Exploring Learner Perceptions of Undergraduate Medical Leadership Training at the University of Ottawa

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Date Submitted: January 8, 2023
Date Accepted: September 22, 2023
Date Published: May 13, 2025

DOI: https://doi.org/10.18192/UOJM.v15i1.6588

ABSTRACT

Objectives: "Leader" represents one of the key professional competencies outlined in the CanMEDS roles. Currently, the University of Ottawa undergraduate medical education leadership curriculum is being revised to improve the student experience and quality of learning. Here, we gather medical students' attitudes on the curriculum, including mandatory lecture content, electives, and extra-curricular opportunities to inform future changes.

Methods: An optional, anonymous, internet-based, 27-item online survey was administered to students from the 2021 to 2024 Doctor of Medicine graduating cohorts. This survey explored four major themes: 1) self-identified leadership competencies, 2) leadership training satisfaction and 3) opportunities to enhance leadership curriculum.

Results: Of 640 eligible students, 67 individuals (10 % response rate) participated in this survey. Overall, the majority of participants agreed or strongly agreed that as a result of their pre-clerkship leadership education, they were confident in their "communication skills" (n= 51, 77%), "capacity to influence others" (n= 43, 64%), "manage conflict" (n= 45, 68%), "provide" (n= 45, 68%) and "utilize feedback" (n= 56, 84%), and "recognize their strengths" (n= 55, 82%) and "areas of growth" (n= 50, 75%). Regarding areas of improvement, respondents supported the incorporation of leadership workshops, simulated learning, and the conversion of large didactic lectures to small group discussions to enhance the current curriculum. Conversely, students did not support the use of online resources. Major themes identified from qualitative feedback included more experiential learning via small group discussions, workshops and opportunities to practice learned leadership skills.

Conclusion: The data collected in this study suggests that the current curriculum provides meaningful education, but there is room for further optimization. Specifically, shifting toward small-group learning might be preferred over the current curriculum. This feedback will guide decisions to optimize the leadership curriculum learning experience.

RÉSUMÉ

Objectifs : Le terme « leader » représente l'une des compétences professionnelles clés décrites dans les rôles CanMEDS. Actuellement, le programme de leadership de l'enseignement médical de premier cycle de l'Université d'Ottawa est en cours de révision afin d'améliorer l'expérience des étudiants et la qualité de l'apprentissage. Ici, nous recueillons les attitudes des étudiants en médecine sur le programme, y compris le contenu des cours magistraux obligatoires, les cours facultatifs et les opportunités extrascolaires afin d'éclairer les changements futurs.

Méthodes : Un sondage en ligne facultatif, anonyme, comprenant 27 questions, a été administré aux étudiants des cohortes de doctorat en médecine diplômant entre 2021 et 2024. Ce sondage a exploré quatre thèmes principaux : 1) les compétences en leadership auto-identifiées, 2) la satisfaction de la formation en leadership et 3) les opportunités pour améliorer le curriculum de leadership.

Résultats : Sur 640 étudiants éligibles, 67 individus (taux de réponse de 10 %) ont participé à ce sondage. Dans l'ensemble, la majorité des participants étaient d'accord ou tout à fait d'accord pour dire qu'à la suite de leur formation en leadership préexternat, ils avaient confiance en leurs « compétences en communication » (n= 51, 77%), leur « capacité à influencer les autres » (n= 43, 64%), à « gérer les conflits » (n= 45, 68%), à « fournir » (n= 45, 68%) et à « utiliser la rétroaction » (n= 56, 84%), et à « reconnaître leurs forces » (n= 55, 82%) et leurs « domaines de croissance » (n= 50, 75%). Concernant les domaines d'amélioration, les répondants ont soutenu l'incorporation d'ateliers sur le leadership, l'apprentissage par simulation et la conversion de grandes conférences didactiques en discussions en petits groupes afin d'améliorer le programme actuel. En revanche, les étudiants ne sont pas favorables à l'utilisation de ressources en ligne. Les themes majeurs identifiés à partir des commentaires qualitatifs incluaient davantage d'apprentissage expérientiel par le biais de discussions en petits groupes, d'ateliers et d'opportunités de mettre en pratique les compétences de leadership acquises.

Conclusion : Les données recueillies dans le cadre de cette étude suggèrent que le programme d'études actuel fournit un enseignement significatif, mais qu'il est possible de l'optimiser davantage. En particulier, le passage à l'apprentissage en petits groupes pourrait être préféré au programme actuel. Ce retour d'information guidera les décisions visant à optimiser l'expérience d'apprentissage du programme d'études en leadership.

INTRODUCTION

"Leader" represents one of the key professional competencies outlined by the CanMEDS roles to function as an effective physician. The CanMEDS represents a framework that describes the required competencies of Canadian physicians to effectively meet healthcare needs and encompasses seven domains: Leader, Communicator, Collaborator, Health Advocate, Scholar, Professional and Medical Expert.[1] Specifically, poor communication skills, leadership and professionalism are associated with patient dissatisfaction, poor patient outcomes and medico-legal claims.[2] While leadership training is quite prevalent among residency programs and practicing physicians, it is rarely integrated into undergraduate curricula. Within the formal or informal curriculum, many medical schools use large-group didactic sessions and have struggled to establish optimized content delivery formats despite evidence suggesting favourable learning outcomes with small-group teaching, project-based and longitudinal programming.[3,4] Fortunately, at the University of Ottawa, students engage in four large group leadership teaching sessions during their pre-clerkship training. Moreover, students are required to complete two multisource feedback exercises whereby feedback is solicited from 8-10 independent evaluators regarding the students' CanMEDS competencies. In addition, for interested students, there is an option of pursuing a non-mandatory leadership elective. Unfortunately, there is no unified definition of leadership and studies of leadership training programs have struggled to demonstrate tangible quantitative measures of behaviour change.[5] Therefore, student feedback represents a critical surrogate of program effectiveness, reception, and change.[5–8] Specifically, student feedback on teaching is consistent and promotes meaningful educational changes that improve learner satisfaction and knowledge acquisition.[9] Moreover, this form of feedback has been shown to be helpful in guiding program and teaching optimization.[10,11] Consequently, we solicited student feedback to gather medical students' attitudes on the leadership training, including mandatory lecture content, elective, and extra-curricular opportunities. This information was collected with aspirations to evaluate satisfaction with the University of Ottawa's leadership training and help guide changes to optimize the leadership curriculum.

METHODS

Data Collection: an anonymous, internet-based, 27-item online survey study administered to all students from 2021 to 2024 Doctor of Medicine graduating years. This was advertised via social media (Facebook and Instagram) and class-wide emails, which were approved by and disseminated from the local institution's medical student association and leadership curriculum program director. All questions were either single-item or multiple-item responses followed by an open text for student comments and feedback. The survey was designed to take approximately 15-20 minutes to complete. This survey explored three major themes: 1) self-identified leadership competencies, 2) leadership training satisfaction, and 3) opportunities to enhance leadership curriculum. The descriptive statistics for each of the major themes are reported below. This project was reviewed by the University of Ottawa Research Ethics Board and met the criteria of TCPS2 - Article 2.5.

RESULTS

Between May 2022 and September 2022, 67 students completed the survey. Of the respondents, 55 were pre-clerkship students, and the remaining 12 were clerkship students. The survey had a response rate of 10%, with a total of 640 students eligible to participate in the study.

Self-Reported Leadership Competencies

Student respondents were asked to report using a five-point Likert scale whether the current leadership training had positively influenced their knowledge and competencies in key learning domains (Figure 1). Overall, the vast majority of student respondents agreed that the curriculum was beneficial to the learning. Specifically, after completing the leadership training at their current training level, 56 (84%) respondents agreed or strongly agreed that they were more confident in their ability to "utilize feedback," 55 (82%) were more comfortable with their ability to "recognize her strengths," and 50 (75%) were better able to "identify areas of growth" (Figure 1). While still representing the majority, fewer students agreed or strongly agreed that they were better prepared to "manage conflict" (n= 46, 68%), "influence others" (n= 40, 60%) or "provide feedback" towards others (n= 40, 60%) (Figure 1).

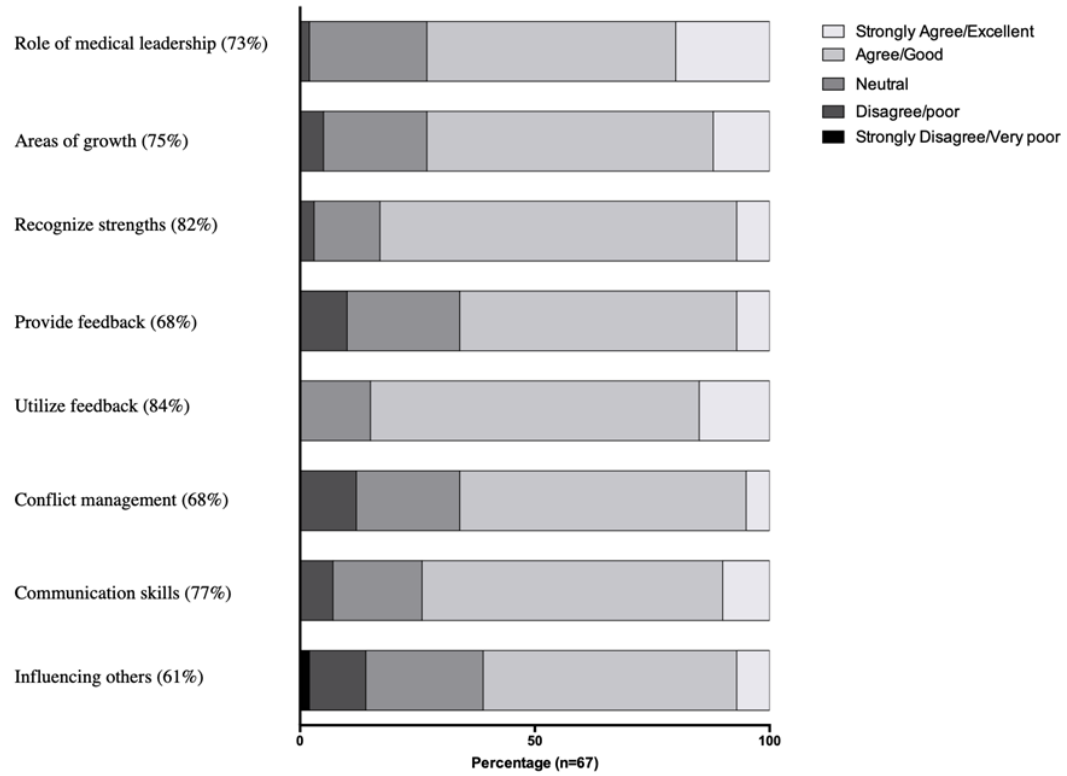

Figure 1: Self-reported confidence in skills taught as part of the Leadership Objectives. Percentages represent the summation of Agree and Strongly agree statements, n=67.

Leadership Training Satisfaction

Student respondents reported dissatisfaction with the overall experience relating to their leadership curriculum and opportunities for mentorship training. While 45 (67%) respondents were satisfied with the opportunities for leadership experiences within the curriculum, only 26 (39%) respondents believed that the overall leadership training was good or excellent. Most respondents rated the pre-clerkship leadership lectures as neutral (n= 27, 40%), poor (n= 17, 25%) or very poor (n= 1, 2%). Additionally, the majority of respondents did not believe the pre-clerkship leadership lectures had prepared them in anticipation of their clerkship learning experiences (n= 48, 72%) (Figure 2A).

As part of the leadership curriculum, students complete a multisource feedback exercise (MSF) at the end of their first and third years of training. Students are asked to solicit feedback from at least 8 colleagues, mentors, and preceptors in order to determine their aptitude regarding the CanMEDS domains (Leader, Communicator, Collaborator, Health Advocate, Scholar, Professional and Medical Expert) using a nominal marking scheme. This exercise, which is meant to allow students to garner feedback, develop further self-awareness, and encourage growth, was not reported upon positively in this survey. Only 25 (37%) respondents reported that the value of the MSF exercise was good or excellent. Similarly, only 21 (31%) respondents "learned something about themselves" from from completing this exercise and even fewer made "major changes as a direct result of the feedback" they received from the MSF (n= 15, 22%) (Figure 2B).

Opportunities to Enhance Leadership Training

When asked to propose additional content or topics they would like to see in future renditions of the curriculum, 47 (70%) respondents indicated no additional content was required. While participants were generally satisfied with the content, only 4 (6%) respondents indicated that no changes are required to the current curriculum with regard to content delivery and format. Specifically, participants were given an opportunity to select several proposed curriculum enhancements that they believed would enhance the learning experience, as shown in Figure 3. The majority of suggested changes selected by participants included more small group discussions (n= 36, 54%), the utilization of standardized simulation scenarios (n= 37, 55%), the provision of leadership workshops (n= 35, 52%) and the creation of a leadership elective (n= 35, 52%) (Figure 3).

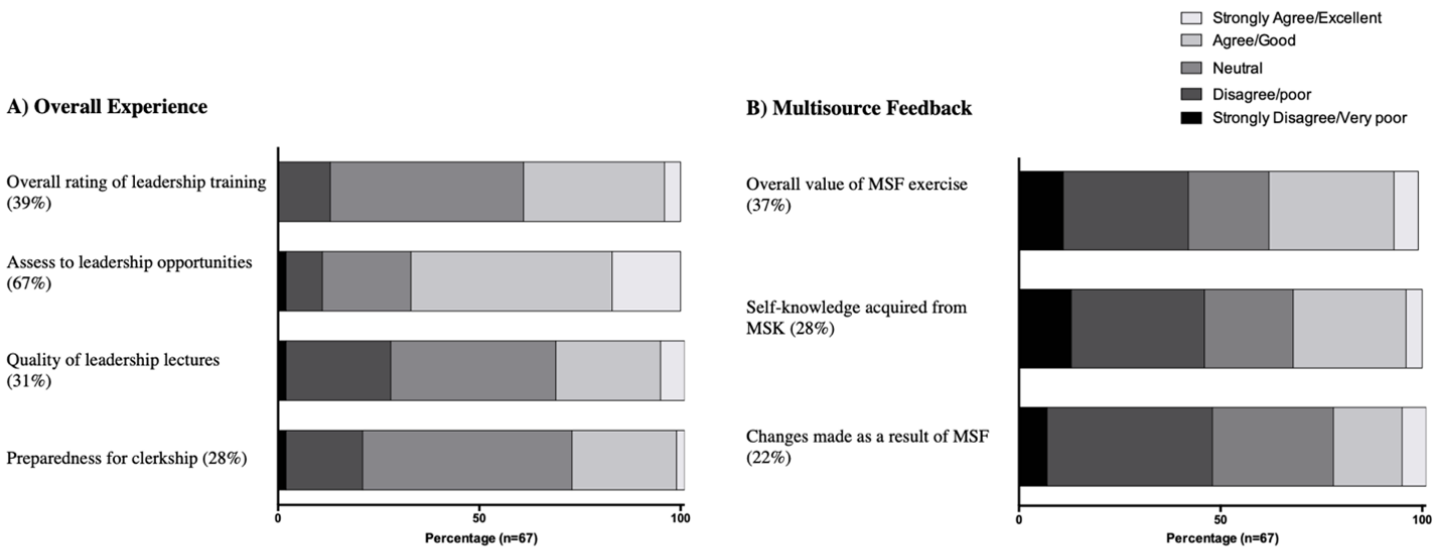

Figure 2: Leadership Training Satisfaction. Participant reported satisfaction with the overall leadership curriculum (2A) and specifically the Multisource Feedback Exercise (2B). Percentages represent the summation of Agree and Strongly agree statements, n=67.

Regarding additional leadership training and opportunities, 27 (40%) respondents would like "additional training," and 34 (50%) were unsure or indifferent towards "additional hours being devoted to leadership training." Regarding avenues of additional leadership training delivery, "self-learning modules" were an unpopular learning modality (n= 50, 74%). However, 54 (80%) respondents agreed to incorporate "standardized patient scenarios" and supported the emphasis on "small group discussions over large group lectures." Finally, 35 (52%) participants were interested in the option to participate in a leadership elective for supplemental learning (Figure 3).

DISCUSSION

Here, we have solicited anonymous feedback from current medical students at University of Ottawa regarding leadership training and recommendations for program enhancement with the goals of incorporating this feedback to inform curriculum changes. The respondents reported increased competencies and confidence in multiple curriculum objectives, such as receiving and giving feedback as well as developing a better understanding of leadership and medicine. However, only 39% of student respondents reported a good or excellent leadership training experience, which indicates there is further room for curriculum improvement and reform. When asked if additional content was warranted, student participants generally agreed that the curriculum content was satisfactory, with most respondents responding that no additional content was required (70%). However, most suggestions for improvement are related to content delivery. Preferred methods of content delivery include small group discussions, workshops, and simulated learning. Many students (52%) also indicated interest in additional leadership opportunities in the form of an elective. Although there is already a leadership elective offered, it is currently limited to 20 students annually through a lottery process. The feedback garnered from this study will provide meaningful insight for curriculum changes and learning optimization for future cohorts at the University of Ottawa. This initiative can be used as a template to influence other curriculum renewal. Notably, student feedback is known to promote positive curriculum changes. Moreover, 'Empowerment Evaluation,' which entails incorporating feedback from all stakeholders, including students, faculty, and administrators, in an egalitarian process of review, was described by the Stanford University School of Medicine and has been found to be an effective method of transforming the medical curriculum.[12]

Here, most respondents supported leadership training; however, findings suggested that the curriculum could be further optimized. Most students (70%) did not believe curriculum content changes were necessary, but most responded positively to alternative modes of content delivery

such as standardized patient learning scenarios (54%), leadership workshops (52%) and small group sessions (52%). These findings are consistent with previous literature supporting these preferred methods of delivery of leadership curricula in medical school.[13–15] Bharwani et al. acquired student feedback from attendees registered at the University of British Columbia, University of Alberta and University of Calgary and found that the capacity for creating a compelling vision, communication skills and conflict resolution are notable skills identified to be missing in medical school leadership programs.[14] Varkey et al. discerned that 85% of medical student respondents identified leadership, conflict management, communication and teamwork as necessary skills that should be taught, yet are underrepresented in medical school training.[16] Similarly, a systematic review of 111 studies found that key features of a successful medical training curriculum include experiential learning, small group sessions, regular opportunities for feedback and reflection and longitudinal programing.[15]

The MSF exercise is a well-established tool used in undergraduate and post-graduate medical education.[17] Unfortunately, among our respondents, students indicated that the MSF was not a positive learning experience. Few student respondents reported gleaning more insight into their own competencies (31%), and even fewer indicated that they had made a change as a direct result of the feedback provided (22%) by the MSF. It is possible the format of delivery was inappropriate or insufficient to incite meaningful feedback and or change. At the University of Ottawa, the MSF exercise is conducted electronically using an anonymous form that provides nominal scores for performance in the CanMEDS competencies. An issue with technology-mediated methods of feedback includes the one-way transmission of information whereby respondents can get fixated on grade scoring.[18] Additionally, learners report dissatisfaction with feedback when there is inadequate guidance or documentation to support improvement; this is often seen in quantitative evaluations.[19] A systematic review of MSF in medical education noted that the influence and use of MSF results varied heavily on the format of feedback, specifically results varied depending on if it had been facilitated or included descriptive narrative comments.[17] To further enhance the MSF exercise, the curriculum should consider the incorporation of qualitative feedback.

However, short narrative comments may lose their evaluative power when there is no dialogical context, where there is no room for clarification or further explanation.[20] Dawson et al. describe meaningful feedback as 'usable, detailed, considerate of affect and personalised to the student's own work.[21] Consequently, educating evaluators on strategies and techniques to optimize feedback is warranted to maximize the quality of the feedback and impact of the simulation exercises.

The data collected from the surveys suggest that the majority of respondents would support incorporating simulation-based exercises and emphasizing small group discussions over large didactic lectures. This is supported by the literature in medical leadership education. Despite the fact that medical students favour simulation and facilitated small group discussions over didactic lectures, less than 30% of medical leadership programs employed mixed approaches to teach and apply leadership skills, with most curricula failing to demonstrate changes in student behaviour.[5] Generally, leadership programs do not give students an opportunity to practice and apply leadership skills as they are predominantly didactic and encompass short-term course-based programming, often consisting of one or two sessions of condensed seminars. Simulation provides the opportunity for students to practice their acquired knowledge of leadership skills and apply them in high-fidelity scenarios, providing an opportunity for enhanced leadership training amongst undergraduate medical trainees.[22] The use of simulation-based learning has been shown beneficial in long-term skill development and retention. For example, Hunziker et al. found that a brief 10-minute lecture followed by a simulated learning scenario significantly increased patient-centered outcomes immediately and four months after the program was administered.[23] We do recognize that while extremely beneficial, simulation-based learning can be extremely resource intensive, and financially limiting.[24]

The study has a few limitations that must be addressed. Firstly, the generalizability of this survey to the general medical class is limited by the poor response rate. Nevertheless, our response rate (n= 67/640, 10%) was comparable to that of online quality improvement surveys for physicians without monetary incentives, which were 8-15%.[25,26] In future surveys, we could increase participant response rate through repetitive advertising, in-person questionnaires and monetary incentives.

Likewise, it is possible our sample represents a biased cohort given that it contains predominantly pre-clerkship students. Furthermore, there may be a selection bias as it may have catered to individuals who were more dissatisfied with the current curriculum or individuals passionate regarding leadership training or curriculum changes. To account for potential biases, future surveys could collect additional demographic information such as age, gender, and previous education to evaluate demographic differences in program satisfaction, leadership interests and program feedback. While we attempted to collect qualitative feedback via written text responses, too few respondents provided comments (n= 11, 16%) in order to enable meaningful qualitative analysis of the feedback received. Future surveys should incorporate qualitative analysis, such as semi-structured interviews, to garner more robust data and recommendations for program enhancement. These methods encourage the divulsion of personalized feedback and facilitate reflection. Consequently, anonymous surveys may not be as strong of a tool for qualitative comments and suggestions.[27] Instead of self-reported subjective metrics of knowledge acquisition, more objective measures of knowledge retention, such as quizzes or skill assessments, would have permitted a more accurate representation of learning from the current leadership curriculum.

Effective leadership training in medical education is necessary to ensure that future physicians have the knowledge and skills needed to navigate the healthcare system, collaborate, and deliver excellent patient care. Well-designed leadership training can improve physician team effectiveness, reduce medical errors, improve overall healthcare expenditure and improve patient satisfaction.[7,28,29] Consequently, the survey data was utilized to promote systemic and institutional change using an empowerment evaluation approach.[12] In response to the survey data, the University of Ottawa leadership working group committee was formed and comprised of medical faculty and students to guide leadership curriculum reform. A modified, longitudinal leadership curriculum was proposed for the graduating class of 2026 with considerations from the survey data. The future undergraduate medical leadership curriculum will focus on core competencies in identifying and resolving conflict, reflecting on feedback, and setting goals to achieve personal growth, providing effective feedback to patient's peers and colleagues, effectively collaborating and communicating with others and demonstrating the concepts of effective leadership.

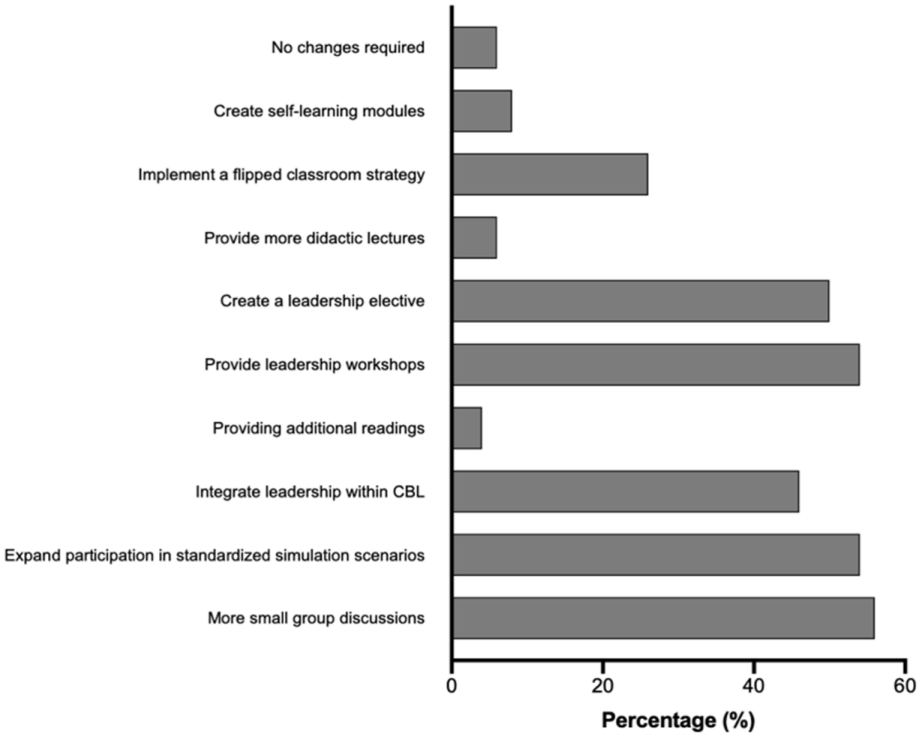

Figure 3: Recommendations for Leadership Curriculum Enhancement. Responses to predetermined suggestions for curriculum improvements, n=67. Percentages represent proportions of selected suggestions by respondents. Respondents were permitted to pick multiple suggestions.

An emphasis will be placed on flipped classroom discussions, small group breakout discussions and workshops. Additionally, further leadership training opportunities, with additional resources, will be devoted to the extracurricular first-year leadership elective to increase potential student enrolment.

CONCLUSION

The feedback solicited from medical trainees suggests that current leadership training is not effective nor optimally administered. Leadership represents a critical physician skill that is associated with professional competency, quality of patient care and satisfaction. Respondents support alternative learning strategies such as experiential and small group learning. This feedback has been used to conduct decisions to optimize the leadership curriculum learning experience with current education reforms. Further qualitative surveys and knowledge assessments will be required to examine student reception to new curriculum changes.

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Conflicts of Interest Disclosure

There are no conflicts of interest to declare.