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Does reverse mentoring work in the NHS: a feasibility study of clinicians in practice

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ABSTRACT

Objective To assess the risks and benefits of reverse mentoring of consultants by junior doctors.
Design A feasibility study divided into two phases: first a semistructured interview where performance of participating consultants was assessed by junior doctors and then a second phase allowing for feedback to be given on a one-to-one basis. Data collected through questionnaires with free text questions and Likert scores.
Setting Tertiary teaching hospital in the UK.
Participants Six junior doctors (66.6% male, age range 31–40 years) and five consultants (80% male, age range 35–65 years and consultants for 5–20 years).
Intervention Reverse mentoring session.
Main outcome measure The concerns and/or benefits of the process of reverse mentoring. Confidence was assessed in 7 domains: clinical practice, approach to juniors, approachability, use of technology, time management, strengths and areas for improvement using Likert scales giving a total out of 35.
Results The most common concerns cited were overcoming the hierarchical difference and a selection bias in both mentors and mentees. However, no participant experienced this hierarchical difference through the reverse mentoring process and no relationships were negatively affected. Mentors became more confident in feeding back to seniors (23 vs 29 out of 35, p=0.04) most evident in clinical practice and areas to improve (3 vs 4 out of 5, p=0.041 and 3 vs 5 out of 5, p=0.041, respectively).
Conclusion We present the first study of reverse mentoring in an NHS clinical setting. Initial concerns with regard to damaged relationships and hierarchical gradients were not experienced and all participants perceived that they benefited from the process. Reverse mentoring can play a role in engaging and training future leaders at junior stages and provide a means for consultants to receive valuable feedback from junior colleagues.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This feasibility study was undertaken on practising clinicians.
⇒ It assessed how effective and meaningful the process of reverse mentoring was in engaging junior and senior doctors.
⇒ It assessed potential barriers to reverse mentoring.
⇒ The change in perception towards reverse mentoring was measured at different time points.

INTRODUCTION

Reverse mentoring, the act of a junior employee mentoring a senior colleague, was introduced in 1999 by General Electric's former Chief Executive Officer, Jack Welch, when 500 managers were asked to learn about the internet from younger employees.[1] Since then, it has been adopted by industry as 'best practice' to ensure a transfer of skills and knowledge from younger to senior workers. Reverse mentoring can also help develop leadership skills, improve intergenerational relationships, enhance diversity and drive innovation which in turn ensures the smooth running and expansion of an organisation.[1–4] In addition, it can build social capital within the workplace by providing a two-way learning process in which both the individuals learn from each other. Reverse mentoring arises from learning and social theory.[5]

Learning theories of mentorship enable the mentor to become a facilitator for the mentee's personal progress through an involved and contributory mentee.[5] Andragogy learning theory emphasises the role of the mentor as a facilitator of self-reflection and critical discussion of past experiences.[6] Through this, mutual development can also occur as is seen in social learning theory.[7]

Social theories of mentorship require the mentee to be an active contributor to the mentor relationship.[7] Social exchange theory suggests the most meaningful mentor relationships rely on a cost-benefit to both parties such as improved clinical safety.[8] Junior mentors would have the ability to provide up-to-date knowledge, while mentees can provide traditional guidance.

Furthermore, it can improve engagement of the 'Millennial Generation' defined as those born between 1978 and 1999. A younger age has been shown to be an independent predictor of burn-out, therefore engaging with future doctors is crucial to ensure the provision of ongoing high-quality care rightfully expected by patients.[9] In recent years, there has been a drop in the number of trainees applying to continue in training posts directly after foundation year two, from 83% in 2010 to 46% in 2018 in medicine, resulting in inadequate numbers of trainees filling higher specialty training posts.[10] In the British Medical Association (BMA) Survey 2017, one in four trainees stated a desire to travel, or parental leave as the reason for a break in their clinical training while one in five stated taking a non-training post or working as a locum.[11] Therefore initiatives are needed to reinspire and encourage junior doctors to remain in training. A junior doctor in the UK is defined as any doctor in postgraduate training. Training consists of 2 years of foundation training designed to provide trainees with the knowledge to manage acutely unwell patients and subsequently specialty training of between 3 and 7 years depending on specialty.[12] On completion of training, trainees are able to work independently as consultants/specialists.

Given millennial employees have a desire to have their voices heard and do not view social distinctions in hierarchy like previous generations a new method is needed for this.[3] They are motivated by purpose and thrive on personalised opportunities to instigate change hence the potential use of a reverse mentoring scheme.[13]

Within medical school, reverse mentoring has been shown to improve the awareness of senior staff to the challenges faced by under-represented medical students.[14] Through this process, senior staff have better realised their responsibilities as leaders to support institutional changes in culture to address inequalities.[15–18] There are no reverse mentoring studies undertaken in the National Health Service (NHS). It is recognised that the established hierarchy within medicine reduces the ability of junior doctors to speak up when witnessing errors or to improve healthcare and thus prevent patient harm due to fear of retribution.[19 20] Furthermore, the Care Quality Commission (the independent regulator of health and social care in England) has recognised that hierarchical structures are 'inimical to safety' and therefore a culture encouraging staff to speak up needs to be promoted.[21]

While there are developing strategies to empower all members of the healthcare team, such as through using multidisciplinary teams, calling individuals by their first names and medical simulations, this fear remains.[19 21 22] Despite the clear benefits in industry to reverse mentoring, it is unclear whether this would be possible in a clinical setting given the hierarchy, nor whether it would be of value. We; therefore, present the first data on the real clinical application of reverse mentoring to practising consultants by their junior colleagues.
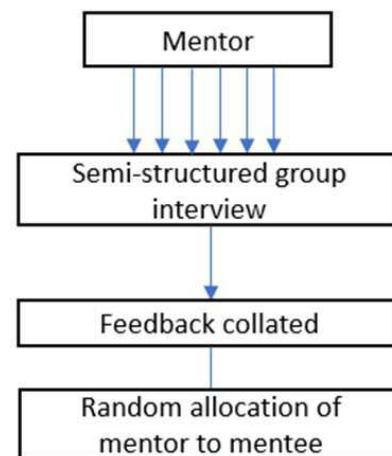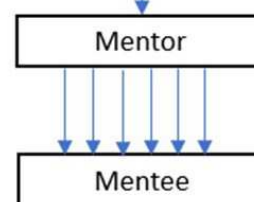

Figure 1 Schematic of reverse mentoring model used.

METHODS

This mixed-methods feasibility study was conducted to examine the risks of reverse mentoring to the relationships between senior and junior doctors. The secondary outcome measured was the benefit of the process to both groups. The study was complete in two phases (figure 1).

All clinical fellows in a single medical specialty within a teaching hospital were invited to participate in the study to act as mentors. The corresponding clinical supervisors were also invited to participate in the study and act as mentees. In the first phase, all mentors attended a face-to-face group semistructured interview to assess the mentees. The assessments were divided into seven domains: use of technology, clinical practice, approach to juniors, time management, approachability, strengths and areas for improvement. Each domain was discussed in turn with open questions and clarification sought when responses were not clear. There were no time limits and mentors were free to discuss for as long as required. These domains were chosen to capitalise on the perspective and experience of junior doctors. The interviews were recorded allowing for notes to be transcribed after and a succinct document of the discussion of each mentee produced to be used as a prompt for feedback sessions. Each document was a collection of the group feedback although only one mentor would be delivering it. Mentors were also asked which mentees they would be willing to mentor including their own clinical supervisor. Both prior to and after the first phase, questionnaires were completed by mentors to measure their opinions on the process. They were also asked to grade on Likert scales their views on the importance of and confidence in giving feedback to seniors.

In the second phase, mentors were randomly allocated a mentee, while taking into consideration their preferences using a random number generator with corresponding numbers assigned to each individual. Pairs were then asked to meet to discuss the points raised during phase 1 with the mentee and provide an opportunity to discuss these. Both mentors and mentees were asked to complete questionnaires to determine their views on the process both before and after the session. Similar to phase 1, Likert scales were used to measure mentor confidence in providing feedback and mentee awareness of how junior doctors viewed them. All meetings were held in confidence with no recording to allow free discussion to occur.

Prementoring and postmentoring questionnaires were collected. An inductive content analysis as described by Burnard[23] was then completed followed by statistical analysis of Likert scale answers. All Likert scores were broken down by the 7 domains to provide a score out of 5 for each domain and a total score out of 35 for confidence and importance of providing feedback and mentee awareness of how others perceive them. Statistical analysis was complete using IBM SPSS V.25.

Patient and public involvement

Patients or the public were not involved in the design, conduct, reporting or dissemination plans of our research. This study was focused on healthcare staff.

RESULTS

A total of 6 clinical fellows participated in phase 1 (all higher specialty trainees, 4 out of 6 (66.6%) male, age range 31–40 years) and agreed to be mentors. Mentors had previously given formal feedback during supervised learning events, Membership of Royal College of Physicians Practical Assessment of Clinical Examination Skills courses, and local training events. In total 3 out of 6 (50%) had previously been mentors to core medical trainees with an interest in their higher specialty. One mentor was unable to participate in phase 2 due to maternity. Given their knowledge of mentees it was decided to be beneficial to include their thoughts during phase 1. Half of mentors (3 out of 6) were willing to mentor all mentees. One-third of mentors (2 out of 6) were willing to mentor 60% (3 out of 5) and one mentor 80% of mentees (4 out of 5).

All supervising consultants invited agreed to being mentees (4 out of 5 (80%) male, age range 35–65 years) and had been consultants for 5–20 years. In total, 4 out of 5 (80%) had previous mentoring roles at the Royal College of Physicians or British Society of Gastroenterology.

Phase 1

Prior to semistructured interviews, 4 out of 6 (66.6%) of mentors expressed concerns about reverse mentoring. The most common concerns cited were overcoming the hierarchical difference, and a selection bias

Table 1 Inductive content analysis of responses from participants at different stages of the reverse mentoring intervention

Comment	Mentor		Mentee	
	Phase 1	Phase 2	Stage 4	Stage 5
Hierarchy or power gradient concerns	I	I	I	I
Selection bias	III			I
Offending consultants	III	III		
No change to practice	I	I		
Not having enough time to do it properly			I	
Collaborative approach to feedback more useful		II		
Refreshing idea	I	I	I	I

in both mentors and mentees (table 1). Mentors stated the process of reverse mentoring would be facilitated by greater awareness of the benefits, anonymous feedback, openness of mentees to the idea, data showing it works and a change to the culture in the work place. Mentors reported an initial poor understanding of the process of reverse mentoring (median score 2 out of 5, IQR: 2.0–3.0). Despite reporting feedback as important to give to consultants (median score 30.5 out of 35, IQR: 27.0–32.0), mentors had low levels of confidence in doing so (median score 21.5 out of 35, IQR: 20.0–25.0), and did not feel they would be able to (median score 23 out of 35, IQR: 19.0–24.0).

Phase 2

Mentoring sessions lasted 45 min (IQR: 30–50 min) however one group took 180 min. All respondents reported feeling the time devoted was 'about right' despite initially no mentee expecting the session to be longer than 60 min.

In total, 2 out of 5 (40%) of mentees reported concerns at the beginning of phase 2. These included concerns regarding the differential of power and not having time to do it properly (table 1). While still reported at the end, all mentees reported no or lesser concerns than when they started (1 out of 5 (20%) and 4 out of 5 (80%), respectively). Mentees became more aware of how others viewed them as a result of reverse mentoring in each domain though did not reach statistical significance (p=0.07). All seniors felt this was a useful experience that will change their clinical practice. All mentors and mentees reported a good or excellent experience and believed that feedback was important both prior to and after the study (23.0 vs 29.0, p=0.08). In total, 2 out of 5 (40%) of mentees also felt that reverse mentoring or more junior doctor

feedback should be included in the consultant appraisal process.

After completion of phase 2, mentors became more confident in feeding back to seniors (23 vs 29 out of 35, p=0.04) and had a greater understanding of their role as reverse mentors though not statistically significant (2 vs 4 out of 5, p=0.07). Concerns raised initially by mentors were reported as lesser concerns following completion of the study and overall comments were more positive (table 1). Common themes highlighted included the benefit of a different perspective to the norm and new ideas which can be implemented. There were concerns raised of the power gradient preventing effective mentoring and risks to relationships, however, these were expressed as potential concerns and not experienced. Mentors felt overall more confident in giving feedback to seniors (23.0 vs 29.0 out of 35, p=0.043) and particularly in discussing a mentees clinical practice and areas for improvement (3 vs 4 out of 5, p=0.041 and 3 vs 5 out of 5, p=0.041, respectively).

DISCUSSION
Statement of principal findings
Our study is the first to assess the potential benefits of reverse mentoring in a real clinical setting and the potential risks to the relationship between consultants and junior doctors. Cross-generational knowledge sharing can be achieved and we have described a method to achieve this. Through this, both mentors and mentees reported a positive experience and initial concerns regarding the differential of power and disruption to relationships were not realised. Importantly, junior doctors became better equipped to be future mentors and consultants were given a new perspective inspiring them to improve their clinical practice and work environment.

All participants recognised the importance of feedback throughout this study and the confidence of mentors in providing feedback improved in all domains. Despite initial concerns from mentors about disruptions to relationships with supervisors, the biggest increases in confidence were in providing feedback on clinical practice and areas for improvement. It is important to note that mentors were asked who they would be willing to mentor at the start of the study and therefore this should be considered in future reverse mentoring programmes also when pairing mentors and mentees. Furthermore, although the phase 2 mentoring sessions were delivered by one mentor, the group contributed to the feedback in phase 1 collectively. This may have provided additional safety to the mentors allowing the mentoring sessions to be of greater value. Although statistical significance was not achieved in the consultants' awareness of how others perceived their performance there was improvement in each domain and this is likely due to the small numbers in this feasibility study. Given the initial concerns of power gradients this may be surprising, however supports the millennial mindset that embraces autonomy over

hierarchy and is therefore a good way to engage junior doctors in their work.[24]

In private industry, reverse mentoring has been implemented for over twenty years.[1 2 25] Jeremy Hunt, former UK health secretary in his new role in the foreign office has also embraced the merits of reverse mentoring.[26 27] Therefore, it is disappointing that reverse mentoring has not been implemented in a healthcare setting sooner and it is hoped that our study will act as a proof of principle for further studies. It is argued that reverse mentoring is of most value in sectors with rapid technological change and in social media. Technological change can be slow in healthcare, with ongoing reliance on bleeps over newer mobile based communication methods.[28] Given this slower pace, we argue that the role of young mentors is crucial in improving the uptake of such technologies in healthcare to improve efficiency and the care healthcare professionals can provide. In addition, reverse mentoring may help generate a feeling of being valued within an organisation which can result in individuals performing better at work.[29 30]

Currently within healthcare, the rate of burnout and psychiatric morbidity among doctors is concerning (31%–54.3% and 17%–52%, respectively) with general practitioners and consultants scoring the worst.[31] While there are professional mentoring schemes such as through the BMA and Health Education England, and mentoring skills workshops available through the Royal College of Physicians, there are currently no reverse mentoring initiatives in the NHS.[32–34] However, there are professional reverse mentoring platforms that can be purchased.[35]

Strengths and weaknesses of the study
Mentoring relationships develop when individuals perceive the benefits of the interaction outweighing the costs.[36] One concern our study has addressed is the required time needed for constructive mentoring to occur in a busy clinical setting. A recognised risk in reduced patient care and higher burn-out is the perceived demands on a clinician's time which may explain the concerns raised by participants in our study.[37 38] Interestingly, despite agreeing an upper limit to mentoring sessions, one group went beyond this and all groups regardless of time reported a positive experience. While it remains challenging for clinicians to take time out of their schedules for their own development, we believe this is important and our study supports reverse mentoring as a beneficial use of limited time both for personal growth and continued service provision. This is further supported by mentee suggestions for including an element of reverse mentoring in the consultant appraisal process. This could include an increased input in the 360-appraisal process currently undergone by consultants that includes junior doctor feedback.

The consultants volunteering in this study have demonstrated an eagerness to change, and therefore larger studies are required to determine if this positive experience can be replicated in larger numbers and on

consultants in different specialties. Despite this, our study has shown that consultants are open to this approach to continued development and our method of reverse mentoring was positively received. Although the longitudinal impact of this intervention is not within the scope of this review, all mentees reported that the mentoring programme was useful and will change their practice. Further study would also be required to assess if this can be complete via online tools as opposed to face to face.

Meaning of the study: possible explanations and implications for clinicians and policy makers

It is the responsibility of the individual to stay up to date with clinical practice but this can be challenging with the global scientific literature growing at a rate of approximately three percent annually.[39] Reverse mentoring offers an opportunity for junior doctors, who have more recently been assessed on clinical practice, the opportunity to highlight out dated practice to senior doctors in a constructive way. Our study showed that one of the areas junior doctors felt most confident in providing feedback was in clinical practice and this may be the reason. This supplemental method of supporting the continued development of senior doctors also offers benefit to younger doctors who are keen to develop leadership skills.[24]

In the UK, postgraduate internal medicine is in the process of undergoing significant changes from a 5-year to 4-year higher specialty programme. There have been concerns expressed by trainees about its implementation and while consultants will be keen to support trainees, without accurate feedback from trainees their support may be misdirected similar to that shown at undergraduate level.[14 27 40 41] Therefore, it is crucial that senior consultants, often policy makers, are aware of the perspective of junior doctors to assure that postgraduate training continues to reflect the needs of trainees. One of the reasons trainees chose to leave medicine is the belief that better training opportunities are available elsewhere, therefore, it is crucial to reverse this trend and policy makers understanding the motivations of junior doctors will be key to this process.[42]

Different healthcare organisations offer their members mentorship programmes, however, these are targeted at those in transitional phases of their career or under-represented groups and less at experienced consultants.[43 44] While undoubtedly important, more experienced consultants should not be overlooked given their role of ultimate responsibility for patients. Therefore, reverse mentoring as described in our study may be a means of providing experienced consultants with a way to continue to improve.

CONCLUSION

We present the first data demonstrating the benefits of reverse mentoring in a clinical setting to both trainees and consultants. The developed method was shown to improve the confidence of junior doctors in a mentor role and the awareness of consultants to how they are perceived by the junior colleagues. Initial concerns expressed with regards to the risk of damaging relationships was not experienced by any individual in this study, supporting the safe implementation of reverse mentoring in a clinical setting.

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