Using meta-synthesis to support application of qualitative methods findings in practice: a discussion of meta-ethnography, narrative synthesis, and critical interpretive synthesis

Citation of final article:

This is the accepted manuscript.

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The final version of this article, as published in volume 51 of Arts in psychotherapy, is available online from: http://www.dx.doi.org/10.1016/j.aip.2016.07.003

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Using meta-synthesis to support application of qualitative methods findings in practice: A discussion of meta-ethnography, narrative synthesis, and critical interpretive synthesis.

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Highlights

- Meta-synthesis allows direct clinical applications from findings of qualitative studies
- Three types of meta-synthesis are presented; meta-ethnography, narrative synthesis, and critical interpretive synthesis
- Using procedures in this paper will enhance applicability of qualitative findings for service developers and therapists
Abstract

*Meta-synthesis* refers to a range of approaches by which existing qualitative studies in healthcare can be reviewed and compared. There is increasing use of meta-synthesis to ensure the clinical applicability of findings from qualitative studies, in healthcare generally, and in the creative arts therapies specifically. Qualitative method research can sometimes lack immediate clinical relevance, as such studies usually focus on the experiences of a small number of participants. Additionally, the results are often presented in great detail; finely elaborated, and described conceptually. Findings reported in this way can be engaging, and even emotionally compelling, however the utility of these outcomes for clinical practice can be limited. Meta-synthesis of multiple studies aims to ensure that findings from qualitative methods studies can be more easily, and effectively, applied in health and social care programs. Three approaches to meta-synthesis are briefly presented here; meta-ethnography, narrative synthesis, and critical interpretive synthesis. A procedure for presentation of meta-synthesis reviews is provided.

**Key words**

Heath service evaluation; qualitative research; meta-synthesis; creative arts therapy; meta-ethnography; narrative synthesis; critical interpretive synthesis
Introduction

Greater understanding of the procedures undertaken in meta-synthesis of qualitative studies, will assist in further transferability of qualitative research findings into creative arts therapy practice. Given the growing number of qualitative method studies in the creative arts therapies, the authors perceived value in presenting guidelines for meta-synthesis intended to be of use to journal reviewers, as well as practitioners, students, and researchers.

The brief overview of meta-synthesis methods presented in this paper is intended to support researchers, peer reviewers, research grant evaluators, research students, and practitioners, within the creative arts therapies, and potentially some related fields, to better understand the process of undertaking a meta-synthesis, and the minimum standards required in meta-synthesis reporting. Readers can use the paper to 1. Find out more about the types of meta-synthesis available, and/or 2. Consider how to prepare a report of a meta-synthesis for publication.

The paper briefly introduces three types of meta-synthesis and provides recent examples of these approaches. Minimal comparator information is provided. The reader is directed to Barnett-Page and Thomas (2009) for the most exhaustive comparator review of meta-synthesis methods to date. The information presented here is not intended as a definitive guide to conducting a meta-synthesis, rather it aims to advise how to commence such a study, and supports appropriate reporting of such studies. Researchers new to this approach should familiarize themselves with the procedures of the method chosen through further training and in-depth reading.
Meta is of Greek origin, meaning across or after (Merriam Webster online). Traditionally meta-analysis is a type of systematic review of research used within evidence based medicine to provide an evaluation of the efficacy of a treatment.

Systematic reviews adhere to a strict scientific design based on explicit, pre-specified and reproducible methods. Because of this, when carried out well, they provide reliable estimates about the effects of interventions so that conclusions are defensible.

(Centre for Reviews & Dissemination, 2009)

Meta-synthesis refers to a range of existing and emerging methods by which qualitative research studies in healthcare are integrated into a larger concept, with the goal of creating findings that are directly relevant to practice (Paterson et al, 2009). Through meta-synthesis, researchers use findings from published studies using qualitative method, to provide further evidence for the effectiveness of an approach within therapeutic work, a service delivery concept, or a specific treatment.

Meta-synthesis is a systematic method, beyond the scope of a literature review, through which the findings of a range of qualitative method studies on a topic can be evaluated, and presented. Additional insights can be gained from viewing the findings across multiple relevant studies. The goal of the meta-synthesis is to elicit novel understandings from comparison and synthesis of the findings of multiple studies. Barnett-Page and Thomas (2009) identified nine existing methods of meta-synthesis, and pointed to further emerging methods. The three methods chosen for this paper are covered in their overview, however the method described here as narrative synthesis they termed meta-narrative. Researchers seeking to use a meta-synthesis method to conduct a review are encouraged to read more widely than this paper, and to confirm terminology and method choice by consulting a wide range of sources.
Meta-synthesis seek to fuse both commonalities and contradictions across relevant studies in order to provide a transformative understanding of a topic or phenomenon of interest (Thorne, Jensen, Kearney, Noblit, & Sandelowski, 2003). The researcher provides fresh interpretations of the findings from the studies reviewed. The meta-synthesis goes beyond the traditional literature review in that additional interpretive and inductive analysis is expected. However, there are examples of earlier reflexive and interpretive literature reviews in the creative arts therapies which point to the development of the later meta-synthesis methods (e.g. O’Callaghan, 2009).

The use of meta-synthesis to guide the application of qualitative findings in healthcare has gradually built momentum and applicability (Noyes, et al., 2008). Service providers and healthcare agencies have sought further information beyond that provided in the meta-analysis of RCT’s. Usually qualitative studies are not intended to be generalizable. They use small sample sizes and are conducted with a view to depth rather than breadth. This is a caution when developing the meta-synthesis. When using small numbers of studies contacting the authors for further information assists credibility of the further findings.

When reporting the outcomes of the meta-synthesis transparency of process is emphasized, especially with regards the procedures followed (Higgins & Green, 2008). Arts-based methods are also encouraged to enhance information as to how the research “synthesizer puzzles together an interpretive account of qualitative studies” (Kinn, et al, 2013, p. 1285).

One of the first examples of meta-synthesis relating to creative arts therapies was presented by Meekums and Daniel (2011). They searched databases for research reports in any methodology about the arts for offenders, including creative arts therapy services. They found nine relevant papers that met their criteria. However, they lamented that in view of their rigorous
requirements for evaluation they “had to reject many pieces of work that are beautifully-written artistic accounts of artistic and therapeutic work, and of the positive effects of engagement with the arts for the individuals involved” (Meekums & Daniel, 2011). It is suggested that a less exhaustive criteria, and openness to arts-based analysis may have provided a workable solution to their disappointment in being unable to engage a wider body of relevant information. Authors are encouraged to find ways to include a wider range of studies, and authors of qualitative research reports need to ensure the minimum standards of reporting are met (Edwards, 2016).

Meta-synthesis reporting is designed to support service development based on research findings that (1) include service user perspectives, (2) acknowledge the complexity of healthcare service delivery, and (3) honor the often unique nature of the settings in which services are provided (Kinn, et al, 2013).

Methods chosen for review

Three methods were selected for review in this paper. The process to decide which methods to include was achieved through discussion between the authors. Our three choices were primarily led by identifying methods relevant to the creative arts therapies. The final decision was to focus on three methods; meta-ethnography, narrative synthesis, and critical interpretative synthesis. They are sufficiently different and have well described processes and research steps which permitted straightforward summary information to be presented. We decided against including Grounded Theory as it is one of the most common methods used in qualitative healthcare research (O’Callaghan, 2012), and its inclusion may have been confusing. We also only wanted to focus methods that permitted synthesis of findings from multiple studies with heterogeneous methods. The three methods are briefly presented below with reference to an
example, followed by a general guide for authors on the information to include when reporting a meta-synthesis of any method for publication.

**Meta-ethnography**

Meta-ethnography was specifically designed for use in small scale analyses, usually with fewer than 50 studies (Dixon-Woods et al, 2006). It is distinctive from other meta-synthesis procedures in that the qualitative reports used in the analysis are selected by the researchers for their relevance and integrity. Meta-ethnography has therefore been considered less comprehensive than other types of synthesis which rely on wide ranging database searches (Britten et al., 2002; Noblit & Hare, 1988).

In meta-ethnography the researcher synthesizes the findings from related qualitative studies by reflecting them into one another (Noblit & Hare, 1988). The thematic and conceptual material is compared and contrasted across the findings of the studies to generate new insights while at the same time preserving meaning (Kinn et al, 2013; Noblitt & Hare, 1988). Britten et al, (2010) proferred this explanation of the procedures used: “Interpretations and explanations in the original studies are treated as data, and are translated across several studies to produce a synthesis” (Britten et al., 2002, p. 210). Meta-ethnography was originally developed in education research (Noblitt & Hare, 1988). Meta-ethnography in healthcare research seeks to present findings that are directly applicable for practitioners (Britten et al., 2002; France, et al., 2014).

In meta-ethnography there are three key steps in conducting the analysis (Noblit & Hare, 1988):
1. **Reciprocal translational analysis.** The key metaphors, themes, or concepts reported in each study report are extracted. These concepts are then translated into each other. Judgements about the ability of the concept of one study to capture relevant concepts from the other studies are based on attributes of the themes. The concept most adequate between the multiple possibilities is identified and included.

2. **Refutational synthesis.** Where contradictions appear between the study reports, these are described, and the synthesizer elaborates and explains incongruities.

3. **Lines-of-argument synthesis.** The research synthesizer builds an elaborated interpretation that reflects the findings of the separate studies. The themes or categories that are most powerful in representing the entire dataset are identified by constant comparisons between individual accounts and the meta-themes or concepts.

The resultant synthesis presents an elaborated framework by which all of the concepts from the original research papers appear, but are unified by greater conceptual integration and practical applicability. Studies using meta-ethnography as the primary method of second order analysis have appeared in a range of healthcare topics including women’s experiences of traumatic birth (Elmir, Schmied, Wilkes, & Jackson, 2010), working with translation services (Brisset, Leanza, Laforest, 2013), and diabetes care (Vermeire, 2007). Kinn et al, (2013) have reported that meta-ethnography was the most commonly used meta-synthesis method in healthcare research.

In a recently completed meta-ethnography accepted for publication pending revisions (O’Callaghan et al, 2016), a research group undertook an analysis of five published reports of research conducted by some of the members of the author team. The method of the five studies
was Grounded Theory. Across the five studies, interviews were conducted with 138 participants comprising three groups, 1. People living with a diagnosis of cancer, 2. People caring for these people, and 3. People who had formerly had a carer role who were bereaved.

The meta-ethnography revealed how, when people are affected by cancer’s harsh effects, listening to or playing music can be a lifeline; music can support biopsychosocial and spiritual well-being, or for some people music can be experienced as elusive or difficult to engage. The findings of the meta-synthesis indicated that workers can improve cancer care services by offering music-based services that are responsive to patients and families. Additionally, it is important that workers can understand that when patients and carers alter their music behaviours this may signify additional support needs which workers need to have the capacity to respond to effectively (O’Callaghan, et al, 2016).

**Narrative Synthesis**

Narrative synthesis is a methodology that uses a text, or word-based approach to systematic reviews and synthesis of findings (Popay et al, 2006). The approach uses text or word based synthesis of findings from both qualitative methods and quantitative studies (Barnett-Page & Thomas, 2009; Popay at al, 2006), or, more usually, a thematic summary of findings from a review of qualitative studies (Lucas, Arai, Baird, Law & Roberts, 2007; Popay et al, 2006). Although the study itself usually has multiple data sources, the findings in narrative synthesis are reported in a narrative, story-telling, format.

Narrative synthesis differs from narrative review, which shares similarities with the traditional scholarly literature review. By comparison, narrative synthesis analyzes the results of individual studies in an in depth and systematic way, creating a final integrated presentation of
the findings (Barbour & Barbour, 2003). Popay et al (2006) defined four main elements in the narrative synthesis process: (1) developing a theory about why the intervention works and for whom, (2) developing a preliminary synthesis of findings of included studies, (3) exploring relationships in the data, and, (4) assessing the robustness of the synthesis. The authors assert that these elements are not a linear sequence rather that they constitute an iterative process. Theory building is often a much needed but neglected aspect of narrative synthesis.

In an example of narrative synthesis methods used to provide an overview of findings on art therapy and cancer symptom management, Wood, Molassiotis and Payne (2011) demonstrated how this approach could be used in an inclusive way to integrate and present findings from a range of methods. The steps the authors used to conduct the narrative synthesis are as follows:

- **a)** A search was conducted first on online databases for all art therapy studies using broad key words like art therapy and cancer. In additional hand searches and referrals were used to identify additional studies that might still be in progress or not available in online databases.

- **b)** Of the 77 papers found in the initial search, the authors removed all studies that referred to clinical care protocols or those that focused on caregivers. The final set of 14 journal papers in the synthesis included 5 qualitative and 9 quantitative studies that addressed social, emotional, existential/ spiritual and physical symptoms of patients with cancer.

- **c)** The studies were then analyzed by creating a matrix that provided a visual summary of the each study in terms of authors and country, research design,
participant characteristics, intervention, outcomes measures, results, and, quality appraisal.

d) Preliminary synthesis found that the studies used a range of data collection methods including surveys, questionnaires, interviews, biomarkers, and, artwork. The final narrative synthesis indicated that art therapy was being used in all stages of the cancer trajectory to address psychosocial symptoms associated with cancer survivorship but that the studies were very heterogeneous so comparisons of effect sizes was not possible. The narrative synthesis also identified that research in the field of art therapy and cancer symptoms was still in its infancy and further study was needed on outcomes for men using art therapy (most studies included women with breast cancer), the role of images in addressing health experiences, multi-site randomized controlled trials and the role of art therapy in addressing fatigue.

Narrative synthesis papers can be found in a range of disciplines in which large numbers of qualitative studies have been published, including nursing (Duran, 2013; Vallido, Wilkes, Carter, & Jackson, 2010), health care (Thorne et al, 2003), education (Scott-Little, Hamann, & Jurs, 2002), healthcare education (Weaver, Dy & Rosen, 2016), psychological therapies (Clark, Baker, & Taylor, 2016; Holding, Gregg, & Haddock, 2016; McDermott, Crellin, Ridder, & Orrell, 2013), palliative care (Belanger, Rodríguez, & Groleau, 2011; Davies, Maoi, Rait & Iliffe, 2014), primary care (Nagaraj & Barclay, 2011) and studies of patient health, quality of life, and well-being (Duran, 2013; Ferner, & Aronson, 2013; Sharp, Moran, Kuhn, & Barclay, 2013; Wiles, Cott, & Gibson, 2008). These studies indicate that narrative synthesis is an accepted method for undertaking meta-synthesis of qualitative and quantitative reports, and can provide an
accessible systematic review of studies on a specific topic.

**Critical Interpretive Synthesis**

Introduced by Dixon-Woods et al, (2006) Critical Interpretative Synthesis (CIS) was developed as a way to produce new findings from a large number of complex, and diverse, sources. CIS was originally intended to be a type of modified meta-ethnography. However, so many procedural and technical variations were introduced that, instead of identifying and reporting the refinements, it was decided to describe the approach as a new method (Dixon-Woods et al, 2006).

CIS both builds on, and deviates from, its meta-ethnographic roots, especially by including all materials relevant to the topic under investigation, for example, qualitative method and quantitative studies. A point of pride in CIS is the method’s fluidity and flexibility (Dixon-Woods et al, 2006). Although reviewers of paper should be able to find reference to the steps taken, these are not necessarily hierarchical or chronological, instead,

…[p]rocesses of question formulation, searching, selection, data extraction, critique and synthesis are characterised as iterative, interactive, dynamic and recursive rather than as fixed procedures to be accomplished in a pre-defined sequence.


The use of the term *critical* in CIS specifically references the expectation that the researcher(s) will identify and interrogate underlying assumptions in their own values and beliefs as well as those represented in the materials included in the review (Dixon-Woods, et al, 2006).
These include *normative assumptions*, and societal and cultural expectation implicit in the study’s use of terms, and reference to participants, services, and others.

The original paper in which the founding of CIS method was presented described CIS as providing way to understand the complexity of issues in access to healthcare (Dixon-Woods et al, 2006). Since that time further studies using CIS have explored the effectiveness of e-health interventions (Morrison, Yardley, Powell, & Michie, 2012), vision loss and risk in older people (Rudman et al, 2016), and difficulties faced by university students who have mental health problems (Markoulakis & Kirsh, 2013). CIS continues to be used across many studies in healthcare reporting, as it is useful for complex data sets, idiosyncratic topics, and aims to meet health bureaucracy’s need for findings which are “useful, rigorous, and relevant” (Dixon-Woods, et al. 2006 np).

However, in line with applications of other qualitative methods research in healthcare, some weaknesses in reports is noted. For example, Flemming (2010) undertook a CIS of effectiveness studies along with qualitative methods research reports to seek further information about the use of morphine to treat cancer pain. Nineteen qualitative studies were found and these were researched in relation to the existing effectiveness literature (Flemming, 2010). The steps of CIS were followed rigorously but it is confusing that Flemming chose to describe her approach as CIS. She provided no reflexive information, and did not elaborate why she chose to do the study. Without this information the basic criteria for a critical study was missing. In Dixon-Woods et al’s (2006) presentation of their first iteration of CIS the use of the self as researcher was identified as essential. It is therefore noted as a caution to those wanting to prepare CIS reports, and an advisory to those reviewing. It is essential that criticality is engaged in CIS. This does not only mean only taking a critical view of the research cited, but engaging criticality in all
steps of the research. There are many other methods in which this is not a requirement, and one of these may be a more suitable choice for researchers unsure or unaware of what criticality entails.

An example from the music therapy literature of the application of CIS includes a study of adolescent mental health and music preference (McFerran, Garrido & Saarikallio, 2016). After identifying 558 papers relevant to the theme the researchers used purposive sampling to choose 33 articles published since 2000. The papers were analyzed according to the type of method used – mixed, qualitative or quantitative – and then across two broad themes of 1. Type of music listened to, and 2. Musical behaviors. They also added other layers to the analysis including a review of the health outcome measures used. They developed and presented an organizational framework that showed how the type of study, the research question, and the method, predicted the outcomes. They criticized contemporary research in the area for accepting researcher assumptions without exploring or challenging these, and recommended that future research consider risk and protective factors in music behaviors and engagement.

Procedures for elaborating the method, and findings, in meta-synthesis reporting

In order to facilitate and support effective reporting of findings from a meta-synthesis, the following questions have been developed to assist authors in preparing the research report for publication. This guide helps only to structure the report, it is not intended to offer assistance in choosing the method, or including information essential to the method chosen, and the subsequent process of analysis.

1. **Why did the author want to undertake the synthesis?** While most meta-syntheses will be guided by a research question, Popay et al (2006) suggested starting the synthesis
report by outlining the theoretical framework, or approach to the synthesis. Describing how or whether this was revised during the search is required. Researchers should be able to describe their personal motivation or professional experience that sparked interest in the topic. This is often described in qualitative research as *relevance* (for example, Kvale, 1996). In CIS this is especially emphasized.

2. **What was the method used?** There are several approaches to conducting a meta-synthesis, and many further beyond the three described above (Barnett-Page & Thomas, 2009). Throne et al (2004) have defined a number of concrete steps to be taken, including (1) defining the problem, (2) identifying the inclusion criteria for studies, (3) describing retrieval processes, (4) using a common approach to describing study characteristics, (5) a systematic process for coding studies and reporting findings, (6) findings are synthesized (7) the effectiveness is determined by the extent to which it creates a new conceptualization of the problem. However, different methods may offer alternative guidelines to these. For example, some methods encourage the use of qualitative findings along with quantitative, and some, such as meta-ethnography encourage the researchers to choose relevant studies, rather than undertaking exhaustive searches.

3. **What were the steps taken to find the literature?** Some tools and techniques for conducting narrative synthesis from qualitative studies include: using keywords to identify research from appropriate databases, and searching key authors to see if they have published earlier or further studies (Popay et al, 2006). Each of the initial studies found is examined closely to ensure they are directly relevant to the research question. The distillation of studies from the initial search to those used for the actual meta-synthesis is conducted judiciously. Researchers need to report their selection criteria and
to identify techniques for whittling down the initial sources such as; removing duplicates, and removing studies that do not meet strict study inclusion criteria.

4. **What were the procedures of analysis?** Provide an example, or a breakdown in a table, of how the material was developed. For example, a matrix used might include the format used to analyse the content and quality of each study. Identify that the selected articles were read by the authors, and how the subsequent analysis was conducted. Usually the studies are coded systematically to identify recurring themes in the findings.

<table>
<thead>
<tr>
<th>Authors, year, &amp; location</th>
<th>Purpose of study</th>
<th>Study design/ type of analysis</th>
<th>Participants (sample size, demographics, characteristics)</th>
<th>Main findings/ patient outcomes</th>
<th>Appraisal of quality of study and implications</th>
</tr>
</thead>
</table>

5. **What were the findings?** Findings are synthesised to identify the main outcomes across studies, including the extent to which these findings are applicable, and useful, for further research and practice. Rating the quality of the findings using existing criteria such as Gough’s *weight of evidence* (Gough, 2007) can be valuable. In Gough’s schema (2007), the researcher assesses (1) the quality of evidence in terms of the implementation of the study, (2) the appropriateness of methods, and (3) the fit with the meta-synthesis question. Findings can be reported as overarching themes, or in a visually diagrammatic framework, that presents themes by time period of intervention, population, type of intervention, or other relevant domains.

6. **How are the findings relevant to clinicians, and/or service development?** The findings can be reported as relevant to research, or can present solutions to practice issues
with a specific cohort or context. Analysis and dissemination using creative techniques has also been promoted (Kinn, et al, 2013). Kinn et al (2013) liken synthesis to creating a *collage of meaning*. Incorporating artistic techniques into the process of reporting can capture, and represent, the complexity of qualitative research findings, moving towards arts based inquiry (Ledger & Edwards, 2011; McCaffrey & Edwards, 2015). This is especially relevant to synthesis of creative arts therapy research, as metaphor and symbolism are integral within clinical practice.

7. **What are the gaps that future research might further explore?** While the authors agree that a report of the limitations of the study might offer an insight into optimal undertaking of a future studies, the role of the final section of the meta-synthesis is to consider future directions. Recommendations as to methods, populations, inclusion criteria, for future research are welcomed in the report.

When submitting for publication, authors are additionally encouraged to include the method of the meta-synthesis in the title of the paper, and to use *meta-synthesis* in the key words.

**Conclusion**

A meta-synthesis can provide a valuable overview of existing findings and new insights around a specific topic. This paper has presented and discussed three types of meta-synthesis. All methods, within the broad range of meta-synthesis approaches available, “represent an inductive way of comparing, contrasting, and translating the original authors’ understanding of key metaphors, phrases, ideas, concepts, and findings across studies.” (Kinn, et al. 2013, p. 1287). There are a range of further relevant methods within meta-synthesis approaches that are beyond the scope of this paper to identify and review. Before commencing a meta-synthesis, researchers
new to its parameters, should seek to identify and review the various types beyond the three represented here to ensure they have chosen the most appropriate method.

This brief overview was unable to present the various debates and criticisms of meta-synthesis, and the threat, perceived in some quarters of the social sciences in healthcare research community, regarding the utility and validity of such processes of synthesis. Readers are encouraged to seek out debates around representation of findings, to further refine their understanding.

Researchers new to meta-synthesis may benefit from finding an existing published report, and using its structure to scaffold their design, rather than only following our recommended procedure which lacks attention to ontological and epistemological concerns. When presenting the final report, following the guidelines presented above will ensure the research is communicated with relevance, integrity, and scholarly rigor to the widest audience possible. Researchers should act courageously in undertaking analysis, and especially if from the Creative Arts Therapies, should engage arts based responses where possible.
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doi: 10.1136/bmj.f7274


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