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ORIGINAL ARTICLE

Real-world challenges to general surgery resident leadership development: a needs assessment

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Abstract

Purpose Formal leadership curricula are not commonly incorporated into general surgery residency training. The aims of this study are to delineate challenges and barriers for leadership development during training to help guide future leadership curricula within general surgery.

Methods All general surgery residents at a single academic health center in the western United States were eligible to participate. The study collection method involved one hour virtual focus groups. Data analysis was performed based using processes employed in constructivist grounded theory.

Results A total of 34 residents were interviewed. Thematic analysis yielded five challenges of becoming an effective leader: (1) Cultural, (2) Individual, (3) Career/Structural aspects of residency, (4) Faculty, and (5) Lack of training. Based on these findings, a framework for future leadership curricula was described.

Conclusions The identification of these challenges and potential framework to include in future leadership curricula can help surgical educators to develop the next generation of surgical leaders.

Keywords Leadership · Curricula · Training · Challenges

Introduction

The need for formal leadership curricula throughout general surgery residency training has been established by national surgical societies and leaders in the surgical field [1]. Leadership components are also key aspects of the core competencies of the Accreditation Council for Graduate Medical Education, highlighting the importance of the development of resident leaders [2]. However, formal leadership curricula are not commonly incorporated into general surgery residency training and most residents learn or develop leadership skills through what is called "accidental leadership" [3]. Accidental leadership refers to the acquisition of leadership skills "on the go", by individuals that are placed on leadership positions without formal preparation or leadership training. Over the years, just a handful of leadership programs involving general surgery residents have been developed, focusing on different leadership components [4–11].

Studies on leadership in clinical environments variously discuss leaders as change agents, as experts, as inspirers, as administrators, and as educators [12]. During residency, even those who do not have formal leadership roles are leading and mentoring other team members. However, it has been reported that residents' leadership skills and behavior often impact their peers' wellbeing, individual growth, and psychological safety, both positively and negatively [13]. Therefore, it is imperative for surgery residents to be guided

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in developing leadership skills while in residency. Given the complexity of graduate surgical education, it is anticipated that there would be challenges in offering a leadership development program. Other surgical specialties have performed formal needs assessment to identify some of the challenges for leadership curricula development, including: trainee and faculty availability, perceived need, and faculty expertise, among others [3]. To our knowledge, a formal needs assessment to identify current challenges to becoming effective leaders has not been performed in general surgery. The first objective of this study is to delineate the challenges for leadership development during general surgery residency training from the perspectives of the anticipated target of that training. The second is to integrate the findings to propose future curricular content of a general surgery-focused leadership training program.

Methods

This qualitative study was performed at a single academic health center in the western United States with one of the largest surgery residency programs (74 general surgery residents). We drew on processes associated with constructivist grounded theory in our approach to data collection and analysis, including purposive sampling, concurrent data collection and analysis, making use of memos, and an awareness that the researchers' identities impact this collection and analysis process [14]. The researchers who collected the data consisted of a male surgical research fellow and a female education specialist with no clinical background. The education specialist had no relationship to the participants, while the surgical research fellow had finished 3 years of surgery residency and was the participants' peer. Additional members of the core research team are two surgical faculty members (one female and one male) who are experts on surgical education.

To recruit participants, each general surgery resident in the university was sent an email and invitation to participate during their allocated protected teaching time and given the opportunity to join or decline the invite to the focus groups. Participants were organized by postgraduate year (PGY) level, including residents in research years (Research), to allow the different groups of residents to speak more freely about their experience with leadership and building leadership skills within training. Focus groups were held with general surgery residents during the summer and fall of 2020, all of which were conducted and recorded remotely using the institutional video conferencing software. IRB approval for the study was acquired and participants consented before the focus groups began, and no compensation was provided for participating. The participants were largely clustered into focus groups by postgraduate year (PGY) level, and included residents in research years (*Research*). Each focus group lasted approximately 60 min. The semi-structured focus group questions for the present study are shown in Fig. 1. These questions were developed by the core research team based on the objectives of the study. Once completed, the questions were reviewed by two residents for individual feedback to corroborate that the questions were clear and met the intended objective. The questions were designed to prompt reflection and storytelling that would allow us to see the connections between leadership skills and styles, emotion, psychological safety, and a sense of well-being (or lack thereof). The focus groups were continued until saturation was achieved. Both the transcription and field notes served as the data for analysis and the session transcripts were anonymized, and uploaded to Dedoose Version 8.3.41 for analysis [15]. The authors both hand-coded each transcript, and met regularly to discuss coding they had done individually and resolve areas of disagreement. They also discussed initial overarching themes and areas of tension in the data and made note of these as the codes were being developed. Once all of the focus groups were coded, codes were organized into a hierarchy with 1–2 levels of sub-codes.

- When you think of a senior resident who has fantastic leadership skills, what does that look like?
  - Going back to those moments with a fantastic senior resident leader, do you feel that those skills impacted your wellbeing and how?
- When you think of a senior resident that has struggled as a leader, what does that look like?
  - Do you feel that the lack of leadership skills impacted your wellbeing and how?
  - What [factors] do you think lead to the struggle of these senior residents? (Lack of training, personality, etc..)
- Have you gained any leadership skills from any formal leadership training?
  - What have you found helpful in those trainings?
  - What has been lacking?
- Can you share any leadership aspects that you consciously or unconsciously incorporate into your daily work?

Fig. 1 Semi-structured question script

Results

From the total 74 general surgery residents, 35 (47%) participated in 6 focus groups. Data collection continued until data saturation was reached. Of the total, 13 (37%) were men and 22 (63%) were women, consistent with the overall residency gender demographics (41% men and 59% women). From the 35 resident participants, 4 (12%) were chiefs, 5 (14%) were PGY-4, 5 (14%) were PGY-3, 6 (17%) were PGY-2, 10 (29%) were PGY-1, and 5 (14%) research residents. In order to protect the cohort's privacy, we limited the demographic data to just gender and postgraduate year.

Participants' prior leadership training

We asked participants to discuss leadership skills they had acquired from formal leadership trainings as part of the focus group protocol. Of the 35 participants, only about a third of them shared a concrete example of either formal leadership training they had received, or informal "accidental leadership" experiences they had prior to medical school. Those who did not respond were given a chance to share, but did not offer any other examples. A brief summary of the focus group participants' prior leadership training provides relevant context for understanding their responses. For example, one resident, as a high school student, participated in an intense, three-summer-long leadership program that emphasized teamwork and survival skills. Playing, captaining, and coaching team sports during high school and undergraduate also provided a place for participants to practice being leaders, specifically highlighting communication skills while playing sports and the need to tailor messages for different teammates differently. Two of the participants mentioned leadership training they had received in the MBA, MPH, and other master's programs they had completed during graduate school or research time. None of the residents explicitly mentioned their MD programs as a source of leadership training or leadership skill building. The three participants who had attended a service academy, been in the army reserves, or been an officer in the army were the ones who were most able to confidently speak about the importance of leadership training and practice and how those experiences impacted the way they treat people and lead as residents in the clinical environment. For them, thinking about leadership both theoretically and practically was truly part of their daily practice in the military. Communication skills were also emphasized by the residents who had prior military experience.

Challenges to becoming an effective leader

Five main types of challenges were identified from residents' perspectives that negatively impact becoming an effective, kind, and intentional leader, which fall into the following thematic areas: (1) Challenges Arising from Surgical Culture, (2) Individual Challenges, (3) Structural Aspects of Surgical Residency Training which Contribute to Challenges, (4) Faculty's Contributions to Challenges, and (5) Lack of Training.

Challenges to becoming an effective leader arising from surgical culture

"I think it was just like feeling that you have to toughen up the interns or something" (PGY-4)

Participants reported that some characteristics of the surgical culture played a crucial role and negatively impacted leadership development. The cultural elements of the surgical training environment they are referring to are that it is often inflexible, depersonalized, and traumatic.

In particular, participants noted a perception that surgical training occurs within a relatively structured, inflexible environment that can make it more challenging to become an effective resident leader. In that kind of environment, taking the time to demonstrate care for one another or to encourage growth is not a priority, and there is no time or space to reflect on the culture and how to effectively push back against it; people "accept the norm" even when it is harmful. "I suppose it could be more of a trickle-down situation where, when they were interns or juniors they definitely did not experience optimal leadership, but then they kind of felt they could possibly take advantage of other juniors when they got into that more senior position." (PGY-2).

In addition, a participant shared that they feel residency is a traumatic experience and this should be addressed when thinking about how to develop more effective leaders. "I think residents have been traumatized, interns are traumatized, chief residents are traumatized. I think it is important to be mindful of that to not project one's own trauma out on other people." (PGY-1).

Relatedly, another aspect of the surgical training culture the participants brought up is depersonalization. The stereotype is that "surgeons do not have feelings" and the expectations is often that as residents move through training they will learn to compartmentalize their feelings and not let those impact their professional tasks. In contrast, participants described effective leaders in their program as those who were able to show their own emotions and struggles, because that allowed them to also feel like they could share their struggles.

Individual challenges to becoming an effective leader

"It takes effort, effort and personal action and thought. And you are already working a lot. And you are exhausted."(PGY-7)

Individual challenges to becoming an effective resident leader break down into two sub-categories: lack of intention to lead and personal stressors. Lack of intention to lead was described in a few ways, including that some residents do not consider leadership to be an important role for them to take on even when they effectively are being asked to lead others.

"I think leadership should be a practiced skill and not everyone actually practices it or wants to practice it because it is not something they want to do going forward. So a lot of people are thrust into roles they do not want or will never seek again, and if it something you never really practice, you do not really use, and you do not teach people, you do not kind of engage and learn how to engage a group and learn how to lead a group" (PGY-2)

Multiple participants stated that some of their colleagues simply "do not care" about developing leadership skills or becoming a leader. In addition to not wanting to prioritize leadership, there is also the sense that some residents simply do not even realize that they should be leading and learning to be a leader in addition to everything else they are focused on in their training. "Like, maybe people do not even realize that's what they should be doing." (PGY-2) Imposter syndrome was also mentioned as a reason why some residents in leadership positions have a hard time functioning as leaders.

"I think people who have imposter syndrome or people who do not feel comfortable with their expertise in a situation and are forced into leadership, that is a really tough situation for them to arise to the occasion in. Often that creates the defensive leader where you do not want to teach because you are not sure what you are saying, and you do not feel like you can let anyone do anything because you do not know if you can fix their mistakes. It creates a really controlling, defensive type of leader that is based in insecurity. I think a lot of bad leaders in residency have been based in insecurity." (PGY-7)

The other individual challenge to being an effective leader has to do with personal stressors. This can include personal stressors from home and external obligations and not being able to handle them well, such as when resident leaders "were not able to mitigate their own issues". (PGY3) Personal stressors also include not having healthy ways to deal with burnout. "They did not care about the wellbeing of their team because they did not have it in them to care about the wellbeing of their team." (PGY-7) And perhaps less dire than burnout, a few participants mentioned that simply being truly tired is also a challenge to being an effective leader.

Structural aspects of surgical residency training which contribute to challenges to becoming and effective leader

"I think there is a constant state of adrenaline and fear where…communication is either broken or not really full…I am just constantly on edge on those days where, I have no idea what you want me to do. I feel unsafe placing an order for MiraLAX, and everything is called into question and I think there is so much stress in that situation." (PGY-1)

The surgical profession and environment have certain structural characteristics that challenge residents to become effective leaders, including: time constraints due to high clinical and non-clinical load of work, hierarchical change with added responsibilities, continual change, and a high level of stress. The quote that introduces this section above speaks to some of these themes, but also vividly describes the lack of psychological safety residents feel that are the result of some of these characteristics.

One repeated comment from participants was that there just is not enough time for residents to juggle all of their responsibilities, which results in not enough time to thoughtfully and carefully lead others. "I am really sorry, I have given [the medical student] some things to read and we will talk about it, but it is not like you have enough time, it is just not as good". (PGY-4).

In addition to time constraints, residency is marked by constant and sometimes unanticipated hierarchical change, which results in folks becoming leaders without fully realizing that was one of the roles they were going to take on when starting residency or deciding to become a surgeon. "I sort of think that I am not sure everyone conceptualizes their job in that way, as you grow up in residency all of a sudden you start to manage teams. But it was not like some people, were like, I am going to be a surgeon so that I can run a team, even though it happens that that is a huge part of the job." (PGY-4) The role of a surgeon by nature requires leadership in the OR, but the set of skills needed to lead a team are not emphasized explicitly, nor is that part of professional identity highlighted during training.

Other participants emphasized the continuous change in responsibilities inherent in residency which can result in residents not feeling like they have solidified their grasp of the basics before moving on to higher level skills. "We are all each year learning how to be something more than we were the year before our roles changed." (PGY-4) and "You do not get that kind of continuous practice that builds upon itself and develops that skill of leadership that you do need, instead, just 1 day you are chief, and one day you are junior, and on the weekends, when there is only two of you in the whole hospital, then you have to do absolutely everything." (PGY-1) This final quote further emphasizes how the continual hierarchical change in residency can impact leadership decisions and development.

"I did not realize I was doing it and then I got through EGS rotation and kind of reflected back on it. I was micromanaging because I did not trust anyone on the team. Because it was July, it was a whole new group of interns, a whole new group of second years, a whole new group of

third years, and I did not trust one person. And I was a new chief too. So I felt responsible to look everything over. And I was getting to the hospital an hour early to look everything over and I caught mistakes because again, people were new." (PGY-6)

This rich quote highlights the ways hierarchical change impacts trust, leader wellness, and management decisions.

Faculty's contributions to challenges to becoming an effective leader

"We're working with attendings that all have personalities and some can be intimidating 'above and beyond'" (PGY-3)

Faculty may lack leadership skills and training themselves which can trickle down and provide a very difficult environment for all. A participant provided an illustrative example of how this played out from a situation when two chiefs didn't get along.

"I was putting in more time because everything was getting done twice. Patients were being told multiple things, so we were always having to put out fires with patients. Attendings were mad so we were having to talk with attendings. It was so much more work for everybody. Everybody was on edge, on pins and needles, trying to protect everybody's feelings and then also trying to make sure that whatever had to happen for patients was actually happening and that it was the right plan, whatever the right plan ended up being and what that is was based off of who was saying. It was incredibly stressful. And the attendings were aware, but they had not really stepped in, in a way that made it better for the team." (PGY-4)

This example, in addition to showing the cascading impact of poor leadership skills, also implicitly highlights the type of leadership modeling that residents may be learning from. While some residents mentioned learning how not to be leaders based on poor examples they witnessed, some residents might assume the failures in leadership like those in the example are the norm and come to expect or emulate them.

Faculty's support (or lack thereof) of residents as they are growing into their leadership roles can enhance (or undermine) the residents' leadership skills. "Although a lot of faculty are great, there are some of them that let you lead and some of them that do not… Ultimately, I can come up with what I want to do and how I want to lead the team. But if the person above me does not support me in that, then it's really hard for me to lead if people undermine me as a leader." (PGY-7) In addition to reporting a lack of support from some attendings in allowing residents to lead, participants reported that faculty who are unpredictable, do not communicate well about what they want or need, or who are not very present can pose a challenge to their leadership growth.

"[Sometimes] they [attendings] are not very present and aren't involved probably because they knew everything's going all right, but as the intern you are trying to do good for your patients, you are trying to put orders and sometimes you just really feel lack of support or direction, and that's been another thing I have struggled with" (PGY-1)

Challenge of lack of training in becoming an effective leader

And I guess I feel like my assumption was that by the time you're a chief or chief year happens, poof, you have all these amazing leadership skills. And it's not true." (PGY-6)

The final challenge residents face to becoming an effective leader is the lack of prior leadership training and not being exposed to a formal leadership curriculum during surgery training. The participants reported that the hope generally seems to be that they will learn leadership skills through "accidental leadership" and absorb an awareness of what makes for effective or ineffective leadership skills from the people around them.

"I think it's hilarious that we have to meet certain expectations get procedure feedback reviews, but just the fact that you are here long enough you all of a sudden become the leader of the team. The hard thing is a couple big parts of our job are leading at this point and teaching, and we do not get formal education on how to do either of those. Although there have been more and more as residency has gone on, but it still in my opinion falls into 'see one, do one, teach one' mentality of surgery. We're supposed to just absorb this from the people we've been around and hopefully you learn some good things along the way and hopefully you learn some things you do not like along the way." (PGY-7)

Residents also discussed the uneven emphasis during residency on the different skills to be learned. "As a PGY-4 we're doing a lot of things on our own and having absolutely no structure at all in terms of how to manage a team. I mean you're just kind of assuming and hope this person's good you know, as opposed to giving them at least some sort of basic skills or framework to develop their own leadership style."

Discussion

There is a need to develop resident leaders that will become the future surgical workforce in clinical and non-clinical environments. Through this qualitative study, we were able to identify perceived challenges to becoming effective, and intentional resident leaders. Previous studies have reported that personal and cultural challenges exist in the surgical field that prevent residents from providing or receiving leadership-specific feedback, hindering their leadership development [16]. Consistent with these

findings, cultural and personal challenges were identified to prevent residents from becoming effective leaders in our study. The surgical profession itself embedded within a high-pressure environment and limited time was also perceived as a limiting factor to becoming effective leaders and instituting leadership programs. This is consistent with prior literature that has reported trainee availability as a major challenge to develop leadership curricula [3]. Also, the role that senior residents play in leading the team and making clinical decisions, many times is dependent on the particular faculty they are working with. The influence faculty have on enhancing or undermining senior resident's leadership role was identified as a key factor for their leadership success. Even though a small number of leadership trainings programs have been implemented for surgery residents, they are not standardized, do not have rigorous evaluation methods, and minimal outcomes are evaluated [4–9]. Therefore, our next steps are to develop an evidence-based curriculum that focus on developing effective surgical resident leaders who possess the skills needed to positively impact the wellbeing of their colleagues; implement it; and to evaluate the implementation of this curricula using comprehensive methods.

In order to develop leadership curricula, we plan to draw on knowledge from previous leadership programs in general surgery [4–10], our recently completed needs analysis [13], and the military, another high stress, high performing work environment to address some of the career related challenges [3]. Changing culture takes years; however, growing evidence that continues to show the importance of leadership development within healthcare environments, hopefully motivate those features of the surgical culture that are currently barriers to leadership development [17–19]. Continuing and expanding faculty leadership development could serve as a sustainable method of delivering leadership curricula for surgery residents, as their lack of availability and expertise in the subject have also been reported as challenges to develop such programs [3].

Responding to challenges in the leadership curriculum

Designing evidence-based curricula will address some of the challenges identified; however, there will still be career related, cultural, individual, and faculty related challenges to overcome. Incorporating responses to the five challenges outlined in this paper into leadership curricula might help to address important barriers. Explicitly addressing these challenges will increase the chances that residents will become effective leaders.

Proposed framework to address challenges in future curricula

1) Addressing Challenges Arising from Surgical Culture

- Use a trauma-informed lens to frame the curriculum and its facilitation
- Discuss the emotional side of being a surgeon and how to allow for emotions in our peers and ourselves, especially within leadership roles
- Provide strategies for functioning well in a stressful work environment, including evidence-based ways to make changes in the work culture from the bottom-up as a young leader

2) Addressing Individual Challenges

- Do not start with the assumption that everyone knows they are becoming a leader, or that they want to be a leader as they are becoming a surgeon. Emphasize the critical importance of leadership in their current and future roles; discuss the different approaches to being a leader so residents can figure out what approach will be kind and effective but also fit their particular personalities. Provide space to think through how to lead when you do not really want to be a leader, given that we argue all residents are leaders in some capacity and impact the wellbeing of those around them
- Address leading when also feeling imposter syndrome, how common it is, and strive to create a department culture through the training that allows for residents to still be *learners*, still in the early stages of growing into their roles in an incredibly complex profession, and therefore open about what they do not yet know. Discussion questions may include:
- What makes you feel insecure as a leader or a resident?
- How do these insecurities impact your leadership behavior?
- How does this behavior impact those you are leading or mentoring?
- Also discuss how to handle leading in times when residents legitimately do not feel proficient enough clinically.
- Push back against the culture of perfectionism as a high-level goal of the curriculum. Incorporate mistakes as part of the learning process, being open about gaps in knowledge, and asking for help the expectation instead
- Include a module on how to recognize burnout, how it impacts residents' leadership, and resources for addressing burnout

3) Addressing Structural Aspects of Surgical Residency Training which Contribute to Challenges

- Provide strategies that increase efficiency in task delegation and address necessity of time management as part of responsibilities of a leader so should be prioritized
- Share strategies for building trust with new colleagues quickly and alternatives to micromanaging when you do not yet have that trust. Example from a participant: letting new folks know that you as a leader will be checking on their work, but as a support to them and to assess where they are in their learning, not to micromanage

4) Addressing Faculty's Contributions to Challenges

- Discuss strategies for how to approach difficult conversations with attendings re: needing more guidance and communication from them, or concerns about undermining residents' leadership decisions; how to seek productive feedback from attendings about leadership
- Consider including faculty in (part of) the training so they are aware of the goals and outcomes and have a chance to reflect themselves

5) Addressing Lack of Training

- In addition to providing time for residents to go through the training we are creating, create additional opportunities to check-in with regard to leadership development after residents have finished the training so they have some time set aside for reflection and further support

Limitations

This study has several limitations. This study was performed at one of the largest general surgery training programs and almost half of the residents in the training program participated, and were representative of the overall residency program. However, in the intent to protect privacy, the demographic data collected was limited. Further, with 35 focus group participants, this study is very much in line with the typical number of participants in similar studies. However, the participants were recruited from only one academic institution, which makes it harder to make strong claims of transferability. Second, even with experts in qualitative research participating in this study, the data were analyzed through our own lenses, potentially incorporating personal biases. Another limitation related to the data collection is that focus group participants could have influenced each other's responses or been kept from saying what they really thought because their peers, including one of the investigators, were present. Within the focus groups themselves there is "no anonymity", which could have prevented other interesting findings from emerging.

Conclusion

The present study identified challenges and barriers to the development of leadership curricula. Moreover, we presented a potential framework based on the findings of the study on how to potentially address those challenges. The development of future evidence-based curricula will help surgical educators develop the next generation of surgical leaders.

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Data availability The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

Declarations

Conflict of interest The authors have no relevant financial or non-financial interests to disclose.

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