

How can the training of medical residents be improved? Three suggestions

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Abstract

Background: The requirements for the quality of postgraduate medical education (PGME) have been increasing recently, due to changing demographics, patient service pressures and evolving healthcare systems. Furthermore, changes in medical knowledge and practice, and multiple challenges inherent in residents' training make the development of PGME highly important.

Aim: To explore the experiences of internal medicine residents in PGME programme and suggest key features for future training.

Method: Twelve internal medicine residents were interviewed concerning their experiences with PGME. Data-driven analysis of the results was conducted, from which three themes regarding areas for development emerged.

Results: The most crucial areas to develop in PGME appeared to be: 1) utilisation of feedback and collegial support; 2) support for residents' skills in coping with stress and developing emotion regulation strategies; and 3) fostering residents' teaching skills and pedagogical practices in clinics.

Conclusions: The development of residents' training should be supported with curriculum and carefully planned pedagogical solutions. In addition, training for teachers of residents should be improved.

Keywords: medical residents; post graduate medical education (PGME); professional development

Introduction

This article focuses on an exploration of internal residents' experiences during postgraduate medical education (PGME) and provides practical suggestions for improving such programmes. The requirements for the quality of PGME have been increasing recently, due to changing demographics, patient service pressures and evolving

healthcare systems. Growing and aging populations with increasing comorbidity and long-term conditions are pushing routine care into community-based settings. This means specialty trainees are not exposed to these commonplace illnesses; instead, they must deal with cases that are extremely complex (Morris and Swanwick, 2018). Furthermore, changes in medical knowledge and practice, increasing patient, consumer and employer expectations of physicians and advances in technology make the development of postgraduate medical education a priority (Sandhu, 2018). In the age of e-health (see Robinson et al., 1998), laypeople have become increasingly active health consumers who increasingly place demands on medical staff (Kaufman, Keselman and Patel, 2008).

In addition to the challenges caused by these recent developments, there are many challenges inherent in PGME that are important to keep in mind when designing PGME programmes. PGME takes place primarily in the clinical working place and is supported by healthcare professionals who are struggling to combine their roles as service providers and teachers (Morris and Swanwick, 2018). Residency programmes often strive to balance service delivery with educational goals, as residents form an essential part of the medical workforce in many countries (Sandhu 2018). During their own training, the residents are often obliged to teach medical students, since the low number of teaching personnel in many areas makes residents' participation in teaching necessary (McBride and Drake, 2011). Thus, residents may hold a triple role (service provider – learner – teacher) (cf. Morris and Swanwick, 2018). This creates tension with increasing pressure to provide service.

Several authors have suggested that residency is one of the most stressful times in a physician's education and training. There are many sources of stress, such as working conditions (e.g., sleep deprivation, on-call alerts and excessive administrative work), emotional pressures and demands from patients (Lue et al., 2010) and financial pressures (Collier et al., 2002). In addition, burnout has been well-documented among medical residents (e.g., Hillhouse, Adler and Walters, 2000; Prins et al., 2007; Ishak et al., 2009; Lue et al., 2010; Dyrbye et al., 2014; Dyrbye and Shanafelt, 2016). According to Prins et al. (2007), medical residents may be at increased risk for burnout, due to conflicting levels of dependency, responsibility and autonomy in their work, combined with possible stressors in their personal lives. In the transition from medical student to practicing physician, one is often faced with uncertainty about treatment issues, role ambiguity, inexperience and the need to make life-and-death decisions (Hillhouse, Adler and Walters, 2000). All in all, experiences during early postgraduate medical education can be particularly emotionally intense (Reddinbaugh et al., 2003; Austenfeld, Paolo and Stanton, 2006). Thus, it is probable that residents need support not only in developing substantial knowledge, but also in other areas of professional competence, such as emotion regulation.

In this paper, we interpret the empirical results of a Finnish sample of students in light of the latest research on PGME concerning professional development and related issues. As residency experiences have an influence on physicians' career decisions (Harris, Gavel and Young, 2005; West et al., 2006; van der Horst et al., 2010), the shortcomings of PGME should be taken into account in planning future training and development. In Finland, PGME takes place alongside work in hospitals of various sizes and healthcare centres. However, Finland differs from other European Union countries in that a medical specialist degree is a university degree (Aine et al., 2014a); in general, it takes up to six years to complete. Still, it is very common to complete a postgraduate medical specialist degree.

In general, residents seem to reach a high level of content-related expertise and preparedness for clinical work during Finnish PGME; however, there may be other shortcomings and areas requiring more support during training (see Aine et al., 2014b; Sumanen et al., 2015). For example, Finnish doctors have reported shortcomings in PGME concerning the skills required to work as a teacher or private physician, for management and leadership, administrative work and multiculturalism, and personal professional development (Aine et al., 2014b; Sumanen et al., 2015). The lack of management skills has also been reported in many other countries (see Berkenbosch et al.,

2013). The importance of soft and non-technical skills, such as effective communication, empathy, leadership, teamwork, critical thinking, situational awareness and emotional intelligence, should not be forgotten in teaching professional practice; rather, such skills should be embedded within the role of being a resident (Sandhu, 2018).

Methods

To explore the most crucial developmental needs of PGME, we conducted interviews with internal medicine residents. The twelve participants of this study represented the total number of residents working in the internal medicine ward of one Finnish university hospital at the time of the study. Their experience in specialty training varied from one to seven years; on average, they had commenced their specialisation four years previously. Semi-structured interviews of approximately 15 minutes were conducted at the internal medicine ward during residents' working hours. Participation in the study was voluntary, and informed consent was obtained from the participants. Approval for the study was obtained from the institutional review board. The interviews were recorded and transcribed verbatim. All the transcripts were anonymised by the interviewer, and the participants were coded with R (resident) and an identification number. After that, each of the writers read the verbatim transcriptions. Data-driven analysis was conducted, from which three themes emerged: feedback and collegial support, stress management and emotion regulation, and fostering teaching skills and pedagogical practices.

Results/Analysis

Suggestions for future development in residents' training

Suggestion 1: Encourage the development of professional competence through feedback and collegial support

Recent definitions of professional competence highlight essential clinical skills, including cognitive expertise, emotional competence and reflective capacity (Murinson, Agarwal and Haythornthwaite, 2008). Support is a crucial element in the development of a resident's expertise. Such support may be intentionally built into the curriculum, or it may occur more informally in various situations during training. Informal learning has been recognised as a major component of PGME; it also plays a major role in professional development (Swanwick, 2005). In this study, almost all the residents (11 out of 12) described the ideal learning situation as one in which the resident would follow difficult patient cases or procedures with a senior physician. In these informal learning situations, the more experienced colleague would show the resident how an expert would solve this type of a problem. This method seemed to produce highly efficient learning experiences for the participants of this study:

Well, generally I could say that it is the challenging patients. Those that you cannot figure out by yourself, like what is wrong with the patient. Then you go through them with a senior and plan additional examinations and check what comes up from those. I think those are the most crucial learning experiences. (R5)

I guess the most common learning experience is that I have a complicated patient, whom I have first tried to examine by myself and think, and then if I still feel I cannot get forward with the matter I can discuss with a more experienced colleague. The most useful thing is when we make sure of some test

results and think together about what could possibly be the reason behind the findings... Like suggestions for diagnoses or for more examinations, and at the same time you get the theory of diseases and the like. (R2)

Three of the residents referred to a journeyman–apprentice relationship in describing the most ideal learning situation, with support and feedback:

It's like the journeyman–apprentice principle. I think the best learning situation is the one where you, for example, are practicing certain skills, like procedural skills, and you can be the one who is doing things but you have the backup there present. ... That you immediately get the feedback and you can ask questions all the time. I think it is most crucial that you yourself get to do things, it is not the same thing to follow when someone else is doing something. (R12)

In the ideal learning situations described by the residents, the feedback they receive from more experienced colleagues plays a very important role. Developing the feedback culture of the institution or department and enhancing these support functions in the curriculum is crucial. While previous models of feedback in medical education have focused on feedback providers, more recent definitions of feedback highlight that the impact of feedback lies in learner acceptance and assimilation of feedback with improvement in practice and professional growth (Ramani et al., 2018). If faculty hesitates to provide "negative" feedback in order to avoid hurting learners' feelings and self-esteem, the feedback is not necessarily goal-directed or actionable. Furthermore, an institutional culture of politeness, although promoting collegiality, might hinder constructive feedback (Ramani et al., 2017; 2018). The most common areas in which the residents felt they needed more support were feedback and senior support, as well as orientation when commencing work in a new ward. Five of the residents wished for regular meetings with the senior and three indicated a need for more systematic, honest and constructive feedback.

We have this tutoring system, but the meetings are held only once a year – maybe 15 minutes per month could be helpful, to share your thoughts with somebody. (R3)

You get feedback on your work every now and then, here and there. But you would need, like a kind of constructive criticism. ... There is no channel for constructive negative feedback. For example, after a certain period, there could be a discussion with the specialist of the ward, or something like that. (R11)

All the feedback, like, that you would get feedback on the things that you have done well and those that you haven't. (R5)

Systematic and conscious orientation when starting work in a new ward was called for by four of the residents:

I would say orientation. We don't get much orientation anywhere. At the district hospital maybe some, and at the health care centre yes, but here [at the university hospital] the orientation was extremely

bad. You get help if you ask, but there was no orientation. (R8)

On our ward, the orientation was zero. On my first day, I was left at the cardiac ward and no one knew if there was a senior who comes to the round or if I was alone. ... I felt that no one even knew I was there, let alone that someone would come and show me a bit. ... I had never been in a university hospital before, so the beginning was quite depressing. (R12)

Three of the residents brought up a contrast between basic training and specialist training. It seems that in the basic training phase, the community spirit is very tight, but in the specialisation phase, the residents do not share the same sense of belonging to a group; rather, they are more or less alone and independent, although some mentioned they receive peer support from their colleagues. The basic medical education curriculum is highly structured and studying is very school-like, with ready-made schedules; this perhaps leaves only a little space to develop self-regulation skills, for instance (Premkumar et al., 2013). After such an externally controlled study environment, the transition to learning in the workplace as a resident might feel challenging.

In the basic training phase, I belonged to a nice group of students, which studied and relaxed together. We had a good atmosphere: I really liked that time. Towards the end of the basic training, you worked harder and harder and everyone else did that too. We all learned and we had the peer support there available all the time. Everyone went through their own cases and it was kind of a way to release stress that you could go through difficult things, it was like therapy that time. And it worked well. ... After graduation it has been more and more independent all the time. ... Here, we have also good people at work, like the other residents, they support each other and based on that, it works well. However, the atmosphere of the clinic, how should I put it, is, so to say, challenging. (R10)

Social support from both leaders and co-workers is an important aspect of medical work, since it promotes physicians' well-being and stress management; it also provides many other advantages, such as job satisfaction and commitment (see Mikkola, Suutala and Parviainen, 2018). One option to increase peer support during specialisation would be a system whereby the residents would work in pairs, at least in some phases of workplace learning. A more experienced resident could also orient the newcomer at the beginning, to lessen the stress and anxiety. Another option to support a smooth transition would be to use job shadowing (Jones et al., 2006; Berridge et al., 2007). For example, in the UK, undergraduates are provided a period of work-based clinical apprenticeship or immersion in a 'community of practice' (Lave and Wenger, 1991; Wenger, 1998). Typically, students spend several weeks shadowing the preregistration house officer (PRHO) whose post they will take over (Jones et al., 2006). Many positive effects of shadowing have been reported, such as improved confidence in clinical skills, orientation within the new work environment and the role of PRHO and allayed anxiety (Jones et al., 2006; Berridge et al., 2007). At the beginning of the residency, shadowing could work as an orientation to working in a new ward. However, shadowing has resource implications for staff development of a clinical teaching workforce (Brennan et al., 2010).

Suggestion 2. Help to cope with stress and develop emotion regulation

Internal medicine is a challenging field due to demographic changes, complexity and rapid advances (among others). Treating patients with comorbidity and long-term illnesses requires mastering and integrating a huge amount of information and techniques. On-call duties are inherent in the work of internal medicine residents, which make it hard for many. In our interview data, many of the respondents mentioned aspects inherent to their chosen field of

specialty, internal medicine, and to practicing medicine in general, when they were asked about the challenges of PGME. Coping with the huge workload was mentioned by six and burdensome emergency duties by five of the respondents.

At times it's so chaotic. The amount of work is sometimes huge. ... When you have ten patients in line and someone is dying in the ER, it's a little stressful. ... It's the uncontrollability... Like, if you have one patient, no matter how complex the situation, you treat him/her with pleasure. But when it gets crowded you can't treat the patients as fast since new ones keep coming in. That is sometimes burdensome. (R1)

On duty, we have to constantly make heavy decisions about who is not worth intensive care or resuscitation in case of cardiac arrest. (R4)

We didn't receive any preparation for coping with uncertainty and time management in our basic degree studies. (R11)

Working as a doctor is stressful in itself, like the fear of making mistakes. At times, at least, when you have had lots of night work, it stresses you out. (R3)

When you go home after a day and night duty with shaking hands, you think it isn't a very big surprise that this kind of work has been proven to decrease your life expectancy. (R10)

It seems that the residents were not prepared for coping with emotions such as stress, anxiety and feelings of inadequacy, which they will inevitably encounter during their residency period. They also struggled with time management. These feelings have been reported elsewhere. According to Brooks et al. (2017), residents feel unprepared for primary care and inadequate as primary care physicians, which discourages them from practicing primary care. They suggest that educators could improve residents' experience in primary care by acknowledging its complexity and breadth, and recognising the consequent steep learning curve that residents face as they gain knowledge, skills and confidence in themselves (Brooks et al., 2017). Lundin et al. (2018) propose that educators should raise students' and trainees' awareness of the strategies they might employ in stressful situations. For instance, encouraging them to share difficult experiences and considering ways to manage emotions might promote development of more effective emotion regulation strategies and discover automated or 'hidden' strategies. In particular, the transition from student to practicing physician and the early phases of postgraduate medical education have been identified as challenging and emotionally intense (Reddinbaugh et al., 2003; Austenfeld, Paolo and Stanton, 2006). Emotion regulation ability may have crucial consequences not only for doctors' own wellbeing, but also for their attentiveness to patient care and patient satisfaction (Sablík, Samborska-Sablík and Drozd, 2013; Kafetsios et al., 2014; Ogundipe et al., 2014; Wu, Chen and Li, 2014).

Suggestion 3: Foster teaching skills and pedagogical practices

There are many reasons to use residents as teachers, such as lack of teaching personnel. But there are many advantages related to this as well, such as the fact that learning from an individual who practices clinical medicine and with whom students can identify can be fruitful (McBride and Drake, 2011; Mann, Sutton and Frank, 2007). In addition to clinical skills and knowledge, students also learn professional behaviour from the residents. Generally, residents seem to enjoy teaching, although few feel confident in their teaching ability (Bordley and Litzelman, 2000; Farrell et al., 2006). Seven of the interviewed residents considered teaching duties as generally positive; however, six respondents indicated that teaching took time from other duties.

Basically, I like teaching. It's just that somehow, I would hope that we had more time to teach. It's like you have your normal work to do and then you have this teaching, so it's often the teaching that is left for the second place. (R3)

Well I like it [teaching] if there's time left for it. But in our ward there's actually no time for it. It's like you have to work like a dog to get your work done during working hours so then it's hard to get motivated into teaching the students on top of that. But in a more peaceful ward, it's of course OK. (R4)

Two of the residents also considered teaching to be difficult and doubted their own teaching skills.

Hmm, I think it's quite difficult. I mean, I don't feel I'm a very good teacher... Can I teach the right things, do I have the exact facts that I can share? ... And of course, I know they should have good teaching, but I feel like, am I the right person to teach here? (R5)

It's quite challenging actually, since you are still learning yourself. ... Like, you're always facing difficult new issues that you think you should teach and be an exemplary model, and then you wonder whether you are the right person for that. ... I feel a little inadequate. (R9)

The interview responses reflect the results of the latest research on Finnish physicians, which indicate dissatisfaction with supporting teaching skills during PGME (Sumanen et al., 2015). However, effective teaching during residency is important for the successful operation of an inpatient service with regard to patient care, staff training and resident well-being (Smith and Kohlwes, 2011). While the residents might be well prepared for their role as physician, they might not have any preparation for their teaching role. Without educational support during residency, residents' teaching skills do not improve in relation to their clinical competence (Edwards et al., 1988). Furthermore, without formal training, residents may end up adopting ineffective teaching strategies (Morrison and Hafler, 2000). One suggestion for increasing confidence and skills in teaching could be to include some pedagogical training in the residency period. For example, even short online university pedagogy trainings have been reported to have potential to affect participants' conceptions of teaching, especially when the participants are not very experienced in teaching (Authors et al., under review). Therefore, pedagogical training should be offered in the early career stages. Various "Resident as Teacher" programmes with differing formats and lengths have recently become increasingly common; however, adequate formal training in teaching skills is not a given. According to Mann, Sutton and Frank (2007), prolonged immersion in medical education provides participants opportunities to explore different methods of

learning, develop teaching skills and strategies and develop and practice core teaching competencies; shorter seminars might also be effective. In addition, for residents themselves, these programmes have potential benefits for their students and institutions; in the end, patients may also reap the benefits, as such programmes could provide better patient care outcomes (Ramani et al., 2016). Lack of time and support from attending staff have been shown to contribute considerably to poor-quality teaching, and the educational climate in a department affects residents' willingness to participate in training (Busari et al., 2002). Thus, programme directors seem to have a huge role in promoting teaching skills during training (Mann, Sutton and Frank, 2007).

Discussion

The goal of medical education, as stated by Merton (1957), should be to ensure that every practitioner has acquired both the knowledge and skills necessary for the practice of medicine and the professional identity of a physician (Crues et al., 2014). Transitioning from the role of student to that of practicing doctor is stressful for many reasons, such as dealing with the newly gained responsibility, managing uncertainty, working in multi-professional teams and experiencing the sudden death of patients (Brennan et al., 2010). In this study, the most crucial areas to develop in PGME appeared to be: 1) utilisation of feedback and collegial support; 2) supporting skills to cope with stress and develop emotion regulation; and 3) fostering teaching skills and practices in clinics. Well-planned apprenticeship models can provide a partial answer to these needs, especially in the case of fostering the use of feedback, providing collegial support and helping to cope with stress. Regarding the development of teaching skills, more formal training systems are needed. It should not be assumed these supporting functions just happen between actors in informal situations in the clinic; rather, they need to be planned and implemented as practices at the curricular level. Pedagogical solutions, such as using working pairs of a novice and a more experienced resident and allocating time for small group discussions of stressful situations (for example), would promote the needed skills. In addition, the personnel who supervise residents may also lack proper training in teaching and supervisory skills. To be able to plan, implement and teach the intended programmes, they also need education for these required actions.

Conclusion

The development of residents' training should be supported with curriculum and carefully planned pedagogical solutions. In addition, training for teachers of residents should be improved.

Take Home Messages

- Medical residents benefit from honest feedback and from collaborating with more experienced colleagues;
- Residents need more support in coping with stressful situations;
- Training in teaching skills is needed.

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Appendices

None.

Declarations

The author has declared that there are no conflicts of interest.

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Ethics Statement

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