Leadership training in a family medicine residency program

Cross-sectional quantitative survey to inform curriculum development

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Abstract

Objective To assess the current status of leadership training as perceived by family medicine residents to inform the development of a formal leadership curriculum.

Design Cross-sectional quantitative survey.

Setting Department of Family Medicine at McMaster University in Hamilton, Ont, in December 2013.

Participants A total of 152 first- and second-year family medicine residents.

Main outcome measures Family medicine residents' attitudes toward leadership, perceived level of training in various leadership domains, and identified opportunities for leadership training.

Results Overall, 80% (152 of 190) of residents completed the survey. On a Likert scale (1 = strongly disagree, 4 = neutral, 7 = strongly agree), residents rated the importance of physician leadership in the clinical setting as high (6.23 of 7), whereas agreement with the statement "I am a leader" received the lowest rating (5.28 of 7). At least 50% of residents desired more training in the leadership domains of personal mastery, mentorship and coaching, conflict resolution, teaching, effective teamwork, administration, ideals of a healthy workplace, coalitions, and system transformation. At least 50% of residents identified behavioural sciences seminars, a lecture and workshop series, and a retreat as opportunities to expand leadership training.

Conclusion The concept of family physicians as leaders resonated highly with residents. Residents desired more personal and system-level leadership training. They also identified ways that leadership training could be expanded in the current curriculum and developed in other areas. The information gained from this survey might facilitate leadership development among residents through application of its results in a formal leadership curriculum.

EDITOR'S KEY POINTS

- Family medicine residents associate family physicians with leadership, desire more personal and system-level leadership training, and agree that leadership training can be expanded in the current curriculum and developed in new areas.
- In this survey, the significant difference ($P < .001$) between the Likert scale score for the highest-ranked leadership ideal and the lowest implies that there is room for growth in residents' personal development as leaders.
- Current curriculum guidelines related to leadership tend to focus on lower-level leadership skills and knowledge. Although residents identified some of these domains, they also desire training in more advanced concepts such as administration, coalitions, and system transformation.

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La formation en leadership dans un programme de résidence en médecine familiale

Sondage transversal quantitatif pour orienter l'élaboration du cursus

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Résumé

Objectif Évaluer la situation actuelle de la formation en leadership d'après les points de vue des résidents en médecine familiale dans le but d'orienter l'élaboration d'un cursus formel en leadership.

Conception Sondage transversal quantitatif.

Contexte Le Département de médecine familiale de l'Université McMaster à Hamilton, en Ontario, en décembre 2013.

Participants Un total de 152 résidents de première et de deuxième années.

Principaux paramètres à l'étude Les attitudes des résidents en médecine familiale à l'égard du leadership, le niveau de formation perçu dans divers domaines du leadership et les possibilités de formation en leadership cernées.

Résultats Dans l'ensemble, 80% (152 sur 190) des résidents ont répondu au sondage. Selon une échelle de Likert (1 = fortement en désaccord, 4 = neutre, 7 = fortement en accord), les résidents ont coté l'importance du leadership des médecins en milieu clinique comme étant élevée (6,23 sur 7), tandis que l'affirmation « Je suis un leader » a reçu la cote la plus faible (5,28 sur 7). Au moins 50% des résidents souhaitaient plus de formation dans les domaines du leadership suivants : maîtrise personnelle du leadership, mentorat et encadrement, résolution de conflits, enseignement, travail efficace en équipe, administration, milieux de travail sains idéaux, coalitions et transformation du système. Au moins 50% des résidents ont indiqué que les colloques en sciences comportementales, une série de conférences et d'ateliers et des journées de réflexion comptaient parmi les possibilités d'élargir la formation en leadership.

Conclusion Le concept des médecins de famille en tant que leaders interpelle fortement les résidents. Les résidents souhaitent plus de formation en leadership personnel et à l'échelle systémique. Ils ont aussi cerné des façons d'élargir la formation en leadership dans le présent cursus et de la développer dans d'autres domaines. Les renseignements recueillis dans ce sondage pourraient faciliter le perfectionnement du leadership chez les résidents en tenant compte de ses résultats dans un cursus formel en leadership.

POINTS DE REPÈRE DU RÉDACTEUR

- Les résidents en médecine familiale associent médecins de famille et leadership, souhaitent plus de formation en leadership sur le plan personnel et systémique, et conviennent que la formation en leadership peut être élargie dans le cursus actuel et développée dans de nouveaux domaines.
- Dans ce sondage, la différence significative ($p < ,001$) entre l'idéal le mieux coté et la cote la moins élevée selon l'échelle de Likert fait valoir qu'il y a place à amélioration dans le perfectionnement personnel des résidents en tant que leaders.
- Les lignes directrices du cursus actuel portant sur le leadership ont tendance à mettre l'accent sur des habiletés et des connaissances de plus bas niveau. Même si les résidents ont mentionné certains de ces domaines dans la formation souhaitée, ils veulent aussi de la formation dans des concepts plus avancés, tels que l'administration, les coalitions et la transformation du système.

Cet article a fait l'objet d'une révision par des pairs.
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In a time of budget constraints, increasing complexity of care, and an aging population, many countries have been forced to consider substantial health system transformation. North American policy has focused on primary care, calling on family physicians to play leadership roles in models such as the Patient's Medical Home and the Patient-Centered Medical Home.[1,2] Medical organizations in Canada have further supported these efforts by including leadership concepts and skills training in medical education frameworks that guide curriculum development, such as CanMEDS–Family Medicine (CanMEDS-FM) and the Future of Medical Education in Canada Postgraduate (FMEC-PG) Project.[3,4] In 2015, after reviewing the original 2005 CanMEDS framework, the Royal College of Physicians and Surgeons of Canada changed the *manager* competency to *leader* to more accurately describe the role expected of physicians in today's health care environment.[5]

With leadership competencies now being viewed as essential for all medical trainees, educators are faced with the challenge of incorporating such curricula while avoiding redundancies and ensuring relevance and value for all learners. Very little is published regarding these tasks in the family medicine (FM) education literature. What can be found focuses on training a subset of residents only, such as chief residents.[6] Curricula refrain from describing a central role for residents in their own development.[7] Perhaps more compelling is that FM residents value leadership training when it is offered and feel ill equipped to take on community leadership roles when it is not.[8]

The effectiveness of an intervention relies in part upon the input of those it is meant to target. The broad purpose of our research is to examine current resident perceptions around leadership training in a Canadian FM residency program. This could reduce the knowledge gap in the literature by suggesting participatory strategies for the development of formal leadership curricula. The current project assessed how strongly residents associate family physicians with leadership, what domains of leadership residents desire more training in, and what opportunities residents identify to expand leadership training.

METHODS

Participants and setting

The survey was administered to all first- and second-year FM residents at McMaster University in Hamilton, Ont, in December 2013, when all residents were in the same location for an educational session. At this stage, first-year residents were 6 months into their 2-year FM residency and second-year residents were 18 months into their residency. Approximately 200 residents made up the entire cohort, with half from each year of training, representing 6 training sites.

Survey development

We designed a cross-sectional, quantitative survey for its inclusiveness, low cost, and reproducibility. To our knowledge, a survey of all residents within a program regarding leadership training has never been undertaken. Ethics approval was obtained through the Hamilton Integrated Research Ethics Board of the McMaster University Faculty of Health Sciences.

Demographic variables such as age, sex, which medical school the resident had completed training at, and current residency training site were collected to test for correlation with responses.

The survey consisted of 3 sections. The first section focused on assessing resident agreement with leadership ideals (ie, broad statements about leadership).

The second section assessed residents' desire for additional exposure to various leadership domains. The domains used were those found within the LEADS Framework, an evidence-based, comprehensive framework for leadership development within the health sector.[9] This framework includes all leadership domains found within the CanMEDS-FM and FMEC-PG Project documents and is increasingly being adopted as a foundational element for leadership development within medical associations and institutions worldwide.

The final section allowed residents to identify leadership training opportunities during their residency both within and outside of the current curriculum.

The draft survey underwent preliminary face and content validation. Five faculty members from the Department of Family Medicine at McMaster University and 2 content experts each from CanMEDS-FM, the FMEC-PG Project, and LEADS were consulted in person or through e-mail to evaluate the comprehensiveness and relevance of survey questions. All feedback was related to language, and minor adjustments were made until consensus was reached. A trial run of the survey was completed with 5 recently graduated FM residents, who were asked to provide verbal feedback regarding feasibility (time required to complete the survey, which was less than 20 minutes) and interpretability of the questions. No adjustments were required.

Data collection and analysis

The survey was paper-based and coded for anonymity. Leadership ideals were rated on a Likert scale from 1 (strongly disagree) to 7 (strongly agree), with 4 being neutral. Leadership domain responses were categorical, reflecting participants' levels of agreement with the amount of training received and the desire for more training. Residents were asked to identify their top 3 leadership opportunities.

Responses to survey items were described as counts and percentages for categorical variables and as means and standard deviations for continuous variables. Reliability of the leadership ideals section of the instrument was assessed using internal consistency measures (Cronbach α). A nonparametric rank sum test (Mann-Whitney *U*) and χ^2 tests were used to determine differences between first- and second-year residents regarding desired training in leadership domains. A paired *t* test was used to determine differences between leadership ideals across all resident responses and their perceived importance. Data analysis was conducted using SPSS, version 20.

RESULTS

Survey participants

In total, 80% (152 of 190) of residents registered in the FM residency program at the time of the study responded to the survey; 82 were in their first year and 70 were in their second year. Six residents were on maternity or medical leave, leaving 32 residents who did not complete the survey. Reasons for not completing the survey included, but were not limited to, acute illness, not wanting the survey to interfere with lunchtime, and not self-identifying with or appreciating the importance of leadership in medicine. Ages of respondents ranged from 24 to 48 years, with a mean age of 28 years. The female-to-male ratio was approximately 2:1, which was representative of the class. All training sites were represented in the sample, with the largest group (28%) being from urban teaching units.

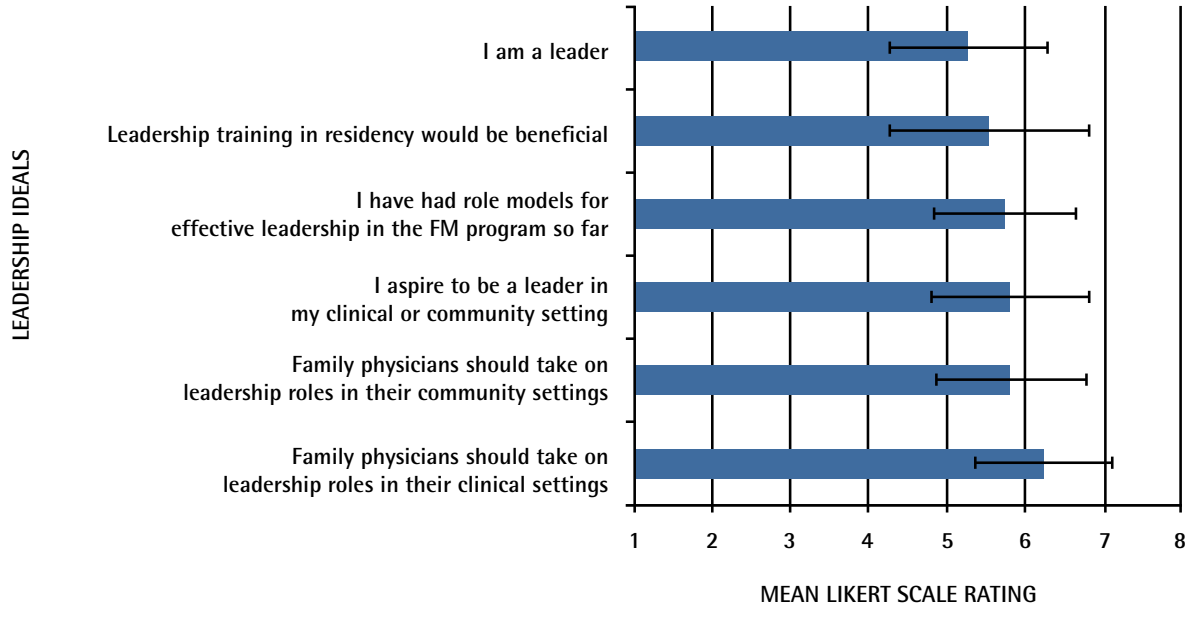
Survey reliability

The Cronbach α for the leadership ideals section of the survey (how strongly FM residents associate FM with leadership) was .73, suggesting a high degree of correlation between questions without question redundancy.[10] Corrected item-to-total correlation ranged from .293 for the variable "I aspire to be a leader in my clinical or community setting" to .680 for the variable "I have had role models for effective leadership in the FM program so far." This suggests good correlation of each question to the total composite score and justifies including all of the questions as contributing to explaining true variance in responses.[10]

Leadership ideals

There was uniformity among the rankings of leadership ideals, all of which fell toward the "strongly agree" end of the scale (**Figure 1**). For individual leadership ideals, very few residents selected responses from the "strongly disagree" end of the scale, with the highest number

Figure 1. Mean level of resident agreement with various leadership ideals: *Ratings were made on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).*



FM—family medicine.

being in the domain "Leadership training in residency would be beneficial" (n = 7). This was also the domain with the highest variability in responses. Controlling for year of training, sex, and age did not result in appreciable differences in the ratings of the leadership domains. Medical school and current training site variables could not be tested for significance owing to lack of sufficient representation within the sample population. A 2-tailed paired *t* test compared mean (SD) ratings for the highest-ranked leadership ideal (Family physicians should take on leadership roles in their community settings: 6.23 [0.88], n = 152) and the lowest (I am a leader: 5.28 [1.01], n = 152) and a statistical difference was noted ($t_{151} = 9.3$; $P < .001$, $\alpha = .05$).

Leadership domains

At least 50% of residents wanted more training in the following leadership domains: personal mastery, mentorship and coaching, conflict resolution, teaching, effective teamwork, administration, ideals of a healthy workplace, coalitions, and system transformation (**Table 1**).[9] A nonparametric rank sum test (Mann-Whitney *U*) was used to determine if there was a difference between first- and second-year residents in their ranking of leadership domains in terms of more training desired. The result was not statistically significant ($P = .829$, $U = 277$, n = 24, $z = -2.17$). There is some agreement among the top ranked leadership domains for first- and second-year residents, which include teaching, administration, coalitions, and system transformation (**Table 1**).[9] There is also some agreement among the lowest ranked domains, which included relationships, self-awareness, professionalism, and effective communication (**Table 1**).[9] However, second-year residents identified character development as 1 of the 5 leadership domains they were least interested in. A χ^2 test showed the proportions of first- and second-year residents (29% and 23%, respectively) wanting more training in this domain were not statistically different. First-year residents also identified social intelligence among their lowest-ranked domains. A χ^2 test showed the proportions of first- and second-year residents (20% and 31%, respectively) wanting more training in this domain were significantly different ($P = .029$, $\chi^2_1 = 4.76$, $\alpha = .05$).

Leadership opportunities

At least 50% of residents identified the following components currently included in their curriculum as ideal avenues for incorporating leadership training: a weekly, half-day, small group learning series focusing on the psychosocial aspects of FM (behavioural sciences); and a week composed of FM-relevant educational lectures and workshops (block 7) (**Figure 2**). Less than 25% of learners identified quality assurance projects and evidence-based medicine seminars as ideal avenues. More than 50% of residents identified a leadership retreat as an ideal avenue for learning that was not currently in the curriculum. Less than 25% of learners identified evaluations of leadership skills, leadership portfolios, leadership modules, and academic projects as ideal.

DISCUSSION

The results of our survey suggest that FM residents associate family physicians with leadership, desire more personal and system-level leadership training, and agree that leadership training can be expanded in the current curriculum and developed in new areas.

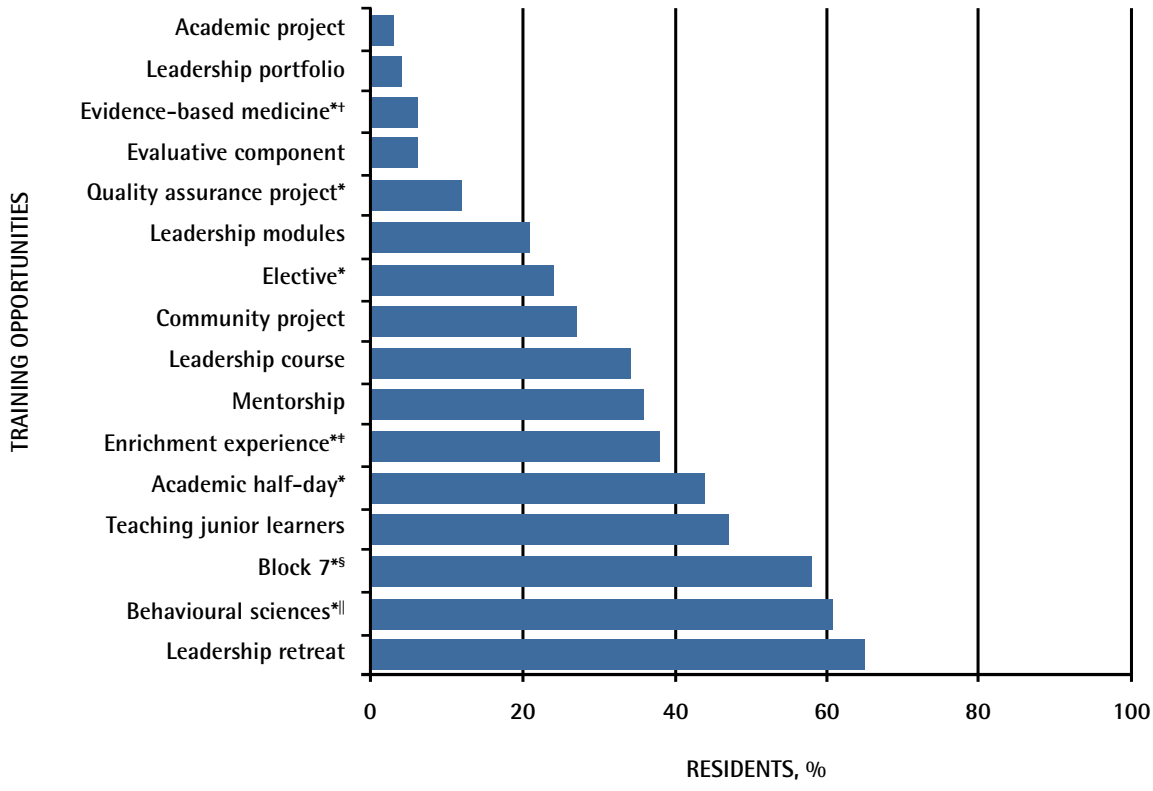
The significant difference ($P < .001$) between the Likert scale score for the highest-ranked leadership ideal (Family physicians should take on leadership roles in their clinical settings) and the lowest (I am a leader) implies that there is room for growth regarding residents' development as leaders.

Table 1. Residents who desired more training in various leadership domains

LEADERSHIP DOMAIN*	FIRST-YEAR RESIDENTS, %	SECOND-YEAR RESIDENTS, %
Self-awareness	23	17
Personal mastery	62	63
Character development	29	23
Professionalism	7	13
Mentorship and coaching	54	65
Self-management and balance	42	44
Time management	48	41
Lifelong learning	30	29
Effective communication	11	7
Social intelligence	20	31
Cultural nuances	35	39
Conflict resolution	53	46
Feedback	27	26
Relationships	27	25
Development of others	48	39
Teaching	63	74
Effective teamwork	41	51
Administration	73	67
Ideals of a healthy workplace	48	52
Collaboration and research	38	28
Vision and goal setting	43	49
Getting results	49	49
Coalitions	57	64
System transformation	60	71

*Leadership domains are listed in order of increasing complexity according to the LEADS Framework.[9]

Figure 2. Opportunities for the incorporation of leadership training as identified by residents



*Currently a component of the family medicine curriculum.
†Residents are required to present to a small group the answer to a clinical question through critical appraisal of research.
‡This is an elective opportunity to explore a counseling strategy in a small group setting with clinical preceptors.
§All residents come together for a week of lectures, seminars, and workshops related to family medicine.
‖Residents meet weekly in a small group setting to present and discuss pre-recorded videos and dialogue around psychosocial clinical encounters.

Current curriculum guidelines related to leadership tend to focus on lower-level leadership skills and knowledge in resident education.[3,4] Although residents have identified some of these domains as areas in which they want more training, they also desire training around more advanced concepts such as administration, coalitions, and system transformation. The leadership domains that residents least wanted training in, such as self-awareness, professionalism, and effective communication, were domains that they were already exposed to, and which were heavily emphasized within the current curriculum's philosophy of care. At the time of this study, there was no leadership-specific curriculum focus to account for statistical differences across domains.

A preference for both experiential and didactic learning opportunities was identified. Curriculum components requiring some sort of deliverable document, such as leadership portfolios or academic projects, were seen as less desirable. Worth highlighting is the low percentage (15%) of residents who identified quality assurance as a means of incorporating leadership training, despite recent policy championing this method as a way for family physicians to lead and contribute positively to health system transformation.[11]

Demographic variables such as age and sex did not seem to affect residents' level of agreement with various leadership ideals, nor did the year of training. It is possible that a lack of meaningful exposure to leadership domain training during residency could explain why second-year residents desire further training to the same degree as first-year residents. This is consistent with the fact that there was no appreciable difference between first- and second-year residents' ranking of leadership ideals. Thus, formal leadership training, which did not exist at the time of this survey, might be a necessary component for satisfying residents' perceptions about satisfactory leadership training and competence.

Strengths and limitations

A cross-sectional, quantitative survey was an ideal way of gathering inclusive opinions. This is supported by our high response rate, which could also reflect the advantages of a

student-led initiative (ie, a resident research project). That said, we recognize that our data consist of responses from a single, albeit diverse, FM residency program, and thus the results cannot necessarily be generalized to other residents across the country. Further, it is unknown what proportion of residents did not complete the survey because they did not self-identify with or appreciate the importance of the topic, which could have skewed the final results. However, there were residents who completed the survey who rated leadership ideals on the negative end of the spectrum, thus capturing some of this mentality.

Another limitation of our study is that the survey was not tested for construct validity or reliability. There is room for misinterpretation when complex leadership concepts are only briefly described.

The quantitative method chosen for this study limited the breadth of data we could obtain. Many questions remain unanswered, including how residents understand leadership and what style of leadership they believe family physicians should practise.

Next steps

To better examine the influence of demographic variables, as well as to improve generalizability, future studies could distribute the survey to other FM programs and other specialty programs. Distribution of the survey is reproducible, particularly if programs have an event where all residents are in one location. Each site would have to customize the section describing current curriculum opportunities for leadership training. Testing will also need to be repeated by the same participants on multiple occasions to understand reliability over time.

Further validation of the survey is a necessary next step, as we currently do not have any other studies to compare our results with. Triangulating survey results with qualitative findings, such as those from focus groups, would allow a deeper understanding of residents' opinions on leadership. The recruitment of additional institutions and programs within Canada can only result in more questions, more ideas, and more innovations. It also creates avenues for comparison and best practice sharing.

Conclusion

Our findings suggest that resident perceptions of leadership are compatible with current educational policy, which mandates formal training.[3,4] Taking this into consideration, efficient and effective leadership curricula could be developed that are customized for residents in FM and other specialties. Further, a breadth of information will become available for evaluating such curricula. We might already be forced to think differently about residents and educational frameworks, knowing that many residents desire exposure to more complex leadership knowledge and skill sets. If curricula can be designed with opportunities for individual interests and pursuits to flourish, all sectors of medicine might benefit, from patient care to education, research, administration, and beyond.

Dr Gallagher is a resident in the Palliative Care Enhanced Skills Program at McMaster University in Hamilton, Ont. **Drs Moore** and **Schabort** are Associate Professors in the Department of Family Medicine at McMaster University.

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Contributors

Dr Gallagher conceived and designed the study, gathered the data, contributed to data analysis, and helped develop the final research paper as her family medicine resident scholarly project. **Drs Moore** and **Schabort** contributed to the study design, performed the data analysis, and helped write the manuscript. All authors read and approved the final manuscript.

Competing interests

None declared

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