

Research paper

The involvement of clinicians in medical education research

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ABSTRACT

Background Medical education, like other forms of professional preparation, is a complex and demanding process, which can benefit enormously from careful research. Although such research can be conducted by researchers from outside medical education, there is also a clear need for clinicians to participate in such research and conduct studies that can draw upon their experience and insights. However, despite recent endeavours to involve clinical educators in such research, there are very few published articles reporting research conducted by such individuals.

Objective To explore the factors that impact upon clinicians' engagement in medical education research.

Method Interview data, concerning potential involvement in medical education research, were

gathered directly from 20 clinicians. A detailed systematic analysis was conducted on the interview transcripts.

Results Three general themes emerged from the interviews, all of which relate to clinicians' engagement in medical education research. They are: (a) effective leadership, (b) promoting professional growth, and (c) all-encompassing support.

Conclusion The study shows that there is a need for clinical leaders with inspirational qualities to drive research in medical education. Also, clinicians need better training in educational research methods and more funding is needed to support this type of research.

Keywords: clinician, medical education, research

How this fits in with quality in primary care

What do we know?

Although several previous studies have contributed to better insights into medical education research in general, no studies have addressed factors that may contribute to clinicians' reasons for conducting or not conducting research into medical education.

What does this paper add?

This study gives a detailed insight into clinician perceptions of factors that motivate and inhibit them in conducting research into medical education. Poor understanding of these factors is likely to contribute to negative interest in using research in medical education by clinicians. Clinical leaders are important for future medical education research but need better training in educational research methods, and funding to support this type of research.

Introduction

Medical education research is a broad description for all research into the practice of medical education. Such research aims to provide insights into, and understanding of, all aspects of teaching and learning in medicine.^{1,2} There are several approaches to the involvement of clinical educators in such research. These approaches include an approach based on the idea that teaching is research, teachers as reflective practitioners, action research, and the teacher as a formal educational researcher.³ Clinicians play a big part in teaching and learning, and clearly could play an important role in conducting research. Pedagogical research studies can be intelligently used as a strand of evidence-based medicine to help solve teaching and learning problems, evaluate educational programmes, and generate and test educational theories.⁴ Despite the clear advantages of clinicians being involved in such research, it has been observed that medical education research is mainly undertaken by non-clinicians, i.e. researchers with backgrounds in education, psychology and social science.¹

Clinical teachers it seems, generally prefer to seek guidance from research that deals with concrete issues that arise in disease-oriented approaches, and not, at present, to make much use of educational research. There are several possible reasons for this. Firstly, clinical teachers have not been primarily employed to conduct research in medical education, particularly non-academic clinical teachers who teach medical students. Secondly, educational research does not have a strong base in medical policy making, and its findings do not appear to have such an immediate effect as those of disease-oriented research.⁵ Thirdly, Harden *et al* came to the conclusion that teachers mostly want to be able to appraise available educational materials and make a decision, on the basis of their prior experiences, whether to use this material or not.⁶ Finally, most clinical teachers are not knowledgeable about recent educational research and theory, which relates to teaching and learning in medicine.⁷ In addition to these reasons, clinicians are not usually trained to teach and are rarely trained in medical education principles.

Clinical research generally involves the use of traditional positivistic research designs, and clinicians are therefore rarely familiar with other research paradigms including the qualitative approaches, which now play a crucial role in social science and educational research.^{4,8} Moreover, clinicians in most countries work under intense pressure to deliver a clinical service and do not always see their primary role as either clinical teachers or educational researchers. Career progression for clinicians is usually through clinical experience and biomedical research rather than via

teaching experience and medical education research. There are therefore very few incentives for them to do educational research. These factors do, we think, start to suggest why clinical teachers appear to pay so little attention to research into medical education.

To date, there are no published data to reveal factors that may contribute to clinical teachers' intent to conduct research in medical education despite the emphasis placed on their contributions to this area.⁹ It was therefore regarded as appropriate to explore the factors that might encourage clinicians' involvement in medical education research. In time this might help the acquisition of knowledge about teaching through reflection on educational practice, and research on teaching in the clinical teacher's own disciplines.

Method

Sample

An interview approach was used in this study, and data were gathered directly from clinicians in different areas of expertise. Their clinical specialties were neurology, nephrology, paediatric cardiology, preventive medicine, anaesthesiology, infectious diseases, clinical microbiology, respiratory medicine, paediatrics, dermatology, ophthalmology, internal medicine, orthopaedic surgery and paediatric psychiatry. These clinicians were full-time members of university academic staff, who had positions ranking from assistant professor to associate professor. They all taught their own specialties in hospital wards and lecture theatres for medical student clerkships and medical interns in the university hospitals. The median age of four female and 16 male clinicians was 41 years, and the median time in practice was 10 years. The clinicians for this study were chosen using purposive sampling, a procedure that involves selecting participants with knowledge of issues of central importance to the research question.⁸ Interviews were scheduled with 20 clinicians.

Interviews

The purpose of the interviews was to gain insights into the broad range of factors that could impact upon clinicians' involvement in conducting medical education research. The interview approach was semi-structured in order to avoid the danger of imposing any prior categorisation that might limit the phenomena under investigation, and it was broadly focused to explore the following question: What factors influence your involvement in the conduct of medical education research? To explore this question, the interview covered four principle themes: (1) the role of education leaders in medical education research; (2) clinicians' involvement

in medical education research; (3) funding of medical education research; (4) institutional support for medical education research. The clinicians were also invited to speak about any other issues that they felt were important but not included in the interview guide. The clinicians were encouraged to respond in narrative form. However, the aim was to allow clinicians to interpret their situation in their own words. They were interviewed using a set of guiding questions and probes to ensure consistency across the clinicians' interviews. An experienced academic practitioner interviewed the clinicians.

Data analysis

As we sought to build understanding from the data collected, data analysis was an ongoing process that began with the first interview and continued throughout the study.¹⁰ The final data analysis occurred when all of the interviews had been conducted. The analysis followed a thematic comparative content analytic procedure in which transcripts were compared with each other to classify those 'themes' that are common in the data set.¹¹ Each transcript was read several times and coded line by line. Words or sentences that captured the key issues and stances acknowledged by clinicians were highlighted. These key issues helped identify preliminary patterns. These patterns were then identified as categories of information. We read these categories of information several times to identify the links among the categories. The links allowed the categories to be clustered together. This procedure facilitated emerging themes within the data.

Results

Three general themes emerged from a series of interviews of clinical educators that sought to investigate clinicians' engagement in medical education research. They are: effective leadership, promoting professional growth, and all-encompassing support. We will now look at each of these in turn.

Effective leadership

The majority of clinicians valued the fact that the clinical education leaders have key roles for encouraging and motivating clinicians to conduct medical education research. However, most of the clinical education leaders were not seen as particularly effective in terms of their contribution to issues such as pedagogical proficiency and vision. As one clinician commented:

'It is both important and difficult to change the attitudes of medical education policy makers towards the need for medical education research.'

Another clinician stated his concern with regards to the need for:

'Avoiding favourite educational leaders, who have no experiences in medical education. I mean that it would be much better to use the experienced and interested people in medical education as educational leaders with respect to demonstrating the importance of medical education research.'

A few of the clinicians, who were considered valued educational policy makers, felt they could pay more attention to medical education and provide the opportunity for clinicians to be involved in medical education programmes, which could lead clinicians to understand better the importance of both medical education and medical education research. A clinician reflected on this situation:

'It is necessary for leaders to consider clinicians in the development of medical education curricula. This may lead to changing attitudes of clinicians and for clinicians to think that research is important for improving medical education.'

Another clinician commented:

'It is motivating to work with an educational leader who shows confidence in innovations in medical education.'

It is clear that the clinicians in this study thought that medical education needed leaders who had personal qualities in education and could empower others for enhancing excellence in research in medical education.

Promoting professional growth

The vast majority of clinicians reported that they did not have sufficient knowledge and skills to conduct medical education research effectively. Furthermore, most of the clinicians reflected that their tacit knowledge of clinical research skills did not encourage them to conduct medical education research. These clinicians revealed that such a poor knowledge led them to pay less attention to medical education research. The following comments from the clinicians illustrate these points:

'... disease-oriented research is totally different from research into medical education. We need to learn and experience education-based research as well as the methods for epidemiological studies.'

'Empowering clinicians with respect to the behavioural sciences is essential.'

'Medical education is a new discipline for us; we need to enhance our skills with respect to medical education research. Enhancing clinician knowledge with respect to medical education provides the chance for us to do some research in medical education.'

It seems to be that, as one clinician put it, ‘the focus on research in medical education has an important role to play in the future of clinicians’. From these points, it was clear that clinicians supported the view that the development of scholarship in medical education is an urgent priority.

All-encompassing support

There is considerable potential for improvements in medical education research, whereby clinicians could conduct research in medical education and create visible products such as journal articles and conference presentations on medical education in their discipline. This would require broad support from medical education policy makers as requested by most of the clinicians in this study. Here are some reflections on the current state of medical education research grants:

‘... medical education research is underfunded. It is essential to consider a specific budget just for conducting medical education research.’

‘Considering a budget for medical students and residents is essential to the future of medical education research.’

It is important to note that the clinicians in this study referred to workshops on medical education research, or medical education research fellowships, as a viable source for developing knowledge and attitudes of clinicians towards conducting medical education research. For example, several clinicians mentioned the value of such opportunities in terms of educating clinicians about the existence of new educational research methods, especially qualitative research methods.

Clinicians also felt that for some medical education policy makers, particularly those who are asked to encourage clinicians in the process of improving medical education, it is important the following points are considered:

- remember to provide the resources for medical education research
- give specific points to medical education research
- help clinicians to publish medical education papers in international journals
- orientate more medical students’ theses towards medical education research
- consider medical education research as a critical priority in the education of doctors.

A further argument stated by the clinicians focused on the publication of medical education research. They valued a move to a situation where all authors of such papers received equal points for academic ranking.

Discussion

The purpose of this study was to explore the factors that might impact upon clinicians’ involvement in medical education research. To our knowledge, our study is the first in-depth, empirical report of the experiences of clinicians, as reported by clinicians. It has allowed us to consider clinicians’ professional development including scholarship in education, which, in our view, is as important as any other area of expertise.⁹

These clinicians have provided an interesting perspective in relation to calls for the conduct of more medical education research by clinicians. In the clinician–leadership context, clinicians had concerns about the effects of educational leader behaviour on clinician behaviour, the relationship of educational leadership to medical education, educational leaders’ characteristics, and the need to appoint appropriate educational leaders. Such aspirations for medical education leadership often stand in stark contrast to findings about educational leaders’ behaviours.¹² This type of leadership may not involve inspirational qualities and the capacity to motivate clinicians in order to establish a climate for achieving certain goals related to teaching and scholarship in education. Although research on leadership and organisational effectiveness has largely addressed how leaders influence the context of performance – how they affect processes at the follower, team, and organisational level of analysis – there has been a dearth of empirical research on how educational leaders can encourage the conduct of medical education research for their own followers.¹³ However, in other disciplines, it has been reported that there is an association between willingness to conduct research and support from leaders.^{14,15}

The second key theme that emerged from this study was the need for greater promotion of clinicians’ professional growth with respect to medical education research methods. The results of this study show that the clinicians had little knowledge about medical education research methods. This finding was reflected in the fact that most clinical teachers do not have the methodological expertise to design appropriate educational research studies.^{4,16} Furthermore, many clinical teachers have a poor knowledge of qualitative research methods in medical education, and most focus on positivistic approaches towards research methodology.¹⁷ To our knowledge these gaps in knowledge related to educational research have previously not been identified in other professional groups beyond medicine. However, a recent study did indicate that

senior nurse managers also had a poor knowledge of social science and educational research methods.¹⁴ A similar poor knowledge of these research methods has also been reported in students.¹⁸

Given the poor level of knowledge about medical education research, there is a clear need to improve clinician knowledge in this area. Acquiring this knowledge may encourage clinicians to become more involved in research or undertaking research training. The importance that the clinicians placed on a workshop on medical education research, as a source of information, gives a clear indication about possible ways of improving knowledge and competency amongst clinicians.

Some medical schools have integrated fellowship programmes and workshops in medical education research in order to inspire clinicians to become more scholarly in relation to the education of health professionals.^{17,19,20} However, becoming involved in medical education research is not only a question of an individual's own motivation and experience, but depends also on the opportunities and constraints of the climate in which they work.²¹

The problem of costs and funding for medical education research emerged as a dominant theme in this analysis and has been identified in previous research.²²

Research reported by Reed *et al* showed that the majority of published medical education research studies are substantially underfunded.²³ They concluded that the quality of medical education research requires increased funding in order to improve the scholarship of medical education. One might argue that such a chronic funding deficiency in medical education research has been a key factor in clinicians remaining less involved in medical education research. Clinicians typically have substantial clinical responsibilities, and it is therefore difficult for them to dedicate their own time to the conduct of medical education research, particularly in an environment where funding is scarce. Clinicians who are involved in medical education research with difficulties tend to develop repetitive and opportunistic studies, probably because of the lack of resources available to support any other approaches.²⁴

It seems that the underfunding of medical education research is not the sole factor preventing the involvement of clinicians in medical education research. The results of this study identified other factors that may help to encourage the involvement of clinicians in the conduct of medical education research. They are: providing resources for medical education research, supporting scholarly dissemination, and awarding specific points to medical education research. Other studies beyond medicine reported that there was a significant relationship between time,

resources, and support by peer and willingness to conduct research.^{25,26} Despite an extensive literature in the field of education, there are relatively few articles addressing these issues. However, the importance of collaboration between research students and clinicians, and a strong multidisciplinary approach has been emphasised in medical education research.^{4,24} Such an approach in medical education research, it might be argued, may encourage clinicians to identify resources in medical education and disseminate their work using a multidisciplinary team. There is a need to explore further relationships between these factors and clinicians' involvement in medical education research. Both quantitative and qualitative approaches can make valuable contributions in order to increase our understanding of the involvement of clinicians in medical education research. The outcomes of such studies may help clinicians to become more actively involved in medical education research and critically provide much-needed evidence to inform pedagogical practices that improve quality in primary care.²⁷

An exploratory research investigation such as this inevitably has limitations. The participants of this study were solely university staff, so generalisations derived from these findings should be made carefully, especially in relation to clinicians who teach but who are not employed by universities. The fact that we conducted our study at a single institution with a relatively small number of clinicians may also limit the generalisability of our findings. Thus, we recommend the study be replicated both in other medical schools and with larger samples of clinical educators to further enhance our understanding of these issues.

Conclusion

We undertook this study to explore the factors that impact upon clinicians' engagement in medical education research. The study shows that we need more motivated leaders with inspirational qualities to drive research in medical education. If clinicians need to become involved in medical education research, they need to be educated in educational research skills. There is little funding for research in medical education. These factors do not encourage clinicians to engage in medical education research.

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PEER REVIEW

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CONFLICTS OF INTEREST

None.

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