just health related)</li> </ul>	<ul style="list-style-type: none"> <li>• Theses below PhD level</li> <li>• Published before 1988 (date of the publication of the original meta-ethnography text by Noblit and Hare)</li> <li>• Does not report on methodological issues* in conducting meta-ethnography AND is not a reporting guideline/ providing guidance on reporting meta-ethnography</li> </ul>
--	---

\*‘Methodological issues’ included all aspects of meta-ethnography methodology including: its philosophical and theoretical underpinnings; research design, practices and procedures including conveying findings and developing theory; providing advice on initial selection of meta-ethnography as suitable for one’s research aim, defining the characteristics of a meta-ethnography, comparing qualitative synthesis methodologies including meta-ethnography as one of those compared, and/or describing any other aspect of meta-ethnography methodology.(1)

## Data coding

Four reviewers, aided by a coding guidance document, coded advice and recommendations on how to conduct and report all aspects of a meta-ethnography from 57 full texts using NVivo 10.0 qualitative analysis software. One reviewer coded each publication; a second reviewer checked completeness of coding for 13 (23%) publications. Codes were mainly based on Noblit and Hare’s seven phases of meta-ethnography conduct.

## Data analysis

Coded data, with reference to the full publications when needed, were analysed qualitatively mainly by two reviewers using processes of constant comparison. Analysis for each node was recorded in analytic memos in NVivo. For complex phases or processes (e.g. Phases 4 to 6) each researcher independently identified key themes which were then compared. Each researcher kept an analysis journal and recorded whether the publications were “rich in detail” about meta-ethnography conduct and/or reporting, i.e. a detailed account with in-depth explanation and rationales that went beyond description. From the analysis, the researchers jointly wrote a detailed description of each phase of a meta-ethnography including advice, recommendations and documented pitfalls for their conduct and reporting, noting any contradictions or uncertainties. The initial findings were scrutinised and discussed by the wider team.

## Stage 2 Methods

Stage 2.1 Documentary and interview analysis of seminal and poorly reported meta-ethnographies.

Stage 2.1 comprised of two stages: **(a)** documentary analysis of seminal and poorly reported meta-ethnographies, and **(b)** exploring professional end-user views on the utility of seminal and poorly reported meta-ethnographies for policy and practice.

Stage 2.1.a Analysis of seminal and poorly reported meta-ethnographies

### **Methods**

We intended to analyse 10–15 poorly reported and 10–15 seminal meta-ethnographies; in total we analysed 29 meta-ethnographies, 13 seminal and 16 poor. Expert academics from the eMERGe Project Advisory Group suggested meta-ethnography journal articles that they

considered to be seminal (i.e. that have influenced or significantly advanced thinking and/or that are of central importance in the field of meta-ethnography) and those that they considered to be relatively poorly reported, and gave a rationale for their choices. The journal articles had to meet the following inclusion criteria:

- A peer-reviewed meta-ethnography journal article.
- Published following Noblit and Hare's 1988 meta-ethnography book.
  
- Considered by our expert advisors and/or published reviews of meta-ethnographies to be either:
  - Seminal, or
  - relatively poorly reported.(3)

Only three poorly reported meta-ethnographies were suggested by experts, therefore, three published reviews(4-6) of meta-ethnography quality were searched by the project team identifying a further 13 poorly reported ones. In total, 13 seminal and 16 relatively poorly reported meta-ethnographies were analysed (see supplementary file S3 for a list of these).

#### Data Coding

Data were coded in NVivo 10.0(7) by three reviewers using a coding frame based on Noblit and Hare's seven phases of meta-ethnography conduct, with additional codes for other important aspects of the methodology and its conduct, e.g. selecting a qualitative evidence synthesis approach, how to preserve the context of primary studies. The coded data were then compared to the recommendations identified in Stage 1.

#### Data Analysis

Focusing on phases 4 to 7, coded data for each phase were read repeatedly by one reviewer and systematically compared to the recommendations identified in Stage 1 to identify how they met/deviated from advice. The meta-ethnographies were also compared to one another. Preliminary findings were discussed regularly with the project team. This resulted in identification of similarities and differences between poorly reported and seminal meta-ethnographies.

#### Stage 2.1.b Professional end-user views on utility of seminal and poorly reported meta-ethnographies for policy and practice

Meta-ethnographies can be used to inform policy and practice, therefore we included the views of potential end-users of meta-ethnographies (professionals not working in academia) on the usefulness of published meta-ethnographies to them in their professional role, to identify which aspects of reporting were important to them.

### **Methods**

#### Sample

Individuals from relevant organisations were invited to participate if they met at least **one** of the following criteria:

- Works for a government or non-government organisation that uses synthesised evidence on health/social care, or develops or disseminates evidence-based health/social care guidance and advice

- Commissions qualitative evidence syntheses
- Works in a role related to the use of research evidence for health/social care policy or practice
- Clinical guideline developer
- Distils evidence for policy makers
- Health or social care policy maker
- Uses synthesised evidence or synthesises evidence in a professional non-academic capacity.(3)

### Sample Recruitment

Twenty-three UK-based organisations were approached directly. In addition the Association of Medical Research Charities circulated an invitation to its 138 medical research charity members and the National Institute for Health Research (NIHR) circulated the invitation to its Board and Panel members. Eighteen organisations agreed to participate, of which 11 participated including non-departmental public bodies, medical research charities and Royal Colleges. Fourteen of their employees were interviewed, four more than our target. Only one participant had previously read a meta-ethnography.

### Ethics

The interviews were exempt from research ethics approval.

### Data Collection

Each participant was given one seminal and one poorly reported meta-ethnography, identified in Stage 2.1a, of relevance to them. Participants were not told which meta-ethnography was seminal or poorly reported. Semi-structured interviews were conducted with participants via telephone (n=13) or email (n=1) regarding the utility of the two meta-ethnographies. The interviewer took detailed notes during interviews.

### Data Analysis

One team member conducted a thematic analysis of the interview data to identify professional end-users' perceptions of good and poor reporting and the utility of meta-ethnography to inform policy and practice, as well as highlighting differences between the views of professional end-users and academics. Findings were discussed regularly by four project team members in analysis meetings, and with the wider project group at team meetings.

The combined findings of Stages 2.1a (documentary analysis of published meta-ethnographies) and 2.1b (interviews with potential end users of meta-ethnographies) enabled identification of good practice principles and contributed towards development of the reporting standards.

### Stage 2.2: Audit of published meta-ethnographies against provisional reporting standards.

Stage 2.2 involved (1) developing provisional reporting standards derived from the good practice principles and recommendations identified in Stages 1 and 2.1; and (2) auditing a sample of published health and/or social care-related meta-ethnographies against the provisional standards. The audit enabled refinement of the standards which contributed to the eventual reporting criteria.

### **Development of provisional standards and audit tool**

The development of provisional standards was iterative. Every item of advice and recommended practice reported in Stage 1 and Stages 2.1 (a) and (b) was converted into a measurable draft standard. A bespoke audit tool was then created (see **Error! Reference source not found.** below).

*Table 2. Excerpt from version 1 of the draft standards and audit reporting tool*

<b>Advice/recommendations</b>	<b>Standard(s)</b>	<b>Evidence source(s)</b>
<i>Phase 0 – Choosing meta-ethnography</i>		
Many qualitative evidence synthesis approaches exist. Meta-ethnography should be considered and specifically chosen as the most appropriate interpretive methodological approach.	Meta-ethnography reports should have:  a clear rationale stating why meta-ethnography was considered the most appropriate qualitative evidence synthesis methodology	Stage 1
Meta-ethnography is suited to developing new conceptual understandings or new theories of experiences and/or behaviour especially when a topic is still being explored, developed and/or refined.		

<b>AUDIT TOOL (version 1)</b>						
<b>Standard number</b>	<i>Phase 0 – Choosing meta-ethnography</i> <b>Meta-ethnography reports should:</b>	<b>Yes - in full</b>	<b>Yes – in part</b>	<b>No</b>	<b>N/A</b>	<b>comment</b>
0/1	report why meta-ethnography was considered the most appropriate qualitative evidence synthesis methodology					

In refining the audit tool, duplicate standards were merged, ambiguous language clarified, the tool was piloted on published meta-ethnographies and revised resulting in a reduction from 138 to 109 provisional standards. The tool was formatted in in Microsoft<sup>®</sup> Excel<sup>®</sup>. Each standard could be recorded as fully met, partially met, not met or not applicable (N/A) with space for additional qualitative comments by auditors.

### **Audit methods**

Two team members led development of the provisional audit standards which were refined by all team members. Three members screened potential studies for inclusion in the audit. Six members audited sampled meta-ethnographies against the provisional standards in April 2016.

### ***Identification of sample of meta-ethnographies for audit***

A comprehensive systematic search for meta-ethnographies was carried out by one reviewer in six electronic databases (SCOPUS, Medline, EBSCO CINAHL, IBSS and Web of Science Core Collection) from their inception to 28 October 2015. Titles and abstracts were searched using the terms ‘meta ethnography’ or ‘metaethnography.’ A search for meta-ethnographies was conducted in the Cochrane register of qualitative evidence syntheses on 30 November 2015. The two sets of results were merged giving 1500 references which, after removing duplicates, resulted in 571 references - these were screened by title and abstract by one reviewer against the following inclusion/exclusion criteria:

#### **Inclusion criteria**

- Title, abstract and/or key words made reference to meta-ethnography or meta-ethnographic techniques or methods of Noblit and Hare.(8)
- Report of a synthesis of primary qualitative research studies.
- Had a health or social care-related focus.
- Published between 1994 and 2015 in English, French or Spanish.(3)

#### **Exclusion criteria**

- Title, abstract and/or key words made no reference to meta-ethnography or meta-ethnographic techniques or methods of Noblit and Hare.(8)
- Not a qualitative evidence synthesis, or, was a qualitative evidence synthesis but conducted using approaches other than meta-ethnography.
- Did not have a health or social care focus e.g. school education.
- Meta-ethnographies reported in languages that could not be translated by the team.
- Meta-ethnographies first-authored by members of the eMERGe Project Advisory Group and worked examples included in Stage 1 or Stage 2.1. (3)

Initial screening by title and abstract using the inclusion/exclusion criteria reduced the meta-ethnographies to a pool of 243 to which three team members applied further purposive sampling criteria so that the sample included meta-ethnographies:

- Published in a range of different journals e.g. medical, nursing, midwifery, allied health professional, social care or social science and at least one meta-ethnography in report rather than journal article format.
- Conducted by reviewers from different disciplinary backgrounds, different countries and from different philosophical traditions.
- Conducted by single and multiple reviewers.
- With a national or international primary studies e.g. included studies from different countries.
- That included different types of qualitative data.
- That were standalone or conducted alongside a quantitative systematic review.
- Represented a range in number of included studies e.g. less than 10, more than 50.
- Reviewers reported using ‘normal,’ ‘adapted’ or ‘modified’ meta-ethnography methods.(1)

The goal of purposive sampling was to ensure a diverse range of meta-ethnographies. The final selection of 40 eligible meta-ethnographies was made by the entire project team. However, when full texts were audited, 21 of these were not recognisable as a meta-ethnography, e.g. they combined qualitative and quantitative data or were literature reviews. These publications were excluded resulting in a final audit sample of 19 meta-ethnographies.(1) A PRISMA diagram is given in Appendix 2.

*Table 3. Purposive sample of meta-ethnography publications audited*

<b>Author(s)</b>	<b>Journal</b>	<b>Year</b>
<b>Kane et al.(9)</b>	Child Care Health & Development	2007
<b>Ypinazar et al. (10)</b>	Australian and New Zealand Journal Psychiatry	2007
<b>Molony(11)</b>	Research in Gerontology Nursing	2010
<b>Purc-Stephenson &amp; Thrasher(12)</b>	Journal of Advanced Nursing	2010
<b>Wikberg and Bondas(13)</b>	International Journal of Qualitative Studies Health and Wellbeing	2010
<b>Malterud and Ulrikson(14)</b>	International Journal of Qualitative Studies in Health Wellbeing	2011
<b>Wells et al. ±(15)</b>	(Research Report)	2011
<b>Garrett et al.(16)</b>	Chronic Illness	2012
<b>Hoy(17)</b>	International Journal of Men's Health	2012
<b>Monforte-Royo et al.(18)</b>	PloS One	2012
<b>Priddis et al.(19)</b>	Journal of Advanced Nursing	2013
<b>Sinnott et al.(20)</b>	BMJ Open	2013
<b>Soundy et al.(21)</b>	Health Psychological Review	2013
<b>Wells et al. ±(22)</b>	Psycho-Oncology	2013
<b>Cullinan et al. (23)</b>	Drugs and Aging	2014
<b>Hole et al.(24)</b>	Scientific world Journal	2014
<b>Errasti-Ibarrondo et al.(25)</b>	Nursing Outlook	2015
<b>Galdas et al.(26)</b>	Health Services Delivery & Research	2015
<b>Lucas et al.(27)</b>	Scandinavian Journal of Primary Health Care	2015

### ***Audit procedures***

Each auditor was randomly assigned a selection of the meta-ethnographies. Verbal and written guidance was provided for use of the audit tool. A second auditor checked audit results with disagreements referred to a third auditor. For each standard, qualitative feedback from auditors was recorded.

### ***Data analysis***

One team member analysed audit data qualitatively and quantitatively . Descriptive statistics were prepared to identify how many provisional standards each publication met (in full, in part or not at all). All qualitative feedback was collated to identify standards which lacked clarity or were duplicative. Findings were discussed with the project team, for rigour and richer interpretation.

## Stage 3. Developing a consensus on the key standards for meta-ethnography reporting

### Aim

The aim of Stage 3 was to ascertain the consensus of meta-ethnography methodology experts and other key stakeholders on the key standards for reporting meta-ethnography in an abstract and main report or publication.

### Design

Stage 3 comprised two stages:

**Stage 3.1** Online expert and stakeholder workshop

**Stage 3.2** eDelphi Consensus Studies.

#### Stage 3.1 Online expert and stakeholder workshop.

The workshop was essential for the reporting guidance development because it ensured that participants had the latest knowledge about meta-ethnography and the quality of its reporting. The workshop exceeded good practice in developing a reporting guideline(2) by including not just academic experts but a wide range of stakeholders including lay people.

#### **Recruitment**

Seventy-eight people were recruited to the workshop, 31 of whom participated: 12 academics, 3 other professional stakeholders, 11 lay people, and 5 project team members. A further nine project participants (six academics and three lay people) gave feedback on the workshop outputs after the workshop.(1)

#### **Procedure**

A three-hour online workshop took place on 12 May 2016. The project team and participants discussed good and best practice in meta-ethnography conduct and reporting, and further developed the draft reporting standards and their wording.

#### **Process**

An online conferencing system, Blackboard Collaborate™, was used to conduct the workshop. Presenting project team members had video enabled. Detailed workshop documents containing the main project findings to date, examples of the standards, a glossary of technical terms and an attendees list were circulated in advance. Summaries of the findings and standards were presented during the workshop.

#### **Data collection and analysis**

Following 25 minutes of presentations by two team members there was open discussion with all participants including discussing a range of draft standards. We explored the definition of a meta-ethnography, how close the draft standards were to best practice, and the utility of meta-ethnography reports for improving clinical practice and intervention implementation. Participants could suggest additional standards for inclusion in the eDelphi studies and suggest revisions to the draft standards. The workshop was audio-recorded and detailed notes, structured by discussion topic, were produced which were circulated for comment and amendments to all participants and to those who could not attend the workshop.



The reporting standards were revised as a result of the workshop but none was deleted because it was not the purpose of the workshop, but of the eDelphi, to select standards for the guidance. Finally, we presented our revised standards to George Noblit and discussed these with him in June 2016. This resulted in further refinements to the standards to clarify and improve their utility. The final list comprised **69** eDelphi items (**53** of which related to the content of a meta-ethnography publication, **16** related to potential journal headings and subheadings under which the content could be structured).

### Stage 3.2 eDelphi Consensus Studies

#### **Objectives**

The objective was to conduct two identical eDelphi consensus studies in parallel - one for meta-ethnography methodology experts and one for other stakeholders. In doing so we could differentiate between and include items of importance to either group. Consensus on an item was defined as  $\geq 80\%$  agreement that it was either “important” or “very important”. Items reaching this level of consensus in either eDelphi study would be included in the final reporting guidance.(28, 29)

#### **Methods**

##### Recruitment

##### *Meta-ethnography methodology expert group*

We aimed to purposively invite an international, multi-disciplinary panel of 45 methodological experts in qualitative evidence synthesis and meta-ethnography via professional networks, inviting authors of key texts identified in Stages 1 and 2, and using a snowballing approach. We anticipated a recruitment rate of 70% giving a final sample of at least 30. We defined a meta-ethnography expert participant as someone who met at least one of the following criteria:

- An academic with a reputation in qualitative evidence synthesis including, but not limited to, meta-ethnography.
- Author of a meta-ethnography or a methodological text in qualitative evidence synthesis or meta-ethnography considered by peers to be seminal.(3)

We emailed potential participants to invite them to participate. Ultimately, 71 potential *meta-ethnography expert* participants were invited to participate in the study of whom 48 individuals (68% recruitment rate) completed round 1 and 28 individuals (58% of those entering the study) completed three rounds of the study.

##### *Key stakeholder expert group*

We aimed to invite a diverse UK sample of approximately 45 key stakeholders comprise of 22-23 public/patient representatives and 22-23 professional evidence users. Ultimately, 48 *key stakeholder expert* participants were invited to participate in the study of whom 39 individuals completed round 1 and 23 individuals (59%) completed three rounds.

We defined a public/patient representative as someone who was aged  $\geq 16$  and met at least one of the following criteria:

- A member of the public or a patient or informal carer with an interest in health or social care research evidence
- A lay member of a clinical guideline development and/or funding panel.

Potential lay participants were identified and invited through voluntary and patient organisations, such as the Scottish Health Council, the Healthwatch and Public Involvement Association (HAPIA), and through the project team.

We defined a professional evidence user as someone who met at least one of the following criteria:

- Experience of producing reporting guidelines for other qualitative evidence synthesis approaches.
- Expertise in critical appraisal and evaluation of qualitative research studies.
- Editors and editorial board members of journals that publish meta-ethnographies and qualitative evidence syntheses e.g. Qualitative Health Research, Social Science and Medicine, Health Services Research.
- Worked for a government or non-government organisation that uses synthesised evidence on health/social care, or develops or disseminates evidence-based health/social care guidance and advice.
- Commissioned qualitative evidence syntheses.
- Worked in a role related to use of research evidence for health/social care policy or practice.
- Clinical guideline developer.
- Distilled evidence for policy makers.
- Health or social care policy maker.
- Used synthesised evidence or synthesises evidence in a professional non-academic capacity.(1)

Potential professional evidence-user participants were identified and invited through relevant organisations such as the Scottish Intercollegiate Guideline Network (SIGN), Healthcare Improvement Scotland (HIS), NICE, the Scottish Parliamentary Information Centre (SPICe), the International Guideline Network (G-I-N), and our existing networks.

#### Delphi Method

The Delphi method is a group consensus-reaching method(30) that presents questionnaires in a series of rounds, each one based on feedback from respondents' responses to the previous questionnaire.(31) Participants are anonymous to each other, thus avoiding conformity to peer-group pressure and the design is suitable for administering to a geographically-dispersed panel ((p. 10).32)

#### eDelphi Procedure

We used a web-based platform developed for online 'eDelphi' studies at the University of Stirling. Rates of study participation are similar to paper-based administration methods ((p. 10).29, 32) The platform includes automated features such as the invitation by email, reminder and feedback processes. In each round, feedback on their own and the whole panel's responses for each item were presented to participants visually as a colour histogram.

This enabled participants to easily compare their responses to the consensus in the previous round and to then either confirm or update their response.

#### Ethical approval

Ethical approval for the eDelphi study was granted from the University of Stirling School of Health Sciences Research Ethics Committee on 27/07/15.

#### Data collection

Data collection took 12 weeks in total and comprised of three rounds, each lasting four weeks. Up to two electronic reminders were sent automatically to participants who had not yet completed the round. A set of 53 provisional items (relating to content) were presented in the first eDelphi round. Participants rated how important it was to them (on a four-point Likert-type scale 1= very unimportant, 4=very important) that the item should appear in the reporting guidance. Participants could record they had no expertise for any item listed. In Round 1 participants could add new items that they considered important (but none was suggested). In Rounds 2 and 3 they saw the same items they rated in the previous rounds and received feedback on the previous round: the relative frequency of responses for each item and their own responses.

#### Analysis

Following completion of round three, frequencies and percentage of responses for each eDelphi study was calculated showing the level of consensus for each item. If an item reached consensus as being deemed important(33) or very important(34) in either eDelphi group it was included in the guidance.

#### Results

Most items (46/53) reached consensus ( $\geq 80\%$  agreement that an item was important or very important) in both groups. Seven items did not reach consensus in the expert group and four items did not reach consensus for inclusion in both groups:-

- While acknowledging publication requirements and house style, the abstract should ideally: differentiate between reported findings of the primary studies and of the synthesis.
- State in which order primary study accounts had data extracted from them e.g. chronological or starting with an 'index' paper, and rationale for that order.
- State the order in which studies were translated/synthesised, e.g. chronologically from the earliest or most recent, and the rationale for this.
- State the qualitative research expertise of reviewers.

Therefore these four items were not included in the guidance.

The project team had to consider how the 49 items could be meaningfully presented in a usable format for end users of the guidance. Stage 4 of the project involved developing the guidance table and explanatory notes, developing training material and organising dissemination of the guidance.

#### Stage 4 Guidance Development Process

There were too many items to form usable guidance in their eDelphi format. Moher *et al.* (2) provided a brief overview of the guidance development process following a consensus study but there was little literature to inform how to develop usable guidance from a large number of Delphi items such as generated in this project. We provide a summary here of the process we followed to develop the final reporting criteria and accompanying explanatory notes from the Delphi items. The guidance development process post-Delphi involved:

1. November 2016. Project Advisory Group Meeting (27 participants) - Refining the structure, content and nature of the reporting guidance
2. January 2017. Project Team Meeting - Merging items
3. February 2017. Project Advisory Group two Online Sessions (9 participants)- Usability of guidance
4. February-March 2017. Project Team Writing Group Sessions - Converting items into a guidance table, reporting criteria and explanatory notes
5. March 2017. Project Team Meeting - Refining the guidance table wording and style, and creating extensions
6. March-May 2017. Project Team and Project Advisory Group Co-Authors - Finalising the guidance table, reporting criteria, explanatory notes and extensions to the reporting criteria.(1)

Input from the Project Advisory Group at the 2016 meeting indicated that:

- guidance with too many items was unlikely to be used.
- a consistent level of detail should be given in the guidance table, with additional detail supplied in the accompanying explanatory notes.
- the guidance table should focus on what is key to good reporting, with suggestions of how this can be achieved described in the explanatory notes.
- the high level guidance should be relevant across disciplines and to a number of types of user, e.g. a meta-ethnography author, peer-reviewer, or an editor of a journal.

Therefore, a process was undergone, as listed above, through which items were reduced in number through merging items, restructuring items e.g. into Noblit and Hare's 7 phases of meta-ethnography, moving detail of reporting requirements from the table of items/criteria to the explanatory notes, moving items into extensions to the guidance. Two levels of reporting were created - a high level summary of the reporting criteria for the guidance table, and the detailed explanatory notes that provided additional clarification.

The reporting criteria and explanatory notes were cross-checked against the items which had reached consensus in the Delphi studies (i) to check that no item had been missed from the re-writing process and (ii) to ensure that further detail had not been added to the guidance.

Three extensions to the guidance were created for reporting steps and processes that are not common to every meta-ethnography: (i) format and content of the meta-ethnography outputs e.g. title, abstract and keywords; (ii) assessment of methodological strengths and limitations of included primary studies e.g. quality appraisal; (iii) assessment of confidence in synthesised qualitative findings using GRADE CERQual (35, 36) Extensions (i) and (ii) were

written from material removed from the guidance table and explanatory notes. Extension (iii) was written by a member of the project team (JN), who was involved in developing CERQual, in collaboration with the other CERQual originators. The final guidance table, explanatory notes and extensions were sent out for final feedback to the project team and Project Advisory Group members who qualified for authorship.

Following the process above, the number of items (criteria) in the final guidance reduced from **49** to **19**. A check was conducted of the detailed explanatory notes against the Stage 3 Delphi items which met consensus, to ensure that the meaning retained fidelity to the Delphi items.

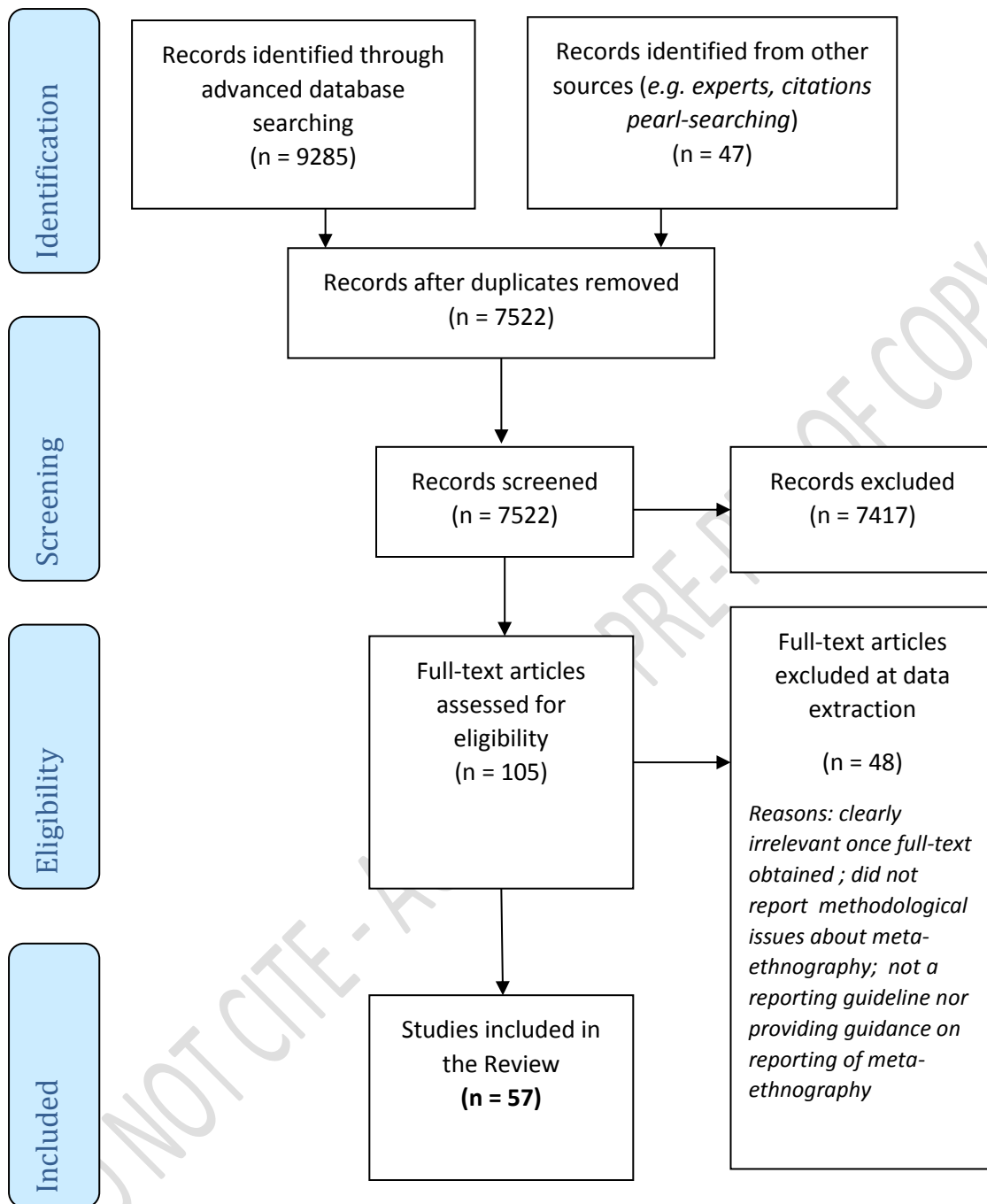
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Appendix 1. PRISMA flow diagram for Stage 1



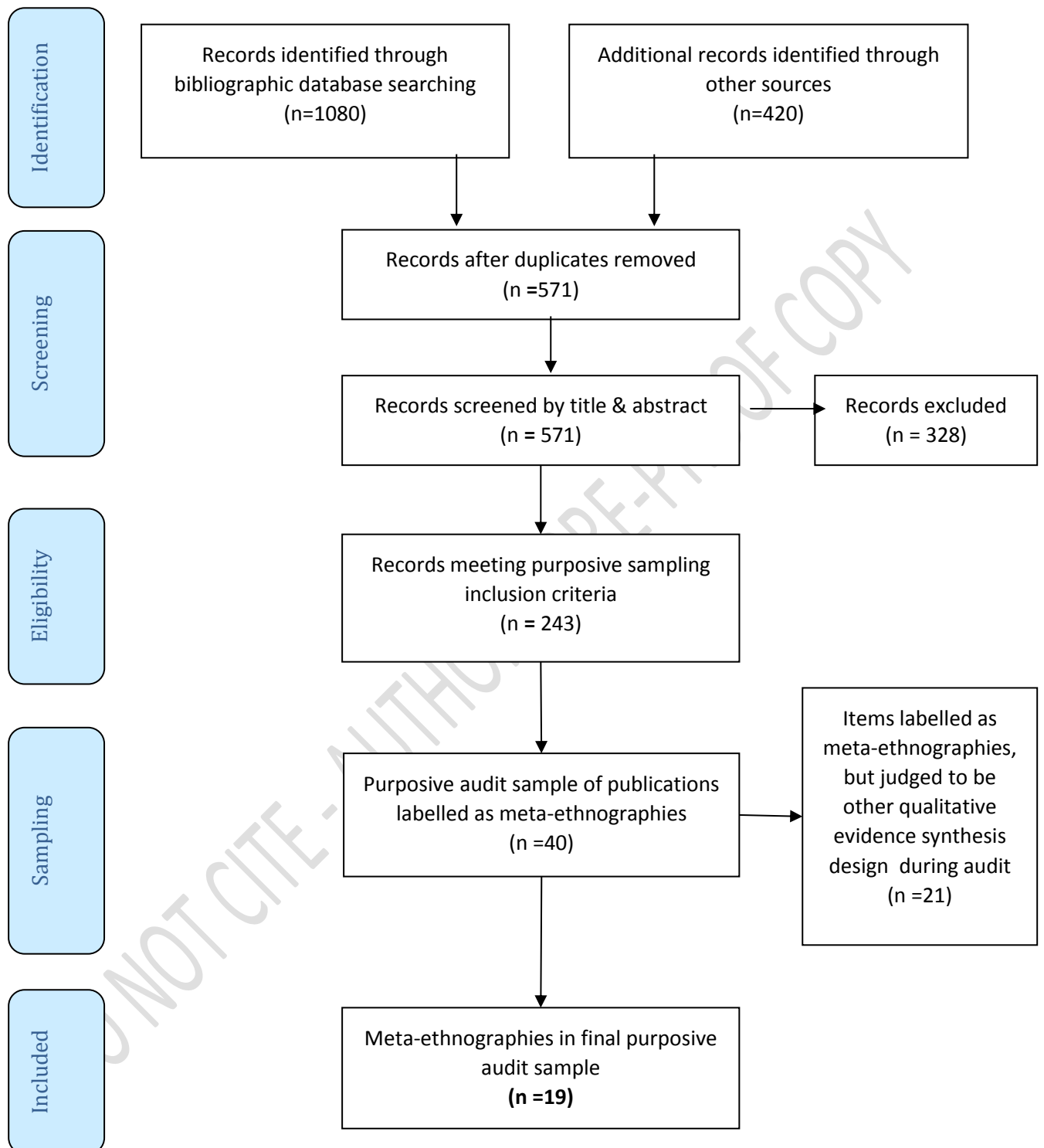
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Adapted From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(6): e1000097.

doi:10.1371/journal.pmed1000097



## Appendix 2. PRISMA adapted flow diagram for Stage 2.2



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From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(6): e1000097. doi:10.1371/journal.pmed1000097

File S2. Supplementary information: A. 57 publications included in the systematic review for 'Stage 1 Identification of Standards' and B. Publications contributing to development of reporting criteria

### A. Publications included in the methodological systematic review

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## B. Methodological publications contributing to development of reporting criteria

<b>Aspect / Phase of meta-ethnography</b>	<b>Publications contributing relevant data/evidence</b>
Nature of meta-ethnography and how it differs from other qualitative evidence synthesis methodologies	(Atkins et al., 2008, Bondas and Hall, 2007b, Bondas and Hall, 2007a, Booth, 2001, Britten et al., 2002, Campbell et al., 2003, Dixon-Woods et al., 2004, Dixon-Woods et al., 2005, Doyle, 2003, Malpass et al., 2009, Noblit and Hare, 1988, Pope and Mays, 2006, Barnett-Page and Thomas, 2009, Bearman and Dawson, 2013, Beck, 2009, Booth, 2013, Booth et al., 2016, Britten and Pope, 2012, Campbell et al., 2011, Toye et al., 2014)
Selecting a qualitative evidence synthesis methodology	(Atkins et al., 2008, Bearman and Dawson, 2013, Beck, 2009, Britten et al., 2002, Campbell et al., 2003, Campbell et al., 2011, Finlayson and Dixon, 2008, Hannes and Macaitis, 2012, Malpass et al., 2009, Noyes and Lewin, 2011, Paterson, 2011, Suri and Clarke, 2009, Tong et al., 2012, Booth, 2013, Toye et al., 2014, Meadows-Oliver, 2015, Melendez-Torres et al., 2015, Garside, 2008)
Phase 1- Getting Started	(Atkins et al., 2008, Booth, 2013, Britten et al., 2002, Campbell et al., 2003, Dixon-Woods et al., 2005, Finlayson and Dixon, 2008, Noblit and Hare, 1988, Garside, 2008, Booth et al., 2016, Campbell et al., 2011, Finfgeld-Connett, 2014, Finfgeld-Connett and Johnson, 2013, Kangasniemi et al., 2012, Kinn et al., 2013, Meadows-Oliver, 2015, Sigurdson and Woodgate, 2015, Toye et al., 2014)
Phase 2 – Deciding what is relevant	(Atkins et al., 2008, Britten and Pope, 2012, Britten et al., 2002, Campbell et al., 2011, Dixon-Woods et al., 2005, Finlayson and Dixon, 2008, Garside,

	2008, Hannes and Macaitis, 2012, Kangasniemi et al., 2012, Noblit and Hare, 1988, Suri and Clarke, 2009, Tong et al., 2012, Walsh and Downe, 2005, Weed, 2008, Booth, 2013, Booth et al., 2013, Carroll and Booth, 2015, Finfgeld-Connett, 2014, Finfgeld-Connett and Johnson, 2013, France et al., 2014, Kinn et al., 2013, Meadows-Oliver, 2015, Nye et al., 2016, Toye et al., 2013, Toye et al., 2014)
Phase 3- Reading Studies	(Atkins et al., 2008, Bondas and Hall, 2007a, Booth, 2013, Britten et al., 2002, Campbell et al., 2006, Campbell et al., 2003, Kangasniemi et al., 2012, Toye et al., 2014, Noblit and Hare, 1988, Campbell et al., 2011, Erasmus, 2014, Malpass et al., 2009, Sigurdson and Woodgate, 2015, Lee et al., 2015, France et al., 2014, Garside et al., 2008)
Phase 4- Determining how the studies are related	(Britten and Pope, 2012, Campbell et al., 2011, Erasmus, 2014, Malpass et al., 2009, Atkins et al., 2008, Britten et al., 2002, Campbell et al., 2003, Beck, 2009, Booth et al., 2013, Doyle, 2003, Toye et al., 2014, Booth et al., 2016, France et al., 2014, Noblit and Hare, 1988)
Phase 5- Translating Studies into one another	(Booth, 2013, Campbell et al., 2006, Campbell et al., 2003, Garside, 2008, Atkins et al., 2008, Campbell et al., 2011, Doyle, 2003, Erasmus, 2014, Toye et al., 2014, Lee et al., 2015, Britten et al., 2002, Finfgeld-Connett, 2014, Malpass et al., 2009, Melendez-Torres et al., 2015, Thorne et al., 2004, Weed, 2008, Barnett-Page and Thomas, 2009, Bondas and Hall, 2007a, Booth et al., 2013, Britten and Pope, 2012, Kinn et al., 2013, Noblit and Hare, 1988, Pope and Mays, 2006, Walsh and Downe, 2005, Suri and Clarke, 2009, Booth et al., 2016, McCann et al., 2013, Dixon-Woods et al., 2005)
Phase 6- Synthesising translations	(Britten et al., 2002, Doyle, 2003, Noblit and Hare, 1988, Atkins et al., 2008, Booth, 2013, Campbell et al., 2011, Thorne et al., 2004,

	Britten and Pope, 2012, Bondas and Hall, 2007a, Campbell et al., 2003, Finfgeld-Connett, 2014)
Phase 7 - Expressing the Synthesis	(Doyle, 2003, Noblit and Hare, 1988, Atkins et al., 2008, Britten et al., 2002, Bondas and Hall, 2007a, Bearman and Dawson, 2013, Beck, 2009, Campbell et al., 2006 , Campbell et al., 2011, Hannes and Macaitis, 2012, Pope et al., 2007, Toye et al., 2014, Booth, 2013)
Issues of primary study context in meta-ethnography	(Atkins et al., 2008, Campbell et al., 2011, Noblit and Hare, 1988, Thorne et al., 2004, Booth, 2013, Britten et al., 2002, Toye et al., 2013, Toye et al., 2014)
Number of reviewers required to undertake a meta-ethnography	(Atkins et al., 2008, Bearman and Dawson, 2013, Booth et al., 2013, Erasmus, 2014, France et al., 2014, Garside, 2008, Lee et al., 2015, McCormick et al., 2003, Walsh and Downe, 2005, Bondas and Hall, 2007b, Booth, 2013, Finlayson and Dixon, 2008, Kangasniemi et al., 2012, Toye et al., 2014, Sigurdson and Woodgate, 2015, Bondas and Hall, 2007a, Campbell et al., 2011)
Validity, credibility and transferability issues in meta-ethnography	(Noblit and Hare, 1988, Campbell et al., 2011, Hammersley, 2013, Booth et al., 2013, Doyle, 2003, McCormick et al., 2003, Campbell et al., 2003, Garside, 2008, Melendez-Torres et al., 2015, Thorne et al., 2004, Bondas and Hall, 2007a, Booth, 2013, Britten et al., 2002, Lee et al., 2015, Meadows-Oliver, 2015, Campbell et al., 2006 , Dixon-Woods et al., 2004, Finfgeld-Connett and Johnson, 2013, Kinn et al., 2013)

File S3. Supplementary information: the sample of 29 published meta-ethnographies analysed in 'Stage 2 Development and Application of Standards'

### Seminal meta-ethnographies

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Table S4. Supplementary information: explanatory notes for Phases 3-6 to accompany Part 2 of the guidance

No.	Criteria Headings	Supplementary data
<b>Phase 3 – Reading included studies</b>		
9	Reading and data extraction approach	<p>The systematic review findings in Stage 1 of the eMERGe project indicated that reading is not a discrete phase in meta-ethnography conduct (Noblit and Hare 1988, Toye et al. 2014). Reading is usually combined with identifying and recording primary study concepts (or metaphors or themes) and their context, e.g. (Atkins et al. 2008, Bondas and Hall 2007, Booth 2013, Britten et al. 2002, Kangasniemi et al. 2012), and has also been combined with quality appraisal of studies (Campbell et al. 2011) and judging the suitability of studies for inclusion in the meta-ethnography (Kangasniemi et al. 2012, Lee et al. 2015).</p> <p>There is currently no agreed, standardised terminology for some of the meta-ethnography analytical and synthesis processes. For example, a range of terms, such as themes, metaphors, or concepts, has been used for the conceptual data in primary studies by different reviewers. Reviewers should more clearly define their terminology to aid the reader’s understanding of the methodological processes (France et al. 2014).</p>
10	Presenting characteristics of included studies	<p>Meta-ethnography was designed specifically to preserve the contextual aspects of studies included in a synthesis because context is important to data interpretation (Noblit and Hare 1988). Noblit and Hare (1988) have contended that aggregative qualitative evidence syntheses were ‘context-stripping [and] impeded explanation and thus negated a true interpretive synthesis’ (Noblit and Hare 1988, p.23). This is why it is important for reviewers to describe the context of each included primary study (Atkins et al. 2008, Thorne et al. 2004), where those data are provided (context is often poorly reported in primary studies).</p>

<b>Phase 4 – Determining how studies are related</b>		
11	Process for determining how studies are related	<p>A common weakness in published meta-ethnographies is reviewers not describing if or how they determined how included studies are related (France et al. 2014).</p> <p>Noblit and Hare (1988) stated that primary studies may relate to one another in three main ways:</p> <ul style="list-style-type: none"> <li>• reciprocally (because they are about similar things),</li> <li>• refutationally (because they contradict one another)</li> <li>• or as a line of argument (because they are about different aspects of the topic being studied).</li> </ul> <p>Concepts from studies, the findings, and/or research paradigms and theoretical approaches adopted may relate to each other reciprocally or refutationally (Bondas and Hall 2007, Britten and Pope 2012, Finfgeld-Connett 2014, Noblit and Hare 1988).</p> <p>One example of a method for comparing studies is to juxtapose concepts from the primary studies in a grid in order to identify the relationship between them (Campbell et al. 2011). The way in which studies or concepts are related influences how the translation (Phase 5) is conducted.</p>
12	Outcome of relating studies	<p>Some authors of worked examples of meta-ethnographies have shown how they related the studies in a grid or table (Britten and Pope 2012, Erasmus 2014, Malpass et al. 2009).</p>

<b>Phase 5 – Translating studies into one another</b>		
13	Process of translating studies	<p>Our systematic review identified that translation is key, and possibly unique, to meta-ethnography compared to other qualitative evidence synthesis methodologies. Translations are not literal but idiomatic: interpreting meaning is central to translation (Noblit and Hare 1988). Reciprocal translation is used when primary studies are roughly about similar things (Noblit and Hare 1988, Britten and Pope 2012). The purpose of refutational translation is to explain and explore differences, incongruities and inconsistencies (Barnett-Page and Thomas 2009, Booth et al. 2013).</p> <p>The various methods of conducting reciprocal translation have not been formally compared in methodological research. Common to the different reciprocal translation methods is a process of comparing the meaning of each concept (or theme or metaphor) from the primary studies to all the concepts from other studies in turn in order to arrive at new and/or combined overarching concepts (Atkins et al. 2008, Campbell et al. 2003, Campbell et al. 2006, Garside 2008, Pope and Mays 2006).</p> <p>The eMERGe project found few published examples of refutational translation (Garside 2008, Wikberg and Bondas 2010).</p>
14	Outcome of translation	<p>Common pitfalls in published meta-ethnographies are: reviewers not clearly stating whose interpretation is being analysed or reported (France et al. 2014); and a lack of transparency in the development of a new interpretation/configuration of data (Kinn et al. 2013). There should be a “a clear auditable process linking findings to their originating studies...to assess the extent to which individual studies contribute to the synthesis, whether themes are present in multiple studies, particular findings are contradictory, or particular studies are outliers” (Booth et al. 2013, p.133). Reviewers should ensure that whose interpretation is being presented - that of the original research participants (sometimes called ‘first order constructs’), the authors of primary study accounts (‘second order constructs’), or the reviewers (‘third order constructs’) - is made clear for readers.</p>

Phase 6 – Synthesising translations		
15	Synthesis process	<p>Synthesising translations refers to “making a whole into something more than the parts alone imply... when the number of studies is large and the resultant translations numerous, the various translations can be compared with one another to determine if there are types of translations or if some metaphors and/or concepts are able to encompass those of other accounts” (Noblit and Hare 1988, p.29).</p> <p>If few translated concepts arise (from phase 5) then it may not be possible to conduct a synthesis.</p> <p>There is no single way to carry out the synthesis process – possible models include those by Atkins <i>et al</i> (2008), Britten <i>et al</i> (2002), Campbell <i>et al</i> (2011) and Toye <i>et al</i> (2014). How the synthesis of translations is conducted depends largely on the way translation was conducted. Translation and synthesis tend to happen simultaneously and in an iterative manner (Doyle 2003).</p> <p>Line of argument can be described as a synthesis which links translations and the reviewers’ interpretation. Some clear and detailed examples of how line of argument synthesis has been conducted can be found in Britten <i>et al</i> (2002), Campbell <i>et al</i> (2003) and Malpass <i>et al</i> (2009).</p> <p>The analysis and synthesis process appears to be best done collaboratively by a team (Atkins <i>et al.</i> 2008, Bondas and Hall 2007, Garside 2008, Toye <i>et al.</i> 2014) so that review findings are considered from alternative perspectives.</p>
16	Outcome of synthesis process	<p>The intention of meta-ethnography is to produce a new theory, interpretation or model, even if this was not ultimately possible (Atkins <i>et al.</i> 2008, Campbell <i>et al.</i> 2011, Malpass <i>et al.</i> 2009). Reviewers must be careful in stating that they are reporting new findings and be aware of the possible influence of findings from other authors on their own conclusions (Booth 2013). Sometimes a new interpretation might not be possible, for example, if ‘no new conceptual development had taken place following early conceptually-rich primary studies’ (France <i>et al.</i> 2014, p.11).</p>

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