Addressing Burnout Among U.S. URM Physicians with a Conditional Acceptance Program

Raissa Li

Department of Community Health, Tufts University

CH-0001: Introduction to Community Health

Professor Allen

December 10, 2020

Issue Statement

Burnout impacts half to two thirds of practicing physicians and contributes to the growing mental health burden among doctors across the United States (Schwenk & Gold, 2018). Burnout is a state of exhaustion caused by intense schedules, inadequate autonomy, and low rewards in a bureaucratic workplace which can lead to depression and suicide (Wiederhold et al., 2018). One study found that the incidence of physician burnout increased by 8.9% between 2011 and 2014 (Rotenstein et al., 2018). This phenomenon not only leads to physician turnover, resulting in practicing shortages and increased health care costs, but it also contributes to lower quality of health care since physicians with burnout are more likely to become violent at work, abuse substances, and exhibit racial discrimination (Lee et al., 2015). The morbidity and mortality of burnout is shown through the serious mental health issues and suicide ideation that medical students and physicians face. It is estimated that one physician dies by suicide each day and male and female physicians are 1.41 and 2.27 times more likely to die by suicide compared to nonphysicians (Silver et al., 2019). Although young adults enter medical school with similar rates of mental health disorders as their non-medical school peers, they experience greater mental health issues as they progress in their training (Mehta & Edwards, 2018). One study estimated that depression and anxiety among medical students was between 25-56% which was greater than the prevalence in age-matched cohorts and the general population (Mehta & Edwards, 2018). The full morbidity of physician burnout cannot be measured accurately due to the high stigma surrounding seeking mental health care in the physician community (Mehta & Edwards, 2018). Many existing methods aimed at addressing burnout tend to focus on managing outcomes

rather than preventing symptoms in younger medical students in the first place, leading to initiatives that have limited effectiveness (Wiederhold et al., 2018).

Doctors underrepresented in medicine (URM) are disproportionately impacted by burnout as they tend to work with lower income populations and experience daily stressors of racism (Silver et al., 2019). Although it is true that some URM physicians may choose not to work with vulnerable populations, a large majority do. In one study, authors found that URM physicians cared for 70.4% of non-English-speaking and 53.5% of minority patients (Silver et al., 2019). In addition to navigating the factors associated with vulnerable populations such as systemic racism and poverty, URM physicians are more likely to work in rural areas with physician shortages and limited resources (Silver et al., 2019). As a result, they tend to face environmental challenges and see more patients with psychosocial issues (Silver et al., 2019). Overall, burnout contributes to growing health inequities as it disproportionately impacts underrepresented communities (Silver et al., 2019). Racial minority students have also reported experiencing isolation and prejudice during their medical education (Silver et al., 2019). One study among URM medical students found that 64% of URM students reported discrimination, abuse, or harassment compared to only 20% of their non-URM counterparts (Wong et al., 2020). Another study reported that 65% of physicians who experienced workplace discrimination rated their health as fair/poor compared to only 27% of physicians who did not encounter any discrimination, revealing how discrimination can be tied to ill health which is a contributor to burnout (Filut et al., 2020). Racism can inflict harmful effects on mental health and contributes to high rates of post-traumatic stress disorder (PTSD) (Restauri & Sheridan, 2020). Beyond patient care, URM doctors experience pay gaps and are underrepresented in leadership positions

(Silver et al., 2019). Since many URM students are from low-income families that lack physician legacy and generational wealth, they face additional academic challenges that prevent them from entering medicine in the first place (Silver et al., 2019). The discrimination that starts at medical school leads to a significant lack of representation in medicine that contributes to increased rates of burnout in young medical students and physicians as well as a growing burden of minority patient care on URM physicians (Silver et al., 2019).

Individual Intervention: Testing for Implicit Racial Bias

One intervention that can address URM physician burnout is decreasing implicit racial bias (IRBIAS) in medical school by requiring first year medical students to take the Black-White Implicit Association Test (IAT) at the start of medical training to increase awareness of implicit bias (van Ryn et al., 2015). Implicit bias refers to unconscious negative attitudes towards other individuals that influence behavior in unintentional but powerful ways (van Ryn et al., 2015). By taking a test to acknowledge bias, non-URM students can decrease discrimination or microaggressions against URM medical students and faculty, improving URM student experiences. As events in medical school are essential in shaping emotional well-being and retention in medicine, implementing interventions that target medical students to prevent burnout in the first place is more effective than treating burnout when it has already happened (Silver et al., 2019). The Black-White IAT uses reaction times to assess evaluations of race (van Ryn et al., 2015). Testing for IRBIAS among first year medical students can be implemented on the individual level of the socio-ecological model. The objective of the intervention is to make individuals aware of their IRBIAS in order to encourage them to actively combat it over time. One study evaluating this intervention among 3,547 students from 49 U.S. medical schools found

that completing the Black-White IAT was a significant predictor of decreased IRBIAS after 4 years of medical school (van Ryn et al., 2015). The prospective study compared changes in implicit bias in non-African American medical students who completed the test at the beginning of their first semester and the last semester of medical school (van Ryn et al., 2015). Changes were calculated by subtracting the year 1 IAT score from the year 4 IAT score. A negative coefficient represented a decrease in racial bias while a positive coefficient portrayed an increase (van Ryn et al., 2015). Van Ryn et al. (2015) found that completing the IAT as part of medical training had a -5.7 coefficient, revealing that the test was a statistically significant predictor of a decrease in IRBIAS (van Ryn et al., 2015). This was the case even after adjusting for other variables such as if students took a seminar on cultural awareness. Students who received results of high implicit bias are likely to take initiative in combating their prejudices through informal education, leading to improved IRBIAS scores.

Institutional Intervention: Implementing a Novel Conditional Admissions Program

Another intervention that can combat burnout in URM physicians are programs that not only increase the recruitment of URM students but ensure their successful graduation from medical school. The objective of the Conditional Admissions (CA) program is to expand access to and retention of medical education for individuals from underrepresented ethnic, racial, and rural groups (Girotti et al., 2015). Medical school admissions rely heavily on grades and test scores which leads to the underrepresentation of minorities in the medical workforce as these students are more likely to face socio-economic challenges and inadequate educational opportunities (Girotti et al., 2015). However, simply expanding the considerations for admission to increase the number of underrepresented students without supplementing gaps in knowledge is flawed as

URM students face severe challenges in managing rigorous curriculums, leading to higher attrition rates and the burnout of minority students (Girotti et al., 2015). CA programs target resources to help students who face educational disadvantages in progressing through medical school (Girotti et al., 2015). In the program, students must meet a "condition" prior to formal admission to medical school which assesses whether they are able to handle curriculums if provided with the right resources.

The novel CA program was evaluated in a large mid-western medical school that previously expanded admission considerations without CA (Girotti et al., 2015). The objective of the study was to compare the outcomes of CA students with the outcomes of URM students admitted through expanded considerations prior to the program. In previous years, traditional methods of increasing URM students were unsuccessful at the school as there was a 15% attrition rate for URM and rural students compared to only 2% for non-URM and non-rural students (Girotti et al., 2015). The implemented CA program not only established strict criteria for academics and extracurricular accomplishments but also included a condition that students had to earn at least Bs in all courses in either a summer pre-matriculation or post-baccalaureate admissions program in order to officially enroll (Girotti et al., 2015). Implementation of the CA program immediately increased the retention and graduation of URM students, raising the rate from 85% in 1998 to 95% in 2004 (Girotti et al., 2015). However, the first CA cohort still performed worse than their non-CA peers in some areas, leading to the implementation of more strict academic requirements and additional educational components post-matriculation in a newly adjusted CA program. In this second cohort, which made up 7.2% (106 students) of the class, 81.4% of the students were from underrepresented racial backgrounds (Girotti et al., 2015). The new program also included

post-enrollment components such as mentorship by older CA participants. This led to improved test performances and a graduation rate of 99% by 2009 which was on par with traditionally admitted students (Girotti et al., 2015). First-time pass rates and mean scores on the US Medical Licensing Examination (USMLE) Step 1 and USMLE Step 2 also increased significantly compared to the scores of the first CA cohort (Girotti et al., 2015). The novel CA program can be implemented on the institutional level of the socio-ecological model. Medical schools can help mitigate URM physician burnout and alleviate uneven burdens in minority patient care by increasing the retention rate and support for URM students through a novel CA program.

Policy Intervention: Funding and Expanding Historically Black Medical Schools

Expanding the number of Historically Black medical colleges with public funding from state and federal governments through a policy intervention will raise the number of URM physicians (Campbell et al., 2020). Although there are fewer Black medical schools, they graduate proportionately more students from underrepresented minority groups than do predominantly white medical schools (Campbell et al., 2020). 13 historically Black medical schools operating in the late 1800s to early 1900s were shut down as a result of low enrollment and limited resources (Campbell et al., 2020). These schools receive less financial support and have more challenges securing facilities than predominantly white medical schools. As a result, there are currently only four historically Black medical schools open (Campbell et al., 2020). Despite the AAMC announcing in 1970 that its goal was to increase enrollment of Black medical students to 12% to match the proportion of African Americans in the general US population, the proportion of African American physicians was still less than 8% in 2019 (Campbell et al., 2020). In 2010, historically Black medical schools provided training to 1 in 5 Black U.S. medical school

graduates (Campbell et al., 2020). Campbell et al. (2020) used graduation numbers from closed and open historically Black medical schools to extrapolate workforce estimates of the number of African American medical school graduates if 5 out of 13 of the historically Black medical schools had been preserved rather than closed. Only 5 of the closed schools were utilized in the study because the other 8 schools had shut down much earlier prior to 1910 (Campbell et al., 2020). Rapid expansion models indicated that 35,315 graduates could have been trained between the year of closure and 2019 if the 5 schools had remained open. The increase in the number of African American graduates in US medical schools from 2014 to 2019 was only 1% (Campbell et al., 2020). If the 5 historically Black medical schools had remained open, this increase in African American graduates could have been as high as 29% from 2014 to 2019 (Campbell et al., 2020). This can further grow the diversity of faculty at predominantly white institutions as graduates of historically Black medical schools often take on leadership positions at predominantly white institutions, offering valuable mentorship to minority students (Campbell et al., 2020). Having role models to encourage students from underrepresented backgrounds is essential for combating the isolation that contributes to their growing burden of mental distress and burnout. Better representation in medical colleges not only leads to more opportunities for diversity and inclusion in these settings, but also progresses to further inclusion in residencies and workplaces as students become physicians. Expanding historically Black medical schools can be implemented at the policy level as federal and state governments can allocate financial grants and create policies that require funding sources to support historically Black medical colleges.

Recommended Intervention: Implementing a Novel Conditional Admissions Program

The institutional level of the socio-ecological model can be targeted in order to create a more inclusive environment in medical school and increase the number of URM physicians that care for vulnerable communities. This will improve the emotional and physical well-being of URM students and physicians by decreasing the discrimination and isolation that can lead to higher risks of burnout as well as distribute the care of vulnerable populations. Enacting an institutional intervention to increase the recruitment of URM physicians through a conditional acceptance (CA) program can help achieve this goal. The CA intervention will be implemented at predominantly white U.S. medical schools because these institutions have the financial resources to support CA students through funding pre-matriculation and mentorship programs (Girotti et al., 2015). Unfortunately, historically Black medical schools have negative media images due to their few faculty members, inadequate facilities, and a history of marginalization (Campbell et al., 2020). It will not only take decades to successfully implement new medical colleges at historically Black colleges, but it will also take years to adjust societal views and biases in the medical community surrounding these schools. Students who enroll in new unknown historically Black medical schools may face a disadvantage in applying to top residency programs and fellowships (Campbell et al., 2020). Therefore, the most effective intervention implemented in a reasonable time frame would be to increase the enrollment of diverse students at predominantly white medical schools which already have the existing infrastructure to create successful physicians. Increased numbers of URM students at these schools will address some of the challenges that current URM students face in terms of isolation and lack of mentorship. African Americans make up only 3% of medical school faculty and have limited teaching roles (van Ryn et al., 2015). Raising the number of URM physician graduates will also increase the number of

URM physician faculty who can serve as mentors to minority students. Students of color are also less likely to feel isolated if they see more diverse peers in their classes. Furthermore, having additional contact with African American medical students and faculty is associated with decreases in implicit racial bias in non-African American students, revealing the importance of providing greater opportunities for collaboration with diverse peers early on in medical training (van Ryn et al., 2015). Implementing CA programs at medical schools addresses the underlying social determinants associated with burnout among URM students including a lack of diversity and inadequate support that leads to increased mental health disorders (Mehta & Edwards, 2018). CA programs elevate academic support and mentorship needed for URM students who are likely to have experienced inequities in education (Girotti et al., 2015). Although non-Black students can also attend historically Black colleges, conditional acceptance programs aimed at students from all underrepresented groups can have an even further outreach on minority students from various backgrounds. The CA program not only increases the number of students from underrepresented groups, but also ensures their pathway to becoming successful physicians (Girotti et al., 2015). Several studies have found this intervention to be effective. Schneid et al. (2018) discovered that pre-matriculation programs for academically disadvantaged students from diverse backgrounds had a significant impact in success in the first year of medical school. Performance in the pre-matriculation program was found to be a strong predictor for year 1 performance, supporting the concept of conditional admissions (Schneid et al., 2018). Another study by Kosobuski et al. (2017) also found that a four-week interdisciplinary pre-matriculation program for Native American and rural medical students in microbiology led to increased retention of content and confidence towards medical school.

CA programs will elevate numbers of successful URM physicians to match the general population which is essential for alleviating burnout. URM physicians are more likely to work with vulnerable communities that physicians from other racial or ethnic backgrounds may not feel fit to serve due to their lack of cultural competency (Girotti et al., 2015). As these patients can face additional challenges that come with poverty, it is important to increase the number of URM physicians in the workforce in order to distribute the workload (Girotti et al., 2015). Interventions simply educating on implicit racial bias are likely not sufficient for addressing structural barriers although they may start the conversation for actively changing personal decisions surrounding diversity and inclusion.

Conclusion

Burnout is highly prevalent among physicians and impacts URM physicians to a greater extent due to the fact that URM physicians tend to work with lower income populations and face prejudice during medical training (Silver et al., 2019). The negative impacts of discrimination contribute to job turnover, secondary traumatic stress, and poor mental health (Restauri & Sheridan, 2020). URM physicians are further underrepresented in leadership positions, revealing an inadequate source of role models for minority medical students (Silver et al., 2019). Implementing interventions at the institutional level to increase the number of URM students will help counter isolation in medical school as well as tackle URM physician shortages. Conditional acceptance programs will increase opportunities for diverse students from low-income and academically disadvantaged backgrounds to pursue medicine and provide adequate mentorship to prevent burnout early in medical school.

References

Campbell K.M., Corral I., Infante Linares J.L., Tumin D. (2020). Projected Estimates of African American Medical Graduates of Closed Historically Black Medical Schools. *JAMA Network Open. 3*(8), 1-10 http://doi.org/10.1001/jamanetworkopen.2020.15220

Filut, A., Alvarez, M., & Carnes, M. (2020). Discrimination Toward Physicians of Color: A Systematic Review. *Journal of the National Medical Association*, *112*(2), 117–140. https://doi.org/10.1016/j.jnma.2020.02.008

Girotti, J. A., Park, Y. S., & Tekian, A. (2015). Ensuring a fair and equitable selection of students to serve society's health care needs. *Medical Education*, *49*(1), 84–92. https://doi.org/10.1111/medu.12506

Kosobuski, A. W., Whitney, A., Skildum, A., & Prunuske, A. (2017). Development of an interdisciplinary pre-matriculation program designed to promote medical students' self-efficacy. *Medical education online*, *22*(1), 1272835. https://doi.org/10.1080/10872981.2017.1272835

Lee, Y., Medford, A., & Halim, A. (2015). Burnout in physicians. *Journal of the Royal College of Physicians of Edinburgh*, *45*(2), 104–107. https://doi.org/10.4997/JRCPE.2015.203

Mehta, S. S., & Edwards, M. L. (2018). Suffering in Silence: Mental Health Stigma and Physicians' Licensing Fears. *American Journal of Psychiatry Residents' Journal*, *13*(11), 2–4. https://doi.org/10.1176/appi.ajp-rj.2018.131101

Restauri, N., & Sheridan, A. D. (2020). Burnout and Posttraumatic Stress Disorder in the Coronavirus Disease 2019 (COVID-19) Pandemic: Intersection, Impact, and Interventions.

Journal of the American College of Radiology, *17*(7), 921–926. https://doi.org/10.1016/j.jacr.2020.05.021

Rotenstein, L.S., Torre, M., Ramos, M.A., Rosales, R.C., Guille, C., Sen, S., Mata, D.A. (2018). Prevalence of Burnout Among Physicians: A Systematic Review. *JAMA, 320(11),* 1131-1150. https://doi.org/10.1001/jama.2018.12777

Schneid, S. D., Apperson, A., Laiken, N., Mandel, J., Kelly, C. J., & Brandl, K. (2018). A summer pre-matriculation program to help students succeed in medical school. *Advances in Health Sciences Education*, *23*(3), 499–511. https://doi.org/10.1007/s10459-017-9808-8

Schwenk T. L., Gold K. J. (2018). Physician Burnout—A Serious Symptom, But of What? *JAMA. 320*(11), 1109–1110. http://doi.org/10.1001/jama.2018.11703

Silver, J. K., Bean, A. C., Slocum, C., Poorman, J. A., Tenforde, A., Blauwet, C. A., Kirch, R. A., Parekh, R., Amonoo, H. L., Zafonte, R., & Osterbur, D. (2019). Physician Workforce Disparities and Patient Care: A Narrative Review. *Health Equity*, *3*(1), 360–377. https://doi.org/10.1089/heq.2019.0040

van Ryn, M., Hardeman, R., Phelan, S. M., PhD, D. J. B., Dovidio, J. F., Herrin, J., Burke, S. E., Nelson, D. B., Perry, S., Yeazel, M., & Przedworski, J. M. (2015). Medical School Experiences Associated with Change in Implicit Racial Bias Among 3547 Students: A Medical Student CHANGES Study Report. *Journal of General Internal Medicine*, *30*(12), 1748–1756. https://doi.org/10.1007/s11606-015-3447-7

Wiederhold, B. K., Cipresso, P., Pizzioli, D., Wiederhold, M., & Riva, G. (2018). Intervention for Physician Burnout: A Systematic Review. *Open Medicine*, *13*(1), 253–263. https://doi.org/10.1515/med-2018-0039

Wong, D., Kuprasertkul, A., Khouri, R. K., Ganesan, V., Kenigsberg, A. P., & Lemack, G. E. (2020). Assessing the Female and Underrepresented Minority Medical Student Experience in the Urology Match: Where Do We Fall Short? *Urology*, *00*(00). 1-6. https://doi.org/10.1016/j.urology.2020.08.076