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Minority Tax on Medical Students: A Review of the Literature and Mitigation Recommendations

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ABSTRACT

Background and Objectives: Accreditation standards for MD- and DO-granting institutions require medical schools to recruit a diverse student body and educate students about diverse groups of patients. The minority tax is a summary of responsibilities assigned to racial and ethnic underrepresented faculty to achieve diversity, equity, and inclusion in medical institutions in addition to their typical academic workload. This article provides a narrative review of medical students' experiences of the minority tax and recommendations on how medical educators can support an equitable learning environment by eliminating the minority tax.

Methods: We searched the PubMed, Web of Science, and Scopus databases, Google Scholar, and medical society websites, blogs, and fora for terms, including minority tax, medical students, and undergraduate medical education. We included publications if they discussed the underrepresented in medicine medical students' experiences of the minority tax.

Results: Our search yielded six peer-reviewed original research articles and six publications of commentaries, opinion pieces, or news pieces. Students who were underrepresented in medicine reported spending more hours on diversity efforts compared with students who were not underrepresented; moreover, students reported that they had to sacrifice academic excellence in order to fulfill these additional diversity duties.

Conclusions: The minority tax among medical students constitutes an unequitable and unjust barrier to career advancement, and it likely represents an early cause of attrition in the pipeline of underrepresented in medicine academic faculty. Medical educators can enact specific recommendations to eliminate or mitigate the minority tax experience for medical students.

INTRODUCTION

Despite calls to increase the representation of historically excluded groups into the field of medicine, the proportions of students who are Black or African American, American Indian or Alaska Native, and Hispanic or Latino remain well below those of these groups in the US population.[1–3] Both the Association of American Medical Colleges and the American Association of Osteopathic Colleges of Medicine have accreditation standards for medical education that require these institutions to recruit and support a diverse body of students and faculty and to include curricula on diversity, equity, and inclusion (DEI).[4,5] When such diversity programming requires the time, energy, and effort of the underrepresented in medicine (URiM) members of the medical student community, the environment represents a potential nidus of the minority tax.

The concept of the minority tax (or cultural tax) has been characterized to include extra responsibilities placed on minority faculty to achieve diversity, experiences of racism and isolation, as well as inequities in key academic areas such as mentorship, clinical duties, and promotion.[6] While the concept was specifically developed in consideration of the experiences of faculty who are racially or ethnically underrepresented, the themes of the minority tax also can be applied to other underrepresented groups in medicine, including sexual and gender minorities, people with disabilities, and women.[7,8] Moreover, a person with more than one underrepresented identity may experience a summative burden of additional responsibilities and isolation.[7,9] For example, minority women have a

minority woman tax[9] within their institutions. The minority tax is a structural cause of chronic underrepresentation in academic medicine because of its effects on URiM individuals' entry, retention, and advancement in predominantly White institutions.[10–12] The concept of the minority tax has been explored in terms of its relevance to the URiM pipeline at the faculty level. To date, few publications have discussed the effect of the minority tax at the level of the medical student or resident trainee. However, URiM students' experiences of bias in evaluations[13,14] and selection for academic awards,[15] as well as experiences of racism and discrimination[16–18] during medical school have been well-documented. In addition to these challenges, URiM students experience stereotype threat in which fear of failure because of their underrepresented identity leads to underperformance,[13,19] and they experience isolation.[18]

This narrative review summarizes the current literature on the minority tax in medical students, names the harms of the minority tax on URiM students, and proposes actions that medical educators and medical school leaders can take to eliminate the minority tax among medical students.

METHODS

Because of the dearth of information on minority tax and students, we decided that a narrative review was the appropriate method for our study. The term minority tax is relatively new to the literature, with the earliest instance appearing in health sciences as a defined and named concept indexed in PubMed in 2015.[6]

To accomplish this narrative review, we searched PubMed, Web of Science, and Scopus using the search term minority tax, which resulted in 37 unique, indexed publications that discussed the minority tax experienced by individuals in biomedical research or the field of medicine. Using Google Scholar, the key word minority tax yielded 1,130 results, excluding those previously identified in databases and excluding patents and citations. Of the 1,167 total articles, title review (done by D.B.) eliminated 1,040, leaving 127 results. Articles were eliminated on title review if they were not available in English; if they were unavailable for review; if the title indicated a nonmedical topic such as finances or law; or if the title indicated a focus on nonacademic aspects of medicine such as clinical care, quality improvement, or nonphysician staffing concerns. In an effort to find materials that may not be indexed within databases, we queried Google with "minority tax," "minority tax medical students," "minority tax health sciences students," and "minority tax medical education." This search added three articles to our final results: a professional society online news article reporting on a student focus group convened by the organization,[20] a professional society forum post,[21] and a news article about an online peer-reviewed publication for medical students.[22] We discussed the nonindexed results and chose to include them because of their relevance to this topic and the relatively few articles identified. Two articles[23,24] discussed medical students' experiences of the minority tax outside of the United States, and we decided to include these for the same reasons. We conducted searches between August 2022 and March 2023. At the conclusion of our search, we had 130 articles for consideration. These 130 articles underwent abstract review (done by D.B.), and 52 articles underwent full article review (done by RMB). Table 1 shows the reasons that articles were eliminated at this stage.

TABLE 1. Articles Eliminated on Abstract and Paper Review

Stage of review when eliminated	Number eliminated	Reason for elimination
Abstract review	41	Did not address students
Abstract review	29	Did not address academic medicine
Abstract review	8	Did not address minority tax
Article review	35	Did not address students*
Article review	5	Did not discuss student experience of minority tax

*"Did not address students" resulted in eliminations from both the abstract and article review when the abstract review was not sufficient to determine whether the paper addressed medical students' experiences of the minority tax.

To assess the quality of the papers, we used a modification of Ebell's strength of recommendation taxonomy (SORT).[25] The SORT criteria originally were created to critically assess the medical literature, principally in the clinical space. Rodríguez et al[26] used a modification to this taxonomy to better assess the literature on underrepresented minority faculty working in the academic medical space. We used the same modifications to assess the level of evidence of those manuscripts included in this review (done by R.M.B. and verified by K.M.C. and J.E.R.). We summarized the main findings of each media source (done by R.M.B. and verified by K.M.C. and J.E.R.); in addition, we identified the harms to the individual underrepresented student documented in the literature that met criteria for this review, and we also delineated solutions to mitigate or eliminate those harms described in the literature (done by RMB and verified by K.D., K.M.C., and J.E.R.). During this process, we had no disagreements on the application of the SORT criteria or on the findings that we identified.

RESULTS

Our study provides a narrative review of the literature exploring the experiences of URiM medical student trainees as those experiences relate to the minority tax. Only six articles included in this review were categorized as original research and provided metrics for review. However, even articles that ranked at a lower tier of evidence, based on the modified framework of Ebell's taxonomy[25] suggested by Rodríguez et al,[26] brought forth findings that were consistent across articles and largely consistent with the experiences of minority faculty in academic medicine.

We found the diversity efforts disparity[27] that has been defined for URiM faculty to also be present for URiM trainees in clinical and educational settings. Students felt as though their

TABLE 2. Literature Describing Medical Students' Experiences of the Minority Tax or of Components of the Minority Tax

Article title	Year	Type of article	Major finding	Strength of evidence
More Work, Less Reward: The Minority Tax on US Medical Students [28]	2022	Original research	A cross sectional survey of medical students from five US medical schools (n=282) showed that URiM students spent 62 hours more per year than non-URiM students on DEI initiatives and 36 hours more on advocacy. Analyses demonstrated that DEI work and advocacy appeared to take away time from other medical school work and activities. Open-ended question responses contributed to understanding URiM students' experiences in medical school.	2
Evaluation of Racial Microaggressions Experienced During Medical School Training and the Effect on Medical Student Education and Burnout [29]	2021	Original research	A cross sectional survey of medical students sampled from medical student listserves (n=217) showed that URiM students experienced more microaggressions than non-URiM students, and microaggressions among URiM students negatively impacted learning and contributed to burnout.	2
"As an Ethnic Minority, You Just Have to Work Twice as Hard." Experiences and Motivation of Ethnic Minority Students in Medical Education [23]	2021	Original research	In six focus groups of 26 ethnic minority medical students in the Netherlands, ethnic minority students expressed having challenging experiences of not belonging, needing to stand up for themselves against being excluded, dealing with expectations on them, lacking role models, and receiving lower grades attributed to cultural and linguistic differences. In addition, intersectional experiences of female gender and minority background compounded these experiences.	2
Professional Identity Formation for Underrepresented in Medicine Learners [30]	2021	Original research	A narrative review of literature on professional identity formation commented that URiM trainees were subjected to the minority tax when they were asked to take on additional responsibilities linked to their identity in patient care or to provide education to others. The authors claimed that these requests could worsen othering and interrupt the processes of professional identity formation.	2
Building a Tool Kit for Medical and Dental Students: Addressing Microaggressions and Discrimination on the Wards [31]	2021	Original research and curriculum	Prior to participating in a workshop on responding to microagressions, a cross-sectional survey of medical students (n=121) showed that the majority experienced and witnessed microaggressions and that URiM students might experience more fear of retribution when considering reporting or acting in response to a microaggression.	2
The Minority Student Voice at One Medical School: Lessons for All? [32]	2013	Original research	Analyses of interviews of 18 URiM current students or recent graduates selected through random quota sampling showed that URiM students felt obligated by DEI work that was offered only to minority students, and they had to compromise academic excellence because of these tasks.	2
Experiencing Racism Within Medical School Curriculum: 2020 ICCH Student Symposium [24]	2022	Conference proceedings	Presenters relayed that students experienced and witnessed institutional bias, microaggressions, and overt instances of interpersonal racism, which they underreported out of fear of a negative impact on their professional trajectory.	3
Supporting Students of Color: Balancing the Challenges of Activism and the Minority Tax [33]	2021	Letter to the editor	The authors argued that the minority tax could negatively impact residency opportunities for medical students because research is prioritized by competitive specialties.	3
Black Students Are Transforming American Medical Schools [21]	2021	News forum student perspective	Students reported that Black medical students had additional responsibilities related to being URiM, including fighting for racial justice within the medical community, attempting to mitigate the effects of medical bias for individual patients on clinical rotations, participating in DEI activities at medical school including addressing existing bias in the curriculum and developing new curriculum to meet diverse patients' needs.	3
Med Students Discuss the Minority Tax, Tokenism and Other DEI Issues They Have Encountered [20]	2021	News/blog	URiM students at schools without a dedicated DEI office and faculty oversight expressed feeling like they were working two full-time jobs when they took on extra DEI duties including mentorship, advocacy, and educating their classmates.	3
A Piece of My Mind: Medical Education and the Minority Tax [34]	2017	Opinion	A Black, queer fourth-year resident physician from the rural South commented that she was proud to have contributed to diversity programming in medical school and residency and also was exhausted by these experiences.	3
The Minority Tax: An Unseen Plight of Diversity in Medical Education [22]	2017	News/blog	URiM trainees reported experiencing the minority tax through their advocacy for diversity in academic programs, community service, work on health disparities, administration pipeline programs, and service as mentors and recruiters for other URiMs. These underrecognized duties required sacrifice and were balanced against academic achievements.	3

Abbreviations: URiM, underrepresented in medicine; DEI, diversity, equity, and inclusion

diversity identities were manipulated for institutional gain. They were commonly asked to address institutional inequity and systemic racism in the medical education experience, when they did not cause those inequities and were the ones who were adversely affected by them. Students expressed a sense of duty to right institutional wrongs while at the same time worried that such efforts would negatively impact their academic performance and could ultimately hinder matching into a residency program of their choice. Trainees reported fighting to belong, dealing with assignment bias and lower grades because of their diversity identity, and facing increasing complexity and a compounding of exclusion and bias with intersecting identities. If no diversity office was present at the institution, trainees felt an even stronger diversity efforts disparity and more pressure to do DEI work. Those increased pressures were complicated by having to educate peers and sometimes even faculty. In addition to diversity and inclusion advocacy, trainees felt the need to address racial justice and underscored challenges with discrimination and bias experienced particularly in the clinical environments of medical schools, including clerkships. Details of the major findings of the articles are outlined in Table 2, sorted by strength of evidence, with the strongest level of evidence first, followed by year of publication. In Table 3, we synthesize the harms of the minority tax on URiM students enumerated in the literature, and we propose specific actions medical school administrators, deans, and course directors can take to address these harms. In addition to the published literature, the recommendations come from collective years of author experience.

DISCUSSION

The findings of this literature review offer compelling evidence that URiM medical students are experiencing the minority tax. In particular, the survey by Kamceva et al[28] quantified the average hours spent on activities that constituted a minority tax and demonstrated that students spend fewer hours on other medical school activities. This finding suggests that students' contributions to DEI work take away time from other crucial medical school activities. The 62 more hours per year that the URiM students spend on DEI initiatives and the 36 more hours spent on advocacy[28] also may be labeled a majority subsidy,[35] highlighting the time saved by non-URiM medical students who nonetheless benefit from the efforts of their URiM peers.

Particularly concerning is that the few published accounts of URiM students' experiences of the minority tax depict numerous situations in which URiM students' time, energy, and resources support activities that fall under the purview of the responsibilities of the hospital systems or medical schools themselves. To this end, URiM students cited many examples of this kind of work, including contributing to medical school DEI curricula through serving on panels to educate other students about their identity,[20,28] giving lectures,[34] or developing curricula;[21,22,34] mentoring other URiM students;[20,22,28,32] administrating premedical URiM pipeline programs,[22] other community service,[22,32] and social activism;[34] working on URiM recruitment[22,32] and being featured in website and other marketing materials;[20] and spending extra time with Black and Brown patients to try to mitigate the negative effects of racism on those individuals' care.[21] When hospitals and medical schools invite, ask, or obligate URiM students to carry out these essential accreditation-required functions of equitable education and care without compensation, reward, or recognition, they impose the minority tax on URiM students; and such experiences, alongside other negative experiences associated with being URiM, impede academic success and detract from URiM career choice in academic medicine.[36]

Many medical schools and hospitals may engage in DEI inititatives in a genuine effort to strive for educational and health equity. The actions in Table 3 serve to align intentions of inclusivity with the impact on URiM students. Medical school administrators and course directors in states where legislation impacts DEI activities will need to review curricular and extracurricular offerings with university legal counsel to ensure compliance.

The personal accounts of URiM medical students' experiences of the minority tax[32–34] depict URiM students' resilience and personal investment in DEI activities. Some of the first-person learner accounts express a sense of pride and mission,[22,33,34] and one characterized the mentorship as rewarding.[28] Taken all together, the proposed actions in Table 3 function to showcase the advanced skill sets of URiM students contributing to DEI activities as markers of success within academic medicine.

The minority tax has been characterized as a significant cause of the attrition of URiM faculty in the field of academic medicine.[6,7,10,37,38] This is the first review and summary of the peer-reviewed and other select literature of the minority tax among medical students. Identifying the minority tax among URiM medical students offers opportunities to intervene and mitigate the minority tax earlier in the URiM pipeline to academic medicine. A careful read of the few articles on the minority tax among medical students reveals a multitude of harms imposed on URiM students by the institutions levying such taxes. Enumerating these harms may enable medical educators and medical school leaders to evaluate the experiences of URiM students within their institutions and to take actions to eliminate or mitigate the minority tax on URiM students.

The core issue of the minority tax—whether imposed on trainees or faculty—is the unequal usurpation of time, energy, and other resources from URiM individuals for tasks specifically related to URiM identity to serve the broader academic medical institution. Thus, many of the actions proposed here to end the minority tax among students involve investment of resources to accomplish the programming achieved through the disproportionate contributions of URiM learners. Other actions here convey the value of all DEI work contributing to the academic success of learners who engage in it. Importantly, medical schools seeking to eliminate minority taxation of URiM students will need to invest in professional support for DEI recruitment, mentorship, and curricula with sufficient faculty and staff to alleviate the burdens placed on medical

TABLE 3. A Summary of the Harms of the Minority Tax on URiM Students and Actions to Address These Harms

Harms of the minority tax	Actions to mitigate the minority tax
Medical student DEI work takes away time from activities that promote academic success. [20–22,28,32,33]	• Develop a system to avoid all conflicts with curricular events when scheduling DEI events. • Ensure that URiM students have equal assignments in recruitment to non-URiM students. • Encourage all medical students, not just URiM students, to participate in DEI work.
Medical student DEI work is underrecognized by medical schools and does not support a competitive residency application. [21,22,28,33]	• Include social justice and care of underserved patients as criteria for academic prizes such as those given by Alpha Omega Alpha. • Add a DEI impact section to the MSPE letter and value this in the final summary of students' performance. • Institute academic prizes for service in underserved communities, social justice, advocacy, and DEI curricular work. [28] • Develop supportive mechanisms to help URiM students develop academic scholarship from their DEI projects.
Labor is unpaid in otherwise paid areas of medical school functioning, such as addressing LCME requirements [20,28] recruitment, [22,32] curriculum development and peer education, [21,28,34] and diversity committees. [21,28,32]	• Institute a DEI office with appropriate faculty and staff to carry out DEI initiatives. [20] • Create paid URiM student DEI positions. [28] • Create a DEI medical education fellowship with opportunities for scholarship and mentorship. [28] • Hire faculty and staff from URiM backgrounds in admissions and recruitment. [28] • Hire faculty and staff with curricular expertise in DEI to carry out curricular initiatives. [24,28] • Develop robust curriculum about DEI. [21,24,32] • Ensure that URiM and non-URiM students share the burden of contributing on DEI committees. [24]
Distribution of care for marginalized and minoritized patients is uneven. [21,30,32]	• Institute a community engagement or community service graduation requirement. • Develop health systems solutions to address patient care needs that do not rely on student labor but rather are built to include student learning.
Distribution of advocacy for social justice issues is uneven. [32,33]	• Develop an advocacy curriculum. • Institute an advocacy or health equity assignment. • Mentor students in writing about social justice issues to ensure that URiM students get academic credit for their social justice work.
The student burden of peer mentorship, [22,28,32] lack of identity concordant mentors, [23,28,30,32] and lack of mentors with URiM mentorship skills are unequal. [6]	• Hire faculty from URiM backgrounds and support their time for mentorship. [21,32,34] • Implement training focused on URiM mentorship skills and train faculty from all backgrounds in these skills. [28,30,32] • Provide differential rewards for mentoring URiM students, regardless of faculty URiM status.
Other harms include experiences of racism, discrimination, and bias in medical school; [21–24,28,30,32] macro and microaggressions; [23,24,28–30,33] trauma when high-profile racist violence takes place; [21] stereotype threat; [22,28,30,32] and tokenism. [20]	• Analyze all evaluative processes to identify bias and take steps to redesign these processes to eliminate inequitable outcomes. • Offer community-wide upstander training and practice. [24,31] • Institute macro- and microaggression reporting systems for students [24] and address instances of racism, bias, microagressions, and stereotype threat. [30,32,34] • Create an extension policy for exams and assignments related to experiences of bias or high-profile traumatic events and reach out to affected students proactively to support policy enactment.

Abbreviations: URiM, underrepresented in medicine; DEI, diversity, equity, and inclusion; LCME, Liaison Committee on Medical Education; MSPE, medical student performance evaluation

students. A key challenge will be the limited number of URiM faculty available for these roles within medical education. As medical educators seek to eliminate minority taxation of students, investing in and supporting faculty and staff efforts will be crucial to avoid transferring the minority tax from students onto URiM faculty. Ultimately, hospitals and medical schools seeking to increase the representation of URiM students, residents, and faculty will need to invest in precollege pipeline programs, community college pathways to medicine, and new historically Black college and university medical schools, [38] as well early science, technology, engineering, and mathematics education, because the URiM pipeline starts in early childhood. [10]

One common theme across the spectrum of clinical care, research, and other academic activities is that URiM trainees and faculty more often engage in and are assigned activities, tasks, and responsibilities that do not result in high performance as measured in academic and clinical terms, respectively, across these fields. When the causal locus of lack of advancement for URiM trainees and faculty is located in the individual's choice to engage in these activities, the message to URiM trainees and faculty is that they and their interests are a poor fit for academic medicine, and the solution is to leave, constituting a leak in the URiM pipeline. Institutions have an opportunity to name and value these DEI, mentoring, and clinical service activities, advancing and promoting the URiM and other faculty who contribute these services, thus shifting the academic environment to welcome and include URiM individuals.

Limitations

Given that academic scholarship on the minority tax is a relatively new topic in academic medicine, a lack of standardized language is available to report, capture, and subsequently search in the medical literature. While this literature review included PubMed-indexed publications and nonindexed

publications on medical society news forums, other types of publications and media—including social media posts and reports written by individual medical students or medical student groups such as the Student National Medical Association, Latino Medical Student Association, and White Coats for Black Lives—were not included in this narrative review. This omission may lead to the false conclusion that URiM students are not voicing concerns or objections to their experiences of the minority tax. Moreover, the limited sample sizes of the published articles included in this review may mean that we did not fully capture the themes of the medical student minority tax. Investigating additional experiences, particularly through interviews and focus groups, could add nuance and depth to the current characterization of the medical student minority tax. Another key opportunity to represent and include students' voices in this work is analysis of the anecdotal experiences of URiM students shared on social media platforms.

Need for Future Research

This narrative review demonstrated that few publications directly address the minority tax among medical students. In addition, the strength of evidence among the articles gathered on this important topic demonstrates the need for more qualitative and quantitative research studies on the minority tax among medical students. This narrative review does not address the minority tax among graduate medical education (GME) trainees; however, one of the articles included in this review[34] and others that were screened for this review[39–41] did include studies and firsthand accounts of minority tax experienced among GME trainees. Themes from the pieces discussing GME minority tax mirrored those of URiM students presented here: experiences of microaggressions and bias, as well as performance of additional services because of their race/ethnicity in areas of patient care, residency recruitment, curriculum, and diversity committees. Such experiences may detract URiM residents from pursuing careers in academic medicine and contribute to the leaky URiM faculty pipeline.

Understanding the impact of the minority tax on the URiM pipeline to academic medicine will require further research on the minority tax among medical students, residents, and fellows, as well as among faculty. At the same time, published studies of the impact, effectiveness, and resources required to implement interventions to eliminate the minority tax will spur the proliferation of more effective efforts toward this end across academic medical centers.

Finally, we did not include social media posts in this narrative review. However, reviewing social media platforms for firsthand account reports of minority taxation among students likely represents a wealth of information about students' experiences of the minority tax and constitutes an area of future research.

CONCLUSIONS

Medical students who are underrepresented in medicine experience the minority tax in addition to microaggressions, bias, and racism. The services that URiM students provide to hospitals and medical schools because of their racial and ethnic identities constitute an unjust experience stemming from structural racism. Medical educators and medical school leaders can take specific actions to eliminate the minority tax on medical students and to foster an equitable learning environment. Further research on the minority tax among medical students, residents, and fellows is needed to understand how the minority tax in undergraduate and graduate medical learning environments contributes to underrepresentation of racial and ethnic minority faculty within the field of academic medicine.

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