

Northumbria Research Link

Citation: Wilson, Gemma, Larkin, Valerie, Redfern, Nancy, Stewart, Jane and Steven, Alison (2017) Exploring the relationship between mentoring and doctors' health and well-being: A systematic narrative review. Journal of the Royal Society of Medicine. ISSN 0141-0768 (In Press)

Published by: SAGE

URL:

This version was downloaded from Northumbria Research Link:
<http://nrl.northumbria.ac.uk/29994/>

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: <http://nrl.northumbria.ac.uk/policies.html>

This document may differ from the final, published version of the research and has been made available online in accordance with publisher policies. To read and/or cite from the published version of the research, please visit the publisher's website (a subscription may be required.)

www.northumbria.ac.uk/nrl



Exploring the relationship between mentoring and doctors' health and well-being: A systematic narrative review

Gemma Wilson^{1*}, Valerie Larkin¹, Nancy Redfern², Jane Stewart³ and Alison Steven¹

¹Department of Nursing, Midwifery and Health, Faculty of Health and Life Sciences, Northumbria University, Newcastle-upon-Tyne, UK.

²Newcastle-upon-Tyne Hospitals NHS Foundation Trust, UK.

³Faculty of Medical Sciences, Newcastle University, Newcastle-upon-Tyne, UK.

The health and well-being of doctors is crucial, both for the individuals themselves and their ability to deliver optimum patient care. With increased pressures on healthcare, support mechanisms that attend to doctors' health and well-being, may require greater emphasis to safeguard those working in frontline services. To inform future developments, this systematic narrative review aimed to identify, explore and map empirical and anecdotal evidence indicating relationships between mentoring activities and the health and well-being of doctors. Twelve databases were searched for publications printed between January 2006 and January 2016. Articles were included if they involved doctors' engagement in mentoring activities and, either health or well-being, or the benefits, barriers or impact of mentoring. The initial search returned 4669 papers, after exclusions a full-text analysis of 37 papers was conducted. Reference lists and citations of each retrieved paper were also searched. Thirteen papers were accepted for review. The Business in the Community model was used as a theoretical framework for analysis. Mentoring influenced, collegiate relationships, networking and aspects of personal well-being, such as confidence and stress management, and was valued by doctors as a specialist support mechanism and professional practice. This review contributes to the evidence base concerning mentoring and doctors' health and well-being. However, it highlights that focused research is required to explore the relationship between mentoring, and health and well-being.

Introduction

There is increasing recognition and strategic focus upon the health and well-being of healthcare professionals ¹, ² in part fuelled by the recognition that *'without strong employee wellbeing, employee engagement declines, retention suffers, and motivation and performance are affected'*.³ This may also impact upon the ability of healthcare systems to fulfil their organisational functions and aspirations.⁴ Health and well-being are fuzzy concepts incorporating many elements. Rather than being the absence of illness, health is defined as *'a state of complete physical, mental and social well-being'*.⁵ The concept of well-being is less universally defined. Dodge, Daly ⁶ proposed a definition of well-being as a state in which *'individuals have the psychological, social and physical resources they need to meet a particular psychological, social and/or physical challenge'*.⁶

Health and well-being are increasingly recognised as varied and complex, the components of which are unique to individuals and related to contexts and situations. Such a broad and inclusive definition can make investigation or comparison of research findings difficult. The Business in the Community Workwell Model (BITC Workwell model), developed by international business leaders, offers a framework for considering a healthy environment and support of employees, incorporating physical, psychological and social components of health and well-being.⁷ It suggests that to create a healthy environment and support the health and well-being of employees, these components act together. How companies manage their staff can determine business performance, and its ability to succeed long term.⁷ The model supports employers to take a holistic, strategic and proactive approach to well-being with the aim of building individual and company resilience and has been used as a benchmarking tool with firms in the FTSE100.⁷

Mentoring schemes are seen as one way of supporting doctors to cope with difficulties, transitions and related expectations.⁸ The Standing Committee on Postgraduate Medical and Dental Education defined mentoring as a:

*'process whereby an experienced, highly regarded, empathic person (the mentor) guides another individual (the mentee) in the development and examination of their own ideas, learning and personal and professional development. The mentor...achieves this by listening and talking in confidence to the mentee.'*⁹

Much research has explored mentor and mentee interaction in mentoring schemes with roles, functions, benefits and challenges highlighted.¹⁰⁻¹³ Outcomes focus primarily on professional aspects, such as career progression, career success^{14, 15} and career choice.¹⁶ However, anecdotal reports from the authors previous research suggests that support mechanisms such as mentoring may influence doctors' health and well-being.¹⁷

The research team developed a two-stage study to explore the relationship between engagement in mentoring activities and doctors' health and well-being. The Joan Dawkins Research Grant, 2014, was awarded by the British Medical Association to undertake the project. This paper presents the first stage of this research, a systematic narrative review framed by the BITC Workwell model,⁷ reporting the relationship between mentoring activities and doctors' health and well-being.

Method

A systematic narrative review was undertaken, as recommended when the review question dictates the inclusion of a wide range of literature and research designs, including qualitative and/or quantitative findings, for which other approaches, such as traditional systematic reviews, are inappropriate.^{18, 19} A systematic search strategy was employed to reduce bias in study retrieval or inclusion (Appendix A). A total of 4,669 papers were identified from database searches (Appendix B). After the exclusion of duplicates and papers not relevant to the aim of this review, thirteen remaining papers were included (Appendix C). The quality of included papers was examined using the Critical Appraisal Skills Programme tool.²⁰ Analysis was undertaken using theory-driven thematic synthesis, in which the BITC Workwell Model⁷ acted as a heuristic device to synthesise findings into four thematic groupings reflecting the components of the model; better relationships, better physical and psychological health, better specialist support and better work.

Findings

Better relationships

The better relationships component of the BITC Workwell model highlights the value of encouraging and enabling good communication, and ensuring effective relationships both inside and outside of the work environment.⁷ Improved relationships and communication provide 'social capital' which promotes employees' mental health, well-being, and engagement.⁷ Evidence from the reviewed literature suggests that mentoring enhances working relationships, increases networking opportunities and leads to the development of communication skills.

Participant feedback from a qualitative study exploring demand for mentoring, suggested that mentoring supported personal and professional relationships, and enhanced networking opportunities.²¹ In another study interviewees suggested mentoring activities enhanced professional practice and collegiality in both mentees and mentors, through facilitation of improved working relationships and teamwork.¹⁷ The authors suggest this collegial approach fosters peer support which protects against feelings of isolation and adds to workplace

satisfaction, an important component of well-being. Findings from other studies, based on participant feedback, also suggest mentoring improved relationships with colleagues,^{22, 23} with one finding that *'the features participants liked best about the mentoring program related to the social networking, inclusiveness, and the supportive nature and camaraderie of the group'*.²⁴ The perceived benefits for collegial relationships arose from mentoring programmes that followed various mentoring models, including both peer mentoring and 'senior/junior' models of mentoring.

Relationships, both inside and outside of work, were perceived as benefitting from communication skills acquired in mentor development.^{17, 22} Participants in the Eisen, Sukhani²² study reported improved communication by peer mentors who described learning skills such as open questioning and active listening. Peer mentors anticipated using newly developed communication skills in both their personal lives and at work, for example to support junior colleagues, in future consultations, and in educational supervisor roles.

Better physical and psychological health

The BITC Workwell model promotes the importance of a safe working environment, and healthy behaviours, to ensure better physical and psychological health, components include stress, anxiety, satisfaction, accomplishment, optimism, confidence, control, empowerment and safety.⁷ Papers described engagement in mentoring as leading to accomplishment in the form of personal development. Of the small number of studies describing specific aspects of personal development, mentoring was reported as leading to improved confidence,^{22, 23, 25} increased energy levels²³ and better stress management,^{22, 25} as well as helping mentees grow socially,²⁶ emotionally,^{26, 27} and intellectually.²⁷

One study proposed three broad areas of benefit, and underlying processes that overlapped in mentoring; professional practice, personal well-being, and personal and professional development.¹⁷ This study suggested personal well-being may be enhanced because mentors and mentees felt more confident, positive and reassured about their performance. The authors postulated that this emanated from additional skills and tools mentoring provided to individuals to deal with personal and professional issues, including problem solving and change management.¹⁷ Peer-mentors in the study conducted by Eisen *et al.* also felt that mentoring led to personal development due to enhanced listening skills and a structured problem solving approach.²²

However, Mann, Ball²³ reported drawbacks, describing adverse issues experienced by three mentees and one mentor throughout a mentoring scheme; one scheme participant withdrew due to emerging mental health issues, one felt it was not the right time to continue, and one mentee remained in the scheme but found

engagement difficult and did not achieve positive outcomes. The mentor of the mentee with mental health issues also experienced adverse effects from the encounter which affected their own health and well-being.

Better specialist support

The BITC Workwell model describes better specialist support as an early intervention in proactive management, of employees' physical and psychological health.⁷ This involves helping teams to manage health issues at work, or facilitating employees' return to work through services such as occupational health, human resources, employee counselling, and training.⁷ Within the papers reviewed, mentoring relationships were considered as a means of providing specialist support to employees in a confidential environment. However, resourcing issues were a concern for sustainability of the training required to become a mentor.

Mentors were described as role models^{24, 27, 28} and as being inspirational to mentees.^{24, 29} Osaghae considers mentoring as being able to '*assist doctors to gain emotional and intellectual growth to become independent practicing physicians*'.²⁷ All 10 research papers described mentoring schemes as an intervention aimed at providing support to mentees.^{17, 21-26, 28, 30, 31}

The mentoring relationship was viewed as a confidential environment for discussion: '*a protected environment where the doctor could discuss their pressures in a non-judgemental space*'²³ and as '*an emotionally supportive and encouraging environment*'.²⁴ In Eisen et al's.²² study, participants felt it was important that mentoring discussions were held in a confidential place where the mentee felt comfortable to discuss their own personal issues. Findings from interviews conducted by Harrison et al.²¹ describe the protective nature of mentoring which can act as a '*safety net*' potentially reducing the likelihood of errors. Registrars and newly appointed consultants felt that mentoring would help in managing the emotional burden of their new role, including their new managerial and leadership responsibilities.²¹

Eisen, Sukhani²² described the importance of mentors being formally trained before being involved in mentoring support. Training was perceived as contributing to the scheme's success, enabling mentors to offer appropriate advice, support, and conflict resolution. However, the authors also discussed financial implications of this training influencing the sustainability of the mentoring scheme, suggesting training to be tailored to local need or budget, or using mentors trained in the scheme to train future mentors. Of the other five research papers describing, or evaluating one specific mentoring intervention, only two stated that mentors had undergone any formal or informal mentor training.^{23, 25}

Better work

This component of the BITC Workwell model focuses on supporting 'better work' by ensuring the working environment is engaging and supportive and giving the employee a voice.⁷ Better work is further ensured by managerial styles and organisational cultures which facilitate mutual trust and respect. Factors concerning job design, including the type of task completed, the variety of challenge, and workload also contribute to 'better work'.⁷

The ways in which mentoring supported better work were evident throughout all 13 papers reviewed, issues raised included activities and functioning in their current professional role and role advancement, with some discussion of benefits to the wider organisation. When reporting the work-related impact of mentoring, most studies described only the benefits that mentees experienced. Of the three studies describing the work-related benefits of both mentors and mentees,^{17, 22, 24} two were peer-mentoring programmes.^{22, 24} Whilst Welch, Jimenez²⁴ reported the benefits of mentoring as being similar for peer mentors and mentees, two of the studies described the impact that mentoring specifically had on mentors' consultation skills,^{17, 22} with one mentor describing mentoring as enabling them to '*take a more egalitarian approach to patients*'.¹⁷

Participation in mentoring was reported as having a positive impact on mentees': job satisfaction;¹⁷ professional outlook;²² educational support;^{22, 30} increased energy levels and motivation;²³ as well as support when faced with professional disappointment or failure.³¹ Five papers proposed mentoring improved mentees' clinical skills.^{21, 22, 27, 30, 31} Mentoring schemes also supported career progression and professional development of mentees, in the identification and discussion of career decisions,^{22, 25, 30, 31} the identification and completion of career goals^{22, 25} and through transference of expert knowledge from mentor to mentee.^{26, 27, 29}

Better work-life balance was described as a useful outcome for mentees^{17, 22, 24, 28} with mentoring identified as helping mentees manage workload, including work-life balance.^{25, 32} Banini³² asserted that mentors have a responsibility to '*take an active role in mentoring the younger generation*' in helping mentees achieve work-life balance.

Although aspects of better work were primarily focussed on the individual's role, Welch *et al.* discussed the benefits of peer mentoring sessions in giving voice to employees to actively create change in the work environment across the wider organisation.²⁴ As part of peer mentoring sessions, participants addressed workplace gender bias leading to the development of a new family-leave policy as well as establishing dedicated on-site lactating facilities, and developing new collaborations between individuals.²⁴

Discussion

A fundamental requirement of healthcare organisations is providing healthcare that is high quality, safe and compassionate.³³ To facilitate this level of care, doctors' health and well-being must be considered as it impacts staff retention, motivation, performance and patient safety. For this reason, NHS England has recently announced a plan to invest £5 million improving staff health and well-being.³⁴ This review has identified associations between mentoring activity and doctors' health and well-being, as conceptualised by the BITC Workwell model.⁷ Papers reviewed suggest mentoring contributes to doctors' health and well-being by enhancing relationships, physical and psychological health, specialist support, and may lead to better work. Although presented as separate units in this review, under headings within the BITC Workwell model,⁷ all of these components interlink and impact on one another.

The findings suggest mentoring impacts both professional and personal relationships due to increased collegiality, networking opportunities, and the development of transferrable communication skills. In addition, relationships with key individuals and working in supportive teams, may impact upon stress levels by influencing levels of social support and role clarity.³⁵⁻³⁷ Kalen et al. confirm mentoring relationships include the promotion of supportive cultures and communities of practice, which may foster the development of social capital.³⁸ Social capital, is a process involving interactions and networks which promote shared values and sense of community.³⁹ It comprises of three attributes: trust, networks of relationships, and reciprocity⁴⁰ and is specifically related to both job satisfaction and engagement with clinical improvements among health professionals.⁴¹ The findings from this review support the positive role mentoring may have in developing and sustaining social capital in the workplace.

To ensure better physical and psychological health, the BITC Workwell model promotes the importance of a safe working environment, and health related behaviours.⁷ Mental health issues, including stress, depression and anxiety, are frequent causes of sickness among employees of the NHS, with rates of suicidal ideation and completed suicides being relatively high amongst doctors.^{2, 42} This review suggests mentoring contributes to better physical and psychological health by enhancing personal development, confidence and stress management. However, one paper highlighted adverse outcomes associated with unsuccessful mentoring which had repercussions for both mentee and mentor affecting morale. From this review it is not possible to

illuminate the detail and complexity of the relationship between mentoring, and physical and psychological health, thus further detailed research is needed.

In the papers reviewed, mentoring is seen as a 'specialist support' mechanism and acts as a lynchpin enabling 'better relationships' and 'better physical and psychological health', which when combined, prompts 'better work'. The use of support mechanisms to enhance individual responses to workplace stresses and pressures is recognised as a mechanism to improve well-being² as is the organisation's responsibility to provide access to such support mechanisms, including occupational health and specialist services.^{2,7} However access to mentoring support is inconsistent across healthcare services, with variations including availability, access, preparation and training.⁴³⁻⁴⁵ Of the seven research papers that discussed a mentoring scheme, only three stated mentors had undergone training.^{22,23,25} Financial and resource implications on health service provision may impact upon the availability of support mechanisms such as mentorship, however, without adequate preparation for the mentor/mentee role the quality of the resulting support may be variable and unsustainable.^{22,23}

The final component of the BITC Workwell model is 'better work'. All of the evidence reviewed referred to mentoring as supporting individuals to work 'better' in some way including improvement of clinical skills, provision of career support, or improved work-life balance. The benefits of mentoring on work were due to the transference of knowledge, identifying and working through goals, as well as giving voice to employees. To enhance staff support and engagement, organisations are encouraged to embrace person-centred culture, many of the components of which are implicit to effective mentoring, as highlighted within this review.⁴⁶

Recommendations and future work

Whilst it is apparent that mentoring is perceived as an important mechanism of specialist support for doctors, to date there is limited research exploring the relationship between mentoring and health and well-being. Evidence arises primarily from small-scale studies, or anecdotal evidence, not primarily focused upon the relationship between mentoring and health and well-being. Furthermore, the primary focus is generally on the mentee, in many cases neglecting the mentor. Further research is needed to specifically explore issues of health and well-being related to mentoring, including a focus on the mentor.

Conclusion

Utilising the BITC Workwell model⁷ as a theoretical framework for analysis to thematically synthesise the findings, an association emerged between mentoring and better relationships, better physical and psychological

health, better specialist support and better work. This systematic narrative review has considered evidence suggesting that mentoring, as a support mechanism, leads to improved relationships, improved physical and psychological health, and ultimately better work. Work was directly articulated as being impacted by mentoring but was also implicitly affected by improving relationships and physical and psychological health. Additional research is needed to further consider the impact of mentoring support on doctors' health and well-being, as well as focusing on the impacts of mentoring on the mentor's health and well-being.

Funding: This research was funded by the British Medical Association's Joan Dawkins Research grant 2014.

Contributorship: All authors read and reviewed the papers included in the review. GW and VL independently analysed and synthesised the papers. These analyses were then brought together in the larger group of all authors for discussion, debate and agreement. GW and VL drafted the paper and all authors were involved in editing and adding to the initial draft. All authors agreed the final draft.

Acknowledgements: We would like to thank the British Medical Association for awarding the research team the Joan Dawkins Research Grant, 2014, which has allowed this research to go ahead.

Competing interests: AS is first author on one of the papers reviewed. No further competing interests are declared.

Guarantor: GW

References

1. Boorman S. The Final Report of the independent NHS Health and Well-being review. *NHS health and well-being review—the government response*. London: Department of Health, 2009.
2. Department of Health. Invisible patients: Report of the working group on the health of health professionals. London: Department of Health, 2010.
3. Fairhurst D and O'Connor J. Employee wellbeing: taking engagement and performance to the next level. *Towers Watson: London*. 2010.
4. Keogh B. Review into the quality of care and treatment provided by 14 hospital trusts in England: overview report. London, UK: NHS England, 2013.
5. World Health Organisation. Preamble to the Constitution of the World Health Organization. In: Organisation WH, (ed.). *Official Records of the World Health Organization* 1948, p. 100.
6. Dodge R, Daly AP, Huyton J and Sanders LD. The challenge of defining wellbeing. *International Journal of Wellbeing*. 2012; 2.
7. Business In The Community. BITC Public reporting guidelines: Employee engagement and wellbeing. London: Business In The Community, 2013.
8. General Medical Council. Leadership and management for all Doctors. London: GMC, 2012.
9. Standing Committee on Postgraduate Medical and Dental Education. Supporting Doctors and Dentists at work: An enquiry into mentoring. London 1998.

10. Steven A. Mentoring schemes for psychiatrists in the North East: an evaluation and exploration. 2008.
11. Overeem K, Driessen EW, Arah OA, Lombarts KM, Wollersheim HC and Grol RP. Peer mentoring in doctor performance assessment: strategies, obstacles and benefits. *Medical education*. 2010; 44: 140-7.
12. Driessen EW, Overeem K and van der Vleuten CP. Get yourself a mentor. *Medical Education-Oxford*. 2011; 45: 438.
13. Connor M, Bynoe A, Redfern N, Pokora J and Clarke J. Developing senior doctors as mentors: a form of continuing professional development. Report of an initiative to develop a network of senior doctors as mentors: 1994-99. *Medical Education-Oxford*. 2000; 34: 747-53.
14. Kalén S, Stenfors-Hayes T, Hylin U, Larm MF, Hindbeck H and Ponzer S. Mentoring medical students during clinical courses: a way to enhance professional development. *Medical teacher*. 2010; 32: e315-e21.
15. Stamm M and Buddeberg-Fischer B. The impact of mentoring during postgraduate training on doctors' career success. *Medical Education*. 2011; 45: 488-96.
16. Cervantes L, Chu E, Nogar C, et al. A Hospitalist mentoring program to sustain interest in healthcare careers in under-represented minority undergraduates. *Journal of Hospital Medicine*. 2014; 9: 586-9.
17. Steven A, Oxley J and Fleming WG. Mentoring for NHS doctors: perceived benefits across the personal-professional interface. *Journal of the Royal Society of Medicine*. 2008; 101: 552-7.
18. Popay J, Roberts H, Sowden A, et al. Guidance on the conduct of narrative synthesis in systematic reviews. *ESRC methods programme*. 2006; 15: 047-71.
19. Snilstveit B, Oliver S and Vojtkova M. Narrative approaches to systematic review and synthesis of evidence for international development policy and practice. *Journal of development effectiveness*. 2012; 4: 409-29.
20. Critical Appraisal Skills Programme (CASP). CASP checklists Oxford: CASP, 2014.
21. Harrison R, Anderson J, Laloë P-A, Santillo M, Lawton R and Wright J. Mentorship for newly appointed consultants: what makes it work? *Postgraduate Medical Journal*. 2014; 90: 439-45.
22. Eisen S, Sukhani S, Brightwell A, Stoneham S and Long A. Peer mentoring: evaluation of a novel programme in paediatrics. *Archives Of Disease In Childhood*. 2014; 99: 142-6.
23. Mann R, Ball K and Watson G. Mentoring for NHS general practitioners: a prospective pilot study of an action learning approach. *Education for Primary Care*. 2011; 22: 235-40.
24. Welch JL, Jimenez HL, Walthall J and Allen SE. The women in emergency medicine mentoring program: an innovative approach to mentoring. *Journal Of Graduate Medical Education*. 2012; 4: 362-6.
25. Tietjen P and Griner PF. Mentoring of Physicians at a Community-Based Health System: Preliminary Findings. *Journal of Hospital Medicine*. 2013; 8: 642-3.
26. Lockyer J, Fidler H, De Gara C and Keefe J. Mentorship for the physician recruited from abroad to Canada for rural practice. *Medical Teacher*. 2010; 32: e322-e7.
27. Osaghae DO. Mentoring in the medical profession: An overview. *Journal of Medicine and Biomedical Research*. 2012; 11: 5-8.
28. Strong EA, De Castro R, Sambuco D, et al. Work-life balance in academic medicine: narratives of physician-researchers and their mentors. *Journal Of General Internal Medicine*. 2013; 28: 1596-603.
29. Cruz-Correa M. Personal Perspective on Mentoring. *Gastroenterology*. 2014; 146: 331-3.
30. Yamada K, Slanetz PJ and Boiselle PM. Perceived Benefits of a Radiology Resident Mentoring Program: Comparison of Residents With Self-Selected vs Assigned Mentors. *Canadian Association of Radiologists Journal*. 2014; 65: 186-91.
31. Ramanan RA, Taylor WC, Davis RB and Phillips RS. Mentoring Matters. *Journal of General Internal Medicine*. 2006; 21: 340-5.

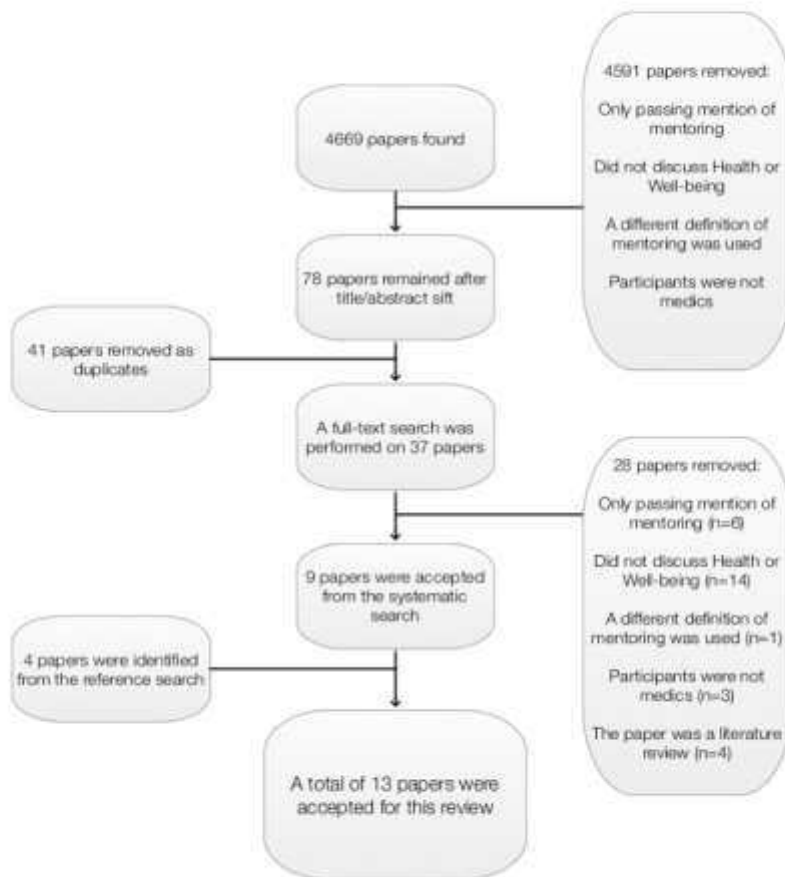
32. Banini B. Capsule Commentary on Strong et al., Work–Life Balance in Academic Medicine: Narratives of Physician-Researchers and Their Mentors. *Journal of General Internal Medicine*. 2013; 28: 1646.
33. West M, Armit K, Loewenthal L, Eckert R, West T and Lee A. Leadership and Leadership Development in Healthcare: The Evidence Base. In: Management FoMLa, (ed.). London, UK2015.
34. Barker R. Making the case for staff wellbeing in the NHS The Health Foundation2016.
35. Firth-Cozens J. Leadership and the quality of healthcare. *Understanding Doctors' Performance*. 2006, p. 122-33.
36. Firth-Cozens J. A perspective on stress and depression. *Understanding doctors' performance*. 2006, p. 22-5.
37. West M and Borrill C. The influence of team working. In: Cox J, King J, Hutchinson A and McAvooy P, (eds.). *Understanding Doctors' performance*. Oxon, United Kingdom: Radcliffe Publishing Ltd, 2006, p. 106-22.
38. Kalén S, Ponzer S, Seeberger A, Kiessling A and Silén C. Continuous mentoring of medical students provides space for reflection and awareness of their own development. *Int J Med Educ*. 2012; 3: 236-44.
39. Office for National Statistics. Guide to Social Capital. n.d.
40. Hsieh C-H. A Concept Analysis of Social Capital Within a Health Context. *Nursing Forum*. 2008; 43: 151-9.
41. Strömngren M, Eriksson A, Bergman D and Dellve L. Social capital among healthcare professionals: A prospective study of its importance for job satisfaction, work engagement and engagement in clinical improvements. *International journal of nursing studies*. 2016; 53: 116-25.
42. QualityWatch. Closer to critical? London, UK: The Health Foundation and the Nuffield Trust, 2015.
43. Connor M, Bynoe A, Redfern N, Pokora J and Clarke J. Developing senior doctors as mentors: a form of continuing professional development: Report of an initiative to develop a network of senior doctors as mentors 1994-99. *Medical Education*. 2000; 24: 747-53.
44. Kashiwagi DT, Varkey P and Cook DA. Mentoring programs for physicians in Academic Medicine: A systematic Review. *Academic Medicine*. 2013; 88: 1029-37.
45. Lakhani M. When I say...mentoring. *Medical Education*. 2015; 49: 757-8.
46. Dixon-Woods M, Baker R, Charles K, et al. Culture and behaviour in the English National Health Service: overview of lessons from a large multimethod study. *BMJ quality & safety*. 2013: bmjqs-2013-001947.

Appendix A: Search term development and inclusion criteria of systematic search

Search terms were developed from the research aim using the framework	
P Patient or population	Doctor; Medic; Physician
I Intervention	Mentor; Mentee; mentoring (truncated to ment*)
C Comparison (if applicable)	Not applicable
O Outcome	Health; Well-being; Benefit; Advantage; Barrier; Impact; Disadvantage; Challenge

Inclusion criteria	
Year of publication	January 2006 – January 2016 (<i>to reflect the contemporary evidence base</i>)
Source	ASSIA (Applied Social Sciences Index and Abstracts) BEI (British Education Index) CINAHL (Cumulative Index to Nursing and Allied Health literature) DOAJ (Directory of Open Access Journals) ETHOS (E-Theses Online Service) Hospital Collection Medline OpenDOAR (Open Directory of Open Access Repositories) Proquest Nursing and Allied Health Source Science Direct Freedom Collection Web of Science Zetoc
Search Field	Title, Abstract, Keywords
Language	English only
Participants	Excluded: Undergraduate medical students (<i>Studies of undergraduate medical students were excluded as the intentions and process of mentoring in this context is often more akin to educational supervision than mentoring</i>)
Search terms	Ment* AND (doctor* OR medic* OR physician) AND (health OR well-being) Ment* AND (doctor* OR medic* OR physician) AND (benefit* OR advantag* OR barrier* OR impact OR disadvantag* OR challeng*)
Type of paper	Excluded: Literature reviews (<i>would not provide original evidence and may result in 'double counting' i.e. consideration of one source multiple times</i>)

Appendix B: Systematic search strategy



Appendix C: Details of papers included in review

Reference	Type of paper	Aim	Medical specialty	Location	Method
Eisen, Sukhani, Brightwell, Stoneham & Long (2014)	Research	To assess demand for peer mentoring among junior postgraduate trainees and to assess benefits for both peer mentees and mentors	Postgraduate paediatric trainees	United Kingdom	Mixed methodology Questionnaire
Harrison, Anderson, Laloe, Santillo, Lawton & Wright (2014)	Research	To look at the perceptions of mentorship, the extent to which medics value mentorship and factors that contribute to its success	Medics	United Kingdom	Qualitative methodology Multi-site, semi-structured interviews
Lockyer, Fidler, de Gara & Keefe (2010)	Research	To examine the feasibility and focus of a mentoring scheme from the perspective of medical leaders and physicians new to Canada	Medics	Canada	Qualitative methodology Focus groups Interviews
Mann, Ball & Watson (2011)	Research	This pilot study aimed to use a prospective study design to look at the potential benefits of using a specified 'action learning' approach to mentoring	General Practitioners	United Kingdom	Mixed methodology Quantitative evaluation form and radar charts Qualitative focus groups and telephone interviews
Ramanan, Taylor, Davis & Phillips (2006)	Research	To describe mentoring relationships among internal medicine students and examine the relationship between mentoring and career preparation	Internal medicine residents	United States of America	Quantitative methodology Questionnaire
Steven, Oxley & Fleming (2008)	Research	To look at the perceived benefits of being involved in mentoring schemes and to explore the overlaps and relationships between the categories of perceived benefits	Medics	United Kingdom	Qualitative methodology Secondary data analysis Multi-site interviews
Strong, De Castro, Sambuco, Stewart, Ubel, Griffith & Jagsi (2013)	Research	To gain further understanding of work-life balance issues from clinician-researchers and their mentors	Academic medicine	United States of America	Qualitative methodology Semi-structured interviews
Tietjen & Griner (2013)	Research	To describe perceptions of a mentoring scheme after its first year	Hospitalists and primary-care physicians	United States of America	Quantitative methodology Questionnaire

Welch, Jimenez, Walthall & Allen (2012)	Research	To describe the content, perceived value and ongoing achievements of a mentoring scheme for women in Emergency Medicine	Women in Emergency medicine	United States of America	Mixed methodology Questionnaire
Yamada, Slanetz & Boiselle (2014)	Research	To evaluate radiology residents' experiences of a formal mentoring scheme, and to determine if mentees with self-selected mentors or assigned mentors had greater perceived benefits	Radiology residents	United States of America	Quantitative methodology Questionnaire

Reference	Type of paper	Medical specialty	Location	Purpose
Banini (2013)	Commentary	Academic medicine	United States of America	To highlight the work-life balance issues medics face and to comment on the study conducted by Strong, De Castro, Sambuco, Stewart, Ubel, Griffith & Jagsi (2013)
Cruz-Correa (2014)	Personal account	Gastroenterology	Puerto Rico	To describe the mentoring relationships that the author has experienced throughout their career
Osaghae (2014)	Discussion	Medics	Nigeria	To describe the mentoring of medics with the aim of informing medical practitioners about mentoring, and enabling medics to appreciate the importance of the mentoring process