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TWELVE TIPS

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Twelve tips for using rapid research methods in health professions education

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ABSTRACT
Information may be required within a short time-frame for making decisions about programmes and interventions in health professions education. Rapid research methods have been increasingly used in healthcare, especially for qualitative research studies and literature reviews. An essential aspect of using rapid research methods is pragmatism, in which there is a balance between the constraints of the short time frame (typically less than 3 months), the available resources, and the rigour for an appropriate standard of quality. Achieving this balance requires careful attention to the design of the research, including clarification of the decision-maker's information needs and the use of rapid methods for literature review, selection of participants, and data collection and analysis. The intention of the article is to provide a practical guide for how rapid research methods for qualitative research studies and literature reviews can be adapted for health professions education.

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Introduction

Decision- makers may require research to be conducted within a short time-frame, with the intention to use the findings for informing their thinking and planning (Bell 2009; Althaus et al. 2022). However, research can take many months from design to dissemination, and also often require substantial allocation of resources, especially financial. In response to this challenge, there has been increasing interest over the last 20 years in the use of Rapid Research Methods (RRM) as a broad research approach for qualitative research studies and literature reviews to provide timely and useful information for informing decision-making (Vindrola-Padros and Johnson 2020; Vindrola-Padros 2021b). There has been widespread adoption of RRM during a wide variety of humanitarian crises and public health emergencies, such as the Covid-19 pandemic, but increasingly they have also been applied to healthcare organisation and delivery, such as improving the dynamics of multi-disciplinary team working (Beebe 2014; Vindrola-Padros 2021b; Vindrola-Padros et al. 2021).

Several common features have been identified that differentiate RRM from other research approaches: (Vindrola-Padros and Vindrola-Padros 2018):

- The research has been conducted within a short time-frame (less than one month to 90 days)
- Qualitative, mixed-methods and literature reviews have been the main methodological approaches
- Multiple sources have been used to collect the qualitative data
- The research process has been clearly reported
- More than one researcher has often been involved to save time and cross-check data.

The unique feature of RRM is that familiar qualitative research methods and literature reviews have been adapted to allow the research to be conducted within a short time-frame, which is usually less than 2-3 months. Examples of these adaptations include interviewing a small selection of key respondents or limiting the number of databases for a literature search. Both decision-makers and researchers have accepted the importance of having a pragmatic balance between having sufficient information from the research for making a decision with the confidence that this information has appropriate rigour. It is important to always consider if the use of RRM are appropriate for the information needs and research questions of the decision-makers.

Our experience is that many researchers in health professions education (HPE) are likely to be required to conduct qualitative research and literature reviews for providing information for a variety of decision-makers, such as module leaders and programme directors, within a short time-frame. This situation is similar to healthcare but, despite the potential usefulness of RRM in HPE, there appears to be limited familiarity and engagement with RRM in HPE. The use of RRM in HPE have been mainly rapid literature reviews (Bastos et al. 2022). However, there have been a few qualitative research studies in HPE, with a focus on understanding team clinical reasoning (Choi et al. 2023), curriculum change during the Covid-19 pandemic (Zhou et al. 2021) and an evaluation of an undergraduate patient safety rotation (Dysinger and Pappas 2011).

We have become increasingly interested in adapting RRM in our HPE research practice and consider that there is also potential for adapting the use of RRM to the many research projects in HPE that are expected to be conducted

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within a short-time scale and with limited resources, such as student projects and the scholarly projects that many junior health professionals are required to conduct. Overall, we recommend that HPE researchers have some prior experience in qualitative research methods and conducting literature reviews before embarking on using RRM.

In this article, we present a practical summary of current best practice for the use of RRM which is based on both our experience of using RRM in HPE (Sandars and Goh 2020) and relevant publications related to the use of RRM non-HPE contexts. We hope that the article will stimulate and guide researchers in using RRM in HPE but also inform decision-makers about the rationale for using the information obtained by RRM. Our Tips assume a basic understanding of research methods, with each Tip discussing how these have been adapted for the use of RRM.

Tip 1

Ensure the topic is suitable for using RRM in health professions education

RRM are intended to be used when the topic requires a qualitative research study or literature review to be conducted over a short time-frame and that the information obtained from the research will be sufficient to inform decision-making (Beebe 2014; Vindrola-Padros 2021b). For example, a programme leader may wish to evaluate the programme from a learner's perspective or a module leader may need to rapidly understand why learners are struggling to learn a specific skill during a new clinical procedure simulation so that the simulation can be modified before the next cohort of students.

An essential aspect of deciding whether RRM are appropriate for a topic is the extent to which the audience of the findings consider that the information will be sufficient to inform their understanding and for taking action. The main pragmatic consideration is the reconciliation of the competing demands of time and the feasibility of conducting research within the short time-frame, and also the available resources (Beebe 2014; Vindrola-Padros 2021b). The use of RRM are not intended to replace and become a substitute for the use of well-designed qualitative research studies, such as ethnographic studies, systematic literature reviews and experimental research studies.

Tip 2

Have a philosophical understanding for using RRM

All research, including the use of RRM, is underpinned by philosophical assumptions about the nature of reality (ontology) and also knowledge and truth (epistemology) (Clift et al. 2021). An understanding of these assumptions is important for the justification of RRM as an appropriate research approach, both for researchers wishing to use RRM and also decision-makers.

a. The reality being studied by research is highly dependent on its 'temporality', which is the snapshot or moment in time during which data has been being collected. This highlights that all research can only provide a time-limited snapshot of reality (Vindrola-Padros 2021a; Vindrola-Padros 2021b). An important consideration when using RRM is that there is no guarantee that the research will be closer to the reality of the situation if there was a longer time-frame for the study (Clift et al. 2021; Vindrola-Padros, 2021a, 2021b).
b. The epistemology considers the extent to which the findings are considered to be a valid representation of the reality of the situation and this requires demonstration that the research process has maintained appropriate rigour (Vindrola-Padros 2021a, 2021b). A discussion of how rigour can be maintained when conducting a rapid qualitative study or rapid literature review is presented in the relevant Tips.

Overall, the justification of RRM as an appropriate research approach is that it is a pragmatic response for providing timely information to inform decision-making. This concept is aligned to 'useful knowledge', which refers to the extent to which information has practical relevance when making a decision (Kilmann 1983). Despite the short time-frame constraints, rigour can be built in and maintained, and this can be demonstrated by explicitly describing the research process and methods, with a critical discussion of its strengths and limitations.

Tip 3

Focus the research questions on the expectations of the main decision-makers

Early engagement with the main decision-makers to clarify their expectations about the depth and breadth of the research is essential (Patton 2008; Vindrola-Padros 2021b). One of the reasons stated by decision-makers for not applying the information provided by researchers is that it does not answer their specific needs (Bell 2009).

An important practical aspect is that the specific information needs of the decision-makers will focus the research questions, which will direct how the study can be conducted, with consideration of the sample and the methods of data collection and analysis. This clarity about expectations will also determine if RRM are appropriate for answering the research questions within a short time-frame.

Our experience is that often the information needs and the associated research questions are vague. We have found it useful to clarify and prioritise what must be answered and what could be answered by a RRM study. RRM are appropriate for exploratory studies that seek to understand the values, beliefs and perceptions of individuals and groups, such as identifying the needs of learners or learners' perceptions of their learning experiences, acquisition of new knowledge and skills, and change in practice. Similarly, RRM are appropriate for clarification studies of interventions in HPE, which seek to understand 'why or how did it work?' (Cook et al. 2008). Justification studies of interventions in HPE, which seek to identify did it work?' (Cook et al. 2008), are less appropriate since it is unlikely that an experimental study can be appropriately conducted during a short time-frame. Also, rapid literature reviews are appropriate if a synthesis of previously published literature is required but the decision-maker does not need a comprehensive search.

Our experience suggests that it is also important to continue engagement with the decision-makers throughout all phases of the project to ensure that the research remains focused on the initial agreed scope of the study.

Tip 4

The importance of the design phase

The importance of the design phase before embarking on data collection and analysis when using RRM has been emphasised by several authors (Beebe 2014; Vindrola-Padros 2021b). The design phase provides the essential opportunity to align the numerous inter-related research components for ensuring that the study will be completed within the expected limited time-frame and available resources: (a) research questions (b) population of interest and sampling approach (c) methods for data collection and analysis, and (d) approach to presentation and dissemination.

Early consideration during the design phase of how to maintain the rigour of the study using RRM is essential if the findings are not to be considered as 'quick and dirty', with subsequent lack of confidence in how the data and its interpretation can usefully inform the decision-makers (Beebe 2014; Vindrola-Padros 2021b).

An important aspect of the design phase is to produce a detailed and transparent project plan of activities that have to be completed. Optimising the time for conducting the study, especially for data collection and analysis, but also writing up, can occur simultaneously and by having a team of researchers. It is essential that at least one of the team has a detailed overview over every task so that the workload within time constraints are completed. Often there are periods of intensive work and weekly team meetings can ensure that any problems can be promptly resolved.

Tip 5

Conduct a rapid literature review

A review may have been conducted by a decision -maker to inform their call for further research but often a rapid literature review will have to be conducted as an integral component of the design phase for a study. Conducting a literature review is an essential component of the design phase of a RRM study since it can identify what is already known and not known about the topic, but it can also identify the methods and the conceptual frameworks and theoretical perspectives that have been previously used for studying the topic. Rapid literature reviews, which synthesise existing knowledge about a topic, are also increasingly being used as a standalone RRM to provide decision-makers with timely information (Tricco et al. 2022), including HPE (Bastos et al. 2022; Lawes-Wickwar et al. 2023).

Rapid literature reviews are a pragmatic RRM that balances rigour with the feasibility of conducting a review within a short-time frame, typically within 2-3 months (Tricco et al. 2015). There have been no specific quality standards proposed for conducting rapid literature reviews (Hamel et al. 2020). However, there have been several best practice recommendations for conducting and ensuring rigour in a rapid literature review, with the overall process being similar to traditional systematic reviews except that various methods are streamlined or omitted (Garritty et al. 2021; Smela et al. 2023; Tricco et al. 2017). Recommendations include a team with experience in conducting literature reviews, preferably with an information scientist or librarian, and a clear protocol that has been developed with the decision-makers during the design phase to ensure that there are appropriate research questions that can be answered by the use of RRM. This protocol should clearly describe the essential steps in the literature review process, including the use of search limits by the date of publication, the type of publication (such as only including systematic reviews or excluding 'grey literature', such as reports and doctoral theses) and the choice of databases (such as only including PubMed). For example, a rapid literature review in HPE may be limited to a specific date range, only in English and only articles published in PubMed or the major HPE journals. An important aspect of the protocol is to describe, as transparently as possible, how the search results and data extraction will be conducted, such as by only one researcher with a random check of completeness by another researcher.

Overall, as for other RRM, rapid literature reviews are a pragmatic approach that balance the information needs of the decision-maker with the available time and resources to conduct the review, whilst also maintaining rigour. We recommend that when presenting a rapid literature review that there is a detailed description of the rationale for the use of the approach, the context of the study, the key questions and the process of data collection and analysis.

Tip 6

Maintain the rigour of the research

There have been no specific quality standards for using RRM for rapid qualitative research studies but several authors have recommended benchmarking against existing standards for qualitative research (Beebe 2014; Vindrola-Padros and Johnson 2020; Utarini, Winkvist and Pelto 2001). These standards include credibility (can I believe the findings?), dependability (are methods systematic and consistent, and documented?) and confirmability (can conclusions be traced back to the data?) (Lincoln and Guba 1985). However, these benchmarks may need adaptation, such as the recommendation for prolonged engagement with respondents and stakeholders for promoting credibility.

Studies using RRM usually include triangulation of data collection, with data collected from a variety of respondents using several different methods, and data analysis using structured approaches so that there is a consistent process across several researchers. An important aspect of having a team of researchers is the opportunity to increase rigour through reflexivity, which can occur by peer debriefing throughout the research process (Rankl et al. 2021).

Member checking is frequently recommended in standards for qualitative research, with the aim of verifying the data that has been collected or the conclusions made from the data. However, engaging respondents in this process can be difficult and also there are ontological considerations since the snapshot of reality has now altered to the time of sharing the findings from the research (Birt et al. 2016). A consensus opinion is that the researcher's decision to have member checking should be justified, with an explicit discussion of why member checking was included, or not included, in the study and its limitations (Motulsky 2021). For example, member checking may have been, or not been, feasible within the short time-frame and available resources, it may not have been possible to easily recontact interviewees or the researcher has a clear ontological reason.

Overall, the main approach recommended for maintaining rigour when using RRM for rapid qualitative research has been the detailed description of the rationale for the use of the approach, the context of the study, the key questions and the process of data collection and analysis (Beebe 2014; Vindrola-Padros 2021b). The reader of the research process has to make their own judgment as to the extent to which there is appropriate rigour for their needs.

Tip 7

Always consider the recruitment of participants

Recruitment of participants can be a major challenge for many research studies and this can be especially challenging with the short-time frame when using RRM (Beebe 2014; Vindrola-Padros 2021b). Recommendations for improving recruitment focus on two main areas: identification of potential participants and making it easy for participation.

a. Potential participants of can be identified by using existing networks known to the decision-makers requesting the research, such as email databases. It is essential to comply with data protection regulations and usually direct contact is made by the owner of the database, without disclosing personal details to the researcher. Posters and leaflets can be distributed, and there is increasing use of social media to advertise recruitment to a study.
b. Making it easy for participation is often overlooked but many potential participants have busy life and work schedules. Recommended approaches include ensuring the researchers can offer interviews at convenient times for participants and to use online conferencing tools, such as Microsoft Teams and Zoom (Beebe 2014; Vindrola-Padros 2021b). It is also important to be willing to offer online tools that are preferred by participants. For example, a participant may be more familiar with Google Meet but the researcher has previous experience that is only limited to Teams.

Tip 8

Use rapid methods of data collection

The main intention of data collection in RRM is to obtain a breadth and depth of understanding within the constraints of the short time-frame for the study. Most RRM studies collect qualitative data to answer the research question but mixed-methods approaches (Lavelle et al. 2013), such as combining a questionnaire with interviews, can be also used (Beebe 2014; Vindrola-Padros 2021b). Using a previously validated questionnaire can be a time-efficient data collection method (Artino et al. 2014), and this approach can also identify a purposive sample of specific participants of interest for interviews, such as respondents with a very high or low score. A purposive sampling approach is often used for RRM, with the selection of key informants who may have a unique perspective on a situation, such as students, lecturers and managers (Beebe 2014; Vindrola-Padros 2021b). This selection process ensures a breadth of perspectives within a short time- frame.

A common concern when collecting data using RRM is the number of participants to interview. An essential aspect of RRM is that it has sufficient 'information power' (Malterud et al. 2021). The concept of 'information power' considers that the sample size is determined by (a) the breadth and depth of information that a sample holds and (b) the extent to which this information is adequate in answering the research question, with high information samples requiring lower numbers of interviews. Using findings from previous empirical studies, there have been recent pragmatic recommendations for obtaining an adequate sample size for 'information power'; 6 interviews will capture the majority of themes and if there is consistency in themes across these interviews no further interviews are required (Guest et al. 2020). This approach may not achieve full 'saturation' of data, which requires a wide diversity of data to be collected from a larger samples, but many researchers adopt a more limited method aligned to the pragmatic recommendation for RRM (Saunders et al. 2018). The described process for obtaining 'information power' highlights the importance of data collection and analysis occurring in parallel.

The questions to participants can be structured to align with the purpose of the research and the research questions. A framework of semi-structured questions can be aligned to appropriate conceptual frameworks, such as the main dimensions of the Consolidated Framework for Implementation Research (CFIR) (Nevedal et al. 2021), with identification of specific enabling and constraining factors, or theoretical perspectives, such as the main dimensions of self-regulated learning (Sandars 2020). This process allows maximum information to be gathered within the limited time-frame of data collection but also facilitates more rapid data analysis.

Two commonly used RRM methods are focus groups and individual semi-structured interviews – both can be used as standalone methods but they can also be combined. Focus groups offer an opportunity to bring together several participants at a moment in time (Stalmeijer et al. 2014), but individual semi-structured interviews allow a more in-depth questioning of participants (McGrath et al. 2019). There are often individual interviews with key informants and a focus group with a wider convenience sample of the study population. It is important to consider that focus groups require skilful facilitation to ensure that a single or small number of participants with a particular view do not dominate the group discussion (Smithson 2000). This has implications for the availability of an experienced researcher in the research team.

Interviews and focus groups are usually recorded but can be rapidly transcribed using artificial intelligence transcription software. This software is integrated within commonly used online conferencing tools, such as Microsoft Teams and Zoom, or available by uploaded to Microsoft Word or commercial providers, such as Otter.ai. The data collection can be combined with field notes made by the researcher.

Data can also be collected using alternative methods to familiar interviews, with these methods being more engaging and enjoyable for reluctant participants. Examples include diaries (Bartlett and Milligan 2020), videos or photographs (Pain 2012) and Post-its (Bargate 2014).

Tip 9

Use rapid methods of data analysis

An essential aspect of qualitative data analysis is data reduction through a series of steps with familiarisation and identification of themes. Data analysis in RRM qualitative research studies should follow these general steps but will require adaptation for a time-efficient method that also maintains rigour (Beebe 2014; Vindrola-Padros 2021b).

A commonly used data analysis approach in RRM is to use a structured matrix or template of categories that are the pre-determined themes of interest to the decision-maker, with illustrative quotations inserted into the appropriate theme in the template (Miles et al. 2018). Examples of these themes can be broad, such as each of the main research questions, or more specific based on the conceptual frameworks and theoretical perspectives, as described for data collection (Tip 8).

A more inductive approach, with an iterative process to progressively refine the matrix or template, is RADaR (rigorous and accelerated data reduction) (Watkins 2017). An initial matrix or template is produced, with categories based on the themes identified from the first set of data collections. These categories can be modified as further themes are identified from subsequent data collections.

RITA (rapid identification of themes from audio recordings) (Neal et al. 2015) can be integrated with both of the above methods. When using RITA, there is no transcription of the recording but the researcher listens to 3 min segments of the recording and to identify themes and illustrative quotations. General word processing or spreadsheet software can be easily used to support this process.

To ensure rigour in the analysis, there are recommendations for RRM that data analysis occurs as an ongoing process during its collection (Beebe 2014;; Vindrola-Padros 2021b). The overall recommended approach is cycles of 'Sort, Sift, Think and Shift', which highlights the importance of reflexivity by regular team debriefing during the 'Think' phase of analysis (Renfro et al. 2022). If a larger team is not involved in the research, we recommend that an essential pragmatic approach for maintaining rigour is to have regular discussions with another researcher throughout all stages of data analysis. This 'critical friend' approach allows provocative questions to be asked about each action, with the intention to provoke new insights into the various actions that have to be made during data analysis.

Overall, research suggests that these rapid approaches can identify similar themes to more familiar approaches of thematic analysis but have the advantage that the process can be achieved within a short time- frame (Taylor et al. 2018).

Tip 10

Use innovative approaches for presentation and dissemination of findings

Identifying and delivering the decision-maker's preferred approach for the presentation and dissemination of findings is essential for ensuring that the findings can provide useful information. This is an important step in the design phase of the study.

Research suggests that policy makers prefer a quickly assimilated presentation of the main research findings (Althaus et al. 2022). A short report with a one page 'Executive Summary', with bullet points of the key messages is a frequently used approach. However, there is increasing interest in using more innovative approaches for the presentation and dissemination of findings from studies using RRM (Grbich 2007; Vindrola-Padros 2021b). Infographics, which combine text and images, have been increasingly used to represent information in an attractive and meaningful visual format. In addition, there is increasing use of social media with short podcasts or videos with sound bites to illustrate key points and personas, which are vignettes of typical respondents and characterise their experiences of a situation (Thalmann et al. 2013).

Tip 11

Ensure that institutional systems are responsive for using RRM

Our experience is that the use of RRM, and the need to set up a project within a short time-frame, can be a major challenge for researchers and institutions, especially in the initial bidding phase but also in the early post-award phase.

Often the call for research funding requires submission of a bid within only a few weeks, and sometimes there is the requirement for ethical review to have been completed and approved by the time of submission. The process of obtaining ethics committee (Institutional Review Board (IRB)) approval within a short time-frame can be especially challenging. Our experience is that highlighting the challenges, and the risk of being unable to bid for funding or complete a study within the expected short time-frame, has produced some options to expedite the process, such as clear guidelines of the types of studies requiring ethics committee approval, chairperson approval of 'low risk' projects and the use of amendments of previously approved generic research studies. These modifications to the process will depend on specific local factors.

Preparing a bid for a research study also usually requires coordinating a variety of essential processes, including recruitment of a research team, preparation and agreement on the costs of the study, and final approval by the institution. Our experience has been that by raising awareness of these challenges to the research administrators, there has been modifications to the institutional systems, with clear procedural guidelines and flow charts, which have been supported by staff experienced in research governance and institutional processes.

Tip 12

Become confident in using RRM in health professions education

Our experience of adapting RRM for research in HPE has highlighted that an important aspect has been our own development and increasing confidence in using RRM. We recommend that researchers are aware of the basic principles and appropriate best -practice standards for maintaining rigour in qualitative research and literature reviews. With this awareness, researchers in HPE can develop their skills and confidence in adapting these standards for RRM in HPE, but also they can guided by best-practice recommendations for RRM that have been developed in other disciplines using RRM.

A major challenge for researchers beginning to use RRM has been how to effectively communicate the justification for their use to the intended audience (Vindrola-Padros 2021b). This requires a clear understanding of the philosophical principles of using RRM, including the rigour in the selection of participants and the methods of data collection and analysis. Overall, the justification of RRM as an appropriate research approach is that it is a pragmatic response for providing timely information, often with limited resources, to inform decision-making. The use of RRM are not a substitute for conducting well-designed qualitative research studies, systematic literature reviews and experimental research studies. Ultimately, it is the user of the information that has to decide if the information is 'useful knowledge' to support their decision making (Kilmann 1983).

The transferability and relevance of the findings when using RRM is often also challenged at the time of dissemination, such as at conferences or by peer-reviewed journals, with concerns that the findings are highly context-bound. However, this aspect is no different to the use of case study research, where a detailed intrinsic study from one context may not be relevant to a wider audience but an instrumental study is more relevant (Kekeya 2021). Instrumental case studies have an underlying conceptual framework or theoretical perspective and this increases its transferability and relevance to a wider audience (Davidoff et al. 2015). We recommend adopting a similar approach when using RRM in HPE and this can be readily achieved by using structured approaches for data collection and analysis, such as described in Tips 8 and 9.

Conclusion

The use of RRM has great potential for research in HPE, especially since there are increasing demands for delivering useful information to decision-makers in a timely manner, and often with limited resources. It is important that researchers are aware of the basic principles and appropriate standards for maintaining rigour in qualitative research and literature reviews. With this awareness, researchers in HPE can develop their skills and confidence in using RRM and can be guided by best-practice recommendations that have been developed in other disciplines using RRM.

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