Contents lists available at ScienceDirect

EClinicalMedicine

journal homepage: https://www.journals.elsevier.com/eclinicalmedicine

Commentary

The growth mindset for changing medical education culture

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A R T I C L E   I N F O

Medical education is exclusionary by design. In the United States, the groundwork for systemic racism in medical education was codified by the Flexner report in 1910 [1]. Despite a call for increased diversity in medicine, inadequate representation of Latino/Hispanic (6%), African American (7%), and American Indian/Alaska Natives (0.2%) continues [2]. Increasing the representation of physicians historically excluded from medicine is imperative. A more diverse workforce is a necessary step for reducing healthcare disparities and meeting a predicted shortfall of 139,000 physicians by 2033 [3]. It is also critical for providing our increasingly diverse patients a similarly representative healthcare workforce and greater access to quality care.

Medical centers must incorporate an understanding of the pervasive influence of racism, white supremacy, health disparities, and systems of oppression into every aspect of education and healthcare. Antiracism programs require that we create environments that support trainees under-represented in medicine (URiM). Many URiM trainees face a lack of mentorship, stereotype threat, and racial bias [4]. Segregated spaces outside and within medical education promote reliance on harmful stereotypes and limit faculty's understanding of URiM trainees, precluding meaningful relationship building [4]. An antiracist culture requires attention to conscious and unconscious bias, *and the* 'hidden curriculum:' unspoken values and norms perpetuated by educators who serve as behavioral models [5]. Unfortunately, physician educators in the US are not explicitly trained in educational theory and often lack the tools for developing pragmatic approaches for learning. While the goals of medical education are clearly defined, the pedagogical standards for training are not. Rather, they are based upon individual instructor preference or biases serving to perpetuate racism in medical education.

A relevant pedagogical framework for changing medical culture is the growth mindset pioneered by Dr. Carol Dweck. Mindset theory holds that our implicit assumptions about the origin of our abilities, intelligence, and talents profoundly affect how we view our mistakes

and failures. Applied to the educational context, the growth mindset framework suggests that ability is acquired through effort and that failure is an opportunity for learning and improvement, whereas the more prevalent fixed mindset thinking suggests that intelligence or ability are innate and unchangeable [6].

One particularly injurious example of the fixed mindset is systemic racism. Characterizations of Black people as *less than White people* ensured economic benefits to White people derived from the savagery of slavery and laws still in effect today [7]. Medicine was complicit in the creation and maintenance of these systems of oppression, and has a lengthy history of harmful surgeries and the denial of treatment to Black people for the purpose of experimentation [8]. Our current medical culture is almost exclusively characterized by fixed mindset thinking, undermining the growth and development of learners [6]. Fixed mindset thinking maintains systemic racism within medicine by overlooking knowledge gaps, omissions in care, and abusive practices pivotal to understanding health disparities. Bias, resulting from fixed mindset thinking, also plays a role in the barriers faced by URiM trainees, contributing to their low representation.

According to Dr. Dweck, educators who regard members of under-represented groups as fixed or *less than* decide early who is worthy of advancement and who to dismiss. A study of 150 STEM professors and >15,000 students found that racial achievement gaps in courses taught by fixed mindset faculty were twice as large as those taught by more growth mindset-oriented faculty. Student evaluations in classes taught by fixed mindset faculty indicated a negative educational climate [9]. These adverse learning environments weaken academic performance and increase stress for trainees, potentially contributing to the greater loss of URiM trainees from training programs and academic medicine [4]. In a survey of over 7000 surgical residents in the US, 16.6% reported experiencing racial discrimination [10]. In contrast, the growth mindset framework creates a more positive learning environment (Fig. 1). Through ongoing intentional practice in educational settings, the growth mindset can be fostered in teachers creating a more inclusive environment supportive of the rigor and potential for all.

While the harm from the fixed mindset is clear, the success of the growth mindset requires an understanding of the varied levels and experiences of our trainees and full engagement from educators [6]. Faculty must start by learning and discussing the impact of systemic racism and white supremacy on health care and education. They must dismantle their assumptions about URiM trainees. Faculty, and the institutions they serve, need to shift from valuing conformity in medicine and recognize differences as strengths. The growth mindset

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Fixed Mindset	Actions to Foster Growth Mindset	Growth Mindset	Results of Growth Mindset
Feelings • Fearful • Shame • Avoidant • Dismissive • Detached	• Mindfulness: Pause, reflect on thoughts, feelings, behaviors, actions. • Sit with discomfort, uncertainty • What are the fears about? • How can I shift my focus from discomfort to action?	**Feelings** • Courage • Self-compassion in discomfort • Curious • Supportive • Change agent	• Personal awareness of bias, discrimination, racism
"I don't know where to start with this URiM learner so I will just do what I always do and hope it works" out."	• Active generous listening to understand learner • Avoid assumptions • Accept/address your bias and unconscious racism • Appreciate differences as strengths • Acknowledge the challenges the learner faces	"I need to listen, observe, ask questions to understand this learner's strengths and struggles. This person's differences are one of their contributions to healthcare."	• Learner centered growth fostering belongingness • Empowering the learner to be who they are and grow into their potential
"I don't want to do this wrong or get called out, so I will just pass this URiM along."	• Create SMART goals together • Use the Competency Based system in assessments • Create an accountability plan to follow up with the learner • Ask learner what you can do to support them and their needs • Look for and acknowledge growth and hard work of learner • Connect with educational leadership to create process for ongoing support and goals	"I will provide specific feedback and help this learner create next step goals. I will make mistakes as a teacher and coach, and will be grateful to learn from this learner and this experience. I will sit with discomfort and deepen my self-awareness around whiteness and racism"	• Learner centered growth • Teacher as learner • Connection fostered • Reinforcing a coaching relationship • Connecting to the overarching program and educational goals
"I can't make a difference on the racism in medical education."	• Learn about the history of racism in society, health care, science, and education • Learn about white supremacy and critical race theory • Join or create a white affinity or allyship group • Work on anti-racist policy for change	"I will take daily risks and be a part of the solution to change the system one learner at a time. I will encourage others to do the same. I will join a committee to change policies and practices."	• Systems change • Self actualization and connection • Able to connect differently • Collective Action
"I don't get involved in institutional politics on racism."	• Call out racism and call in colleagues, committees, and leadership for change • Set concrete institutional goals and hold each other and the institution accountable	"This is a human rights issue. Patients, health centers, and society will benefit from this learners growth and development as a healthcare professional. I am part of that solution as an educator."	• Societal and Culture change • Inclusive, connected and empowered educational community where everyone is growing

Fig. 1. Racism to Anti-racism using a Growth Mindset Framework: Dialogue and actions moving from fixed to growth mindset in medical education fostering an inclusive educational environment.

educator is relational, actively listens, recognizes and values growth and hard work, and collaborates with learners to create an environment that promotes academic success. The power of the growth mindset in improving the educational climate for URiM trainees is one aspect of a multi-factorial approach for change including: education to promote awareness of systemic racism; policies to support equity, justice, and inclusion instituted by educationally-equipped leaders; and institution-wide educational programs incorporating the growth mindset. Expanding programming to incorporate the growth mindset will promote an educational culture necessary for deconstructing systemic racism in academic medicine and foster a culture of inclusion and belonging for all.

Declaration of competing interest

The authors do not have any conflicts of interest to disclose.

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