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MONOGRAPH

Engaging Medical Students in Leadership Development

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Abstract
Leadership development plays a critical role in preparing collaborative, systems-based physicians. Medical schools across the globe have dedicated significant effort towards programming for medical student leadership development. Students report a variety of existing leadership opportunities, ranging from formal didactics to leadership positions within the community. Students identify lack of time, funding, and the hierarchy of medicine as significant barriers for engaging in leadership opportunities. Students favor a formal leadership curriculum coupled with hands-on opportunities to practice leadership skills. In order to train medical students to be engaged physician leaders, it is imperative to foster practical opportunities for leadership development.

Keywords Leadership development · Undergraduate medical education · Curriculum · Health systems science · Student-led

Introduction

Scientific, technological, and cultural advances are constantly influencing the healthcare environment—patients are living longer, have greater access to health information through the internet, and are experiencing "shifting illness patterns" with increasingly sedentary lifestyles and rising obesity rates [1]. The mission of medical education is to improve the quality of healthcare and as such, medical education initiatives should parallel changing practice needs [2]. For this reason, medical schools across the world have recognized the need to develop physician leaders capable of influencing rapidly changing healthcare climates [3, 4].

Multiple initiatives have identified leadership as a foundational competency for physicians functioning within modern health center settings [5–7]. The necessary knowledge and skills of leadership include understanding different types of leadership roles, decision-making in unclear situations, navigating hierarchies, collaboration, and adaptation [8]. This content is being integrated within medical education as part of health systems science curricula, conceptualized as the third pillar of medical education alongside the basic and clinical sciences. It is important to initiate this training in the preclinical phase of medical school.

One common barrier for programs integrating this content is the lack of consensus and broad variation in how leadership is integrated within medical education [5, 9]. With the large investment of resources required, it is advantageous to understand the development of leadership in trainees across the continuum of medical education [10]. The existing literature reports a lack of time, competing requirements, and a crowded curriculum as barriers to leadership education [9, 11–13]. Students also perceive preparation for licensing examinations as a competing priority when engaging with leadership material and, in this capacity, can act as a potential "point of resistance" to curricular changes [14, 15]. As such, it is imperative to better understand how students perceive leadership programs in undergraduate medical education (UME).

Within the USA, efforts in leadership education have been spearheaded by institutions within the American Medical Association (AMA) Accelerating Change in Medical Education (ACE) Consortium [6]. Through this effort, the AMA supported a student-led conference focused on incorporating leadership content and skills within UME. The conference gave students an opportunity to learn about existing leadership opportunities from each other based on their own medical school experiences and engage in activities that required

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the use of leadership skills. Conference attendees were provided an optional, open-ended online survey directly following the conference regarding their perspectives on opportunities for, barriers to, perceived supports and ideas for leadership development within their medical schools. Thirty-one medical student conference attendees completed this survey and we conducted a thematic content analysis of these responses to provide guidance for creating a medical student leadership curriculum. This analysis included coding of survey responses, member checking, and triangulation with field notes. This monograph is meant to provide schools with a framework by which to engage students in leadership opportunities and curricular change efforts in a manner that views students as key stakeholders and provides agency toward the development of leadership competencies necessary within health care settings.

Establish and Promote Student Leadership Positions, Set Clear Expectations, and Make These Available for All Levels of Medical Students

There is a lack of access to leadership opportunities at many institutions. Students suggested the creation of formal leadership positions within student-run clinics or specialty interest groups. In addition, extracurricular student organizations present a valuable platform for student leadership, as they provide an underlying mission that students collaborate towards achieving [16]. Equally as important, students and administration should pay attention to communication about existing leadership opportunities or the creation of a centralized resource (i.e., website or newsletter) for the advertisement of such opportunities.

At times, students feel unsure of the expectations of student leadership positions, including hours per week, length of leadership term, and general roles and responsibilities. Often, uncertainty about the level of necessary commitment can be a barrier to student engagement. This could be addressed through clear delineation of expectations within leadership position applications, as agreed upon by student leaders and faculty sponsors.

Additionally, student leaders could be trained together in a school-wide "onboarding session," giving a brief overview of leadership styles and effective group communication, conducting a productive meeting, and setting an agenda, among other administrative activities. The learning objectives of this orientation session could be adapted from the Medical Leadership Competency Framework (MLCF), a guideline of key leadership competencies required for healthcare providers developed by the National Health Service and utilized within undergraduate medical education throughout the United Kingdom [17]. Adopted for other parts of the world, this resource could help prime medical students prior to beginning leadership roles, as well as encourage communication and collaboration between student leaders.

Develop and Implement a Formal Leadership Curriculum That Is Hands-on and Practical

Students identified a formal leadership curriculum as an important component in their development as student leaders. Students proposed the addition of individual leadership projects as an accompaniment to formal didactics. This could include leadership over small-scale clinical research and quality improvement projects. An example of such an integrated, hands-on program is the UCLA-PRIME leadership program, which supports student leadership in clinical quality improvement endeavors [18]. In addition, students could engage in non-clinical leadership opportunities, such as working with community leaders in business or the non-governmental sector. These projects could provide an avenue for the implementation of key principles taught in the classroom setting.

Such subjective work, however, poses the challenge of standardized and fair assessment. In a survey of medical students in the UK, students expressed contrasting views on the value of assessment within leadership education. Some students viewed assessment as necessary for instilling value into this work. However, assessment can also be regarded as another "hoop" that students must address. Some strategies for meaningful evaluation in a leadership curricula include peer assessment, direct observation of group performance, written reflection of leadership experiences, and observed simulated clinical encounter (OSCE)–type experiences [19].

Support Opportunities to Work with Students and Professionals in Other Fields of Healthcare

The success of an interprofessional team strongly depends on effective communication, collaboration, and teamwork—skills which are essential in leadership development [20]. Students commented on the limited opportunities to work with professionals in other health care fields as posing a barrier in their leadership development. Surveyed students desired interprofessional learning, specifically the opportunity to work with nursing, pharmacy, and social work students in a clinical setting. Several countries have made efforts to embed interprofessional training into undergraduate medical education, through organizations such as the Norwegian Ministry of Health and Care Services and the Canadian Interprofessional Health Collaborative [21]. Core interprofessional competencies have been identified and outlined by a number of academic organizations, including the United States Interprofessioanl Education Collaboration (IPEC), and emphasize leadership as a key goal of an interprofessional curriculum [22].

In addition, several studies have demonstrated the benefit of community leaders, such as elected officials and members of non-governmental organizations, providing mentorship and

facilitating classroom instruction of medical students through a leadership curriculum [23, 24]. Such experiences address the need for more professional collaboration in our rapidly changing healthcare system [8].

Support Student Involvement in Curricular Development and Feedback Acquisition

Several students commented on the utility of student curriculum committees in compiling feedback and brainstorming curricular reform. Inclusion of the student voice in curriculum reform has been regarded as a positive force, due to students' inherent commitment as consumers of the curriculum [25]. Several studies have highlighted the benefits of a "students-as-partners" approach in teaching, research, and other institution-wide initiatives [26]. Greater transparency on administrative initiatives and potential student involvement on administrative committees may increase student buy-in and provide unique opportunities for student leadership development. Because students interact with a curriculum on a daily basis, they can provide timely and personalized feedback that reflects the most current generation of learners.

Surveying recent graduates of a course or program prior to any curricular reform and student participation in curricular development can be considered a pedagogical approach to increase learner engagement and sense of agency [25]. Student involvement in curricular design and reform capitalizes on the "threshold concept," in which increased ownership of a curriculum improves responsibility over learning [26].

Promote an Institutional Culture That Is Supportive of Medical Student Leadership, Despite the Traditional Hierarchy Within Medicine

An institutional culture supportive of student leadership is an important driver for engagement in leadership roles. However, the hierarchical nature of medicine and an administrative resistance to change are often barriers to student engagement. Hierarchical systems may devalue student input based on perceptions that students are inferior team members [27]. Students may also shy away from leadership opportunities because of their inexperience, an idea which is reinforced by existing hierarchies. Therefore, students can be both externally and internally discouraged from leading, due to both their own inexperience and their institution's resistance to change.

To address this, it is important for medical schools to celebrate successful student leaders and actively encourage students to pursue leadership roles. The learning environment is critical for student growth and success. [25]. A "students-as-partners" approach emphasizes collaboration between students and faculty, rather than the hierarchy dictated by years of experience and knowledge base [24, 28]. This could take the form of support for peer-teaching programs, student governance, and student input in the organization of elective rotations, as identified by previous research on student engagement [29]. Institutional support of medical students as they develop their skills as leaders not only is an investment in the next generation of physicians, but also brings vibrancy through the influx of new ideas.

Connect Students with Faculty and Peer Mentors Who Share an Interest in Student Leadership Development

Students can benefit from access to formalized mentoring from faculty with an interest in leadership development. This could be facilitated through increasing faculty time dedicated to working with student leaders, or a centralized resource for students to identify faculty mentors. In addition, peer-to-peer mentorship can play an important role in student leadership development. Student mentees may find this more approachable, as upperclassmen are closer to the current student experience. Peer-to-peer mentorship also provides a unique leadership opportunity for senior student mentors, as evidenced through the "Mentorship in Medicine" at the University of Texas Health Science Center at San Antonio [30]. Specifically, it was found that peer-to-peer mentorship serves an important adjunct to traditional faculty mentorship [30].

Mentorship can also be utilized to encourage women and underrepresented minorities (URM) to engage in student leadership. Despite the improving gender parity in medical school enrollment, there is a well-studied lack of female representation in leadership positions within academic medicine [31]. In addition, there remains disproportionate representation of URM faculty in administrative and senior leadership positions within academic medical centers [32]. One solution to address these disparities is intentional mentorship programming to connect senior faculty leaders with female and URM students. Examples of such programming have been described at Wake Forest University School of Medicine and Creighton University Health Sciences Schools [33]. Access to mentorship from women and URM faculty members with leadership experience can motivate and support students throughout their academic career.

In addition to traditional mentorship, coaching programs are emerging as an addition to competency-based medical education [34]. Coaching encourages constant self-reflection, rather than reflection in response to academic or professional deficiencies [34]. In this way, the coaching model supports lifelong learning and adaptation to the changing healthcare environment, both of which are critical for leadership development.

Provide Dedicated Administrative Support for Student Leadership, Including Grant Funding for Student Leadership Projects

Resource limitation can be a barrier to medical student leadership development. This can include lack of funding for student leadership projects, a lack of time for leadership education in condensed medical school curricula, and difficulty balancing leadership development with the many other demands on medical student time.

Dedicated administrative support of student leaders, which could take place in the form an "Office for Student Leadership", may alleviate this barrier. Students also suggested grant funding for student projects, through which students could apply for funding and subsequently report outcomes of their endeavors. Lastly, students suggested curricular incentives for engaging in student-organized projects, whether that take the form of elective credit or a formalized Certificate in Leadership.

Conclusion

Changes in health care have led to a call for physicians capable of addressing systems issues and leading medicine toward serving the dynamic needs of our communities. As medical schools across the nation continue to dedicate extensive resources towards leadership development, it is imperative to understand how students receive these initiatives. Students learn leadership skills in a variety of settings; thus, developing medical student leaders requires a multimodal approach. For this reason, many schools support a combination of approaches to medical student leadership development, ranging from formal curricula to extracurricular leadership opportunities, while encouraging students to be self-directed, engaged learners [35, 36]. Medical students prefer practical, hands-on opportunities for leadership development, which are fostered in a culture that is supportive of medical student leadership and allows students to develop the skills necessary for tackling the future needs of health care.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval NA

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