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FOCUS ON RESEARCH METHODS

A roadmap to realist interviews in health professions education research: Recommendations based on a critical analysis

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Abstract

Context: Realist evaluation is increasingly employed in health professions education research (HPER) because it can unpack the extent to which complex educational interventions work (or not), for whom under what circumstances and how. While realist evaluation is not wedded to particular methods, realist interviews are commonly the primary, if not only, data collection method in realist evaluations. While qualitative interviewing from an interpretivist standpoint has been well-articulated in the HPER literature, realist interviewing differs substantially. The former elicits participants' views and experiences of a topic of inquiry, whereas realist interviewing focuses on building, testing and/or refining programme theory. Therefore, this article aims to help readers better understand, conduct, report and critique realist interviews as part of realist evaluations.

Methods: In this paper, we describe what realist approaches are, what realist interviewing is and why realist interviewing matters. We outline five stages to realist interviewing (developing initial programme theory, realist sampling/samples, the interview itself, realist analysis and reporting realist interviews), drawing on two illustrative cases from our own realist evaluations employing interviewing to bring theory to life. We provide a critical analysis of 12 realist evaluations employing interviewing in the HPER literature. Alongside reporting standards, and our own realist interviewing experiences, this critical analysis of published articles serves to foreground our recommendations for realist interviewing.

Conclusions: We encourage HPE researchers to consider realist interviews as part of realist evaluations of complex interventions. Our critical analysis reveals that realist interviews can provide unique insights into HPE, but authors now need to report their sampling approach, type of interviewing and interview questions more explicitly. Studies should also more explicitly draw on existing realist interviewing literature and follow reporting guidelines for realist evaluations. We hope this paper provides a useful roadmap to conducting, reporting and critically appraising realist interviews in HPER.

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1 | INTRODUCTION

Realist approaches like realist synthesis and realist evaluation have increased in popularity in health professions education research (HPER) over recent years.[1] Realist researchers typically attempt to unpack the extent to which educational interventions work (outcomes), for whom under what circumstances (contexts) and how (mechanisms). A realist data collection method that is gaining traction within HPER is realist interviewing. Therefore, this article aims specifically to support researchers who are using, or contemplating using, realist interviews as part of HPER. We provide a glossary of all realist and realist-related terms to help readers who are new to realist approaches (see Box 1 later). For those who would like a broader introduction covering the philosophical origins of realist approaches (in more detail than is possible here), we recommend first reading other outputs.[1–3]

Realist evaluation understands that education is complex, social and context-specific, so can work differently for different people,

Box 1 Glossary of key realist and realist-related terms (in alphabetical order)

Term	Definition	Source/further reading
Conceptual focusing	When participants are given the opportunity to express their viewpoint on the interviewer's programme theory based on their own thinking and decision-making.	Pawson[13]
Context	'In realist approaches, contexts are conceptualised as dynamic and relational features that shape mechanisms through which interventions work'.	Rees et al.[1, p.273]
CMO configuration (CMOC)	'… the causal links between context, mechanism and outcomes' in realist approaches.	Marchal et al.[4, p.83]
Critical realism	Sees the world and its structures and mechanisms as existing independent of our consciousness but foregrounds the social, historical and political. Such structural factors might relate to equity, diversity and inclusion.	Given[14]
Generative causation	'a trans-empirical but real existing entity, explaining why observable events occur'.	Bloom & Moren[15, p.60]
Mechanism	In realist approaches, context-sensitive mechanisms are usually hidden structures, processes or entities generating programme outcome(s).	Rees et al.[1]
Middle-range theory	Formal theories that are more abstract than programme theories and provide a bridge to existing knowledge. Middle-range theories include, for example, educational theories.	Marchal et al.[4]
Objectivism	'… an epistemological notion asserting that meaning exists in objects independently of any consciousness'.	Crotty[16, p 10]
Outcome	In realist approaches, outcomes are described as the expected or unexpected results of a programme that are generated by context-sensitive mechanisms.	Rees et al.[1]
Programme theory	How and why programmes produce outcomes and under what circumstances.	Marchal et al.,[4] Pawson & Tilley[17]
RAMESES II	The RAMESES (Realist and Meta-narrative Evidence Syntheses Evolving Standards) II reporting standards for realist evaluation.	Wong et al.[18]
Scientific realism	Sees the world and its structures and mechanisms as existing independent of our consciousness.	Brekke et al.[19]
Subjectivism	Assumes that knowledge is socially constructed by people through activities of sense-making.	Rees et al.[1]
Teacher–learner cycle	During realist interviews, participants sometimes act as teachers, explaining their experience of the programme to the interviewer, and sometimes these roles are reversed, with the interviewer explaining (teaching) the developing theory.	Pawson[13]
Theory consolidating	Theory consolidation interviews are confirmatory in nature and aim to elicit whether the programme theory is supported, rejected or needs modifying.	Manzano[5]
Theory gleaning	Theory gleaning interviews are exploratory, aiming to gauge the relevance of the initial programme theory to different real-world settings.	Manzano[5]
Theory refining	Theory refining interviews establish relationships between relevant contexts, mechanisms and outcomes.	Manzano[5]

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under different circumstances and for different reasons. Furthermore, realist evaluation is theory-based, privileging the building, testing and refinement of programme theory (i.e., theory about how and why interventions yield outcomes and under what conditions).[4] Whereas realist synthesis employs secondary data sources (e.g., peer-reviewed journal articles and grey literature), realist evaluation draws on primary data sources (e.g., interviews and questionnaires) to build, test and/or refine theory. Quantitative methods such as questionnaires and scales are commonly employed for evaluating outcomes and contexts, whereas realist interviews are thought to be especially helpful for unpacking outcome-generating mechanisms.[1] Importantly, interviews (alone or in combination) are commonly the main data collection method in realist evaluations.[5]

Realist interviewing differs from qualitative research interviewing from an interpretivist standpoint because the former focuses on building, testing and/or refining programme theory, whereas the latter typically focuses on eliciting participants' views and experiences of a topic of inquiry.[1,6] See Box 2 for a summary of the differences between realist and 'typical' interpretivist interviews. Although qualitative research interviewing is well-articulated in the HPER literature,[7–9] realist interviewing is not, despite its increasing use as a realist evaluation data collection method (see Table 1 later). Therefore, we have written this current *Focus on Research Methods* paper, primarily for those relatively new to realist research, based on our knowledge of the methodology literature, as well as our own experience of realist and qualitative interviewing.[10–12] We hope this paper helps evaluators to conduct and report realist interviews optimally, as well as reviewers and editors to critically appraise realist interviews more easily. See Box 3 for an overview of this paper's illustrative cases. We selected these two examples for their commonalities (both employ realist interviewing of faculty development interventions), as well as their differences. For example, the realist evaluation of supervision training relates to a specific state-wide intervention in Australia,[10,11] whereas the realist evaluation of faculty development relates to multiple different faculty development interventions across the United Kingdom.[12]

1.1 | What are realist approaches?

> … nothing works everywhere or for everyone … context really does make a difference to programme outcomes.[21,p. 4]

Box 2 Differences between realist interviews and 'typical' interpretivist interviews in HPER

	Realist interviews	'Typical' interpretivist interviews
Aim	To evaluate a programme through identifying contexts, mechanisms, outcomes and their interactions.	To elicit participants' subjective views and/or experiences of a topic of inquiry.
Theory	Focuses on building, testing and/or refining programme theory.	Interviews might serve to build theory about the topic of inquiry, as in grounded theory methodology. Otherwise, theory might be used before data collection (to help design the interviews) and/or after data collection (to make sense of qualitative findings), or theory may be absent.
Interview phases	Typically different phases involved in realist interviews, with interview schedules often varying with the phases.	Interviews are typically conducted in one phase with one interview schedule (although questions may be refined throughout the data collection process), except for longitudinal qualitative research (which can involve repeated interviews with participants).
Interviewing style	Realist interviewer typically alternates between learner role (the interviewer learns from participants about their perceptions of contexts, mechanisms, outcomes and CMOCs) and teacher role (interviewer teaches the participant about their initial programme theory/theories).	Typically participant-led, especially with semi-structured and unstructured interviews (so interviewer learns from the participant).
Interview question types	Typically shifting from exploratory questions (theory building) to confirmatory questions (theory testing/refinement).	Typically exploratory questions (especially with semi-structured and unstructured interviews).
Analytical approach	Interviewing geared towards collecting optimal data for configurational realist analysis.	Interviewing geared towards collecting optimal data for qualitative data analysis (most commonly some form of thematic analysis in HPER).

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Box 3 Overview of two illustrative cases

	Realist evaluation of supervision training[10,11]	Realist evaluation of faculty development[12]
Overview	We conducted a realist evaluation of a brief-duration supervision training programme (half-day workshops: Study 1) and an extended-duration supervision training programme (half-day workshops with longitudinal audio-diaries over an average of 9 weeks: Study 2) with supervisors from various health care and human services professions.	We conducted a realist evaluation of faculty development employing 32 realist interviews with faculty development leads and members from 17 UK medical schools.
Interview phases	Study 1: Our realist evaluation of the brief-duration intervention involved 53 realist interviews across two phases: 10 interviews with workshop developers/facilitators (Phase 1) and 43 interviews with supervisors participating in the workshops (Phase 2). Study 2: Our evaluation of the extended-duration intervention involved 48 realist interviews in two phases: 25 entrance interviews (Phase 1) and 23 exit interviews (Phase 3), with 176 longitudinal audio-diaries in-between (Phase 2). Note that these audio-diaries served as both an educational intervention and a data collection method, with interviewers asking further realist questions of supervisors (by email correspondence) after listening to their audio-diaries (see Table 1 later for further details).	This realist evaluation involved three phases: the development of an initial programme theory based on existing peer-reviewed literature (Phase 1), which was used within realist interviews with key stakeholders across UK medical schools to glean, refine and consolidate programme theory (Phase 2). Consequently, this was used to underpin the creation of a series of recommendations for faculty development programme designers (Phase 3).
Theory-driven	The realist interviews served to refine and develop programme theory generated from our earlier realist synthesis.[20]	Importantly, and consistent with the RAMESES II guidelines for reporting realist evaluations,[18] this realist evaluation sought to develop a programme theory to understand a phenomenon (faculty development) rather than a specific faculty development intervention (see Table 1 later for more details).

Realist approaches are well suited to researching health professions education (HPE) in the real world—in all its glorious complexity. This complexity might include multiple interacting components (e.g., curriculum components, educators and learners), involving multiple groups or levels (e.g., diverse learners and partner organisations), where there are multiple possible outcomes (e.g., assessments of knowledge, skills, professionalism and team-working) and/or where the intervention is tailored (e.g., learners can have different placements).[22] In complex interventions, such as education, the outputs are not always predictable from the inputs because the process is inevitably context-dependent.

Realist approaches enable complexity to be acknowledged and analysed (rather than controlled for, as in scientific approaches),[1] by exploring the interactions between so-called contexts (relational and dynamic features influencing mechanisms),[23] mechanisms (usually hidden processes, entities or structures generating outcomes)[24,25] and outcomes. Realist approaches allow researchers to ask nuanced research questions, such as what works, for whom, in what circumstances, to what extent, how and why.[17] Realist approaches start with an initial programme theory, which is tested and developed during the research process. Realist approaches create explanatory middle-range theories that are concrete enough to be tested but sufficiently abstract to be transferrable[4] and explain why and how things may occur, so-called 'generative causation'.[4]

Realist approaches are underpinned by scientific realism (which sees the world and its structures and mechanisms as existing independent of our consciousness) or critical realism (which concurs but foregrounds the social, historical and political) and an objectivist or subjectivist epistemology (nature of knowing).[1] A more detailed exploration of the philosophical foundations of realist approaches can be found elsewhere.[1–3] As mentioned above, there are two main realist methodologies—realist review (also known as realist synthesis), which synthesises existing research evidence, and realist evaluation, which involves empirical data collection. Realist evaluation is not wedded to any particular methods but can incorporate whichever approach best suits the research question and research teams' ontological and epistemological foundations. This flexibility of realist approaches, and the ability to combine the theoretical and the practical, is extremely attractive to those researching HPE.

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1.2 | What is realist interviewing and why use it?

> Realist interviews investigate propositions about how, where, when and why programmes are and are not effective. It is the programme's story that is pursued.[6,p. 1]

Realist interviews are theory-driven and typically semi-structured.[5,6,13,17,26,27] They are focused on the gleaning, refining and/or consolidating of programme theory,[5] which is the theory about: 'the set of assumptions of programme designers (or other actors involved) that explain how and why they expect the intervention to reach its objective(s) and in which conditions'.[4,p. 83] When interviewers aim to glean programme theory, interview questions can be described as exploratory,[6] including questions about how the programme works (or fails to work), for whom and under what circumstances. So, while interviewers do not necessarily use realist terminology explicitly in their questioning, they are essentially asking questions purposefully eliciting information about contexts, mechanisms, outcomes and context-mechanism-outcome configurations (CMOCs) (the causal links between contexts, mechanisms and outcomes).[4–6] This can often mean that interviewers employ 'why' and 'how' questions, enabling the elicitation of participants' ideas about causality.[26] In this theory-building approach, Pawson and Tilley[17,p. 180] explain that the interviewer's programme theories can 'lurk somewhat dormantly' throughout the interviewing process.

However, when interviewers aim to refine and/or consolidate programme theory, they can employ interview questions that could be described as confirmatory or what Pawson calls the teaching-learning function and conceptual focusing function.[13,17] Here, 'the researcher's theory is the subject matter of the interview, and the subject is there to confirm or falsify and, above all, to refine that theory'.[13,p. 299] So, interviewers play an active role in teaching by presenting the draft programme theory to participants (who are therefore positioned as learners in the interview process) for them to comment on—with participants either supporting, rejecting or modifying the programme theory.[5,6,27–29] In these interview phases, the questions become less standardised across participants and more bespoke to the stage of development of the programme theory, in order to refine outcome patterns.[5] The final (consolidation) phase of interviews moves to a more detailed consideration of 'a smaller number of CMOs which belong to many families of CMOs'.[5,p. 356] The approach is flexible, and Manzano[5] suggests that gleaning and refining programme theory can be done within the same round of interviewing or different rounds, and the consolidation phase can occur in tandem with another phase of data collection.

Pawson suggests a division of expertise between the interviewer and the participant in realist interviews, with the interviewer thought to have expertise and insights on the programme outcomes and contexts based on their initial theorising and/or data collection to date, and participants as experts on outcome-generating mechanisms, especially their own reasoning processes,[13,17] or group reasoning processes as in realist focus groups.[28] Moreover, Pawson and Tilley[17] suggested that so-called 'subjects' (i.e., programme recipients) would be more sensitised to mechanisms than contexts and outcomes, whereas so-called 'practitioners' (e.g., programme facilitators and programme designers) would be sensitised to contexts, mechanisms and outcomes. They suggested that 'evaluators' (i.e., interviewers) would have expertise of theories, as well as expectations of CMOCs.[17] They argue that programme subjects and practitioners know some of the story but cannot offer the 'whole story'.[17,p. 163] Ultimately, the teacher and learner roles are seen as dynamic and interchangeable throughout the process of realist interviews, leading to a teacher–learner cycle, with participants sometimes acting as teachers (and interviewers as learners). For example, when the participant teaches the interviewer about the developing programme theory, such as their own thought processes relating to mechanisms, described as the conceptual focusing function.[5,6,13,17] These are important considerations therefore in the choice of interview participants (as discussed below).

2 | FIVE KEY STAGES OF REALIST INTERVIEWING

2.1 | Developing initial programme theory/theories

Realist interviewers typically hold initial beliefs (theory/theories) about how interventions work and in what contexts before designing their realist interviews, even if the primary purpose of realist interviews is to build programme theory. Initial programme theory/theories can be generated through realist syntheses, through exploring the assumptions of programme designers, managers or implementers, or exploratory research such as case study or document review.[4] These initial programme theories influence the design of the interviews including their sampling/sample, interview questions and approaches to questioning and analysis. Once developed, these initial programme theories will continue to be gleaned, refined and consolidated throughout data collection.[13]

2.2 | Sampling/sample

Purposive and theoretical sampling is key for realist interviews, with participants selected based on their ability to contribute to the gleaning, refining and/or consolidation of programme theory.[5,6,17,27,29] Furthermore, participant diversity is important to help shed more fulsome light on programme theory, with programme practitioners (e.g., programme designers and programme facilitators) typically being interviewed first (often for theory gleaning purposes), and then latterly programme users (e.g., programme participants) being interviewed,[5,6,29] as was the case in Nguyen et al.[10] If programme theory suggests that programmes might work differently for different stakeholders (e.g., medicine versus nursing practitioners) and/or from different organisational settings (e.g., primary versus secondary care), then those sub-groups of interest should inform ongoing sampling.[5,6]

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No suggested minimum number of realist interviews exists.[6] The acceptable number of realist interviews is determined by the relevance and rigour of realist interview data (for gleaning, refining and/or consolidating theory purposes), alongside other forms of data that may be collected in a mixed-methods study design.[5,28] So, while researchers may have an original plan for the number of realist interviews, interviewers are likely to need some wiggle room based on the quality and coverage of the data collected and the diversity of sampling.[5] Indeed, given that realist evaluators expect: 'different outcomes for different groups in different circumstances',[28,p. 416] then data collection and analysis with sub-groups is key. While the focus should always be on the quality of data in relation to building, testing and/or refining programme theory, Manzano[5] suggests that large amounts of data could be needed (sometimes with lengthy interviews), even with small sample sizes. However, she cites various health-related studies employing large numbers of interviews (e.g., 39–100), alongside other forms of qualitative and quantitative data collection. Furthermore, Manzano[5] advocates the potential benefits of repeating interviews with informants at different timepoints in the implementation of an intervention, to enable interviewers to further develop, test and refine programme theories.

2.3 | The interview itself

Prior to data collection, the evaluation team will need to develop a realist interview schedule, which is likely to vary in its level of structure at different stages of the interview process, and whether the focus is on building, testing or refining programme theory. This will begin with questions sensitising participants to the programme being evaluated including their role within the programme and their views and experiences of the programme.[5] For example, 'Can you tell me what your involvement in (or contact with) … [programme] has been?'[30,p. 1] If the purpose of the interviews is to glean programme theory (i.e., early on in the programme development process), the interview schedule will include exploratory questions to elicit participants' thoughts on outcomes, mechanisms and contexts, as well as the links between these configurational elements. For example, to elicit information on outcomes and contexts, interviewers may ask: 'what do you consider the outcomes of [programme …] to have been for [specific stakeholder group]?'[30,p. 1] To glean information about outcomes and mechanisms, interviewers may ask: 'We are curious about how [programme …] causes its outcomes. How do you think the programme has caused, or helped to cause [outcome identified by participant?]'[30,p. 2] If the purpose of the interviews is to refine and consolidate theory, the interview schedule will include elements of the teacher-learner and conceptual refinement functions. For example, 'there are lots of ideas about how [programme …] actually works, and we think it probably works differently in different places or for different people. One of those ideas is [brief description of main mechanism]. Has it worked at all like that here/for you? Can you give an example?'[30,p. 2] Box 4 provides an overview of the realist interview schedule for the two illustrative cases provided in Box 3. For further worked examples of realist interview questions, see Manzano[5] for a realist evaluation of hospital staff leading patient discharge and Mukumbang et al.[27] for a realist evaluation of a group-based antiretroviral treatment adherence-enhancing intervention in South Africa.

2.4 | Realist analysis

Although we do not cover realist analysis in depth in this article, which focuses on realist interviewing, Box 4 demonstrates that the realist analytic process begins during data collection and influences the interviewer's line of questioning. Similarly, Box 5 demonstrates how the interviewers in the illustrative cases employ the teacher–learner function and conceptual refinement process as part of in-the-moment realist analysis during the interviews to build, test and/or refine programme theory. Having said that, this analytic process typically continues more formally through the transcription of interviews and the coding of realist transcripts. Researchers can employ software such as Atlas.ti or NVivo to improve the rigour and methodological transparency of the coding process.[31–33] Here, analysts typically conduct realist configurational analysis, identifying contexts, mechanisms, outcomes and their interactions (through CMOCs) to build, test and/or refine programme theory, as well as middle-range theory across cases.[1,31] The configurational analysis process can also incorporate relevant educational theory, if helpful. More detail on configurational analysis of realist interviews can be found elsewhere.[31–33]

2.5 | Reporting realist interviews

The RAMESES II reporting standards for realist evaluations aim to create greater consistency and rigour for research employing realist evaluation. The reporting standards advise that data collection methods should be described and justified, and accounts provided of how methods contribute to programme theory building, testing and/or refinement.[18] Furthermore, the recruitment process and sampling strategy should be described and how this contributes to developing and refining programme theory.[18]

3 | CRITICAL ANALYSIS OF REALIST INTERVIEWING IN HPER

In order to examine the increasing popularity of realist interviewing in the HPER field, and to identify how to improve the quality of such interviewing, we identified all realist evaluations employing interviewing published over the last decade in five leading HPER journals (i.e., Academic Medicine, Advances in Health Sciences Education, Medical Education, Medical Teacher and Nurse Education Today). We identified 12 studies explicitly referring to core realist tenets such as programme theory and configurational analyses. We critiqued these papers drawing on principles derived from the reporting standards for realist evaluations and original realist interviewing outputs.[13,17,18]

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Box 4 Examples of realist interview schedule questions in the two illustrative cases

	Realist evaluation of supervision training[10,11]	Realist evaluation of faculty development[12]
Interview schedules (available on request)	We employed three realist interview schedules: (1) for workshop developers/facilitators; (2) for supervisors immediately after the workshops; and (3) for supervisors on completion of the longitudinal audio-diary phase.	We employed three realist interview schedules: (1) theory gleaning; (2) theory refining; and (3) theory consolidation.
Interviewee preparation	In the realist interviews for workshop developers/facilitators, participants were advised that the interviewer would be using realist interviewing and what that meant (e.g., 'I am going to be using a realist approach … this means I will be asking you questions … [to] get a better understanding of your reasoning behind decisions … I will be asking you about what you think the outcomes of the workshop are and why').	We sent information sheets to all participants prior to their realist interview, which explained the realist study design (and briefly explained the concepts of contexts, mechanisms and outcomes), what to expect in the interview and their right to withdraw from the process at any stage.
Exploratory questions	Workshop developers/facilitators were asked exploratory questions about anticipated and/or actual outcomes (e.g., 'what do you think are the outcomes of the workshops?'), mechanisms (e.g., 'how has it led to those outcomes?') and contexts ('under what circumstances do you believe this outcome has worked?'). Workshop participants were also asked exploratory questions about outcomes (e.g., 'what were the immediate outcomes of the workshop for you?'), mechanisms (e.g., 'how do you think the workshop has caused or helped cause [these outcomes]?') and contexts (e.g., 'what were the circumstances that led to this outcome?').	*Theory gleaning interviews* were exploratory, gauging the relevance of the initial programme theory to different real-world settings. Exemplar questions were: 'What are the intended outcomes of faculty development in your institution?' 'To what extent are these achieved?' 'Why do you think that happens?' 'How does that make people feel?' 'What structures or processes are important in enabling that to happen?' 'Can you give an example?'
Confirmatory questions	The workshop developer/facilitator interview schedule advised the interviewer to: 'summarise any CMO configurations … for testing, refining, refuting' [teacher–learner cycle]. The workshop participant interview schedule advised the interviewer to test programme theory with the participants: 'there are lots of ideas about how the supervision training workshop actually works, and we think it probably works differently in different places or for different people. One of those ideas is … [teacher-learner cycle] has it worked at all like that here/for you? Can you give an example? [teacher-learner cycle and conceptual focusing function]'.	*Theory refining interviews* established relationships between relevant contexts, mechanisms and outcomes. Exemplar questions were: 'To what extent does the developing programme theory make sense to you?' 'Which parts of it are most or least relevant in your setting?' 'In your experience, what mechanism might be associated with that outcome?' 'What kinds of institutional context would be needed to make people feel that way?' 'Can you give an example?' [teacher–learner cycle and conceptual focusing function]. *Theory consolidation interviews* were confirmatory in nature. They focused on the connections between contexts, mechanisms and outcomes in the near-final programme theory. Exemplar questions were: 'To what extent does this near-final programme theory make sense to you?' 'Which parts of it make most or least sense to you?' 'To what extent do you associate that context with that mechanism?' 'When people feel like that (e.g., engaged or reassured), what is the outcome?' 'How does this CMOC play out in your setting?' [teacher–learner cycle and conceptual focusing function]

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Box 5 Demonstration of the teacher–learner function and conceptual refinement processes in the illustrative cases

Case 1: Realist evaluation of supervision training[10,11]

Excerpt	Analysis
Interviewer: *So in the literature we found that a lot of people think the mixed pedagogical approach was very helpful for them to … improve their skills and knowledge* [outcomes: skills and knowledge] *because it triggered their reflection* [mechanism: active/experiential learning]. *Is that the case for you?*	The interviewer presents part of the initial programme theory (based on our realist synthesis)[20] to a supervisor participating in the extended-duration training. As per Pawson's[13] theory-driven interview, this relates to the interviewer positioning themself as teacher and therefore the participant as learner, teaching them about programme outcomes and mechanisms, but then asking them questions to elaborate further.
Participant: *Yes*.	Mukumbang et al.[27] suggested that a risk with the teacher–learner function is that participants simply agree (or acquiesce) with the programme theory presented by the interviewer (teacher), and this is what we experienced here with the participant simply agreeing with the interviewer's partial programme theory.
Interview: *So how is the active and experiential learning environment in the workshop contributing to your learning?*	Because the interviewer does not receive the specific detail regarding context and mechanism that they are seeking, they prompt the participant by asking a 'how' question. This enacts the conceptual focusing function, as illustrated by Mukumbang et al.[27]
Participant: *I think actually being involved in active discussion* [mechanisms: peer learning] *is good for remembering things* [outcomes: knowledge] … *But having the opportunity to discuss and share with other people* [mechanisms: peer learning] *helps remembering and really having an opportunity to think about how you would apply that knowledge* [outcomes: knowledge and practice].	At this point, the participant presents their own ideas (so positions themselves as the teacher and the interviewer as learner), providing further explication of outcome-generating mechanisms based on their own experiences of the workshop. This is an example of the conceptual refinement process discussed by Pawson.[13]
Interviewer: *So, having a discussion with others* [mechanisms: peer learning] *would help you to remember things better* [outcomes: knowledge] *and also trigger you to reflect better too* [outcomes: reflection]?	This question helps the interviewer to test and refine the theory, by sharing their understanding of what the participant has said.
Participant: *Yes*.	

Case 2: Realist evaluation of faculty development[12]

Excerpt	Analysis
Interviewer: [Discussing mechanism: engagement] *One of the difficulties that's been mentioned is people being unable to get protected time to do faculty development activities* [context: accessibility] … *[do] you think that's relevant?*	Mukumbang et al.[27] suggested presenting instances where the intervention worked and failed to work according to the theory to avoid acquiescence among interview participants. Here, employing the teacher-learner function, the interviewer shifts the dialogue to focus on a potential failure of the theory. Note that this relates to the outcome of improved competence but this is not explicit in the transcript.
Participant: *Well, it's not that it's not relevant, it's just it's not particularly feasible because it begs the question of who is offering this protected time? … if I jump to accreditation* [context: accreditation] *that's very appealing because of the teaching requirement, evidence of experience and skill*.	As a result, the participant adopts the role of teacher and the interviewer the role of learner.[13] This leads to the identification of an aspect of the programme theory requiring further refinement as the participant shares their experience.
Interviewer: *And so what would be your take on alternative ways of engaging people* [mechanism: engagement] *like meeting their educational needs?* [context: meeting educational needs].	Realising that one of the context-mechanism linkages has come into question, the interviewer then seeks clarification regarding the other context linked to the mechanism in question (engagement).
Participant: *I think that* [context: meeting educational needs], *to me, that's a bit vague. There's a huge range of what's possible from the novice teacher through to the experienced teacher because they can always be better, always be more effective and always have more impact, and I'm not sure this model captures that*.	The participant then shares their perceptions of flaws in the contextual part of the model, leading to them offering up refinement (e.g., context pertaining to novice and experienced teachers). This is an example of the conceptual refinement process discussed by Pawson.[13]

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Whereas some interventions were singular (e.g., rural immersion training programme),[34] others were implemented in multiple settings (e.g., national competency-based medical education initiative implemented in different family medicine programmes).[35] Furthermore, some focused on phenomena rather than specific interventions (e.g., memorable firsts).[36] Despite intervention diversity, the purpose of studies in relation to programme theory was clear in all but one case (see Table 1), with all remaining studies serving to build, test and/or refine programme theory.

In terms of sampling, half of these studies in the HPER field employed some form of purposive sampling (including maximum-variation sampling), and one employed convenience sampling. Five omitted their sampling approach, so are inconsistent with the reporting standards.[18] The number of interviews per study varied from 7[37] to 53,[10] with an average of 29 interviews per study. So, the sample sizes were generally smaller than those found in Manzano's brief review of health sector realist evaluations (i.e., 39–100 interviews).[5] Six of the 12 papers included interviews with programme practitioners like designers/facilitators, and all incorporated interviews with programme participants (i.e., learners), so six included both. Five studies described their interviews as 'semi-structured', four as 'interviews' and three as 'realist'. Although eight of the 12 studies described the types of questions asked in their interviews, only three explicitly provided interview questions.[12,35,38] In one study, the interview questions were unclear.[37] Ten of the studies cited key realist interviewing outputs such as Pawson and Tilley[17] (n = 9), Pawson[13] (n = 4), Manzano[5] (n = 4) and Mukumbang et al.[27] (n = 2). Two studies did not cite any key realist interviewing outputs.[34,39] Only one of the papers explicitly cited Pawson's[13] teacher–learner cycle,[40] although three studies implied this cycle in their descriptions of interviewing. None of the papers explicitly mentioned Pawson's[13] conceptual focusing function, although three studies implied this. These findings are consistent with Manzano,[5] whose brief review of health sector realist evaluation papers (published 2004–2013) illustrated that most articles employed traditional semi-structured interviews without explicitly providing interview questions, meaning that it was difficult to assess whether Pawson's[13] teacher-learner function was employed. Moreover, other scholars[26] have suggested that novice realist researchers risk poor phrasing of realist interview questions, thereby affecting adversely the ability to extract realist data for realist analysis. For example, poor questioning can prevent interviewers linking together contexts, mechanisms and outcomes to elicit causal explanations.[26] Suboptimal questioning, in our experiences, can include asking too abstract questions; not seeking sufficient examples; not seeking sufficient contextual details; and not adequately probing for participants' understandings of mechanisms, causation and so on.

Interestingly, as found previously by Manzano[5] in relation to health sector realist evaluations, in the HPER field, interviews were the sole method of data collection for half of the 12 studies, with the remainder including other qualitative methods such as observation (n = 3), document analysis (n = 2), field notes (n = 2) and audio-diaries (n = 2). Only one study collected quantitative metrics.[40] Furthermore, all studies employed analysis identifying contexts, mechanisms and outcomes, along with realist configurational analysis. Interestingly, nine studies also mentioned some form of thematic analysis, whereby contexts, mechanisms and outcomes were conceptualised as themes, or the steps in framework analysis (a form of thematic analysis) were employed to organise the realist configurational analyses. Finally, only five studies[10–12,34,40] reported meeting the reporting standards for realist evaluations.[18]

In conclusion, we identified several limitations in published realist interview studies within the HPER field, meaning that reporting standards for realist evaluations were sometimes unmet.[18] Specifically, a lack of method transparency was common with insufficient articulation of sampling approach, type of interviewing and interview questions and citing seminal realist interviewing methods outputs.

4 | OUR RECOMMENDATIONS FOR REALIST INTERVIEWING

Building on the reporting standards for realist evaluation,[18] our critique of published articles within HPER and our realist interviewing experiences, we suggest 12 recommendations for realist interviewers in HPER. These recommendations should help realist interviewers navigate and address possible roadblocks to data collection, thereby preventing suboptimal realist interviewing that could derail the core purpose of realist evaluation—to build, test and refine programme theory. Alongside interviewer training, we recommend that realist interviewers:

1. Employ realist interviewing techniques based on initial programme theory from the very outset of the study.
2. Draw on key realist interviewing outputs.[5,13,17,27,28]
3. Employ the teacher–learner cycle and conceptual focusing function where relevant.
4. Use purposive sampling for realist interviews, guided by what is most relevant to building, testing and/or refining programme theory.
5. Determine sample size sufficiency based on the data's utility to build, test and/or refine programme theory.
6. Ensure exploratory and confirmatory interview questions are relevant to eliciting contexts, mechanisms, outcomes and, most importantly, causal configurations, to build, test and/or refine programme theory.
7. Be explicit with interviewees about using the teacher–learner cycle and conceptual focusing function at the start of the interviews.
8. Create a psychologically safe environment for the interviewees to ensure they feel safe to disagree with the proposed programme theories if relevant (thereby avoiding acquiescence).
9. For projects with multiple interviewers, listen to the interview audio-recording shortly after the interview to note any newly identified CMOCs and share these with the fellow interviewer(s) so that everyone can test/refine newly identified CMOCs in subsequent interviews.

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TABLE 1 Overview and core features of health professions education realist evaluations employing interviewing.

Author	Intervention: evaluation aim	Sampling; participants	Interview type, theory purpose, and interview questions (if cited)	Other data collection	Data analysis	Key realist interviewing outputs & concepts cited	
Bingham et al.[34]	Rural immersion training programme: 'To develop theory about how contexts and mechanisms interact to contribute to openness to future rural practice by medical students undertaking immersive rural training' (p. 1398)	Purposive; 23 medical students	23 in-depth semi-structured interviews to test/refine programme theory, with follow-up interviews 1 year later. Questions were not cited but included key question themes (e.g., rural background/ experience and attitudes towards rural training)	None	Thematic analysis including realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27] Teacher–learner cycle Conceptual focusing	x x x x x x
Browne et al.[40]	A safe medication administration education programme: '… to identify factors that enable or constrain the application of knowledge and skills gained through a safe medication administration education programme into practice' (p. 2)	Purposive; Stage 1: 6 policymakers & key stakeholders; Stage 2: 3 experts; Stage 3: 7 participants & managers	16 semi-structured interviews in three stages to glean (Stage 1), refine (Stage 2) and test (Stage 3) programme theory. Questions were not cited but reportedly varied for each person (Stage 1); contained exploratory questions based on conjectured CMOs (Stage 2); and further explored conjectured CMOs (Stage 3)	Stage 1: document analysis; Stage 3: observation, document analysis, reported critical incidents & quality care nursing metrics	Thematic analysis including realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27] Teacher–learner cycle Conceptual focusing	✓ ✓ ✓ x ✓ x
Ellaway et al.[35]	National competency-based medical education initiative in family medicine: 'What is the current view of the impact Triple C [national competency-based medical education initiative] implementation had in different FM [family medicine] programs across Canada' (p. 1851)	Convenience; Interviews: 27 leaders; Focus groups: 38 residents, preceptors & administrators	27 individual interviews & 5 focus groups to build, discuss and amend theories. Interview schedules provided as supplementary digital appendices. Questions explored stakeholder reflections & experiences of programme & its impacts, outcomes (e.g., 'what impact did implementing Triple C have?'), mechanisms (e.g., 'what environmental factors have impacted what works?') and contexts (e.g., 'for whom does it work better, in what contexts, and why?')	None	Thematic analysis, template analysis & CMO identification/ codification	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x x ✓ x x x

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TABLE 1 (Continued)

Author	Intervention: evaluation aim	Sampling; participants	Interview type, theory purpose, and interview questions (if cited)	Other data collection	Data analysis	Key realist interviewing outputs & concepts cited	
Haruta & Yamamoto[37]	A community hospital-based interprofessional education (IPE) programme for medical students: 'To investigate the interrelationships between the conditions of clinical practice, what and how medical students learn, and the outcomes of IPE in clinical practice in the primary care field' (p. 102)	Not stated; 7 clinicians (including medical, nursing & allied health professionals) participating in the clinical practice	7 interviews to build theories. Questions not cited/unclear	Ethnography (participant observation including student reports, assessments and field notes)	Thematic analysis including realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x x ✓ x x x
Lefroy et al.[36]	Memorable firsts across the preparedness for practice transition: 'To identify causal chains of the contextual factors and mechanisms that lead to a trainee being capable (or not) of completing tasks for the first time' (p. 1037)	Not stated; Interviews: 32 final-year medical students & 13 junior doctors; Focus groups: 70 junior doctors and postgraduate trainees	32 individual interviews & 10 focus groups to test and develop theories. Questions not cited, but authors state that interviews were bespoke to participants. Focus groups included discussion of memorable firsts and participants' preparedness for them	Learning logs and audio diaries (final-year medical students) and focus groups (doctors)	Thematic analysis including realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x x ✓ x x x
Nguyen et al.[10]	Supervision training workshops for health and human service workers: '… to better understand the extent to which a state-wide Australian supervision training program works, for whom and under what circumstances, and why' (p. 1204)	Maximum-variation; Stage 1: 10 workshop developers; Stage 2: 43 supervisors participating in workshops	53 realist interviews in two stages to refine and develop programme theory. Questions not cited, but questions elicited participant understandings of contexts, mechanisms and outcomes associated with workshops. The authors state that interviewers sought information from participants, in addition to presenting theories to participants for feedback	None	Team-based framework analysis including realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27] Teacher–learner cycle Conceptual focusing	✓ ✓ ✓ ✓ Implied Implied

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TABLE 1 (Continued)

Author	Intervention: evaluation aim	Sampling; participants	Interview type, theory purpose, and interview questions (if cited)	Other data collection	Data analysis	Key realist interviewing outputs & concepts cited	
Ogrinc et al.[39]	Integrated quality improvement curriculum at a Veterans Affairs hospital: 'This study describes the design factors that facilitated and inhibited the integration of a QI [quality improvement] curriculum … into the routine work of inpatient internal medicine teams' (p. 1380)	Not stated; Interviews: 8 residents; Group interview: QI teachers	8 individual, semi-structured interviews & 1 group interview to develop theories. Questions not cited for individual interviews—authors stated they were 'standard' based on knowledge of the curriculum & related teaching approaches. Group interview encouraged participant reflection on what was effective (or not) and barriers to teaching	Field notes	Grounded theory approach to identify themes with mapping to C, M & O patterns	Manzano[5, a] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x x x x x x
Onyura et al.[38]	Education Scholars Programme: 'Our goal is to construct a cohesive account of—and model how—intensive longitudinal faculty development programming can work to produce change' (p. 168)	Not stated; Focus groups: 79 programme participants; Interviews: 15 programme graduates	10 focus groups & 15 semi-structured follow-up interviews. Unclear theory purpose as theory was not built into the original design of interview questions. Focus groups asked programme participants for their experiences of the programme, personal/professional growth and changes in educational practices. Semi-structured follow-up interviews included questions about programme outcomes (e.g., 'please describe any successes you have had since completing the program') and contextual factors affecting outcomes (e.g., 'in what contexts have you had successes?'). They include their interview guide as an appendix	None	Secondary data analysis employing framework analysis including identifying C, M, O & relationships	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x x ✓ x x x

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TABLE 1 (Continued)

Author	Intervention: evaluation aim	Sampling; participants	Interview type, theory purpose, and interview questions (if cited)	Other data collection	Data analysis	Key realist interviewing outputs & concepts cited	
Proctor et al.[11]	Faculty development: 'To understand the mechanisms by which investment in faculty development may lead to improved outcomes for staff and students' (p. 832)	Purposive; 32 faculty development leads and members from 17 UK medical schools	32 realist interviews across three phases to glean, refine & consolidate programme theory. Questions, guided by developing programme theory, aimed to identify contexts likely to lead to positive outcomes, underpinning mechanisms and the relationships between these. Programme theory was shared with participants across all interview phases and feedback solicited (e.g., 'which parts of the initial programme theory are most relevant in your setting?')	None	Realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	✓ ✓ ✓ x Implied Implied
Rees et al.[12]	Extended-duration supervision training: '… this evaluation tests and develops programme theory for extended-duration supervision training to answer the question: to what extent does the supervision training programme work, for whom, under what circumstances and why?' (p. 1).	Maximum-variation; Entrance interview: 25 nursing & allied health supervisors Exit interview: 23 nursing & allied health supervisors	48 realist interviews across two phases (Phase 1 = entrance; Phase 3 = exit) to refine and develop programme theory. Interview questions focused on teasing out contexts, perceived outcomes (anticipated and actual), underpinning causative mechanisms and CMOCs	Longitudinal audio-diaries (Phase 2)	Realist configurational (CMOC) analysis embedded in framework analysis. Various forms of descriptive coding including identifying Cs, Ms, Os & CMOCs	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27] Teacher–learner cycle Conceptual focusing	✓ x ✓ ✓ x x
Sorinola et al.[41]	3-day faculty development course for UK medical educators: 'This study used a realist approach to evaluate FD (faculty development) and to test the hypothesis that motivation, engagement and perception are key mechanisms of effective FD activities' (p. 385)	Not stated; Interviews during course: 33 FD participants (physicians & nurses); Interviews after course: 12 FD participants	45 interviews across two stages (during and after course) to test hypothesised mechanisms. Questions not cited but interviews during the course explored participants' motivation, engagement & perceptions about course usefulness/relevance. Interviews after the course explored the longer-term impacts on behaviour & learning	Observation	Various forms of descriptive coding including identifying Cs, Ms & Os, as well as one CMOC	Manzano[5, a] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x x ✓ x x x

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TABLE 1 (Continued)

Author	Intervention: evaluation aim	Sampling; participants	Interview type, theory purpose, and interview questions (if cited)	Other data collection	Data analysis	Key realist interviewing outputs & concepts cited	
Sorinola et al.[42]	Faculty development for medical educators: 'The study aimed to develop realist theories that explain the connections between contexts (C), mechanisms (M) and outcomes (O) to find out what works for whom and why in FD [faculty development]' (p. 422).	Purposive; 16 faculty development coordinators & medical educators from 8 UK medical schools	16 semi-structured interviews to develop realist theories. Questions not cited but aimed at identifying stakeholders' perceptions of contexts, mechanisms & outcomes. The authors stated that they employed Pawson's 'theorizing the interview' approach but do not cite related terminology	None	Descriptive, evaluating & causation coding including realist configurational (CMOC) analysis	Manzano[5] Pawson[13] Pawson & Tilley[17] Mukumbang et al.[27, a] Teacher–learner cycle Conceptual focusing	x ✓ ✓ x Implied Implied

[a]These seminal realist interviewing references were published the same year or later than the HPER realist evaluations (so the HPER realist evaluations could not be expected to include them).

10. Where pragmatic constraints allow, analyse realist interview data as soon as possible after interviews and analyse the interviews in the same order as data collection to make sense of CMOC development processes.
11. Clearly and explicitly report the type of interviews (e.g., realist), sampling approach (e.g., purposive), participants (e.g., whether they are programme practitioners and/or programme participants), the purpose of the interviews in relation to theory (e.g., building, testing and/or refining theory), interview questions (e.g., as supplementary online materials) and the type of analysis employed (e.g., realist).
12. Join realist evaluation communities of practice (e.g., RAMESES jiscmail) to access scholarly engagement, advice and support for realist interviewing.

5 | CONCLUSIONS

In this *Focus on Research Methods* article, we have showcased one of the most common realist evaluation data collection methods in HPER—realist interviewing. We explain what realist interviewing is, how it differs from 'typical' qualitative research interviewing from an interpretivist standpoint and why it matters. Drawing on two illustrative case studies, we outline the key stages of realist interviewing: developing initial programme theory; realist sampling/samples; the realist interview itself; realist analysis; and reporting realist interviews. We provide a critical analysis of 12 realist evaluations employing interviewing published over the last decade in leading HPER journals. We present the study interventions and evaluation aims, sampling and participants, their interview types, theory purposes and interview questions (where possible); other data collection methods used (where relevant); and their data analyses. We also consider the extent to which these studies draw on key realist interviewing outputs,[5,13,17,27] and concepts (i.e., teacher–learner cycle and conceptual focusing function), and are consistent with the RAMESES II reporting standards for realist evaluation.[18] Our critical analysis suggests that contemporary HPE realist evaluations using interviewing could do better to make their sampling approach, type of interviewing and interview questions more explicit. Studies should more explicitly draw on (and cite) seminal realist interviewing outputs, including making Pawson's[13] 'theorizing the interview' more unequivocal, as well as its associated concepts of the teacher–learner cycle and conceptual focusing function. This is to reassure readers that optimal realist interviewing approaches were employed enabling the building, testing and/or refinement of programme theory. Studies should also follow guidelines for reporting realist evaluations.[18] We have enjoyed the benefits afforded by realist interviewing within our own realist evaluations—realist interviews have enabled us to unpack the black box of how interventions work (or not) and for whom and under what circumstances. We therefore encourage other HPE researchers to consider realist interviews to evaluate complex HPE interventions. We hope that our two illustrative cases presented in this article, alongside our recommendations, and recommended

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Box 6 Recommended reading for realist interviews

- Bronnimann A. How to phrase critical realist interview questions in applied social science research. J Crit Realism. 2021;21(1), 1–24.
- Emmel N, Greenhalgh J, Manzano M, et al. (Eds). Doing Realist Research. London: SAGE; 2018.*
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- Westhorp G, Manzano A. Realist evaluation interviewing – A 'starter set' of questions. The RAMESES II Project. www.ramesesproject.org; 2017.

*We recommend reading these outputs prior to this *Focus on Research Methods* paper.

reading (see Box 6) will aid novice and experienced realist evaluators to more easily conduct and report realist interviews in HPER. For reviewers and editors of HPE journals, we hope our recommendations will enable you to critically appraise realist evaluations employing realist interviews more easily.

AUTHOR CONTRIBUTIONS

CER, CD and VNBN had the initial idea for this manuscript. All authors contributed to the thinking behind the article. CER led the writing of the article, with all authors contributing. CER, CD and VNBN contributed the first illustrative case in Boxes 3–5, and DP and KLM contributed the second illustrative case. CER, CD and VNBN identified and interpreted the literature presented in Table 1. All authors (especially KLM) edited and revised the paper and approved the final version.

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CONFLICT OF INTEREST STATEMENT

None.

DATA AVAILABILITY STATEMENT

The data provided in this paper as part of the illustrative cases are not publicly available due to ethical constraints.

ETHICS STATEMENT

Not relevant but the necessary ethics approvals were in place for the illustrative cases presented in this paper (see the original papers for further ethics details).

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