A qualitative study exploring mentorship in anesthesiology: perspectives from both sides of the relationship

Une étude qualitative examinant le mentorat en anesthésiologie: perspectives de part et d'autre de la relation

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Abstract

Purpose *Mentorship has been shown to improve career satisfaction, research productivity, and retention of academic physicians. There is a current lack of studies investigating factors that either promote or hinder effective mentoring relationships through the perspectives of both faculty and residents. The aim of this study was to ascertain these factors and subsequently to provide guidance on designing residency mentorship programs.*

Methods *We used a qualitative design to examine mentorship experiences at the University of Ottawa Department of Anesthesiology and conducted semi-structured interviews with 11 residents and 12 faculty in the mentorship program. Data were analyzed iteratively using a constant comparative method to identify themes resulting in positive or negative mentorship outcomes.*

Results *As determined from both mentor and mentee perspectives, a successful mentorship program hinges on*

three key factors—i.e., the anticipated goals of a mentorship relationship, characteristics of the participants, and the structure of the program. When themes were compared between mentors and mentees, differences in their perception of the goals of the relationship and the structure of the program resulted in cases of disillusionment and negative mentorship outcomes. The concept of a mentorship network emerged as a possible solution that would meet the evolving needs of mentees as they progress through training. The network would involve each mentee acquiring multiple mentors, with each providing guidance for a mentee's diverse areas of interest.

Conclusion *We identified three key factors that facilitate or hinder mentorship relationships and proposed solutions for designing effective mentorship programs for postgraduate training programs.*

Résumé

Objectif *Il a été démontré que le mentorat améliorait la satisfaction en matière de carrière, la productivité en recherche et la rétention des médecins académiques. À l'heure actuelle, peu d'études se sont intéressées aux facteurs qui favorisent ou au contraire entravent des relations de mentorat efficaces en examinant aussi bien les perspectives du corps professoral que celles des résidents. L'objectif de cette étude était de déterminer quels étaient ces facteurs puis d'émettre des recommandations pour la mise au point de programmes de mentorat pendant la résidence.*

Méthode *Nous avons utilisé une méthodologie qualitative pour examiner les expériences de mentorat dans le département d'anesthésiologie de l'Université d'Ottawa et réalisé des entrevues semi-structurées auprès*

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de 11 résidents et 12 professeurs du programme de mentorat. Les données ont été analysées de façon itérative à l'aide d'une méthode comparative en continu afin d'identifier les éléments entraînant des résultats positifs ou négatifs de mentorat.

Résultats Comme l'ont déterminé les perspectives des mentors et des mentorés, un programme de mentorat réussi repose sur trois facteurs clés: les objectifs anticipés (ou attentes) d'une relation de mentorat, les caractéristiques des participants et la structure du programme. Lorsqu'on a comparé ces éléments entre les mentors et les mentorés, les différences de perception concernant les objectifs de la relation et la structure du programme ont causé certains cas de déception et des résultats de mentorat négatifs. Le concept d'un réseau de mentorat a été proposé comme solution potentielle pour répondre aux besoins en évolution des mentorés au fur et à mesure qu'ils progressent dans leur formation. Avec un tel réseau, chaque mentoré aurait plusieurs mentors, chacun offrant une orientation et des conseils dans l'un des divers champs d'intérêt du mentoré.

Conclusion Nous avons identifié trois facteurs clés qui favorisent ou entravent les relations de mentorat et proposé des solutions pour mettre au point des programmes de mentorat efficaces dans le cadre des programmes de formation postdoctorale.

Mentorship has its origins in Greek mythology. When Homer's Odysseus embarked on his odyssey, he entrusted the development of his son, Telemachus, to his advisor, Mentor. Since then, the term "mentor" has come to describe an individual who serves as a trusted advisor to someone of more junior standing. In medicine, American surgeon, William Halstead, depicted mentoring in the late 1800s when he developed a model whereby an experienced surgeon would select and train an apprentice.

Mentorship in medicine has been shown to serve two broad functions, namely, career development and psychosocial support.¹ A successful mentorship program generally refers to an *effective* program in which mentors assist their mentees in acquiring professional skills and attitudes that translate to interpersonal, academic, and career success. Although it is difficult to formulate a precise definition of mentorship in medicine, the following definition of mentorship in the medical literature comes from the Standing Committee on Postgraduate Medical and Dental Education (SCOPME, 1998)²:

"The process whereby an experienced, highly regarded, empathetic person (the mentor) guides another individual (the mentee) in the development

and re-examination of their own ideas, learning, and personal and professional development."

Multiple studies have espoused the ability of mentorship to improve career satisfaction and to increase research productivity and retention of faculty in academic medicine.^{1,3,4} Mentorship of residents also helps develop skills to practice with increased independence, confidence, and reduced stress.⁵ Despite clear beneficial outcomes associated with mentorship, there is a gap in the literature on the impact of mentorship on anesthesia residents. Multiple recent editorials have highlighted the need for further research in this area.⁶⁻⁹

Most previous research has focused on quantitative outcomes of mentorship such as furthering career progress. A systematic review of mentoring in medicine⁴ identified themes related to desired characteristics of the participants in a mentoring relationship, the development and characteristics of this relationship, and barriers associated with mentoring. Most included studies were self-report surveys limited by a low response rate. In addition, quantitative methods do not typically provide information on understanding how effective mentoring relationships are developed and maintained.

Qualitative research, which allows for a deeper examination of personal experiences, may enhance our understanding of these concepts. A recent qualitative study explored the characteristics of both effective mentors and mentees and successful mentorship relationships. It provided an in-depth examination of the mentorship relationship from the perspective of faculty members alone, without inclusion of trainees.¹⁰ Similarly, a review of qualitative research in medicine included research on faculty mentorship.⁴

There is currently a lack of qualitative studies investigating the mentorship relationship from the perspectives of both residents and faculty. Our study aimed to fill this knowledge gap in the literature. Accordingly, the purpose of our study was to explore the mentorship relationship from both faculty and resident perspectives and to provide a deeper understanding of the primary goals and challenges in establishing an effective mentorship program during residency training. By obtaining views from both stakeholder groups, we aimed to elucidate elements of a successful mentorship relationship and provide clarity on solutions for designing residency mentorship programs.

Methods

At the time of our study, a formal mentorship program was already in place at our institution. We used a qualitative

approach by collecting data from both mentor and mentees through semi-structured interviews, and we then analyzed the data iteratively using a constant comparative method. Appendix A (available as Electronic Supplementary Material) includes a glossary of study-specific terms used in qualitative research.

This study received ethics approval from the Ottawa Hospital Ethics Review Board in August 2013 (reference number 20130244-01H).

Participants

Our anesthesia departmental administrative assistant forwarded recruitment e-mails to all anesthesia staff and residents employed at the University of Ottawa teaching hospitals. Interested participants responded directly to our research assistant to coordinate an interview. To enhance our understanding of mentorship, we sought the views from both mentees and mentors. Participant selection was carried out using purposive sampling so as to identify individuals across a variety of characteristics (e.g., postgraduate year [PGY] level, sex, years of faculty experience). At the time of the study, there were 50 anesthesia residents ranging from PGY-1 to the most senior residents in PGY-5. Junior residents were classified as either PGY-1 or 2, whereas senior residents were classified as PGY-3, 4, or 5. Among the four affiliated Ottawa teaching hospitals, there were 118 faculty members, approximately half of whom had less than ten years' experience as mentors. In our institution, the mentorship program coordinator formally pairs faculty and mentees at the beginning of residency, and this formal pairing is expected to last from PGY-1 until the completion of the mentee's residency training. The formal mentorship program was initially instituted in the department in 1999.

Data collection

A research assistant with specialized training in qualitative research examined mentorship experiences by conducting semi-structured interviews. Semi-structured interview guides (see Appendix B) were designed to follow a suggested predetermined line of inquiry but also to allow flexibility in questioning. Consequently, the interview questions could evolve throughout the process of data collection and thereby permit the exploration of emerging themes. The semi-structured interview questions were developed from a review of the current literature on mentorship and then vetted by our entire research team for clarity, flow, and overall suitability of content. The questions were piloted with a small group of residents

and faculty and were modified slightly only with respect to changes in wording so as to clarify the meaning and intent of several questions. Interviews lasted approximately 45 min and were audiotaped and transcribed verbatim. Data collection continued until we reached a point of saturation—i.e., until we no longer found new themes occurring within the data.

Qualitative research typically does not *a priori* estimate sample size,^{11,12} and qualitative analysis does not generally aim to demonstrate generalizability to a larger population. Instead, the goal of qualitative research is to sample enough of the population of interest so as to be satisfied that a suitable amount of data has been collected to describe a phenomenon in one particular context. This goal is achieved by continuing data collection until a number of analyzed interviews yield no additional useful content, known as “saturation”. As there were 50 residents within the residency program at the time of the study, we budgeted to sample 20% of this population ($n = \text{ten residents}$). This 20% estimate is typically considered as an acceptable estimate in qualitative research and was sufficient to reach data saturation in our sample.¹³

Data analysis

Qualitative data analysis included the application of inductive coding techniques.^{11,13} The research team followed Creswell's¹² coding process where data are first explored to gain a general sense of the data and then coded. For our purposes, these codes were described and collapsed into themes, and triangulation was used in several key ways to maintain rigour and credibility throughout the data analysis process. First, three researchers (S.A., S.S., M.D.B.) coded all the data following an inductive process whereby codes (e.g., labels) were affixed to segments of text as they related to a given theme—i.e., the meaning of a given amount of text, e.g., goals of mentorship. Second, these three researchers met frequently (i.e., biweekly) to discuss and agree on the meaning of themes within the transcripts. Finally, a codebook was created listing all the identified themes along with their corresponding definitions and prototypical comments.¹³ A codebook is useful to ensure data are represented in a systematic structured manner as well as beneficial for categorizing themes in subsequent writing. During development of the codebook, any disagreements in coding were discussed until consensus was reached. In this study, we aimed to identify underlying or comprehensive themes and challenges vital to the development of effective mentoring relationships.

Results

Participants included anesthesia residents ($n = 11$) representing all five years of residency training and anesthesia faculty ($n = 12$) (Table 1).

As determined from the perspectives of both mentors and mentees, the success of the University of Ottawa anesthesia mentorship program hinges on three key factors,—i.e., the anticipated goals of a mentorship relationship; characteristics of the participants; and the structural framework of the program. The main themes are discussed individually below along with their relevant subthemes.

Goals and expectations of mentorship

Mentees

A recurring theme was the evolving needs of mentees as they progress through residency. Our study shows that resident mentees, particularly junior (PGY-1 and 2) mentees, value the psychosocial support and nurturing characteristics of a formal mentor. As one junior mentee stated:

“Residency is a tough time. It’s busy. It’s stressful. We have other external things that are hard to deal with, and I think having that mentor know you on a personal level is important—to give you advice, not necessarily on your personal life but how to deal with things and maintain a work-life balance.”

Many junior residents valued the support of a mentor during their transition to residency, as most considered

this a large adjustment in terms of work expectations and time requirements compared with their previous schooling. Mentees looked towards their mentors for guidance and reflection on important issues such as career-life balance and sought “normalization” of their experiences. When mentees did not acquire mentorship in their initial years of residency, they typically stated that this psychosocial support was the element that they most missed.

As a mentee progressed throughout residency, an experienced mentor who could provide advice regarding career development and transitions and introduce networking opportunities and resources became particularly important. One senior (PGY 3-5) mentee said:

“I think, as you progress through residency, you’re worried about more, what’s my research project going to be on? Or what am I going to do for a career? Am I going to do a fellowship? Am I going to do community anesthesia or academic anesthesia?”

Mentors

Faculty were divided in the overall goals of mentorship. There was a discrepancy between whether mentorship during residency functioned primarily for psychosocial support and whether it should focus on professional guidance. This distinction was critical as it defined how mentors approached the relationship.

Emotional support was important to junior mentees, and many mentors echoed this sentiment:

“So, in my mind, mentorship is more about creating this relationship with my mentee over the period of their residency and making sure they’re fine. And, I’m not a psychiatrist but if I feel that they need some help, well, maybe my role is to just show them support.” (Faculty)

In certain instances, mentors could adapt the relationship, “if I feel that they need some help”, to the goals of the mentee. Particularly, as mentees’ goals change during the evolution of their residency, this ability to evolve in the relationship was considered important for continued growth of the mentorship. As one mentor said,

“I think, first and foremost, to be able to adapt yourself to the mentee and to what their needs are. Every time you get a new mentee, you kind of start from zero again and you just try to see what they need and how you can adapt.” (Faculty)

On the other side of the spectrum, mentors thought their purpose was to facilitate attainment of objective goals in terms of career or academic success.

Table 1 Demographics

	Mentee	Mentor
Year Residency		
1	3	
2	2	
3	3	
4	2	
5	1	
Cumulative Number	11	12
Sex		
Male	5	6
Female	6	6
IMG*	4	
Dissolved Initial Relationship		
Yes	6	3
No	5	9

* IMG = international medical graduate

“I looked forward to developing a relationship with a mentee, offering advice and making opportunities for that person. Looking out for opportunities that they might not know about or think about seriously when they’re a resident because they don’t have the experience to consider that it might be valuable. And then, I guess, there was a mismatch between me and my mentee, who didn’t really want to go beyond the scope of what was required of residency. They didn’t want to investigate other side avenues or opportunities on top of the clinical opportunities. From there, I suppose, our relationship fell apart.” (Faculty)

Despite an internal interest in developing a mentoring relationship, the misalignment of goals between mentors and mentees prevented the consolidation of a meaningful relationship. When mentees and mentors differed in their expectations/goals in the mentorship relationship, in some cases, this resulted in participant disillusionment and negative mentorship outcomes.

Mentor and mentee responses as regards their mentorship goals are compared in Table 2.

Characteristics of the participants and the mentorship relationship

Mentor attributes

Mentees most commonly mentioned that mentors should be interested, honest, and trustworthy. Nurturing

characteristics, such as caring, support, being a good listener, and empathy, allowed mentees to consider they could develop a bond with their mentor. Motivation was the most commonly identified attribute leading to strength in forming a relationship. Mentees often based the mentor’s approachability or accessibility on how much interest the mentor expressed in the mentorship. When questioned on what may be a core component for a functional relationship, a mentee reflected:

“I think a mentor who is genuinely interested in the mentor/mentee program is important. They have to be easily available. That can be difficult sometimes because we have different schedules and hours. However, although my mentor was busy, it was easy for us to meet up.” (Senior Resident)

Mentees commonly identified trustworthiness, honesty, and being non-judgmental as important attributes in their mentor. They valued the ability to speak freely without fear of negative consequences or change in professional relationship.

“I think that’s one part of the mentor/mentee relationship. You can discuss anything you want, even if it’s about the program or about one of the colleagues. You need to establish that trust and rapport with your mentor.” (Senior Resident)

Participants noted an intrinsic differential in power between mentors and mentees as faculty mentors are accountable for evaluating their mentees. This conflict is highlighted below by a mentor; however, similar comments were noted from the mentee perspective.

“...to emphasize, people [who] are in positions where they’re [completing] formal evaluations and formally responsible for passing or failing residents, mentoring may not be as comfortable for them.” (Faculty)

Nevertheless, it was noted that senior faculty may be able to provide practical advice or wisdom based on their own experience of what was challenging or rewarding in their own careers. This insight was valuable to mentees when formulating plans regarding their future career objectives. Recognizing that they may not have experience or knowledge in all of the mentee’s fields of interest, mentors may be instrumental in facilitating relationship building or networking between the mentee and an individual in an area of interest identified by the mentee.

“My mentor actually has been very accommodating in trying to connect with people that they finished with or had seen recently, that are about 10 years out.

Table 2 Comparison of mentorship goals between mentees and mentors

Mentees	Mentors
Junior Residents	
Psychosocial support	Career Guidance (50% primary)*
Stress Management	Psychosocial support (50% primary)**
	Work-life balance
	Networking
Senior Residents	Academic/research guidance
Career Guidance	Administrative support
Academic/research guidance	Economic guidance
Networking	Transition to practice
Transition to practice	
Psychosocial support	

* 50% of mentors consider career guidance as a primary consideration in the mentorship relationship

** 50% of mentors consider psychosocial support as a primary consideration in the mentorship relationship

And I've connected with them, and that has been another value that my mentor has provided." (Senior Resident)

Mentors and mentees independently identified compatible personalities and shared interests as key to successful mentorship. Compatible personal and career goals facilitated a framework for openness and dialogue in the mentorship relationship.

Mentee attributes

A relationship generally implies an association between two individuals. Nevertheless, while there were multiple comments as to what constitutes positive mentor characteristics, both mentors and mentees made minimal mention of the responsibilities or characteristics of a mentee that would facilitate a successful mentorship relationship. When identified, positive mentee characteristics included interest, self-motivation, and social responsibility. Many mentees commented that they were "surprised" or "had not considered" the mentee responsibilities, if any, to the relationship. This may serve to provide a basis for mentors' occasional frustration over the "lack of motivation" for the relationship. As a mentor stated,

"I think a mentee needs to be receptive to learn, and if they're not receptive, then you can only try to provide what they seem to need. If they don't seem to want [the relationship], if they don't look at a mentorship relationship the same way you do, you obviously need to change how that relationship will be."

Or another mentor stated,

"I want somebody who is self-directed, essentially where I would want you to pull your own toboggan. And I'll walk beside you and give you some tips. But I don't want to do all the work." (Faculty)

Characteristics of the relationship

Sex, culture, ethnicity

Both mentees and mentors had divergent opinions regarding the impact of factors that may be perceived as sensitive aspects in a relationship, such as culture, ethnicity, and sex. In general, many female mentees favoured a female mentor to discuss elements surrounding career-life planning; however, they thought career-specific advice could be garnered from both sexes.

As a female mentee stated,

"My first was a male and I think the professional side of the mentor would've been just as valuable in a different way. But I think the personal support would've been different. My current mentor is female and she's been a fantastic mentor, I really feel that I've benefited a lot both professionally and personally from having this relationship with her. I mean in life phases, it makes more sense to get advice from someone who's gone through whatever it is you're looking ahead to." (Senior Resident)

Female mentors echoed these sentiments,

"As a female, I've always felt treated absolutely equally, had as many opportunities, and been valued as much as my male colleagues. However, the supports are not necessarily the same for women, and if you want to have a family, you do have to take time off. In this way, you may just not make as much money as somebody else or have as prestigious a research career as somebody else." (Faculty)

A majority of both male mentee and mentors did not consider sex to be a hindrance to the development of a mentorship relationship, particularly surrounding professional or research-related advice. Many male mentors appreciated the inherent differences in career-life planning and were cognizant of these challenges.

Participants who came from diverse sociocultural backgrounds were dissimilar as to whether matching should or should not be reflective of these backgrounds. In one aspect, an international medical graduate (IMG) stated,

"I'm an IMG but I don't know if I would want an IMG as my mentor if I came into first year. I wanted a Canadian graduate as a mentor because [I think] they can help me more and know the system a bit more than just another IMG." (Resident, Junior)

In contrast, some IMGs thought commonality of culture may foster a stronger mentorship relationship.

"I found throughout my life that I connect probably better with people who have immigrated to Canada. It doesn't matter where they're from. But that experience is something that is very different from somebody who was born and grew up in Canada. So, to me, a mentor that's also immigrated, that's a bonus." (Resident, Senior)

Religion and sexual orientation were not explored by participants.

Additional forms of mentorship relationships

Informal mentorships

As mentees progressed through training and defined their career goals more clearly, they were more likely to seek informal mentors in their developing areas of interest. Multiple informal mentors were sought to support the mentees' specific questions and interests, depending on faculty members' strengths and areas of expertise. From a mentee,

"And I think the ability of us to always continue to be able to seek out informal mentorship from people, I mean, I find that invaluable. As much as I value my formal mentorship, I also take as much away from the informal relationships I formed." (Resident, Senior)

Some participants discussed the potential of mentorship networks with both informal and formal mentors, which could be an option to help them achieve their diverse mentorship goals. Mentorship networks could assist mentees in acquiring multiple mentors who speak to or provide guidance in the mentees' specific areas of interest.

Peer mentorship

An interesting observation was the prevalence and value of peer mentorship throughout residency. Particularly for junior mentees, this form of informal mentorship was consistently viewed as the greatest source of information regarding the transition to residency. This peer mentorship provided stress relief in the sense of camaraderie as well as in knowing they did not experience the challenges of residency alone. There was a sense that senior residents were honest, reliable, and genuinely concerned with the wellbeing of junior residents.

"The senior residents are always looking out for you. As soon as I got here, they gave me their phone numbers and e-mail address. I mean, obviously you need to have a staff as someone you can also ask for advice, but I think that the senior residents are probably the most important." (Resident, Junior)

Peer mentorship was delivered informally, and there were concerns that, if the system were formalized, there may be loss of the honesty or authenticity of the peer advice.

Structural framework of the program

Participants identified key areas in the framework that need to be addressed. These included the matching process,

initiation of the mentoring relationship, guidelines of the program, and faculty development.

Matching process

Both mentors and mentees raised a concern regarding transparency surrounding the pairing process. Many participants were unclear as to the factors considered when formalizing mentorship pairings. From the mentor perspective,

"I struggle a little bit with how it's worked within our faculty up to this point, as it seems not to be driven by an underlying shared interest or need. At least in my experience thus far, it's been random matching of people." (Faculty)

Nevertheless, there was acknowledgement that matching based on compatible interests and personality would be difficult with new residents as these traits would be unknown at the onset of their residency.

Initiation of the mentoring relationship

The perceived lack of explicitly stated expectations and responsibilities of the formal mentoring relationship led to uncertainty whether the relationship was fundamentally driven by the mentor or the mentee. A key issue surrounding this concept was whether initiation of the relationship was primarily the role of the mentor or the mentee. A mentee cited the main reason for lack of initiation as,

"Some people, for example, get paired with a very senior, very distinguished and respected individual. I can imagine there would be somewhat of a vertical pressure there as well that you'd feel a bit intimidated." (Resident, Senior)

A majority of mentors were cognizant of a potential hierarchical barrier that would prevent mentees from initiating the formation of a relationship, and they echoed sentiments that responsibility for initial contact rested with the mentor. One mentor said:

"I feel that it's more my responsibility to contact them because if they are in a need, they may not even have the courage to contact me." (Faculty)

Nevertheless, in direct contrast, a few mentors reasoned,

"I tend to view mentor-mentee relationships as mentee driven. Everything I've read from the business literature suggests that the mentee is in a position of driving both the selection of a mentor and the relationship." (Faculty)

Guidelines of program

Optimal frequency of meetings was difficult to define; however, both mentors and mentees appreciated awareness of time expectations and limitations. Most agreed that an initial in-person meeting should occur within the first few months of residency, and contact should occur twice yearly at a minimum and sometimes more frequently.

Both mentors and mentees were responsible for initiating dissolution of their relationship. Barriers to dissolving an unsuccessful relationship included concerns surrounding repercussions or discomfort when seeing their respective former mentor/mentee. Some were not certain how to proceed with formally dissolving a relationship. Participants in both the mentor and mentee groups requested reassignments; however, interestingly, this was usually completed without knowledge of the corresponding partner in the relationship. It was generally unclear if or when the corresponding mentee or mentor became aware of the reassignment. Relationships seemed to dissolve for a multitude of reasons, including personal or career dissimilarities, personal factors, or non-alignment of mentorship goals. From a mentor,

“Well I felt uncomfortable in asking to be reassigned, but I thought it was probably better for the mentee. I’d probably be a better mentor for someone who is slightly in a different life stage.” (Mentor, Junior)

Both mentors and mentees suggested including an annual program evaluation. Ongoing evaluations and the resulting relevant changes were stressed as important in building the strength of the program and ensuring that the needs of residents were continually met. A mentor said,

“[To] assess the program is important because I think that, at the moment, it’s a very social thing. But if we wanted to make it better, we should have a more structured evaluation every year. What could we do to make it better?” (Faculty)

Faculty development

Mentor training or access to mentorship resources were identified as factors that could improve the efficacy of a mentoring relationship. From a mentor perspective,

“As a mentor, you join this mentorship program and there is not really much of an orientation. There is not much guidance on ‘these are the things a mentor might do for somebody they’re mentoring.’ ” (Faculty)

A mentorship training program would allow mentors to gain confidence in and enhance their leadership abilities

and likely become stronger resources for their resident mentees.

Discussion

In this study, we found that the success of a mentorship program hinged on three key factors: the anticipated goals of a mentorship relationship, characteristics of the participants, and the structural framework of the program.

We found that the goals of mentorship evolved for residents as they progressed throughout their training. Psychosocial supports were particularly important for junior residents as they transitioned to the demanding rigour of residency training, whereas facilitation of career goals and guidance for transition to independent practice became important for senior residents. This was the central finding of our study and should likely be reflected when structuring or designing residency mentorship programs. A structural framework for a mentorship program that addresses the evolving goals of mentees would clarify expectations of the relationship and speak to the “global” goals that are important to achieve at each stage of resident training—keeping in mind that the mentorship relationship should still be individualized for each mentee. In this way, mentorships can be driven by a shared focus in achieving the outcomes as defined by the mentee.

At the onset of residency, meetings may need to focus on resident wellbeing, and more frequent meetings may facilitate a supportive environment. Senior residents may appreciate meetings in which predetermined topics are covered that relate to specific career concerns. Incorporating a list of suggested discussion topics into mentorship program guidelines can facilitate awareness of changing expectations. This list can be consolidated into topics for junior residents (e.g., stress management, communications skills, work-residency balance) and senior residents (e.g., academic vs community practice, research interests, elective preparations, résumé building, and job planning).

Characteristics affecting the success of a relationship can be separated into personal and professional qualities,⁴ which is in keeping with previously published data.^{14–17} Good mentors displayed characteristics consistent with an empathetic or caring nature; they had compatible career goals and/or similar lifestyles, and expressed sincerity in their efforts to provide “mentee-centred” mentorship. In general, we found that the most commonly mentioned attribute affecting success of a relationship was the motivation and interest of both parties.¹⁵ It was particularly concerning how often a perceived disinterest in the corresponding party was associated with the eventual dissolution of a relationship.

Potential complex issues regarding sex and ethnicity were discussed in our study. Multiple studies seem to reveal that females face challenges in finding mentors and opportunities for promotion related to mentorship.^{1,9,18–20} Our results show inconsistencies regarding the effect of these factors on the development of a mentorship relationship and the need for pairings related to these factors. This result is in keeping with previously published papers.^{1,15,18,19,21} Sensitivity and awareness of how sex and ethnicity influence a person's relation/perception with the world may likely be as important in establishing a relationship as directed matching based on these factors.

Based on the participants' comments, we concluded that there could be many alternatives to a formal mentorship program, including a valuable informal mentorship (where mentors are not preassigned) that occurs parallel to the organized program. This is in keeping with the existing literature which suggests that informal mentorship is often more successful. Nevertheless, without a formal program, many potential mentees may not find a mentor of any kind.^{3,22} The concept of a mentorship network²³ emerged as a possible solution to meet the evolving needs of mentees as they progress through training. In an academic context, it is unlikely that a single mentor has the ability to provide expertise in all career or professional avenues. A mentorship group would ideally consist of both junior and senior residents and mentors from both academic and community settings. This concept of forming formal mentorship groups^{23,24} may decrease the chances of incompatible relationships while simultaneously increasing exposure to individuals with varied interests. In addition, this may encourage peer mentoring, which our study has shown is markedly beneficial for junior residents.²⁵ Additionally, an established list of mentors in specific areas (e.g., specific research niches, cardiac anesthesia, administrative, etc.) may be provided to residents if they develop an interest in these areas during residency.

Many participants voiced concerns about being unaware of the details regarding the structure of the mentorship program. Accordingly, we would consider guidelines necessary to provide structure to the relationship and important to minimize miscommunication, clarify expectations, and ensure that mentorship goals are obtained. From the participants' perspectives, the guidelines should clarify the responsibilities of both mentors and mentees, meeting frequency, procedures for dissolution of relationships or changing mentors/mentees, and the goals of mentorship. Clear expectations should be delineated regarding the responsibilities of both mentors and mentees. Specifically, as highlighted in our results, mentee responsibilities are a commonly overlooked factor in mentoring relationships, but these should be discussed in

mentoring guidelines. Mentee responsibilities may include personal issues, such as accessibility—i.e., mentees should show interest and engagement in the relationship and demonstrate self-motivation through their actions, e.g., preparation of career-related objectives prior to meetings.^{14,26,27} Initiation of the relationship is an important responsibility, and due to the perceived hierarchical barriers between staff mentors and resident mentees, this task should be preferentially allocated to mentors.²⁸

Some participants in our study experienced negative mentoring relationships, causing eventual dissolution of the relationship. A centralized but confidential system for voicing concerns with relationships may enable change in respective pairings and ensure that mentors/mentees can meet mentorship goals while maintaining professional connections. Matching criteria should be transparent and recruitment should be voluntary,¹⁵ which may increase motivation and therefore satisfaction for both mentors and mentees within the program. Given that new residents are not known during the initial mentorship pairings, it is inevitable that an element of guesswork is involved and that some pairings may not be successful. Therefore, a transparent and comfortable process for changing mentors/mentees is an important element to consider when building a mentorship program framework.¹⁰ A suggestion may be to assign mentees/mentors for the first six to 12 months and thereafter allow the partners either to make their own selection or continue with their initial mentoring relationship. Additional strategies for preventing or dealing with failed mentoring relationships include providing resources, such as symposiums or educational programs, which facilitate developing positive mentor characteristics and skills.

Feedback from participants regarding the program's effectiveness in meeting mentorship goals is vital to ensure continued positive development of the existing framework of the mentorship program. Both mentors and mentees should have the opportunity to express areas of concern or to highlight areas of strength in the overall program. Feedback should be encouraged and should be an integral part of the program.

A limitation of the study is the use of a sampling from a single specialty training program. A recent survey⁹ indicated that only 54% of Canadian anesthesiology training programs had formal mentorship programs; however, it is difficult to appreciate the extent to which the mentorship program structure at our institution is reflective of mentorship programs at these other anesthesiology training programs. Another limitation of our study is the potential selection bias in participant recruitment. Participants may have particularly positive or negative mentorship experiences which prompted them to

engage in the study. Therefore, it is possible that the views of the small sample size may not reflect the opinions of the entire department. Moreover, we did not include mentors outside the specialty of anesthesiology, which we recognize may be valuable to residents throughout their residency training.

A strength of our study is its uniqueness in obtaining diverse perspectives on mentorship relationships from faculty and both junior and senior residents. Each participant had a valuable perspective in understanding the multidimensional aspects of a mentorship model. The qualitative analysis of the interviews allowed for a rich exploration of each stakeholder's observations, experiences, and suggestions for improvement.

Areas of future research should focus on examining mentor-mentee dyads for a further account of factors leading to either successful or unsuccessful relationships. Additionally, as mentioned in a recent editorial,⁸ a longitudinal study following physicians after completion of their residency program may provide further information regarding the long-term impact of residency mentorship.

Conclusion

We conclude from our findings that a successful mentorship program involves recognizing evolving mentorship needs, clearly outlining mentee/mentor expectations, mutual compatibility and interests, and a responsive program structural framework. Our study showed the evolution of mentorship priorities as residents progressed throughout their residency training. The overall structural framework should address this change in mentorship goals which develops between junior and senior residency. Mentorship guidelines should clarify the expectations of both participants in the relationship and ensure that a mechanism is in place to allow for changing the mentee-mentor relationship. Mentorship networks may provide a reasonable solution for achieving diverse goals, as a mentee may benefit from a group of mentors with each addressing different aspects of their personal and professional career.

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References

1. Sambunjak D, Straus SE, Marusic A. Mentoring in academic medicine: a systematic review. *JAMA* 2006; 296: 1103-15.
2. Oxley J; Standing Committee on Postgraduate Medical and Dental Education. Supporting Doctors and Dentists at Work: an Enquiry Into Mentoring. London: SCOPME report; 1998.
3. Stamm M, Buddeberg-Fischer B. The impact of mentoring during postgraduate training on doctors' career success. *Med Educ* 2011; 45: 488-96.
4. Sambunjak D, Straus SE, Marusic A. A systematic review of qualitative research on the meaning and characteristics of mentoring in academic medicine. *J Gen Intern Med* 2010; 25: 72-8.
5. *The Association of Anaesthetists of Great Britain and Ireland*. Stress in Anaesthetists, London, 1997. Available from URL: <http://www.aagbi.org/sites/default/files/stress97.pdf> (accessed February 2016).
6. Flexman AM, Gelb AW. Mentorship in anesthesia. *Curr Opin Anaesthesiol* 2011; 24: 676-81.
7. Flexman AM, Gelb AW. Mentorship in anesthesia: how little we know. *Can J Anesth* 2012; 59: 241-5.
8. Miller DR, McCartney CJ. Mentoring during anesthesia residency training: challenges and opportunities. *Can J Anesth* 2015; 62: 950-5.
9. Zakus P, Gelb AW, Flexman AM. A survey of mentorship among Canadian anesthesiology residents. *Can J Anesth* 2015; 62: 972-8.
10. Straus SE, Johnson MO, Marquez C, Feldman MD. Characteristics of successful and failed mentoring relationships: a qualitative study across two academic health centers. *Acad Med* 2013; 88: 82-9.
11. Patton MQ. *Qualitative Research & Evaluation Methods*. 3rd ed. Thousand Oaks, CA: Sage; 2002.
12. Creswell JW. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. Thousand, Oaks: Sage; 2013.
13. Miles MB, Huberman AM. *An Expanded Sourcebook. Qualitative Data Analysis*. Thousand Oaks, CA: Sage; 1994.
14. Rabatin JS, Lipkin M Jr, Rubin AS, Schachter A, Nathan M, Kalet A. A year of mentoring in academic medicine: case report and qualitative analysis of fifteen hours of meetings between a junior and senior faculty member. *J Gen Intern Med* 2004; 19: 569-73.
15. Straus SE, Chatur F, Taylor M. Issues in the mentor-mentee relationship in academic medicine: a qualitative study. *Acad Med* 2009; 84: 135-9.
16. Cho CS, Ramanan RA, Feldman MD. Defining the ideal qualities of mentorship: a qualitative analysis of the characteristics of outstanding mentors. *Am J Med* 2011; 124: 453-8.
17. Jackson VA, Palepu A, Szalacha L, Caswell C, Carr PL, Inui T. "Having the right chemistry": a qualitative study of mentoring in academic medicine. *Acad Med* 2003; 78: 328-34.
18. Leonard JC, Ellsbury KE. Gender and interest in academic careers among first- and third- year residents. *Acad Med* 1996; 71: 502-4.
19. Robinson JD, Cannon DL. Mentoring in the academic medical setting: the gender gap. *J Clin Psychol Med Settings* 2005; 12: 265-70.
20. Mayer AP, Files JA, Ko MG, Blair JE. Academic advancement of women in medicine: do socialized gender differences have a role in mentoring? *Mayo Clin Proc* 2008; 83: 204-7.

21. *Koopman RJ, Thiedke CC.* Views of family medicine department chairs about mentoring junior faculty. *Med Teach* 2005; 27: 734-7.
22. *Davis OC, Nakamura J.* A proposed model for an optimal mentoring environment for medical residents: a literature review. *Acad Med* 2010; 85: 1060-6.
23. *Higgins MC, Kram KE.* Reconceptualising mentoring at work: a developmental network perspective. *Acad Manage Rev* 2001; 26: 264-88.
24. *DeCastro R, Sambuco S, Ubel PA, Stewart A, Jagsi R.* Mentor networks in academic medicine: moving beyond a dyadic conception of mentoring for junior faculty researchers. *Acad Med* 2013; 88: 488-96.
25. *Bussey-Jones J, Bernstein L, Higgins S, et al.* Repaving the road to academic success: the IMERGE approach to peer mentoring. *Acad Med* 2006; 81: 674-9.
26. *Day R, Allen TD.* The relationship between career motivation and self-efficacy with protégé career success. *J Vocat Behav* 2004; 64: 72-91.
27. *Zerzan JT, Hess R, Schur E, Philips RS, Rigotti S.* Making the most of mentors: a guide for mentees. *Acad Med* 2009; 84: 140-4.
28. *Hauer KE, Teherani A, Dechet A, Aagaard EM.* Medical students' perceptions of mentoring: a focus-group analysis. *Med Teach* 2005; 27: 732-4.