8.1 Introduction to mixed methods systematic reviews

Decision-makers who use systematic reviews increasingly argue for a more comprehensive synthesis of the evidence than that currently offered by single method reviews (Dixon-Woods et al., 2005). This is particularly evident in the areas of public health and social policy that deal with complex interventions. A range of methodologies are available that incorporate multiple study designs/types of data including integrative literature reviews (which can include both empirical and theoretical studies with limited formal methods on combining data) (Broome, 2000), comprehensive literature reviews/systematic reviews (where no formal combination or integration of data is undertaken) and mixed methods reviews (where data is combined and integrated together in a more formalized manner). Systematic reviews aim to provide unbiased syntheses of studies/evidence using rigorous and transparent methods as opposed to literature reviews that are largely subjective and unrepeatable. Mixed methods systematic reviews (MMSR) can bring together the findings of effectiveness (quantitative evidence) and patient, family, staff or other’s experience (qualitative evidence) to enhance their usefulness to decision-makers (Bressan et al., 2016). In addition to this movement for MMSR, there is an increasing focus on the different types of information that guideline developers need when making a decision, such as feasibility, priority, cost effectiveness, impact on equity, acceptability (Alonso-Coello et al., 2016) and patient values and preferences (Zhang et al., 2018). Integrating data in response to these different types of questions into a single synthesis would be incredibly useful for guideline development groups and decision makers.

Systematic reviews addressing questions of experience, (qualitative) and effectiveness (quantitative) have specific purposes but increasingly both perspectives are required to inform clinical, policy or organizational decisions. For example, although quantitative evidence suggests that the use of larval therapy is both clinically effective and cost-effective for the debridement of wounds (Adela, 2017; Arabloo et al., 2016; Sun et al., 2014; Tian et al., 2013; Wilasrusmee et al., 2014), evidence from qualitative studies indicates that negative experiences and perceptions impact on the acceptability of the therapy. Some studies indicate feelings of distaste and disgust associated with maggots influence patients’ decisions to reject the therapy or impact negatively on their experience of the therapy (McCaughan et al., 2015; Menon, 2012).

Mixed method systematic review methodology is an emerging field of enquiry; MMSR are also referred to as mixed methods research syntheses (Heyvaert et al., 2013), mixed studies reviews (Pluye & Hong, 2014) and mixed research syntheses (Sandelowski et al., 2006). While there is a degree of complexity in conducting MMSR, the core intention is to combine quantitative and qualitative data (from primary studies) or integrate quantitative evidence and qualitative evidence to create a breadth and depth of understanding that can confirm or dispute evidence and ultimately answer the review question/s posed.

Mixed methods reviews represent an important development for individuals engaged in evidence synthesis for healthcare as they attempt to increase the usefulness of their findings and the ability of those findings to inform policy and practice. Similarly, Sandelowski et al. 2013 suggest that the methodological inclusiveness characteristic of MMSR is particularly relevant to international organizations as this broad conceptualization of evidence increases accessibility and utility by a wider range of end users.

Through the development of a well-structured MMSR, the numerical data inherent in the positivist paradigm can support or endorse the equally important opinions and perspectives presented in interpretive and critical paradigms and vice versa. This has the potential to produce more informative conclusions than those derived from evidence presented in autonomous modes of synthesis, i.e. effectiveness systematic reviews and experiential systematic reviews.

Dependent on the nature of the review question (discussed in more depth in Section 8.3) MMSRs allow for:

- an examination of the degree of agreement between quantitative and qualitative data to validate or triangulate results/findings,
- identification of discrepancies within the available evidence,
- determination of whether the quantitative and qualitative data address different aspects of a phenomenon of interest, and
- one type of data that can explore, contextualize or explain the findings of the other type of data.

Although MMSR are gaining traction among healthcare professionals due to their usefulness and practicality, guidance regarding the methodology of combining quantitative and qualitative data is limited and largely at the theoretical stage (Hong et al., 2017).