Mentoring in post-graduate medical education and specialist training

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Acknowledgements

The authors of this report wish to express their sincere appreciation to their colleagues in the Evidence Centre, Health Research Board (HRB) for their constructive commentary on earlier drafts of this review. They are especially grateful to Louise Farragher, Information Specialist, HRB, for her help with developing search strategies and locating relevant documents. They would also like to thank Dr Deanne Kashiwagi and Dr Alison Stevens for peer reviewing this review and providing constructive feedback.

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Executive summary

Purpose

The Department of Health (DoH) is in the process of undertaking a strategic review of medical training and career structure for post-graduate medical doctors in Ireland. To assist this process, the DoH required a review of the literature on specific aspects of mentoring for post-graduate medical doctors.

Review questions

The DoH asked the Health Research Board (HRB) to answer the following questions:

1. How is mentoring defined in the medical literature?
2. How is mentoring used to support post-graduate medical trainees?
3. What are post-graduate medical trainees' experiences of mentoring?
4. What is the impact of mentoring on retaining post-graduate medical trainees and specialist doctors in publicly funded health systems?

Method

A rapid evidence assessment was used to answer the four questions posed by the DoH. Two systematic reviews (one containing studies using different designs, but excluding qualitative studies) and one containing only qualitative studies were used as index papers to "unpack" key concepts and identify other relevant studies; both reviews were also used to provide key evidence. From the citations in the index papers, other relevant reviews and primary studies were identified. Papers were included in the review on the basis of the substantive contribution they could make to answer the questions.

History of mentoring

In Greek mythology, the key elements of a mentoring relationship are described as spiritual, pragmatic and advisory. These themes continue to permeate contemporary literature under the categories of personal and professional development. In order to illustrate the historical importance of mentoring in medicine, Barondess drew on a review of the acceptance speeches made by individuals receiving the Kober Medal of the Association of American Physicians, which was established in 1925. Of the 41 recipients, 43% referred specifically to their mentor by name. Barondess asserted that '*…this is testimony to the importance of the mentor in shaping the medical and academic career…*'.

Defining mentoring

There have been various attempts to define mentoring in the literature, and a number of commonalities are noted among existing definitions, which include a reciprocal relationship between an experienced person (mentor) and a less experienced person (mentee), which may or may not be formal and structured, but provides the mentee with guidance on personal and professional development, and encourages reflection on and learning from decision-making. The literature identified a number of the attributes and skills of a mentor (such as expertise, professional integrity, honesty, accessibility, approachability and facilitation) and how mentors and mentees choose each other (such as assignment, matching and mentee-led selection). There is a strong recommendation in the literature that mentees should not be line managers or educational supervisors.

Processes for implementing mentoring programmes

Kashiwagi *et al.* (2013) in the most recent systematic review to examine mentoring in a medical context identified global objectives of mentoring programmes in the articles reviewed. These were the professional and/or career development of mentees, academic success, increased networking and retention by their university faculty. They also identified the focused objectives of mentoring, which were project completion, developing links with other organisations and improving communication within their departments. Kashiwagi *et al.* identified seven programme components in their synthesis of the literature: (i) mentor training and preparation; (ii) management committee; (iii) contracts or mission statements; (iv) pairing mentors and mentees; (v) designing formal curricula for mentees (covering career development, research, teaching and clinical practice); (vi) monitoring programme activities and evaluation, and (vii) programme funding, including compensation for mentors and protected time for mentees.

An earlier report (in 2004) for the UK Department of Health, prepared by the Doctors' Forum, contained a number of useful insights into how mentoring was used to support post-graduate medical doctors in training. The Doctors' Forum reported that there were considerable variations in how mentoring was practised. This was reflected in the many schemes available. The authors of that report noted that despite the variations in schemes, the central concepts of mentoring were consistent, in that mentoring helps doctors to help themselves. In practice, mentoring was used both to help doctors' self-development and to deal with difficulties. The outcomes for mentees were predominantly developmental, i.e., a change in perspective and understanding.

Mentees' experience of mentoring

From the studies retrieved for this review, there appears to be a limited body of evidence reporting on the direct experience of mentees who have participated in mentoring programmes. The evidence that does exist tends to be primarily descriptive, as illustrated by the most comprehensive review of qualitative studies in the literature. **Sambunjak *et al.* (2010)** in their systematic review of qualitative studies point out that '… *the largest gap in the existing body of research relates to the limited depth in which the phenomenon of mentoring in academic medicine has been explored. In most of the included studies, authors performed a thematic analysis of mentoring experiences as reported by the participations without providing a 'thick' description of events and circumstances pertinent to mentoring…[this] limited the level of conceptual innovation we could achieve in our systematic review*'.

The evidence assembled from the studies retrieved for this review suggests that, for the most part, mentees perceive mentoring as a positive experience, with some studies reporting that mentoring can help mentees develop concrete career goals, boost their self-confidence and enhance their ability to resolve problems. Some studies reported that mentees benefit from career progression, and that for some, mentoring is vital to career success. Mentees are perceived to have primary responsibility for finding a suitable mentor, and informal rather than assigned mentoring relationships appear to be their preference. Characteristics of effective mentors include acting in the best interests of the mentee; being honest and trustworthy; being a good listener and being accessible and approachable. Having the capacity to introduce the mentee to professional networks was also desirable. According to a number of authors, successful mentoring goes beyond a doctor's professional role; in addition, it crosses the personal-professional divide and both mentors and mentees clearly benefit from the relationship. Many authors promote the need for compensation for mentors and protected time for mentees.

Outcomes of mentoring programmes

From the studies retrieved for this review it would appear that evaluations reporting on the outcomes of mentoring in medical contexts are scarce in the peer-reviewed literature. This scarcity has been identified, beginning with **Ehrich *et al.* (2003); Allen *et al.* (2004)** and continuing with **Straus *et al.* (2006); Sambunjak *et al.* (2006)** and, more recently, with the work of **Frei *et al.* (2010)** and **Kashiwagi *et al.* (2013)**. These reviews of mentoring in the medical context represent an impressive body of evidence; however, they convey more about the nature of the work undertaken to evaluate mentoring than about the effectiveness of mentoring. It would appear that evaluations of mentoring have tended to assess the importance of mentoring, using self-report questionnaires that are completed by mentees either during or following their mentoring experience.

Sambunjak *et al.* (2006) undertook what they claim was the first systematic review to examine the evidence on the relationship between mentoring in academic medicine and career development in the form of career choice, career progression and scholarly productivity. The overall summary of the studies reviewed by Sambunjak *et al.* suggested that mentoring was an important influence on personal development, career guidance, and career choice and research productivity. Eight of the studies in the Sambunjak *et al.* review reported on the influence of personal development and career guidance, while five studies reported that mentors were seen as an important career-enhancing factor. In addition, one study from Canada reported that mentees were more likely to achieve a promotion. Most of the studies were self-report surveys (34 were cross-sectional), with heterogeneous measures. This meant that statistical pooling of the results was not feasible. Sambunjak *et al*. reported that '*the poor quality of the studies does not allow conclusions to be made on the effect size of mentoring on any aspect of academic and professional development [among medical students, residents, fellows, and staff physicians]…the limitations of this evidence preclude its use to suggest mentorship strategies that should be implemented at academic institutions*…'.

The most recent systematic review by **Kashiwagi *et al.* (2013)** identified objective outcomes of mentoring programmes as: retention rates; attendance at meetings; number of successful nominations to professional societies and committees; and promotions. **Kashiwagi *et al.*** included four papers in their review, which they claimed measured 'retention rates'. These four papers were retrieved and reviewed for relevant data on the assessment of retention rates as an objective outcome.

Taking these four studies chronologically, **Benson *et al.* (2002)** reported that '*our retention data show a trend towards greater retention of participating junior faculty: 38% who did not form preceptoring partnerships left the organisation, as compared with 15% of those who formed partnerships*…'. It should be noted that the numbers are quite small; from an invited faculty cohort of 144 potential preceptees, 33 applied and 20 formed partnerships. The paper is unclear in reporting on the numbers transitioning from the preceptor programme to the mentoring programme. **Pololi *et al*. (2002)** reported that '*the mentoring program affected faculty members' retention in academic medicine…in part because it helped many participants find greater satisfaction in their work and improved their understanding about the nature and expectations of academic medicine. Although some indicated an unwavering commitment to academic medicine, with a desire to stay at the medical school that was relatively unaffected by the program, a few experienced the program as reinforcing…their decision to stay*…'. **Wingard *et al.* (2004)** report that…*' 85% remained in the University (10 left) and 93% remained in academic medicine (5 left) one to four years after participation in a mentoring programme. A total of 10 participants left the University compared to the 14 expected to leave based on national estimates…the differences observed between those leaving and remaining are not statistically significant but in 'the desired direction*'. **Kosoko-Lasaki *et al.* (2006)** report that '*…all faculty members in the mentoring program at Creighton [one of the sites] have remained after one year*…'. However, on closer inspection of this report, it appears that after one year, the faculty retained three out of three, however three is quite a small total sample.

In summarising the findings of these four papers, Kashiwagi *et al.* concluded that '*…faculty retention appears to improve in systems with mentoring programs*…'. However, based on the poor quality of the retrieved studies, it cannot be reliably concluded that mentoring programmes improve retention rates. What may be concluded is that mentoring programmes may be associated with improved retention, but the nature or direction of this association remains unknown, based on the four studies cited here.

Conclusion

There are a variety of definitions of mentoring in the literature; they contain common themes, which include professional support, personal support, supportive relationship, reflective practice and a partnership based on common bonds or interests. There is agreement in the literature that the overall outcomes from mentoring are professional or career development, academic success, increased networking and retention by the mentee's university faculty. However, mentees' expectations differ, and include having concrete career goals, greater self-confidence, and enhanced ability to use their initiative. Seven components of mentoring programmes were identified in a large systematic review and these are: mentor training and preparation; management committee; contracts or mission statements; the selection of mentors for mentees; development of formal curricula; monitoring and evaluation; programme funding, including compensation for mentors and protected time for mentors. The characteristics of effective mentors and mentees are identified in the literature, and emphasise confidentiality, listening, trust and an ability to reflect and change. The factors that facilitate successful mentoring are described, and emphasise: reciprocity; clear expectations; mutual respect; personal connection; providing a wider prospective and opportunity for reflection; demonstrating a willingness to take risks and a commitment to resolve conflict. Two processes identified in the UK that help achieve successful mentoring are the use of problem-solving and change management mechanisms. There is evidence that mentoring is an important influence on personal development, career guidance, as well as career choice and research productivity. Only one systematic review included retention rates as an outcome; the findings are based on four studies, and the reviewer noted that mentoring appears to increase retention by the mentee's university faculty. However, from evidence currently available, it cannot be definitively stated that mentoring improves such retention. The majority of the literature for the review was based on American and Canadian experiences; only a small number of papers and reports were obtained from the UK and mainland Europe.

Introduction

Purpose of the review

In July 2013, a Working Group chaired by Professor Brian MacCraith, President of Dublin City University, was established to carry out a strategic review of medical training and career structure. The Working Group was charged with examining and making high-level recommendations relating to training and career pathways for doctors, with a view to:

- improving graduate retention in the public health system
- planning for future service needs
- realising maximum benefit from investment in medical education and training.

The Working Group considered a number of issues, including the pathway for training at every level from intern to specialist, and the potential for reducing the length of specialist training. The Working Group also considered mentoring and career planning supports for medical graduates, as well as measures to improve the quality of the training experience. As an input to its deliberations, the Working Group sought information on the international evidence relating to mentoring supports for trainee doctors. The HRB conducted the international evidence review on behalf of the Working Group, and submitted its finalised report on 13 May 2014.

This evidence review was undertaken by Martin Keane with support from Jean Long, Evidence Centre, HRB. The Evidence Review was requested by the Workforce Planning Unit of the Department of Health (DoH) as part of a knowledge brokering service offered through the research utilisation team, DoH, in collaboration with the Evidence Centre. The question was set by the DoH through an iterative process with the research utilisation team and the Evidence Centre, HRB.

Review questions

The DoH asked us to answer the following questions:

1. How is mentoring defined in the medical literature?
2. How is mentoring used to support post-graduate medical trainees?
3. What are post-graduate medical trainees' experiences of mentoring?
4. What is the impact of mentoring on retaining post-graduate medical trainees and specialist doctors in publicly funded health systems?

Mentoring: A brief introduction

The term 'mentor' and 'mentoring' are derived from Greek mythology. Barondess (1995) provided a useful account of the life of Ulysses, the mythical character in Homer's *Odyssey*, set in Ancient Greece.

When Ulysses left his family to fight in the Trojan War he entrusted his infant son, Telemachus, to his friend, Mentor. Barondess described how this mythical relationship developed, and what its key characteristics were. He broadly categorised the key elements of the relationship as spiritual and pragmatic, and these are themes that continue to run through the contemporary literature under the categories of personal and professional development. According to Barondess, the primary role given to Mentor was to act as guide to the young Telemachus. This theme endures in the contemporary literature on mentoring, where the desire of mentees today is to be guided and not prescriptively directed. Barondess also introduced a cursory but relevant selection of the early literature on mentoring in medicine, and noted *'…the continuing importance and power of mentoring in medicine are widely, if tacitly, acknowledged in its persistence and especially in the personal bonds that characterize it, although data to support this concept are difficult to come by…'*.

In order to illustrate the historical importance of mentoring in medicine, Barondess drew on a review of the acceptance speeches made by individuals receiving the Kober Medal of the Association of American Physicians; the medal was established by Dr George Kober in 1925. Of the 41 recipients, 43% referred specifically to their mentor by name. Barondess asserts that '…*this is testimony to the importance of the mentor in shaping the medical and academic career*…'.

Methodology

Searching for relevant literature

This rapid review set out to find data to answer the four questions on mentoring posed by the DoH. The nature of the four questions posed meant that studies with different designs approaches would be needed in order to answer the questions. We anticipated the need to undertake some initial scoping of the literature to help unpack the concept of mentoring, identify how retention was defined and measured, and how the primary target group (post-graduate doctors) were described. This initial work would enable us to develop further searches that were consistent with the concepts and terms used in the peer-reviewed literature. This type of work in developing what we will call an iterative search strategy is in line with the suggestions of Brunton *et al.* (2012), who point out that "…when it is unclear at the beginning of a review what specific types of study are needed or where the review is proceeding along an 'investigative' line, pursuing conceptual and evidential 'leads' as and when they arise, an iterative search strategy is appropriate…reviewers [can] be 'led' from the findings in one research article to inform where and how next to look for the next potentially relevant reference in order to create a 'sampling frame'…while iterative searching is a very broad issue…it is also a very empirical method. Finding out what is needed when searching becomes a part of the findings of the review…".

In order to begin to identify potentially relevant studies, it was important to identify what we call an 'index' paper. According to Greenhalgh *et al.,* an index paper can be regarded as a seminal source of literature on a particular topic and, when comprehensive in scope, can be used to guide the direction of a search strategy to locate and review additional evidence. A brief initial scoping search of Google Scholar, using mentoring and systematic review as search terms, yielded two systematic reviews, **Sambunjak *et al.* 2006** and **Sambunjak *et al.* 2010.** The 2006 review was judged to be a seminal study, as the authors claimed that this was the first systematic review to examine the evidence on the relationship between mentoring in academic medicine, and career development in the form of career choice, career progression and scholarly productivity. This review used a comprehensive search to identify all relevant studies; it included 42 papers using different study designs, but excluded qualitative studies. It was decided to use this review as one index paper to scope out the conceptual landscape of mentoring in a medical context, and identify other relevant papers for in-depth screening.

From our initial scoping searches we located another systematic review by **Sambunjak *et al.* (2010)**, who examined the experience of mentoring from the perspective of the medical trainee and included only studies with a qualitative design. This review included a comprehensive search of the literature dating from the 1960s to 2008, and used relevant databases, citations/references searching, and contacting experts in the field to identify relevant studies; only nine studies were included in the final review. As this review was a comprehensive systematic search and analysis of the peer-reviewed qualitative literature on mentoring for medical doctors, it was decided to use this paper as the second index study for the HRB review.

A number of other reviews relevant to addressing the questions posed by the DoH were also retrieved, for example, **Straus *et al.* (2006), Buddeberg-Fischer and Herta (2006), Frei *et al.* (2010) and Kashiwagi *et al.* (2013)**. These reviews were identified by tracking citations, or were found opportunistically while searching for other papers, or when scoping out search terms using concepts identified in the index papers. The selection of comprehensive systematic reviews as a basis for undertaking rapid reviews is a technique recommended by other reviewers engaged in similar work. For example, **Khangura *et al.* (2012:4)** pointed out that that:
'Depending on the nature of the question, purpose of the report and magnitude of the literature, a variety of types of evidence have been targeted in the searches for evidence summaries. In most cases (for example, for questions of treatment effectiveness), emphasis has been placed on locating and summarizing evidence from relevant and high-quality systematic reviews. Evidence from systematic reviews is prioritized in order to limit

unnecessary duplication, to minimize resources needed to screen and summarize primary level evidence and to minimize the potential bias and/or error which could be incurred by reviewing primary evidence rapidly…'.

As our initial scoping searches yielded a number of comprehensive reviews, we decided to use these in this review for (a) unpacking the conceptual landscape of mentoring in a medical context; (b) identifying studies to retrieve for in-depth screening; (c) summarising the available evidence to address the four questions. While primarily relying on comprehensive reviews to address the question in this review, we also identified and retrieved a number of primary studies to either (a) specifically address one of our questions or (b) complement the data from the reviews to answer a question. For example, Kashiwagi *et al.* (2013) included four papers that measured retention rates for doctors who had been mentored. They concluded that '*…faculty retention appears to improve in systems with mentoring programs*…'. As one of the four questions posed by the DoH was '*What is the impact of mentoring on retaining post-graduate medical trainees and specialist doctors in publicly funded health systems?',* we decided to retrieve these four studies and review them individually, in order to address the DoH question.

Quality appraisal and synthesis of included studies

Seven comprehensive reviews, 19 primary studies and 6 papers providing context to mentoring for doctors are included in this review. While we did not undertake an objective quality appraisal of either the reviews or the primary studies, we did, however, make informed judgements about the types of studies we would rely on. We retrieved and included the seven reviews, as they (a) reported in detail on the methods used to undertake the work, and (b) contained data that could contribute to answering some or all of our questions. We followed the same approach with the primary studies that were retrieved and synthesised. Our primary objective was to retrieve sufficient data from peer-reviewed studies that could contribute substantively to answering the four DoH questions. The synthesis of data from the studies retrieved for this review is presented as a descriptive account to answer each of the four questions posed. Where appropriate, and where the data retrieved permits, similarities and contrasts between the data are highlighted. Given the small time frame of three months to complete this review, and also given the diverse questions posed by the DoH, and the heterogeneity coupled with the poor quality of studies identified in the literature, it was not feasible or appropriate to undertake either an aggregative or interpretative synthesis of the data.

Limitations of this review

This review relied extensively on two systematic reviews as index papers and five additional comprehensive reviews, in order to unpack the conceptual landscape on mentoring in the medical context, identify relevant studies from tracking reference citations in these reviews, and build additional iterative searches. We acknowledge that by confining our searches to these published reviews and related studies, it is possible to overlook other relevant studies that were either missed by the authors of these published works or were not included in their work. However, we are reasonably satisfied that we captured a sufficient number of studies to provide adequate data to answer the four questions posed by the DoH. Nonetheless, we acknowledge that the findings presented in this review are only attributable to the studies retrieved.

Findings

Question 1: How is mentoring defined in the medical literature?

Findings

There are variations in the way that mentoring is defined in the medical literature. In a much-cited study by **Jackson *et al.* (2003)**, and in the first systematic review of mentoring in the medical context undertaken by **Sambunjak *et al*. (2006)**, both defined mentoring as '*a dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (protégé), aimed at promoting the development of both*'. This definition was derived from the work of **Healy and Welchert (1990)** when they studied mentoring in an educational context, and it suggests that mentoring is a developmental process with benefits for both mentor and mentee.

Berk *et al.* (2005) reported on the work of the Ad-Hoc Faculty Mentoring Committee at Johns Hopkins University School of Nursing who came together to define mentoring; to identify specific characteristics and responsibilities of mentors; to develop an instrument that describes the mentoring relationship, and to build a scale to measure the effectiveness of the mentoring relationship in terms of outcomes for the mentee. Berk *et al.* reported that the committee agreed on the following definition of mentoring:

'*…a mentoring relationship is one that may vary along a continuum from informal/short-term to formal/long-term in which faculty [members] with useful experience, knowledge, skills and/or wisdom offer advice, information, guidance, support or opportunity to another faculty member or student for that individual's professional development…*'.

This definition proposed by the Faculty Mentoring Committee at Johns Hopkins University, and cited by Berk *et al.,* underplays the reciprocal nature of mentoring and suggests that mentoring is only concerned with providing guidance and support to promote the professional development of the mentee.

A slightly different variation of what defines mentoring is provided by **Buddeberg-Fischer *et al*. (2004)** who have been instrumental in designing, delivering and evaluating mentoring in Switzerland. They put forward the view that '*mentoring represents the structured promotion of individuals within a professional group with the aim of optimally supporting their professional careers as well as their personal development*'. This definition reiterates the role of support, and underscores the developmental nature of mentoring. However, it builds on earlier variations of the definition by suggesting that mentoring is as much about promoting personal development as it is about promoting professional development.

Steven *et al*. (2008) point to the absence of a universal definition of mentoring and note that this lack of consensus appears to be driven by both philosophical differences about what constitutes mentoring and differences between countries that implement and study mentoring. The overall view of Steven *et al.* is that these variations are the norm in the literature.

Steven *et al.* (2008) cite one variation which derives from an inquiry into mentoring by the Standing Committee on Postgraduate Medical and Dental Education in 1998. This inquiry, undertaken in the UK, recommended that mentoring in a medical context should be promoted and used more frequently as a framework for career development. The committee defined mentoring as '*…the process whereby an experienced, highly regarded, empathic person [the mentor], guides another individual [the mentee] in the development and re-examination of their own ideas, learning and personal and professional development…*'.

This definition is widely cited in the literature and notes that mentoring is developmental, with the key role of the mentor being to provide guidance to the mentee. The definition varies from other efforts in that there is an emphasis on developing the mentee as a critical learner, in addition to fostering their personal and professional development.

The vast majority of attempts to define mentoring have been made by both researchers and medical expert groups; in the studies included in this review, scant attention was paid to how the participants in mentoring programmes defined their work. One notable exception, however, is the work of **Garr and Dewe (2013)** who undertook a qualitative study to explore the role that mentoring plays in developing a medical career. They interviewed 21 doctors (12 males) in post-graduate specialty years one to eight in England, and invited participants to define what mentoring meant to them. The authors reported that: '*… all the trainees were clear about what mentoring is, with four main themes identified; a senior person whom you can rely on for advice and guidance, someone providing support, an informal adviser relating to training and personal issues to help and develop you and a supportive relationship with someone not directly related to your work*'.

One key variation arising from this definition provided by Garr and Dewe, based on their interviews with doctors, is that mentoring is seen as an informal process that the mentee can voluntarily engage in, and is not related to the formal assessment of their work.

Overview

There is no universal definition of what constitutes mentoring in the medical literature; this lack of consensus would appear to be influenced by both philosophical and geographical differences. However, there are some common elements of thought permeating the literature regarding certain key components of what might constitute mentoring; these include the view that mentoring is primarily a developmental relationship, with some benefit for the mentor, but with most advantages to be enjoyed by the mentee. There appears to be some agreement that the personal and professional development of the mentee are among the main objectives of the mentoring relationship. The mentor is generally described as the person acting as a guide to the mentee; however, there are variations in how the process of guidance is described. Some emphasise professional development – with specific attention paid to career-related elements such as learning new skills – while others suggest a more holistic definition, with equal attention paid to the personal development of the mentee. According to the literature reviewed, mentoring may or may not be formal and structured, with a strong signal from doctors in the study by Garr and Dewe that mentoring should be separate from formal monitoring and assessment, and that mentors should not be line managers or educational supervisors.

Question 2: How is mentoring used to support post-graduate medical trainees?

Findings

From the studies retrieved for this review, there appears to be a shortage of high-quality studies reporting on how mentoring is used to support post-graduate doctors. For example, **Ehrich *et al.* (2003)** reviewed a sample of 82 studies undertaken between 1995 and 2002, which related to mentoring in medical contexts. The authors reported that the vast majority of these studies were descriptive, and only eight studies reported outcomes. In the eight studies which reported outcomes, it was not possible to say who benefitted from mentoring – mentors, mentees, or the organisations where the mentoring took place.

The work by **Allen *et al.* (2004)** appears to confirm the lack of studies reporting outcomes on mentoring in medical contexts up to the early part of the 2000s, as only one study related to mentoring among health care professionals is referenced from what was a comprehensive search for mentoring-related literature. The authors also highlight the lack of robustly designed studies in the wider research literature on mentoring. They state that '*…the nature of most research designs used in mentoring research also creates reason for debate regarding the causal ordering of variables. Few studies have been designed such that mentoring data are collected prior to that of outcome data…for example although mentoring may result in greater job satisfaction, it may also be that satisfied employees are more apt to put themselves in a position to benefit from mentoring…*'.

Nonetheless, the work by Allen *et al.* is instructive in drawing attention to the type of outcomes measured when mentoring was evaluated in settings other than a medical context; this work is also useful in examining the effectiveness of mentoring on a number of career-related outcomes. Allen *et al.* reviewed 43 studies undertaken in different organisational settings that compared outcomes for mentored groups with non-mentored groups, and compared studies that correlated mentor functions with mentee outcomes. Allen *et al.* reported that the effect sizes associated with objective outcomes were small, and that the sizes of the samples in most of the studies were also small. Nonetheless, they were able to undertake a meta-analysis to test a number of hypotheses.

Allen *et al.* reported that when mentored individuals and non-mentored individuals were compared, mentored individuals improved career consequences for objective outcomes – specifically monetary compensation and promotion. Mentored individuals also reported improved consequences for subjective outcomes (such as career satisfaction, expectations for career advancement, career commitment and job satisfaction) when compared with non-mentored individuals. Career-related mentoring was positively related to the following objective outcomes: compensation, salary growth and promotion. Career-related mentoring was positively related to the following subjective outcomes: career satisfaction, job satisfaction and satisfaction with mentor. Psycho-social mentoring was positively related to the following objective career outcomes: compensation and promotion. It was also positively related to the following subjective outcomes: career satisfaction, job satisfaction, intention to stay with the company or organisation, and satisfaction with the mentor. There was mixed support for the hypothesis that objective career outcomes had a stronger relationship with career mentoring than with psycho-social mentoring. There was mixed support for the hypothesis that subjective career outcomes had a stronger relationship with psycho-social mentoring than with career mentoring.

According to Allen *et al.* '*…the accumulated empirical evidence indicates that focusing on mentoring primarily as a means to achieve objective career success may not be warranted. More specifically, our review illustrates that mentoring is more strongly related to subjective indicators of career success, such as career and job satisfaction, than it is to objective career success indicators…*'.

Buddeberg-Fischer and Herta (2006) undertook a review of the MEDLINE literature to identify formal mentoring programmes for medical students and doctors. They included 16 studies, 7 of which focused on formal mentoring programmes for doctors. The remaining nine concentrated primarily on first to third year students. Of the seven studies that focused on doctors, five were located in the USA and two were located in Canada. All seven studies used the one-to-one dyadic mentoring model, and mentees in four of the seven programmes were primary care trainees. The authors noted that '*…despite the fact that formal mentoring programmes have been acknowledged to be of great importance for the career support and promotion of junior physicians, there are not many papers published which give satisfying details on the various elements of such a programme*…'.

Although the conclusions of Buddeberg-Fischer and Herta are restricted to studies retrieved from MEDLINE, and published prior to 2006, other authors using wider search strategies around the same time frame echo the claim that few papers containing adequate details on mentoring programmes for doctors were published.

Straus *et al.* (2006) undertook a systematic review to analyse the evidence on what factors influence the decision to choose or not to choose a career in academic medicine. They searched for relevant studies published between 1990 and 2005. A total of 25 relevant papers were included in the final review. The authors cited four studies which reported on the influence of a mentor or role model. However, they did not explore the nature of this influence in any great depth, and therefore no conclusions can be drawn. Straus *et al.* (2006:1226) went on to say that in the studies they reviewed, which included a focus on mentoring, '*…a lack of mentorship was felt to impact negatively on research productivity and few formal mentorship programs have been implemented and evaluated…Mentorship is under-recognized by administrators and appropriate academics. Compensation should be considered for excellent mentors*…'.

Sambunjak *et al.* (2006) undertook a systematic review to examine the evidence on the relationship between mentoring in academic medicine and career development in the form of career choice, career progression and scholarly productivity. Sambunjak *et al.* undertook a comprehensive search for relevant literature, with no time limits. They identified all studies evaluating the impact of mentoring on career choices and academic advancement among medical students, residents, fellows, and staff physicians; all study designs, except qualitative studies, were included. No experimental studies were identified. From a total of 42 papers, 39 studies were included in the final review. While the majority (n=33) were undertaken in the United States, three were undertaken in Canada, two were undertaken in the United Kingdom and one was undertaken in Germany. Most of the included studies were self-report surveys (34 were cross-sectional), with heterogeneous measures. This meant that statistical pooling of the results was not feasible. Sambunjak *et al.* report that '*…the poor quality of the studies does not allow conclusions to be made on the effect size of mentoring on any aspect of academic and professional development [among medical students, residents, fellows, and staff physicians]…the limitations of this evidence preclude its use to suggest mentorship strategies that should be implemented at academic institutions*…'.

The overall summary of the studies included in this review by Sambunjak *et al.* suggests that mentoring was an important influence on personal development, career guidance, career choice and research productivity, including publication and grant success. Eight studies reported on the influence of personal development and career guidance, and five studies reported that mentors were seen as an important career-enhancing factor. In addition, one study from Canada reported that doctors with a mentor were more likely to achieve a promotion.

Sambunjak *et al.* further report that '*…the role of the mentor and content of mentorship greatly differed among the studies, ranging from an informal personal support to formalised mentor relationships. The majority of studies did not mention if a mentor was assigned or self-identified. Moreover, none commented on how frequently mentors met or on the intensity of their interaction…*'.

Frei *et al.* (2010) undertook a review of the PubMed literature 2000–08 to investigate the following: What types of structured mentoring programme for medical students are reported in the scientific medical literature, and what concrete statements, if any, can be identified regarding the effects of mentoring programmes?

They included 25 studies which met the inclusion criteria for the review. Of these studies, 14 described formal mentoring programmes for medical students, including information on the goals of the programmes, models used, participants, evaluations and the effects of the programmes. The other 11 studies referred to mentoring for medical students in general, and included surveys and personal accounts of mentoring, covering its impact on the professional development and success of the students. Mentee participants in these programmes were predominantly first to fourth year medical students; the setting appears to have been college/faculty and/or medical school, not the hospital or medical work site. In addition, it appears that the participants were students and not interns. All programmes evaluated took place in the United States of America. The primary goals of these programmes, as identified by the study reviewers, were career counselling, developing professionalism and personal growth, increasing interest in research and academic careers, and fostering interest in specialities where a future shortage is projected. Three models of mentoring were identified: one-to-one mentoring; small groups of students mentored by a faculty member or senior physician (group mentoring); a combination of both one-to-one and group mentoring. Five of the studies reported on the characteristics of a good mentor, i.e., they should be available regularly, be non-judgemental, empower and encourage the mentee, be a role model, build a professional network, assist in the mentee's personal development. Successful mentees should set the agenda, accept criticism, and reassess the performance and benefits of the mentoring relationship.

Eight programmes were evaluated using a survey which collected self-reported data on the functions and perceptions of mentoring. All programmes evaluated aimed to establish a personal student-faculty relationship; it was reported by students that mentors contributed to students' professionalism and performance. Mentored students receiving ongoing career advice gave more thought to their career and how they could match this to their interests and abilities. Improved medical school performance, as well as increased interest in research, increased research productivity, and aspirations to an academic career were also reported among the students mentored. Integrating medical students into research collaborations was identified as a contributory factor to these effects. According to Frei *et al.:* '*Students involved in mentoring felt better supported at a personal level and rated their overall well-being as higher*'.

In the most recent review undertaken by **Kashiwagi *et al.* (2013)** – who reviewed the literature on mentoring for physicians to identify the key components that contribute to the success of mentoring programmes – the reviewers searched MEDLINE, EMBASE and Scopus for articles published between January 2001 and May 2011 that described mentoring programmes for practising physicians. One of their inclusion criteria was mentoring programmes for physicians out of training, as the reviewers wished to collect all existing material on this group of physicians, and they considered that there was a paucity of research in this area. After reviewing the articles found during their searches, they included 16 articles that described 18 mentoring programmes, and they extracted data on programme objectives, components and outcomes. The authors also examined the reference lists of the 16 articles to obtain additional papers. All mentoring programmes in the 16 articles were operated at academic health centres in the United States of America, and participating mentees were predominantly described as Junior Faculty.

Kashiwagi *et al.* identified the following global objectives in the articles reviewed; these objectives were professional or career development, academic success, increased networking and faculty retention. The authors also summarised the focused objectives from the literature. These objectives were project completion,

developing links with other organisations, and improving communication within departments. Kashiwagi *et al.* also identified seven components in mentoring programmes designed for doctors. As follows:

1. **Mentor preparation:** several programmes reported doing work to prepare and train mentors, either through providing books or manuals on mentoring, or sponsoring training through workshops and seminars.
2. **Planning committee:** several programmes reported using an oversight team or committee who were responsible for pairing mentees and mentors, and were also responsible for programme design, monitoring and evaluation.
3. **Contracts:** several programmes reported using written mission statements or contracts, and some required mentees to sign contracts for participation as a sign of commitment to the mentoring programme.
4. **Pairing mentors and mentees:** 10 programmes reported using paired mentor-mentee dyads, and four allowed mentees to choose their mentors.
5. **Monitoring activities:** regular meetings between mentors and mentees, or among peer mentors, were the most common activity; meetings ranged from weekly to twice weekly. Some programmes added guest speakers and website development to share information and increase programme visibility. These items were added to the regular meetings schedule.
6. **Formal curricula for mentees:** programmes reported curricula topics to include career development, research, teaching and clinical practice.
7. **Programme funding and compensation for participants:** programmes reported using both internal and external sources of funding. In addition, support for mentors was less common than for mentees. Mentees who were granted 'protected time' valued being allowed to dedicate this time exclusively for mentoring – and away from clinical duties. Some programmes reported giving a stipend/funding to mentors.

In the grey literature, one report was located that provided some insight into how doctors perceived mentoring as a supportive intervention. This report, by the **UK Department of Health (2004)**, was issued by the Doctors' Forum and contained a number of useful insights into how mentoring may be used to support post-graduate medical doctors in training. The views expressed were derived from consultations with mentees and mentors, and although the data were collated more than 10 years ago, there is some resonance with the peer-reviewed research that is included in the HRB review. The Doctors' Forum held that there are considerable variations in how mentoring is perceived and practised, as reflected in the many schemes available. However, despite such variations, some degree of consensus emerged from the Doctors' Forum on how mentoring was perceived to support doctors.

Mentoring was seen to help doctors to help themselves, to find their own solutions to indeterminate problems. It was also seen as a developmental rather than a remedial approach. In practice, mentoring was perceived as both helping doctors' self-development and helping them to deal with practical difficulties. Overall, there was a consensus that mentoring was regarded as a general organisational approach for managing transition points in professional careers. For example, doctors identified both general and specific ways that mentoring could support them. In the main, they appreciated the value of:

- having someone to go to who makes you feel you were being well listened to
- being able to address problems and dilemmas in a risk-free environment
- exploring real problems during mentoring programmes
- identifying actions and ways of addressing and resolving real problems
- seeing another person's point of view, and the ability to challenge one-sided views.

More specifically, doctors perceived that mentoring helps them to:

- gain confidence and job satisfaction
- improve their working relationships
- enhance their problem-solving ability
- increase their sense of collegiality
- assist them in their career choice.

Overview

From the studies retrieved for this review, it would appear that reports on outcomes of mentoring in medical contexts are scarce, making it difficult to draw any firm conclusions about how mentoring is used to support doctors. This scarcity has been identified, beginning with **Ehrich *et al.* (2003), Allen *et al.* (2004)** and continuing with **Straus *et al.* (2006), Sambunjak *et al*. (2006)** and, more recently, from the work of **Frei *et al.* (2010)** and **Kashiwagi *et al.* (2013)**. These reviews of mentoring in the medical context represent an impressive body of evidence. However, they convey more about the nature of the work undertaken to evaluate mentoring than about the effectiveness of mentoring. Many authors have commented on the poor quality of evaluation studies on mentoring in a medical context. For example, in a re-appraisal of the review undertaken by **Sambunjak *et al.* (2006)**, which it was claimed was the first systematic review of mentoring in a medical context, **Sambunjak and Marusic (2009)** pointed out that only 4 of the 34 studies identified in that review offered the participants a clear definition of mentors or mentorship. Sambunjak and Marusic went on to point out that '… *because study participants had to decide the meaning of these terms, it is not clear what kind of relationship or process was actually explored. The conceptual diversity of this situation creates an error variance that limits the ability to summarize research findings and estimate the effects of mentoring…*'.

However, it would appear that the lack of high-quality evaluations reporting on outcomes for mentoring with doctors may be reflective of well-designed evaluations of mentoring in other contexts. For example, **Allen *et al.* (2004)** pointed out that '*…the nature of most research designs used in mentoring research also creates reason for debate regarding the causal ordering of variables. Few studies have been designed such that mentoring data are collected prior to that of outcome data…for example although mentoring may result in greater job satisfaction, it may also be that satisfied employees are more apt to put themselves in a position to benefit from mentoring…*'.

Question 3: What are post-graduate medical trainees' experiences of mentoring?

Findings

From the studies retrieved for this HRB review, it appears that very little research involving in-depth investigation has been carried out on doctors' perceptions of what it means to be mentored. An in-depth investigation could include using a grounded theory or using an ethnographic framework with in-depth data collection and analysis; such investigations can be generically referred to as qualitative studies. The research that was retrieved as part of this HRB review shows that qualitative studies on mentoring are primarily descriptive – as illustrated by a comprehensive review carried out by **Sambunjak *et al.* (2010)**, who included only qualitative studies in their systematic review on mentoring for medical doctors. They pointed out that '*apart from the disproportionate geographical representation [all included studies were undertaken in North America] the largest gap in the existing body of research relates to the limited depth in which the phenomenon of mentoring in academic medicine has been explored. In most of the included studies, authors performed a thematic analysis of mentoring experiences as reported by the participants without providing a 'thick' description of events and circumstances pertinent to mentoring, e.g., by doing an ethnographic study, or to develop a comprehensive theory, e.g., by doing a grounded theory study… [this] limited the level of conceptual innovation we could achieve in our systematic review*'.

The focus of the review undertaken by Sambunjak *et al.* was on the one-to-one dyadic model of mentoring; senior to junior, face to face. Their search for relevant studies was comprehensive (dating from the 1960s to 2008), and included databases, following up citations and references, and contacting experts in the field. Nine studies were included in the final review. Sambunjak *et al.* analysed the findings of the primary studies using a qualitative meta-summary, which is the non-interpretative aggregation of findings from individual qualitative studies. They identified five major themes in relation to mentoring relationships. The themes say little about how doctors experienced mentoring, or what mentoring meant to them; however, we cite them here, in order to illustrate the type of descriptive data that Sambunjak *et al.* referred to. The themes primarily related to the characteristics of mentors and mentees, and of the mentor-mentee relationship.

Desired characteristics and actions of mentee and mentor

Four studies reported on what was desired from the role of the mentee. It was reported to be preferable if the mentee initiated and cultivated the relationship with the mentor; showed commitment to ensuring that the relationship succeeded; demonstrated passion to succeed in his/her career; was proactive and willing to learn; was selective in accepting advice from the mentor. Additional desired characteristics and actions of mentees included adequately preparing for meetings with mentors; completing tasks when allocated; responding honestly to feedback, and developing capacity for self-reflection.

Six studies reported on what was desired from the role of the mentor. These characteristics related to the personality, interpersonal abilities and professional status of the mentor. It was considered preferable if the mentor was honest, sincere and prepared to listen to the mentee. Desired interpersonal characteristics included those that focused on the academic and personal development of the mentee. For example, enhancing the visibility of the mentee and developing their connections with academic environments – while protecting them from adverse experiences in the academic setting – were reported as desired characteristics. Mentors who encouraged the mentee to express their thoughts and feelings, facilitate their capacity for self-reflection, and help them set goals for their career were preferred.

Initiation of the mentoring relationship

Two studies reported that mentees had a responsibility to find a mentor, but could also benefit from early guidance and education from their institution. Mentors could be sought from both inside and outside the

department or institution, and could be selected from among peers or from among more senior faculty members. It was important to select a mentor at an early stage of one's career. Mentoring could develop informally over time – initially perhaps from a friendship, later becoming a mentoring commitment – or it could be a formally assigned relationship. Participants in four studies raised concerns about the formal assignment of two people to a mentoring relationship, which they might feel they had been forced into. There was a perception that if a mentee identified a potential candidate for mentor, and if there was an element of 'chemistry' between the two individuals, then a more comfortable and effective relationship might develop.

Structure of the mentoring relationship
The structure of a mentoring relationship is linked to gender, race, ethnic composition and the number of actors in the mentoring relationship. The HRB authors report that findings from five studies included in the review were inconclusive, which suggests that matching pairs on these structural elements were not viewed as essential; the sensitivity of the mentor may be more important than matching on any of the factors listed above.

Characteristics of the mentoring relationship
Five studies reported characteristics of the mentoring relationship, describing it as a personal connection between two parties, based on professional and personal interest. The key underlying values of this relationship were described as honesty, trust, mutual respect, open communication and confidentiality, a willingness to take risks and a commitment to resolve conflict.

The barriers to mentoring, dysfunctional mentoring and possible solutions
All studies reported barriers to mentoring. These related to: personal characteristics of the mentor/mentee, for example, lack of skills and over-emphasis on research by the mentor and lack of courage to change by the mentee; the relationship itself, for example, the mentee feeling vulnerable, differences between/lack of fit, mentor taking advantage of or taking credit for work, mentor being bossy and competition arising between the pair; structural or institutional, for example, time constraints, lack of continuity, conflict of interest and no incentive for mentors.

The HRB authors also retrieved, and include here, a number of primary studies which further illustrate the descriptive nature of data that are available to speak to the experiences of doctors who have been mentored. Some of these studies have been published since the review by Sambunjak *et al*. in 2010. **Straus *et al*. (2013**) recently undertook a large qualitative study to determine the characteristics of effective mentors and mentees, and the factors influencing successful and unsuccessful mentoring relationships. The authors claim that *'[this] is the largest qualitative study [relatively large sample] on mentoring relationships and is unique in its inclusion of participants from two large [academic health centers] in North America [in Canada and the United States*]'.

They interviewed 54 medical faculty members by telephone; these were selected by stratified, purposive sampling, in order to include participants from different ranks, e.g., assistant professor, professor. The design of the study and the data analysis were underpinned by a grounded theory approach. The main findings are summarised in Table 1 and Table 2.

Table 1: Desired characteristics of mentors and mentees

Characteristics of effective mentors	Characteristics of effective mentees
Altruistic or acting in the best interests of the mentee	Be open to feedback
Honest	Be active listeners
Trustworthy	Be respectful of mentors' input and time
Be an active listener	Be responsible for driving the relationship
Have substantial mentorship experience	Pay attention
Have professional experience	Prepare for meetings and be punctual
Have access to networks	
Be accessible	

Source: Straus *et al*. 2013

Table 2: Characteristics of mentoring relationships

Characteristics of successful mentoring relationships	Characteristics of unsuccessful mentoring relationships
Reciprocity	Poor communication
Mutual respect	Lack of commitment
Clear expectations	Personality differences
Personal connection	Perceived (or real) competition
Shared values	Conflicts of interest
	Mentors' lack of experience

Source: Straus *et al.* 2013

Steele *et al.* (2013) collected data by survey (n=175), focus groups (n=8) and individual interviews (n=19). Survey responses indicated that a positive mentoring experience during residency training provided a high incentive to pursue an academic career. There was unanimous agreement among participants in the focus groups that having nurturing, formalised mentoring programmes promoted career development. Data collected from individual interviews tended to suggest that participants felt mentoring programmes were good in theory, but may fail in practice, or prove unsustainable. Suggestions on improving the profile of mentoring in institutions included compensating mentors, formalising mentoring programmes, matching mentors and mentees on mutual interest, and encouraging mentors to 'speak the language' of the mentee.

Garr and Dewe (2013) interviewed 21 doctors; 12 of these doctors had a mentor and 9 had no mentor. Garr and Dewe reported that mentored doctors experienced positive relationships when the mentor was approachable, supportive, honest, trustworthy, flexible, empathetic and responsive. The mentored trainees stated that mentoring had not hindered their career, and they suggested that not having a mentor may be a hindrance to one's career. Both the mentored and non-mentored trainees stated that mentoring should be an important part of training. They stated that it should be an informal arrangement separate from the educational supervisor; everyone should have access to a trained mentor whom the mentee had chosen. The mentored trainees said mentoring had had a positive impact on their careers, as it gave them a wider perspective.

Straus *et al.* (2009) explored the mentoring relationship through in-depth interviews with 21 mentees and 7 mentors in Canada. The majority reported having had good mentoring experiences, and all participants associated good mentorship with career success. Nine described adverse experiences; such experiences included poor levels of mentorship, having research stolen by the mentor, and perceived competition with the mentor, which was perceived to negatively impact on career progress and productivity. For some interviewees, concern was expressed that the assigned mentorship could have a negative impact on the mentor-mentee relationship.

Steven *et al.* (2008) collected data from six mentoring sites throughout England, using semi-structured interviews with 49 participants. The participants included (among others) mentors (16), mentees (16) and people who were both mentor and mentee at the same time (3). The mentors and mentees were working in general practice, in hospital medicine, and in public health. **Steven *et al.*'s** analysis did not distinguish between responses from mentors or mentees.

Participants perceived benefits in their professional practice and personal wellbeing. Indeed, one appeared to enhance the other, suggesting overlaps between these categories. Mentoring was perceived to have a positive impact on consultation skills, work relationships and teamwork. Mentors and mentees spoke about positive changes to their professional and personal confidence as well as their morale. They also spoke about being reassured about their performance, about having increased confidence, and about having an enhanced sense of personal wellbeing. In addition, they spoke about their development, noting that the skills they acquired during mentoring were useful to their professional and personal development. According to the authors '*…all three categories – professional practice, personal wellbeing, personal-professional development and their overlaps – appear to be underpinned by the processes of problem solving and change management*…'.

Buddeberg-Fischer *et al.* (2004) reported on a mentoring programme for junior physicians of both sexes implemented in the University Hospital, Zurich, and evaluated in a 12-month pilot phase. Eight mentoring groups were formed, with a total of 40 junior physicians, comprising 17 women and 23 men. Each group (comprising 3-6 mentees) was mentored by one of eight mentors (four male mentors and four female mentors). All mentees had graduated from medical school 4-5 years previously. The mentoring programme followed a five-phase model: (i) forming (informing about career opportunities); (ii) storming (developing career plans); (iii) norming (focusing on career goals); (iv) performing (implementing career steps); (v) finalising (evaluating career successes). Focus group interviews were undertaken with 34 mentees at the end of the 12-month pilot phase. Six participants had left during those 12 months. From the perspective of the remaining mentees, the support they received in developing and making their career goals concrete was perceived to be the most successful outcome. In addition, the mentees talked about how the mentoring experience had boosted their self-confidence and furthered their ability to use their own initiative. Some mentees were promoted to senior physician posts, and some demonstrated increased research and publishing activity, including research fellowship placements abroad.

Jackson *et al.* (2003) explored the experiences of academic medicine faculty members. The authors conducted individual telephone interviews with 16 faculty members (9 men and 7 women), using both closed and open-ended questions. Twelve of these interviewees had completed their residencies, and five had completed fellowship training.

Compatibility – 'being on the same wavelength' or 'having the right chemistry'– was considered essential for the successful mentoring relationship, and required the mentee and the mentor to be aware of their respective working, communication and relational styles. Another important observation was that mentees required perseverance in order to find successful mentoring relationships. Prized mentors had 'clout,' knowledge, and interest in their mentees, and provided both professional and personal support.

Bagnall (2012) reported the views of 27 junior doctors in England who had already completed, or were currently participating in, leadership programmes. The doctors were interviewed, in order to determine their experiences and aspirations for the future. The majority reported that mentoring, coaching and action learning empowered them to apply their new skills in the workplace; those who were not receiving this type of support reported that their experience was less satisfactory and less rewarding.

Overview

From the studies retrieved during this HRB review, it would appear that qualitative studies reporting on mentees' experience of being mentored are largely descriptive and lack the in-depth, 'thick description' that would provide a more robust interpretative account with both descriptive and explanatory power. The reviews and primary studies included in this review show, for the most part, that mentees view mentoring as a positive experience, with some studies reporting that mentoring can help mentees to develop concrete career goals, boost their self-confidence and enhance their ability to use their own initiative to resolve problems. Some reports suggest that mentees who received mentoring were promoted to senior physician posts, whereas other mentees demonstrated increased research and publishing activity, including research fellowship placements abroad; some mentees believed that good mentorship was vital to career success. A lot of the reporting in the studies included in this review focused on describing what were perceived to be desirable characteristics of mentees, mentors and the mentoring relationship; mentees were considered to have primary responsibility for finding a suitable mentor. In addition, informal rather than assigned mentoring relationships appeared to be the preferred option. The perceived characteristics of effective mentors included acting in the best interests of the mentee; being honest and trustworthy; being a good listener; being accessible and approachable; having the capacity to introduce the mentee to professional networks. The factors reported to have influenced successful mentoring were reciprocity; clear expectations; mutual respect; personal connection or compatibility; shared values; open communication and effective feedback. According to a number of authors, successful mentoring went beyond a doctor's professional role and crossed the personal-professional interface. Some authors promoted the need for compensation for mentors and protected time for mentees.

Question 4: What is the impact of mentoring on retaining post-graduate medical trainees and specialist doctors in publicly funded health systems?

Findings

In the most recent systematic review by **Kashiwagi *et al.* (2013)**, which included data on 18 mentoring programmes for physicians, the subjective outcomes assessed in the programmes that were evaluated included satisfaction with the programme, perceived psycho-social benefits and the development of professional skills in mentees. Objective outcomes included retention rates, attending meetings, the number of successful nominations to professional societies and committees, and promotions and rank.

Kashiwagi *et al*. included four papers which they claimed measured 'retention rates. These papers were by **Benson *et al.* (2002), Pololi *et al.* (2002), Wingard *et al.* (2004), and Kosoko-Lasaki *et al.* (2006)**. The four papers were retrieved and reviewed for relevant data on the assessment of retention rates as an objective outcome. It was noted that Kashiwagi *et al.* stated that '*…faculty retention appears to improve in systems with mentoring programs*…'. Kashiwagi *et al.* did not say that mentoring programmes improved retention rates; they merely suggested an apparent association. Moreover, they only speak to faculty (university/US academic health centres) not hospitals. The findings from the individual papers in relation to 'retention' are presented below.

Benson *et al.* (2002) reported on the evaluation of a demonstration faculty-to-faculty mentoring programme during a period of major institutional reorganisation in Hahnemann University, Philadelphia. The authors described three key features of the demonstration project; two-tiered preceptoring and mentoring programmes, voluntary participation, and selection of senior faculty by junior faculty. The preceptoring programme (goal of orientation to institution and profession) took place over a one-year period; in the paper by Benson *et al.,* this programme was differentiated from the mentoring programme. The authors reported that '*…our retention data show a trend towards greater retention of participating junior faculty: 38% of junior faculty who did not form preceptoring partnerships left the organisation, compared with 15% of those who formed partnerships. This potentially positive outcome was found particularly with minority faculty; 100% (6/6) with preceptors remained, while 33% (1/3) without preceptors remained…*'. It should be noted that the sample numbers are quite small; from an invited faculty cohort of 144 potential preceptees, 33 applied for partnerships and 20 formed partnerships. The paper is unclear in its reporting on the numbers transitioning from the preceptor programme to the mentoring programme.

Pololi *et al.* (2002) report on the design, implementation and evaluation of a facilitated group mentoring programme for junior faculty members in the medical school at East Carolina University. Eighteen assistant professors volunteered to participate in the programme. The programme adopted the peer collaborative mentoring approach in contrast to the dyadic approach; the former is non-hierarchical.

It is reported that data were collected through self-report qualitative and quantitative items. 'Retention of faculty' is reported as follows: '*…the program affected faculty members' retention in academic medicine at our school, in part because it helped many participants find greater satisfaction in their work and improved their understanding about the nature and expectations of academic medicine. Although some indicated an unwavering commitment to academic medicine and a desire to stay at the medical school that was relatively unaffected by the program, a few experienced the program as reinforcing…their decision to stay…*'.

Wingard *et al.* (2004) reported on an evaluation of a mentoring programme involving assistant professors, which was implemented in the junior faculty of the University of California, San Diego. The evaluation collected data via surveys before and after the seven-month programme; it also collected data from 67 participants in another programme which took place four years later. The authors reported that 85% of programme

participants remained in the university (10 left). 93% remained in academic medicine (5 left); one of these five left four years after participating in the programme. A total of 10 participants left the university by July 2003. However, according to national estimates, the number that would have been expected to leave in the same timeframe was 14. The authors suggested that the differences observed between the numbers of those leaving and remaining were not statistically significant, but were in 'the desired direction'. However, claims that the programme 'caused' or 'contributed' to retention were not discussed in the paper. There were merely 'implied assumptions' that these people would not have remained in the university if they had not participated in the programme.

Kosoko-Lasaki *et al.* (2006) reported preliminary data for an 18-month period after implementation of a mentoring programme for women and underrepresented minorities (such as African Americans or Hispanics) at two institutions of higher education in the United States. However, the reporting on retention in the mentoring programme was confusing, as it was not clear how many numbers were involved. This was despite the authors claiming that *'…all faculty members in the program at Creighton [one of the sites] have remained after one-year…*'. In another part of the report, the numbers suggest that three out of three faculty members were retained after one year.

Overview

The four studies cited in the review by **Kashiwagi *et al.* (2013)**, and reviewed individually in this HRB review, were of such poor quality that little reliability can be attributed to their conclusions.

Overall conclusion

There is no universal definition of what constitutes mentoring in the medical literature; this lack of consensus would appear to be influenced by both philosophical and geographical differences. However, there are some key elements identified in the literature of what might constitute mentoring: mentoring is primarily a developmental relationship, with the mentee perceived to benefit most; the personal and professional development of the mentee are among the main objectives of the mentoring relationship; the mentor is generally described as the person acting as a guide to the mentee; mentoring may or may not be formal and structured, with an preference for the former and a specific preference for mentoring to be dissociated from formal monitoring and assessment by line managers or educational supervisors.

Studies reporting on the outcomes of mentoring in medical contexts are rare in the peer-reviewed literature. This scarcity has been identified, beginning with **Ehrich *et al.* 2003, Allen *et al.* 2004,** and continuing with **Straus *et al.* 2006, Sambunjak *et al.* 2006** and, more recently, from the work of **Frei *et al.* 2010** and **Kashiwagi *et al.* (2013)**. These reviews of mentoring in the medical context represent an impressive body of evidence. However, they convey more about the nature of the work undertaken to evaluate mentoring than about the effectiveness of mentoring. It would appear that evaluations of mentoring have tended to assess the perceived importance of mentoring using self-report questionnaires that are completed by mentees either during or after their mentoring experience. The four studies cited in the review by **Kashiwagi *et al.* (2013),** which report on retention outcomes, were of such poor quality that little reliability can be attributed to their conclusions.

From the studies retrieved during this HRB review, there appears to be limited evidence of reporting on the direct experience of mentees who have participated in mentoring programmes. The evidence that does exist tends to be descriptive, as illustrated by the most comprehensive review of qualitative studies in the literature. **Sambunjak *et al.* (2010)** in their systematic review of qualitative studies point out that '*…the largest gap in the existing body of research relates to the limited depth in which the phenomenon of mentoring in academic medicine has been explored. In most of the included studies, authors performed a thematic analysis of mentoring experiences as reported by the participants without providing a 'thick' description of events and circumstances pertinent to mentoring…[this] limited the level of conceptual innovation we could achieve in our systematic review…*'. The descriptive accounts which emerge from the available studies suggest that mentees self-report that mentoring is a positive experience through which they develop concrete career goals, boost their self-confidence and enhance their ability to use their own initiative to resolve problems. Some studies report that doctors who were mentored were promoted to senior physician posts; in addition, some doctors demonstrated increased research and publishing activity, including research fellowship placements abroad; some mentees believed that good mentorship was vital to career success. Studies also reported on what was perceived to be the desirable characteristics of mentees and mentors and of the mentoring relationship; for example, mentees were perceived to have primary responsibility for finding a suitable mentor, and informal rather than assigned mentoring relationships appeared to be their preference.

However, despite the poor quality of studies evaluating the effectiveness of mentoring, despite the lack of conceptually rich studies documenting the experience of mentoring, and despite the lack of a universal definition of mentoring in the medical literature, there are some signals in the literature which point to the key components of mentoring:

- Mentoring is primarily a dyadic relationship between a senior (mentor) and junior (mentee).
- Mentoring can be established formally (assigned) or informally (unassigned).

- Mentees prefer to choose their own mentor.
- Mentoring is developmental not remedial; it can provide educational development (new learning), personal development (to enable mentees to manage transitions) and professional development (promoting and improving concrete career outcomes).
- Mentoring excludes formal assessment.
- Mentoring appears to be well received by mentees.

Finally, in the absence of robust evaluations assessing the effectiveness of mentoring and more conceptually rich qualitative accounts of the mentoring experience, it is unclear how the future evidence base on mentoring can be improved. Unless robustly designed randomised trials are undertaken to evaluate the effectiveness of mentoring, the likelihood of building sufficient aggregated data to undertake a meta-analysis will not materialise. Similarly, unless robust, conceptually rich qualitative studies are undertaken to interpret the meaning of mentoring to mentees, the likelihood of configuring an assembled body of literature into a meta-ethnography will remain unexplored. We are satisfied that this rapid evidence assessment to answer four specific questions about mentoring for post-graduate doctors has retrieved, screened and extracted relevant data to answer the four questions posed by the DoH. We await further robustly designed studies in order to strengthen the evidence base on mentoring in medical contexts.

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