



University of Dundee

Advancing the science of literature reviewing in social research

Bradbury-Jones, Caroline; Breckenridge, Jenna; Clark, Maria T.; Herber, Oliver Rudolf; Jones, Christine; Taylor, Julie

Published in:
International Journal of Social Research Methodology

DOI:
[10.1080/13645579.2019.1576328](https://doi.org/10.1080/13645579.2019.1576328)

Publication date:
2019

Document Version
Peer reviewed version

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):
Bradbury-Jones, C., Breckenridge, J., Clark, M. T., Herber, O. R., Jones, C., & Taylor, J. (2019). Advancing the science of literature reviewing in social research: the focused mapping review and synthesis. *International Journal of Social Research Methodology*, 22(5), 451-462. <https://doi.org/10.1080/13645579.2019.1576328>

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Advancing the Science of Literature Reviewing in Social Research: The Focused Mapping Review and Synthesis

Abstract

Literature reviews are an important and popular part of synthesising evidence across a range of disciplines. There are numerous approaches, each with their distinctive features and purposes. The aim of this article is to advance the science of literature reviewing by describing a new form of review: The 'Focused Mapping Review and Synthesis' (FMRS). We critique the approach and highlight its similarities and differences in relation to existing review methodologies. There are four key features of a FMRS. It: 1) focuses on a defined field of knowledge rather than a body of evidence; 2) creates a descriptive map or topography of key features of research within the field rather than a synthesis of findings; 3) comments on the overall approach to knowledge production rather than the state of the evidence; 4) examines this within a broader epistemological context. The FMRS can be used to answer questions that might not be appropriate for other review types and potentially offers a useful addition to the methodological toolkit of social researchers from multiple disciplines.

Keywords

Evidence, literature review, synthesis, scientific inquiry, knowledge synthesis, methodology, social research, mapping review

Author Accepted Manuscript of Bradbury-Jones, C, Breckenridge, J, Clark, MT, Herber, OR, Jones, C & Taylor, J 2019, 'Advancing the science of literature reviewing in social research: the focused mapping review and synthesis', *International Journal of Social Research Methodology*. <https://doi.org/10.1080/13645579.2019.1576328>

Introduction

In the mid-18th century, the Scottish naval surgeon James Lind was confronted with a wealth of reports about scurvy which required him to 'remove a great deal of rubbish' before he could publish the first landmark review entitled *A treatise of the scurvy* (Lind 1753, p.viii). Two decades later, the first medical review journal was published in the UK: *Medical and Philosophical Commentaries*. In the first edition, Andrew Duncan (1773, pp. 6-7) observed that evidence was 'scattered through a great number of volumes' and much of it was too expensive to be purchased. Now, more than two centuries later, overload of information and lack of open access to information continue to pose problems for researchers and clinicians; with 75 trials and 11 systematic reviews being published every day (Bastian, Glasziou & Chalmers 2010). Knowledge synthesis has thus become increasingly important, particularly since the advent of the evidence based practice movement (Chalmers, Hedges & Cooper 2002; Naylor 2001; Sackett, Straus, Richardson, Rosenberg & Haynes 2000) and the formation of the Cochrane Collaboration in the 1990s, a body which summarises the best quantitative research evidence to inform the most effective and efficient treatment choices.

As qualitative research approaches, originating first in anthropology and sociology, have gained popularity within other disciplines, the number of qualitative studies arising from fields such as education, management, medicine, nursing, allied health has proliferated (Noblit 2018). Vast quantities of qualitative research studies are published daily and the need to synthesise learning from these studies has grown, in order to: contain the information explosion; advance theory; abstract higher-order

conclusions from qualitative data; and inform evidence-based practice and policy (Major & Savin-Baden 2012). As a result, several literature review types have been developed during - and since - the 1990s. . Noblit and Hare's (1998) meta-ethnography was one of the first, leading the way for subsequent descriptions on the synthesising of qualitative research. The meta-synthesis of Walsh and Downe (2005) and the thematic synthesis of Thomas and Harden (2008) followed; building yet further the frameworks through which qualitative studies could be reviewed. Adding to these seminal papers, Whitemore and Knafli's (2005) integrative review, provided new insights into the combining of quantitative and qualitative research, which at the time helped quell the pervasive paradigm wars.

In 2005, Arksey and O'Malley (2005) detailed the nature of scoping studies and in so doing, referred to the plethora of available review types and their associated nomenclature at that time. A review of evidence synthesis methodologies by Grant and Booth in 2009 identified no less than 14 different approaches to reviewing the literature. More recently, Booth and colleagues (2016) laid out the critical requirements of 19 different review types, indicating that there is a proliferation of review types. However, as Grant and Booth (2009) suggest, there is still room for emerging precedent within the reviewing sphere, particularly as new review types are developed in response to changing needs, priorities and pressing global issues.

In this paper, we describe and name a new review type: the Focused Mapping Review and Synthesis (FMRS). As authors working in different disciplinary areas within health and social care, at times we have found ourselves trying to answer questions that have not lent themselves to empirical study or 'traditional' forms of review. These have tended to be questions about what is happening

methodologically or theoretically within our field, rather than questions about evidence of effectiveness. We sought a novel and pragmatic path to developing and describing new methods that would meet the demands of such review questions.

The process began with a project in which we sought to investigate the child protection research landscape in the UK (Jones, Taylor, MacKay, Soliman, Clayton, Gadda & Anderson 2010). Given the expanse of literature in this area (both academic and grey) and the wealth of literature stored outside the usual academic databases (websites and niche databases), a conventional mapping review to cover the entire field was impractical and unfeasible. Instead, we developed a highly focused and deliberately selective approach to literature reviewing, which we subsequently refined. Examples of its application are presented in Table 1. For the purpose of cross-reference these examples are presented as FMRS # 1-4.

[Insert Table 1]

Our aim in this paper is to present the FMRS as a new addition to the review tool bag detailing its unique approach to searching, appraisal, synthesis and analysis. In the paper we outline the aims, focus and limitations associated with a FMRS and draw on illustrative examples from our own work. To aid contextualisation, we make comparisons to other forms of review, providing illustrative examples where relevant. In the discussion section we utilise the SALSA (Search, Appraisal, Synthesis and Analysis) framework developed by Grant and Booth (2009) to differentiate FMRS from other types of review.

Overview of the FMRS approach

Literature reviews aim to provide an overview of the state of science concerning a certain topic and identify gaps in existing knowledge (Fawcett 2013). Similarly, the aim of the FMRS is to address epistemological questions that relate to a particular research field. This requires attention within the review process to not only theoretical and methodological issues, but often ethical and political issues (Soares & Yonekura 2011). There are four key features of a FMRS. It: (1) Focuses on a defined field of knowledge rather than a body of evidence; (2) Creates a descriptive map or topography of key features of research within the field rather than a synthesis of findings; (3) Comments on the overall approach to knowledge production rather than the state of the evidence; and (4) Examines this within a broader epistemological context. While, individually, each of these four defining features of FMRS share some similarities with other review types, when combined, we argue that they take on sufficient difference to warrant a new description and naming.

FMRS does not aim to synthesise the evidence of 'what works' in the way that systematic reviews might aim to do, but rather it seeks to identify the assumptions, boundaries and contours (its shape and form) within a body of research (theoretical, methodological, epistemological), and to develop a critical commentary on these assumptions, their application and their limitations. Assumptions, boundaries and contours form the mnemonic 'ABC' that helps capture an important feature of the FMRS.

The focus within a FMRS is on specific journals within a predetermined timeframe. The retrieved information is then mapped to create a contemporary synthesis of information within that field. The processes of identifying a focus, mapping and synthesising form the architecture of this approach, as shown in Table 2. These are

discussed further in the next section of the paper. Calibration is also an important feature at each step in the process and will be explored later.

[Insert Table 2]

As discussed, the FMRS shares some characteristics with other forms of review. It has similarities too with critical interpretive synthesis and meta-narrative approaches that examine a body of literature, rather than the details of individual studies. Like a scoping review, it provides an overview of what is out there on a particular topic (Perryman 2016). In the same vein as mapping reviews, it identifies linkages (Cooper 2016) and patterns (Perryman 2016) and it can be used to collate, describe and catalogue in the similar way to a systematic map (James, Randall & Haddaway 2016). It is also similar to Paterson and colleagues' (2001) description of Meta-Method and Meta-Theory that are concerned respectively with how methods and theories are utilised within a body of studies. With all this in mind, what is it that makes the FMRS sufficiently different to propose it as a new approach?

FMRS key steps: focus, mapping and synthesis

As the name suggests, a distinct feature of the FMRS is its focus, which is different to many other forms of review where a wide-casting net attempts to retrieve all relevant information on a subject. For example, unlike a critical review, it does not aim to demonstrate that the reviewer has 'extensively researched literature and critically evaluated its quality' (Grant & Booth 2009, p. 94). The types of questions that lend themselves to be answered by the FMRS require what we have described as the production of a 'snapshot' (FMRS #1& 2) or a 'profile picture' (FMRS #3).

The FMRS focus relates to two areas: timeframe and sources of information. The design and method are process-oriented and offer a panoramic view afforded by multiple sources. Developing clear assessment criteria for searching the literature is crucial. From the outset, the research objectives are set in alignment to search criteria. Critical questioning by all team members provides the collaborative means to peer-review and cross-disciplinary reflection.

Imposing time limits on searches is common practice in literature reviews (Aveyard 2014). Similarly, in our previous FMRS projects the timeframe has varied from three months (FMRS #1) to six years (FMRS #2), with the main criterion being the ability to answer the review question. For example, in FMRS #3 we had to restrict the timeframe to three months because the total number of articles became otherwise unwieldy to manage. A pragmatic approach is important. In review FMRS #4 we described the processes that help to define the timeframe. In that review, the lead reviewer accessed each journal to determine the likely numbers of relevant articles within a given timeframe (FMRS #4). We had initially set a six-month timeframe, but the scoping identified that this was likely to yield insufficient data. Extending the timeframe to several years would have overcome this, but was beyond the time resources of the small review team and may have compromised depth and quality. Ultimately, we decided on a time-period of one year for that particular review (FMRS #4).

Most forms of review search for evidence from multiple sources, facilitated by systematic database searches (Cooper, Booth Varley-Campbell, Britten & Garside 2018). A feature of the FMRS is to identify journals in advance according to their likelihood to contain the required information. This selectivity also allows the introduction of some quality assessment. One criterion that we have tended to use is

to select highest ranking journals in a particular field (FMRS #1, FMRS #2 & FMRS #4) as reported by Thompson Reuters InCites™ Journal Citation Reports (<https://jcr.incites.thomsonreuters.com/>). This has ranged from five journals (FMRS #1) to 13 (FMRS #4). While there are inherent biases in selecting journals according to this criterion, the justification is that we can gain insight into the nature of publications at the higher end of the field. It may be that some FMRSs demand different criteria on which to base journal selection, with the decision based on the review aim.

Undertaking an initial scoping of potential journals can assist in establishing the amount of relevant material contained within those journals in a given timeframe. This can inform the parameters of the FMRS in terms of focus and allow for some elasticity in the process. In our experience these early processes take some time. Regarding organisation, each team member has been responsible for three (or in some cases four) specific journals (FMRS #1).

Retrieval of articles involves a stepped process. This begins with chronological scrutiny of every journal issue within the specified timeframe. Titles, abstracts and key words are examined in order to identify articles that match the inclusion criteria. For example in one FMRS we included all papers (children and adults) that reported primary empirical research dealing with abuse, violence, death or dying, published in the six-year period from 1st January 2009 until 31st December 2014 (FMRS #2). As with all forms of review, full text download of eligible articles is then undertaken. We have also found it necessary to obtain full text articles where the inclusion eligibility is unclear. Through these processes our FMRS projects have included 32 (FMRS #4) to 102 (FMRS #3) and 104 (FMRS #2) articles. The initial scoping described earlier is a mechanism to ensure that the included articles meet the needs of the review,

balancing manageability with ability to answer the question. As with other forms of review, flowcharts can sometimes be useful in capturing the filtering of information involved in the process (Jones et al 2016).

Table 2 shows the need for ‘calibration’ as part of the focused stage, particularly around retrieval of articles. By this we refer to the need for frequent points of contact and deliberation among the review team in agreeing the parameters of the review. We have found it particularly important to calibrate for shared understandings about definitions and concepts. For example, in the review that investigated the scope of gender-based violence research in Europe (FMRS #4), although we had an agreed definition of what ‘gender-based violence’ means, further discussions were required to operationalise this as the review proceeded. This called for critical decisions (and agreement) about whether this was to mean all people (given that we all have a gender) or whether this was to be interpreted as violence against women. We decided on the latter, but it took multiple discussions to be confident that we were sufficiently calibrated to ensure reliability in retrieval processes. This example is an illustration of how the calibration exercise led to a refinement of a definition, i.e. rather than retrieving literature on “gender-based violence” it became apparent that the focus should be more specifically on “violence against women”. Hence, the calibration exercise forces the review team at an early stage to reflect on *a priori* knowledge and make assumptions explicit which would otherwise remain tacit.

We have already explored the difference between FMRS and other forms of review, particularly mapping reviews. Furthering our critique of mapping within a FMRS, the analogy with geographical patterns and landscapes is useful and aligns well with its ABC processes. In explaining how to deal with big data qualitatively, Davidson and

colleagues (2018, p.8) refer to the process of thematic mapping, likening it to geophysical surveying, whereby:

Geophysical surveying is an approach used by archaeologists to gain insight into a field of study without disturbing the landscape. The patterning of landscape features can be recorded, mapped and visualised from the surface to detect areas of interest for further investigation.

Conceptually, we see much of this in the FMRS and in terms of practical application, we have standardised our approach to the mapping process. Articles meeting the inclusion criteria are read in full and the assigned reviewer extracts data according to an abstraction pro forma that is produced specifically for the project. Table 3 shows the example from one of our reviews (FMRS #2). These are designed around the review question.

Calibration is important here again. Once the assigned reviewer has completed the abstraction from their selected source, the overall lead reviewer must appraise all articles against the inclusion criteria to agree those for final inclusion. This is an important way of ensuring reliability and a step we have completed for all the reviews. Additionally, as a form of reliability check, more than 10% of papers in the reviews were double-checked (distributed across the team). It is sometimes important to hold another calibration meeting at this point to agree any anomalies. In the language of Booth and colleagues (2013), at this stage it is important to turn attention to dissonance or the disconfirming case. For example, in one review where we were only interested in articles reporting qualitative studies (FMRS #3), we engaged in considerable debate about one particular article that was described by

the authors as qualitative, but included considerable quantitative data. Hence the need to calibrate our viewpoints on what constitutes 'qualitative research'.

Whether the extracted features are subject to quantitative and/or qualitative analysis will be dictated by the individual review. We have found that the snapshot profile that we have achieved in our reviews has lent itself more to qualitative description than statistical analysis, with the exception of some straightforward tabulation in some projects (FMRS #3). In reporting the team's earliest FMRS, the iterative nature of analysis was captured:

[A] typology of substantive topics was developed initially through a thematic analysis of 30 of the most recent child protection research papers. This was then tested and further developed through an iterative process whereby existing categories were refined and new categories added as research outputs were reviewed (Jones et al. 2016, p. 12).

Intertwined with analytic processes is mapping: the process of identifying and displaying the contours and boundaries within that particular body of literature. Mapping occurs across journals and we have displayed the results of mapping in various ways, most often in tabular form or through diagrammatic representation.

All our reviews have led to a synthesis of information that addresses the review questions and contributes new knowledge within our focused area of interest. As examples, in FMRS #1 as a result of the FMRS we were able to develop a typology of how theory is used in qualitative research and make inference about which approaches could be construed as more rigorous. In FMRS #3 we looked at the types of qualitative approaches that were being applied in health and social care research and arrived at a conceptual model for debate and education. To date we

have not appraised the included studies for quality because our purpose has been to profile what was happening in the field in each review, rather than to draw conclusions from the included studies' findings. However, we would not rule out the appropriateness of critical appraisal for future FMRS projects if it were appropriate to the specific review questions agreed at the outset.

Discussion

We present a description of the FMRS as a new addition to the methodological menu of literature review approaches outlined by Grant and Booth (2009). To demonstrate the features of the FMRS approach and ascertain its strengths and limitations, we use the SALSA (Search, Appraisal, Synthesis and Analysis) framework of Grant & Booth (2009), who argue that:

Clearer understanding of the distinguishing features of each review type can be built up within the systematic review community through both direct comparison and emerging precedent. (2009, p.104)

We will now consider each of the four elements of reviewing (Search, Appraisal, Synthesis and Analysis) in relation to the FMRS, making comparisons to other forms of review, to explore the opportunities and challenges presented by our new methodological approach. The distinct elements of the FMRS are summarised in Table 4.

[Insert Table 4]

Regarding the ‘Search’ component of the SALSA framework, we recognise that other researchers have used similar approaches, adopting a focused stance, with targeted journals. For example, in their extensive analysis of nursing literature, Richards and colleagues described the process that they labelled as a systematic literature review (Richards, Coulthard & Borglin 2014). However, from their description, although their review was indeed systematic in the way it was conducted, we suggest that it looks more like a FMRS than a conventional systematic review because eligible papers were obtained from *all* issues published in the top 20 rated nursing journals using impact factors reported in Journal Citation Reports for 2010. In a similar vein, Barbour and colleagues (2016) described their analysis of trial documentation as a descriptive study. On closer examination, however, it became apparent that reports of randomised controlled trials that were examined were published in 2011 in the six top rated general medical journals, based on impact factor. Polit’s (2017) descriptive analysis of clinical significance in nursing research included primary research articles published during 2016 in three non-speciality nursing journals with the highest 2015 impact factor. Following a process that mirrors that of a FMRS, Polit describes how a total of 362 articles were electronically searched for terms relating to statistical and clinical significance.

The list of reviews that share characteristics with the FMRS (in the sense that eligible papers were obtained by targeting specific journals) could be extended further to include the work of Carlsen and Glenton (2011) who focused on sample-size reporting, Lau and Trausen’s (2016) critique of contemporary qualitative health research and Tutarel (1999) who investigated the composition of board membership across countries. Ultimately, what this shows is that the features of the FMRS, exist already in the realm of qualitative synthesis. However, our paper offers a

technological advance within the methodological field of literature reviewing not so much in the use of the FMRS *per se*, but rather in naming it and detailing its architecture.

Regarding the 'Appraisal' component of the SALSA framework, the FMRS cannot be a sole endeavour because of the need for calibration. With consensus at the heart of the FMRS approach, it is essential that the review team embrace collaboration. It is important also, that they are willing to engage in debates when dissonance and discrepancies arise within the review process (Booth, Carroll, Ilott, Low & Cooper 2013). As Richards, Coulthard and Borglin (2014 p. 148) describe, in cases of 'uncertainty or disagreement' consensus can be achieved through the involvement of a third reviewer. Like other forms of review then, FMRS does not allow one or two individuals to undertake all of the review work, with additional authors on the periphery, and is thus an equaliser, requiring mutual respect, accountability and commitment from all reviewers. Its success hinges upon team co-operation and the individual and collective willingness to remain open and engage in debate during the appraisal process. This can of course be time consuming, but the multiple perspectives are invaluable and wholly necessary when grappling with high-level ideas and the ABC features of the FMRS.

Depending on the focus, mapping can bring together a disparate and diverse set of papers. For instance, a FMRS that focuses on mapping methodological approaches can bring together papers with similar methods, but from completely different substantive topic areas. These may also be spread across journals from different disciplines and it is therefore useful to engage a multi-disciplinary review team who

are knowledgeable about the disciplinary and methodological conventions within different fields, in order to ensure papers are interpreted and appraised in the right context. Multi-disciplinary teams composed of individuals from different disciplines contribute their disciplinary perspectives in an attempt to solving complex problems that homogenous teams cannot (Younglove-Webb, Gray, Abdalla & Ap 1999).

Unlike an exhaustive search strategy where it is not entirely possible to predict where papers will be retrieved from outside of the broad parameters of online search databases, the focused nature of the FMRS from the outset is conducive towards ensuring – rather than hoping – that the review team have the relevant backgrounds and expertise to extract, analyse and synthesise review data appropriately and with rigour. In this way, reviewers' skills can be matched more closely to support the focus of the review. It would be logical to assume that such close working and in-depth calibration meetings would necessitate face-to-face contact. However, in our team experience – at times working across four universities and three countries – we were able to connect successfully via regular email, teleconference and skype communications, without hampering the quality of our discussions. Trust within the review team is important, and so, having worked together previously can help to create a strong foundation for the review process. However, the highly co-operative nature of the FMRS approach itself means that trust can also be established quickly along the way; whilst some of our team had worked together before, others were brought together for the first time into new configurations.

Regarding the ‘Synthesis’ component of the SALSA framework, the FMRS has the benefit of taking a phenomenon and drawing ‘attention to its completeness within the literature’ (Taylor, Bradbury-Jones, Breckenridge, Jones & Herber 2016, p.3). It is not better than other forms of review; it simply forms a different purpose (FMRS #4). In terms of contribution to knowledge, our reviews have led to the synthesis of information either into a typology (FMRS #1) which has been presented in a tabular format with narrative commentary or a conceptual or theoretical model (FMRS #2 & FMRS #3) displayed in the form of a coordinate system consisting of four quadrants. One of our reviews has led to a thematic description (#4) typically described in narrative form. To aid the synthesis process, the scoping pro forma presented in Table 3 is useful. It allows the review team to systematically collect information relevant to the questions to be answered by the FMRS.

In relation to the ‘Analysis’ component of the SALSA framework, depending on FMRS review question, the analysis might seek to characterise the quality and/or quantity of the literature under review or to describe the current status of a field of enquiry. For example, in one project (FMRS #3) the aim of our study was to profile the alignment between researchers’ reported orientation (methodological or philosophical positioning) and the actual techniques used (methods) in order to determine the *quality* of qualitative research in health and social science literature. Another project (FMRS #2) sought to provide a snapshot of the extent (*quantity*) to which the issue of vicarious trauma was considered within the published literature.

Challenges and limitations of the FMRS

While having potential to advance the science of literature reviewing, the FMRS does have a number of challenges and limitations. Reviewers conducting a FMRS require

sound reasoning and decision-making skills to select the most appropriate search parameters to answer the review question. Because the FMRS focuses on a relatively narrow pool of literature sources, and does not include an exhaustive retrieval of abstracts, it is unlikely that reviewers will pick-up on missed items of relevance at a later stage. The review team must therefore have a strong justification for their focus that is closely aligned with the purpose of the review, whether narrowed according to, for example, journal, methodology, subject or date. This requires a strong conceptualisation of the review topic from the outset and a clear consensus and shared understanding amongst the review team right from the beginning of the review process. It also requires familiarity with the existing literature landscape and an awareness of the aims and scope of multiple potentially relevant journals to choose from, and how these differ. This is where a multi-disciplinary team is particularly useful in a FMRS; where different team members bring knowledge of, and familiarity with the scope, range and nature of literature within different disciplinary areas.

While we appreciate the diversity of review approaches that add value to constructing knowledge in a field, it could be argued that FMRS methodology is too narrow, at least in comparison to wider exhaustive searches of the literature.

Defining the *limits* of the focus has sometimes been a challenge. Well-defined search parameters have been required to constitute the focus and this has demanded reflexive whole team agreement. Collaborative, adaptive leadership is crucial. Incorporating multi-disciplinary perspectives on the limits of data collection and analysis set the boundaries of inquiry and enabled us to flexibly extend or collapse the scope of research.

In all our FMRS projects we have acknowledged the limitations of working with a limited amount of journals and a restricted time period. For example:

'It is the ability to answer the research question that is important. However, including more journals would almost certainly have revealed further interesting patterning than our review was able to provide. It is acknowledged that choice of journal introduces inherent bias.' (FMRS #4)

'The snap-shot is contextual and temporal and it could be argued that findings from this form of review are an artefact of the included journals: another timeframe with other journals would likely create a different profile.' (FMRS #3)

As noted in this last quotation, different journals using a different timeframe would create a different map. However, this is not a limitation *per se* and it is no more problematic than accepting that asking different questions of different participants in different contexts (either qualitatively or quantitatively) will yield different data. Moreover, as an extension and development of the FMRS, there is potential for citations to, and reference of included articles to be considered for inclusion. This retains the bounded nature of the review, yet offers a wider coverage. Overall, despite inherent limitations as acknowledged, we can argue from an experiential position, that the FMRS holds many benefits. Also, as an emergent review type, it is ripe for expansion and modification, as review teams deem appropriate.

In summary, the FMRS is useful for investigating complex research landscapes in the field of social research. It can be regarded as a methodological development that

responds to the need for focused, timely reviews that address a range of questions. The FMRS is helpful in exploring professional issues of multi-disciplinary concern, as shown in the reviews reported in Table 1. Because it is a collaborative endeavour, FMRS researchers must be open to flexible re-setting of search parameters in light of multiple perspectives. We hope other researchers will consider adopting FMRS and claim the method as a useful adjunct or alternative literature review method.

Conclusions

Kastner and colleagues (2012, p.1) posed the question: 'what is the most appropriate knowledge synthesis method to conduct a review?' The answer is that it depends on the questions being asked, but for some projects, the questions will lend themselves towards being answered by a FMRS. This will particularly be the case where the question being posed relates to epistemological concerns within a field of knowledge production. The FMRS can be used to investigate diverse issues relevant to, for example, medicine, nursing and health and social care, which gives it wide applicability.

We have begun to present details of the FMRS at conferences and the approach has been received with great enthusiasm among academic colleagues, who have asked when they can expect a paper to be published that details the approach. In naming and describing it in this article, we hope that the FMRS can be established as an identifiable form of review. In turn, it might become a useful and legitimate addition to the reviewing toolkit and the vocabulary of researchers from many disciplines who engage with social research methodologies.

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Table 1: Four reviews using FMRS

FMRS #	Article title	Timeframe	Number of journals	Number of papers included	Output
#1	Bradbury-Jones C., Taylor J. & Herber O. (2014) How theory is used and articulated in qualitative research: Development of a new typology. <i>Social Science & Medicine</i> , 120, 135-141.	3 months (2013)	Five	55	Typology
#2	Taylor, J., Bradbury-Jones, C., Breckenridge, J., Jones, C. & Herber, O.R. (2016) Risk of vicarious trauma in nursing research: A focused mapping review and synthesis. <i>Journal of Clinical Nursing</i> . 25(19-20), 2768-77.	Six years (2009-2014)	Six	104	Theoretical model
#3	Bradbury-Jones, C., Breckenridge, J., Clark, M.T., Herber, O.R., Wagstaff, C. & Taylor, J. (2017) The State of Qualitative Research in Health and Social Science Literature: A Focused Mapping Review and Synthesis. <i>International Journal of Social Research Methodology</i> . DOI:10.1080/13645579.2016.1270583	3 months (2015)	Six	102	Conceptual model

#4	Bradbury-Jones, C., Clark, M., Paavilainen, E. & Appleton, J. (2017) A Profile of Gender-based Violence Research in Europe: Findings from a Focused Mapping Review and Synthesis. <i>Trauma, Violence, & Abuse</i> . DOI: 10.1177/1524838017719234	12 months (2015)	Thirteen	32	Thematic description
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Table 2: Key steps of the FMRS

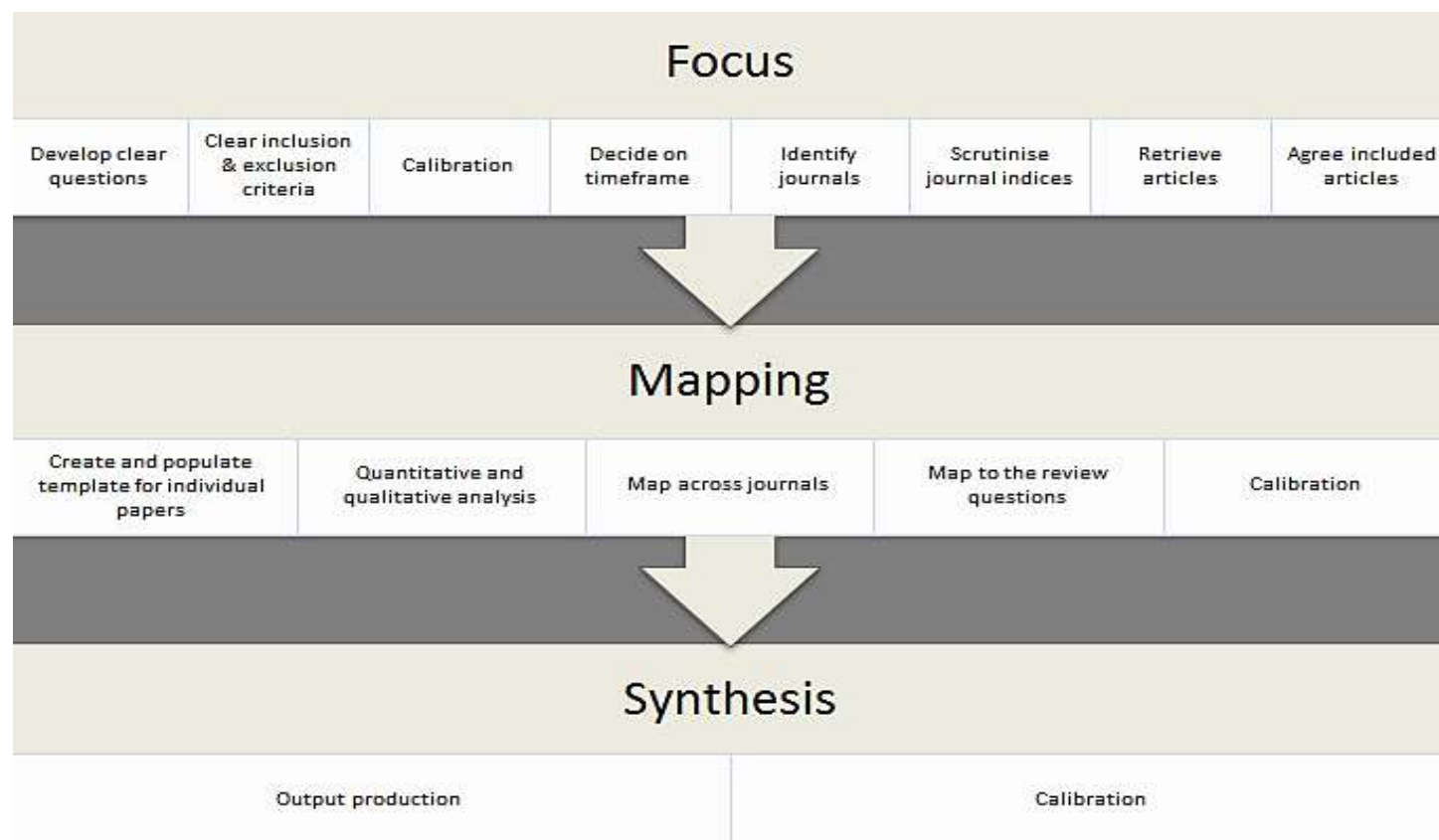


Table 3: Example pro forma for data extraction (adapted from Taylor et al. 2016)

Year of Journal	Total papers published during review period	Total papers meeting inclusion criteria	Number of papers dealing with abuse/violence (specify)	Number of papers dealing with dying/death (specify)	Number of papers involving children (0-18)	Number of papers involving adults (19+)	Number of papers that discuss vicarious trauma	Study design/methods used (name)	Method of analysis
Total									

Table 4: Key characteristics of the FMRS using the SALSA framework

Label	Description	Search	Appraisal	Synthesis	Analysis
Focused Mapping Review and Synthesis (FMRS)	Focuses on: 1) a defined field of knowledge rather than a body of evidence; 2) creates a descriptive map or topography of key features of research within the field rather than a synthesis of findings; 3) comments on the overall approach to knowledge production rather than the state of the evidence; and 4) examines this within a broader epistemological context.	Completeness of searching determined by chronological scrutiny of every issue within each target journal. Involves a stepped process: First, title, abstract and key words are examined, followed by retrieval of full-texts of eligible articles that match the inclusion criteria.	No formal quality assessment but critical appraisal may be considered in certain circumstances. Collaborative endeavour of a multi-disciplinary review team (with consensus at the heart of the FMRS approach). Need for calibration exercise.	Synthesises information about topics, designs and methodologies. Typically narrative; synthesis of information leads to a typology, a conceptual or theoretical model or a thematic description. Need for calibration exercise.	Iterative nature of analysis. Characterizes quantity and quality of literature, perhaps by study design and other key features or describes the current status of a field of enquiry.