CASE STUDY 10.1

Thematic synthesis of primary studies: An example of children's views of healthy eating

Source: Thomas, J. and Harden, A. (2008) 'Methods for the thematic synthesis of qualitative research in systematic reviews', *BMC Medical Research Methodology*, 8: 45.

The synthesis of primary research to assess evidence for effectiveness is well established, but methods for integrating primary qualitative data are less well developed. James Thomas and Angela Harden argue that policy-makers also need evidence on the likely acceptability and appropriateness of interventions in order to facilitate evidence-based policy-making, and that this is currently dispersed across qualitative literature that is unlikely to be read by those who could benefit from its insights. They therefore developed an approach called 'thematic synthesis', for synthesizing primary data in a way which reproduces the rigour and explicit procedures of systematic reviewing, but utilizes the principles of qualitative analysis.

The example they take is a review of children's views about healthy eating, which was undertaken to identify facilitators and barriers to healthy eating in order to inform potential interventions. The relevant literature was identified by a variety of means, including searching grey literature, books and asking for further recommendations from authors of

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identified studies. The logic for searching was essentially a qualitative approach to sampling. Rather than aiming to include all published literature (as would be needed for a quantitative review for effectiveness), the aim was to include enough literature for conceptual saturation, thus aiming for a maximum variation sample which deliberately sought to include 'deviant cases'. The eight relevant studies identified were then assessed for quality, in terms of whether they adequately represented the views of participants (i.e. that the study was appropriate for the review). The review did not analyse primary data from the original studies, but rather, for each study, analysed all the text included in the 'Findings' or 'Results' section of the report. These sections were uploaded for analysis.

A qualitative approach to thematic analysis then used similar principles to those that would be used for primary data (see Chapter 8). This was a three-step process, starting with a detailed line-by-line coding of the text uploaded from each report. Each line was assigned a code, and reviewing was undertaken by three researchers to assess reliability. A total of 36 descriptive codes were identified in this way, such as 'good and bad foods', 'foods in the school', 'breaking rules and asserting independence'. Step two was sorting these codes into hierarchical trees under 12 descriptive summary themes. Although Thomas and Harden had intended to conduct a deductive analysis, focusing on barriers to and facilitators of healthy eating, they found that few studies addressed this directly. Instead, they derived the descriptive codes and themes inductively, from what was reported in the studies. In the third step, they moved back to a more deductive analysis, by interpreting these 12 themes in terms of their original questions about barriers and facilitators. This step involved generating analytical themes from inferences about the descriptive findings of the studies included in the review. This was done iteratively by the group identifying interpretative themes, checking these against the descriptive themes that reflected the primary data, and then further refining their interpretations. Six analytical themes were identified, which included 'children do not see it as their role to be interested in health', 'fruit, vegetables and confectionary have very different meanings for children' and 'children value eating as a social occasion'. From these six main integrating themes, they could identify implications for developing interventions, such as that 'healthy eating messages should not focus on health warnings, or group together fruit and vegetables'.

Thematic synthesis is thus a method for generating a summary of available qualitative evidence on a particular topic in ways that might be used by policy-makers and each step of the process 'preserves an explicit and transparent link between conclusions and the text of the primary studies'. It shares many features with other approaches to synthesis, including systematic reviews of qualitative empirical studies, although these often do not have a step of interpretive analysis. Thomas and Harden suggest that the third step of integrating the concepts identified in the primary studies is needed when those primary studies are not explicitly addressing the research question for the review. For integrating research outputs that do address the review question, it may be sufficient to simply group them together. Finally, they distinguish their final step of developing analytical themes from 'third order integration' found in meta-ethnography. Whereas the latter is typically a process for reviewing theoretical literature, their step of analytical themes is orientated to an empirical question in a review.

Reflective questions

Suppose that you are bidding for funding for a research project investigating why there is such poor uptake of training offered by 'expert patient programmes' for people with

chronic non-communicable diseases. You are including a systematic synthesis of the qualitative data and the funders have asked you to clarify why this has been included. Explain, in a brief note, why this is important for your research design, what kind of things you will seek out for review and why it is not necessary to review every single bit of evidence. What value do you feel taking a 'qualitative sampling approach' has over taking a more usual 'systematic review' approach? If you were a funder would you be happy to fund such an approach? How would you justify it to your more sceptical colleagues?

Feedback

It is necessary to include a systematic synthesis of the qualitative data because: otherwise you run the risk of repeating what has already been done, rather than adding to the existing body of knowledge; you will seek out evidence/findings from a broad range of contexts; you are interested in all the possible views that have been expressed on this issue. The value of a sampling approach is that the research question does not require counting instances of an event or view but summarizing the range of interpretations, and where this has not already been done, further synthesizing them to address the specific research topic or question. As a funder, this approach would provide a useful summary, or synthesis, of previously identified qualitative themes because it is the range of *meanings* of things in which you are interested.

CASE STUDY 10.2

Integrating the findings of qualitative studies to produce generalizable theoretical constructs: An example of evaluations of telemedicine

Source: May, C., Harrison, R. and Finch, T. et al. (2003) 'Understanding the normalization of telemedicine services through qualitative evaluation', *Journal of the American Medical Informatics Association*, 10: 596–604.

'Telemedicine' refers to a range of information and communication technologies that enable health care to be provided at a distance, either by facilitating real time communication between clinicians and patients in different physical locations, or by transmitting images or data to distant sites. A large number of trials of telecommunications in clinical practice have been instigated in the UK, but few methods have

been widely adopted as routine practice. Carl May and colleagues were interested in why these innovations – despite the promise of addressing real limitations in health care delivery – have failed to be 'normalized'. They note that evidence on the effectiveness of telemedicine for achieving good clinical outcomes is relatively weak, in that there have been few well-designed randomized controlled trials. However, they suggest that evidence on effectiveness is not a sufficient condition for change in practice, given that research in other areas has shown that innovations do not get adopted simply because 'they work': to be routinized as part of everyday practice, innovations have to be integrated into the complex networks of health system delivery and local health services such that they become just another normal part of health care, rather than a special innovation.

To address the question of what conditions would enable telemedicine to be normalized as part of routine clinical practice, May and colleagues drew on the qualitative body of evidence that has accumulated on the process of implementing telemedicine. Much of this has been generated in the context of evaluations of innovative service delivery. Specifically, they drew on three studies (conducted by two teams of researchers) which between them include data on 11 different UK sites, and a range of different primary, secondary and tertiary clinical specialties. Although the three studies had somewhat different aims and were embedded in different programmes of research, they all used a range of ethnographic methods to generate data, including formal in-depth or semi-structured interviews, participant observation, documentary analysis, and analysis of video-recorded consultations.

To develop a generalized theory of the conditions under which telemedicine becomes embedded in clinical practice (or not), the research team describe their approach as 'developing iteratively a series of propositions that were tested, study against study' in team discussions. They then developed an initial model of the conditions necessary for normalization. Finally, this initial model was tested by re-analysis of the data. This process draws on the constant comparative method of data analysis (see Chapter 9), in that it involved a process of hypothesis generation and testing from the data. Here, however, the data were already generated.

Re-analysis of the corpus of data from these three studies generated a more generalizable understanding of the processes by which telemedicine does or does not get incorporated into practice. First, because innovations in the UK were typically delivered as part of research studies, with little evaluation to date of their effectiveness or cost-effectiveness, clinicians were often reluctant to adopt new routines. Second, existing models of health care delivery typically presented a large number of organizational challenges for integrating the technologies of telemedicine: challenges which were usually underestimated by its proponents. Only where local champions of new systems had sufficient power and good networks with clinicians were they able to change organizational models of delivery such that telemedicine becomes integrated into practice, rather than merely seen as a burdensome trial. Where the technology is seen as experimental, its legitimacy remains dubious as part of routine care. Routinizing care required new ways of working, with clinicians (nurses, general practitioners, specialists) having to change what they did. In the short term, this adds to workload, rather than reducing it, which does not foster adoption. Ways of working with patients are also disrupted, as new communication styles have to be developed in order to communicate using video-conferencing, or with different combinations of clinical staff interacting. Interaction between patient and doctor, or

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between doctors, follow particular styles in different kinds of clinic, and these were disrupted by the change from face-to-face real time consultation to one mediated by new technologies.

By analysing the data from three studies, and testing emerging propositions about the processes of telemedicine use against their data, May and colleagues argue that they are able to generalize some theoretical constructs about the conditions under which telemedicine becomes normalized in practice. These relate to: the implementation of telemedicine depending on good networks with policy sponsors; integration into organizational structures; development of the network of those who will deliver the service, with clear roles defined; and the development of new procedures and protocols to incorporate telemedicine. Where any of these does not happen, they propose, telemedicine (however effective in terms of a local trial) is unlikely to be normalized as part of routine practice.

This approach to integrating the data from qualitative studies demonstrates the value of drawing on a larger body of data than could be generated by one single study. By testing propositions iteratively against the whole data set, May and colleagues were able to develop some more generalizable theory, and could formulate this as a set of propositions, which can then be further tested in other settings. Although their case studies were all from the UK National Health Service, by presenting detailed examples from their data, other research users can assess how far they are likely to hold for other contexts.

Reflective questions

Would you characterise this as primary research, or a review?

Feedback

This study is somewhat unusual in that it uses qualitative evidence to assess effectiveness and also combines it with data from more ethnographic studies to try and make sense of the puzzle they are addressing (i.e. why are some innovations not adopted).

This study did not carry out any primary research of its own, and yet was still able to produce 'new knowledge' from an analysis of a group of other research findings.

Thus drawing on a *range* of data as well as different *levels* of data and combining them might also be a productive way to deepen understanding.