UC San Diego UC San Diego Electronic Theses and Dissertations

Title

What Medical Schools Don't Teach You

Permalink https://escholarship.org/uc/item/30h897mq

Author Yim, Rachel Kai-Xin

Publication Date

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA SAN DIEGO

What Medical Schools Don't Teach You

A Thesis submitted in partial satisfaction of the requirements for the degree Master of Arts

in

Global Health

by

Rachel Kai-Xin Yim

Committee in charge:

Professor Saiba Varma, Chair Professor Sandra Daley Professor Bonnie Kaiser

Copyright Rachel Kai-Xin Yim, 2021 All rights reserved. The thesis of Rachel Kai-Xin Yim is approved, and it is acceptable in quality and form for publication on microfilm and electronically.

University of California San Diego 2021

TABLE OF CONTENTS

Thesis Approval Page	iii
Table of Contents	iv
List of Figures	v
Acknowledgements	vi
Abstract of the Thesis	vii
Introduction	1
Methods	
Results	7
Discussion	
Conclusions	
References	

LIST OF FIGURES

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to Professor Saiba Varma, Professor Bonnie Kaiser, and Professor Sandra Daley, my research committee, for their patient guidance, enthusiastic encouragement and useful critiques. I could not have completed this project without their mentorship and support. Specifically, thank you Professor Saiba Varma for her advice and help with the drafts of this paper as well as the scope of the project. My grateful thanks are also extended to Professor Bonnie Kaiser for her help in quantitative and qualitative method design and data analysis. Lastly, to Professor Sandra Daley, who helped me build a lasting relationship with the UCSD School of Medicine.

Lastly, my completion of this project could not have been accomplished without the support of the ARC, medical students, and Dr. Weena Joshi. Thank you for allowing me to take time away from your work and supporting me on this journey. Your generosity, honesty, and empathy made the research informing this presentation possible.

ABSTRACT OF THE THESIS

What Medical Schools Don't Teach You

by

Rachel Kai-Xin Yim

Master of Arts of Global Health

University of California San Diego, 2021

Professor Saiba Varma, Chair

This project reveals how focusing on race in the formal medical school curriculum is inadequate because so much of medical school is informally thought outside of curriculum. These aspects of the hidden curriculum are not being addressed by proposed curricular changes through programs such as PRIME. Even when the medical curriculum does address race, it does so in ways that reinforce racist ideas (race as a biological determinant of health). The lack of understanding of how racism is embedded in existing institutional structures, the history of medicine and medical racism, are not at all addressed. Further, the microaggressions experienced by students of color both inside and outside the classroom require deeper cultural transformation. This project also calls for the need for antiracist and social justice work to be truly collective, to be the responsibility of each and every medical professional, rather than the burden of a few. Rather than a "choice" or "option," all students and staff must learn how to integrate knowledge of racism and colonialism in their training. Currently, the structure--which emphasizes individual volunteers to take on this work--causes certain students who take on this work and who encounter difficulties and resistances to blame themselves, while white students (or students not in the PRIME program) are able to overlook structural violence and other health determinants.

Introduction

This project emerged after both personal and political events. In response to the murder of George Flloyd, confrontation with the violence of racism in all its forms sparked protest and conversation across the country. As a student hoping to go to medical school, I watched how this discussion traveled, or did not travel, into medicine. As a future medical professional, I hoped that my professional development would include building capacity to combat the racial injustice that frequently undermines medical care. However, as critical race studies scholars' have powerfully documented, mere exposure to these lessons is insufficient to create medical professionals who can transform these into their everyday clinical practices. By drawing on the work of Linda Tuhiwau Smith, David L Brown & Rajesh Tandon, and Eve Tuck on decolonial and antiracist qualitative methodologies, my project engages and intervenes in these urgent social and political debates about the future of medical education while attending to my own specific location in a public university in southern California.

The Liaison Committee on Medical Education (LCME) is an accrediting body rooted in the tripartite mission for educational programs at schools of medicine in the United States and Canada (32). During a 1942 conference, the Association of American Medical Colleges (AAMC) and the American Medical Association (AMA) established the LCME to publish a guide of standards like the Directory of Accredited Medical Education Programs to help systematize and programmatize practices across all medical schools. (32). In order for medical schools to achieve and maintain accreditation, a medical education program leading to an MD or DO degree must meet the LCME accreditation standards contained in the LCME Functions and Structure document (32).

However, in 2020, the LCME published an updated "Function and Structure" guideline that had both mandatory and voluntary standards that Medical schools needed to or could choose to abide by. Standard 7, Curricular Content list outlines a recommended curriculum outline that schools follow: Biomedical, Behavioral, Social Sciences; Organ Systems/Life Cycle/Prevention/Symptoms/Signs/Differential Diagnosis, Treatment Planning; Scientific Method/ Clinical/ Translational Research; Critical Judgement/ Problem-Solving Skills; Societal Problems; Cultural Competence and Health Care , Disparities; Medical Ethics; Communication Skills; and Interprofessional Collaborative Skills. Out of nine of the overarching course curriculums, one, section 7.6 titled Cultural Competence and Health Care Disparities, examines racial disparities (11). However, this model, as stated previously, is optional. Section 7.6 states 4 objectives the curriculum should address: "The diverse manner in which people perceive health and illness and respond to various symptoms, diseases, and treatments"; "The basic principles of culturally competent health care"; "Recognition of the impact of disparities in health care on all populations and potential methods to eliminate health care disparities"; and "The knowledge, skills, and core professional attributes needed to provide effective care in a multidimensional and diverse society". While understanding the different ways individuals go about seeking treatment for their illness is very important, my research will show how this statement not only ends up hurting patients, but also medical students of color (32).

For instance, the UCSD School of Medicine created the PRIME-HEq program dedicated towards addressing health disparities and social justice issues. It is meant to be an inclusive program designed to build on students' interests and backgrounds in community service. PRIME-HEq faculty work with students to identify populations or communities at risk for health disparities in order for this subcohort of students to receive exposure, training, and the

opportunity to work with the identified group and further their passion and knowledge to better equip them to improve health equity. However, my findings demonstrate that this is inadequate because so much of medical school is informally thought outside of the curriculum. These aspects of the hidden curriculum are not being addressed by proposed curricular changes through programs such as PRIME.

By conducting a comprehensive literature review and secondary research of existing medical school curriculum, surveying medical student's mental well being, and performing semi-structured ethnographic interviews with BIPOC medical students to understand their experiences, feelings and perceptions of how race is taught in the medical curriculum, my findings highlight the urgent need to transform existing medical school curricula towards more socially and racially just frameworks and call upon the Medical School's leadership to take further decisive actions against structural racism and anti-Black violence that plagues underrepresented communities.

Methods

Medical Schools Analysis: Sampling Criteria

I researched existing medical school curricula at UCSD and across the US. To understand how many and which medical schools incorporated section 7.6 LCME guidelines, I analyzed the 4 year curriculum outline of 96 LCME accredited medical universities in the US to determine whether they were meeting the LCME's optional guideline mentioned previously.

I began gathering data on LCME accredited medical universities from the LCME accreditation website for the United States and Canada (32). I chose only LCME accredited medical schools because most medical facilities (clinics, hospitals, labs, etc.) only hire new practitioners from a school that has been LCME accredited. From there, I excluded any Canadian

medical universities in order to focus on the U.S. based institutions that annually enrolled at least 15,000 students. I did this in order to sample what the majority of medical students are learning in an accredited medical university in the United States. I made sure my selection ranged in MD/DO, and the year the school was founded (32). After selecting the universities, I created a data extraction table to evaluate if the universities' curriculum implemented the optional LCME policies (32). This rubric included questions that asked: is racism or any kind of social justice framework as a class taught, is the course mandatory, is the course optional, is race a part of their other courses, and are they meeting LCME's requirements? After developing the data extraction table, I examined only the 4-year pre-clinical and clinical curriculum outline on the medical school's website.

Lecture Analysis: Sampling Criteria

To further investigate how race is taught in medical education, I also sampled basic medical lectures from the required preclinical curriculum from UCSD. I analyzed the slides for contextual clues to determine if race was presented as a biologically salient factor or was contextualized as a form of social difference.

To do this, I only sampled basic science lecture slides from the required preclinical curriculum from UCSD and WMU. I limited my searches to only English-language slides. Slides were randomly chosen and given to me by medical students from UCSD and WMU. I specifically chose UCSD and WMU because they resemble well rounded characteristics that can be seen in different Medical Schools in the United States- UCSD is a Doctor of Medicine school that focuses on research whereas WMU is a Doctor of Osteopathic Medicine school that focuses on medical practice. From the group of lecture slides collected, I only included slides in the study that mentioned any race, slides that did not mention race were excluded. I then read 4 slides

before and 4 slides after (8 slides in total) for context clues surrounding the "race" slide to categorize if race was presented as a biologically salient factor or was contextualized by examining social differences. Slides that labeled race as a risk factor for any clinical condition were coded as biologically salient whereas slides that mentioned race and their social determinants were coded as socially presented.

Survey Design

I also conducted a survey to determine if there were significant differences between Black, Indigenous and People of Color (BIPOC) and non BIPOC students' experiences of medical school and their overall medical student's mental well being. The survey was designed in qualtrics by a medical student and only captured nominal and ordinal types of data. Here are a few questions asked: what do you racially identify as, how would you rate your mental well being, how would you rate your quality of sleep, etc.

There were two ways survey results were analyzed. First, I wanted to know what the typical mental well being is for students and potentially the different subgroups. In order to do this, I chose to do descriptive statistics and cross tabulation analysis. I exported my survey data in SPSS, cleaned the data and prepped it for analysis. By doing this, I generated contingency tables and diverging bar charts as representations of the overall responses in the survey. Separately, I also wanted to know if there is a difference between BIPOC and non BIPOC student's mental well being? In order to compare 2 independent nominal variables with dependent ordinal variables, I conducted an independent t-test. I converted all my likert data into sum scores because most mental health screeners in literature convert their likert scales into continuous variables, the central limit theorem justifies this conversion, and by adding up all the variables I actually can maintain variability in my data so that I can see where individuals are

falling across a wider range. Then, I exported my data to SPSS, cleaned the data and made it appropriate for analysis. I found that the data was parametric, and performed an independent t-test.

Interviews of Medical Students

Lastly, at the center of this project, I conducted 6 semi-structured ethnographic interviews with BIPOC medical students to understand their experiences, feelings and perceptions of how race is taught in the medical curriculum and doing antiracist work in the UCSD Medical school.

I approached UCSD medical students through the UCSD Anti-Racism Coalition, mass emailed a Google survey, and utilized snowball sampling as my recruitment strategy. Student recruitment included anyone enrolled in an LCME accredited medical university that was undergoing at least 1 preclinical course. At least half of my student participants referred me to other students for recruitment and as a result I created many small recruitment chains. In compliance with the human research protection protocol, I have kept the identifying information about participants and their affiliated institutions confidential and present data using generalized language to discuss the respondents and their schools (32). I stopped recruitment when I reached saturation.

My interview guide was structured in 3 different sections: an introduction, curricular questions, and reflection questions. I utilized the same interview guide with each medical student but probed for more in depth insights where necessary. In this analysis, I draw upon what medical students described during our interviews by comparing their stated intentions and experiences with their didactic material (e.g., syllabi, assignments, PowerPoint slides, lecture notes).

Results

Medical School Analysis

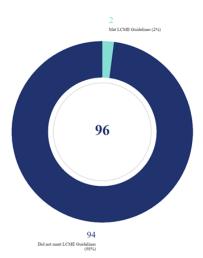


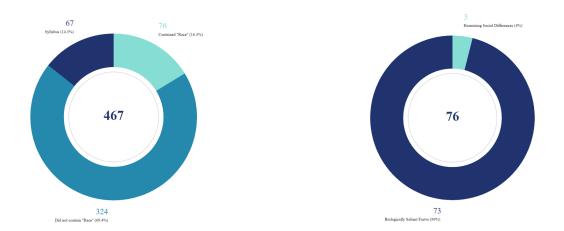
Figure 1: Medical Schools that Met Section 7.6 LCME Guideline From a total of 96 medical schools included in this paper, only 2 Medical Schools (2 percent) met the LCME 7.6 optional guidelines while 94 Medical Schools (98 percent) lacked any sort of social competency or race based curriculum.

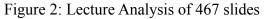
On LCME's accredited lists of medical schools, there were a total of 173 medical universities in the United States and Canada (32). Of the 173 total LCME medical universities, only 156 were LCME accredited medical schools located in the United States. Of the 156 LCME accredited United States medical universities, 60 were excluded due to the small population size of less than 15,000 enrolled students. In total, only 96 total medical universities were included in the internet analysis of medical schools. In the 96 included medical universities, 51 were Doctor of Osteopathic Medicine schools while 45 were Doctor of Medicine schools, 3 were from Alabama, 3 from Arizona, 3 from Arkansas, 5 from California, 2 from Colorado, 1 from Connecticut, 1 from District of Columbia, 3 from Florida, 2 from Georgia, 1 from Hawaii, 1 from Idaho, 2 from Illinois, 2 from Indiana, 2 from Iowa, 1 from Kansas, 2 from Mentucky, 2 from louisiana, 1 from Maina, 1 from Maryland, 1 from Messachusetts, 2 from Michigan, 1 from Minnesota, 2 from Mississippi, 3 from Missouri, 1 from Nebraska, 2 from Nevada, 1 from new

Hampshire, 2 from New Jersey, 2 from New Mexico, 5 from New York, 2 from North Carolina, 1 from North Dakota, 2 from Ohio, 2 from Oklahoma, 2 from Oregon, 3 from Pennsylvania, 1 from Pomona, 1 from puerto rico, 1 from Rhode Island, 2 from South Carolina, 1 from South Dakota, 2 from Tennessee, 4 from Texas, 3 from Utah, 1 from Vermont, 2 from Virginia, 2 from Washington, 2 from West Virginia, and 1 from Wisconsin (32).

In my analysis, only 2 (2%) medical universities, Emory School of Medicine and John Hopkins School of Medicine (both Doctor of Medicine schools), taught racism or any kind of social justice framework as a class, made it mandatory, and most importantly met the LCME optional section 7.6 guideline (17)(24). The other 94 medical universities (98%) did not list any kind of race or social justice class which made the other 4 questions (Is the course mandatory, is the course optional, are they cognisant about race in their other courses, and are they meeting optional LCME requirements?) not applicable.

Lecture Slides Analysis





In 467 total slides collected, 67 were of syllabus (14.3 percent), 324 did not contain "race" (69.4 percent), and 76 contained race (16.3 percent). Of the 76 slides that were included in this study, 73 were coded as biologically salient (96 percent), while 3 were coded as examining social differences (4 percent).

To further investigate my observations on the use of race in medical education, I sampled basic science lecture slides from the required preclinical curriculum. In total, 467 slides were given to me by 3 individuals: 2 medical students from Western Medical University and 1 medical student from University of California, San Diego. The 2 medical students were 1st and 2nd years from WMU and gave me 214 slides from 3 courses: Organ Systems: Musculoskeletal, Dermatology, Hematology; Clinical Skills: Medical Reasoning, Osteopathic Manipulative Medicine; and Foundational Topics: Anatomy, Physiology, Biochemistry, Immunology, Genetics. The rest of the 253 slides came from one 3rd year medical student at UCSD enrolled in 3 courses: Medicine 401, Neurology, and pediatrics. Of the total 467 slides, 76 slides met the inclusion criteria for the review, 67 slides were syllabi, and 324 slides did not contain any "race" related terminology, and 0 slides were in a language other than English.

I found that race, in 73 out of 76 of the slides, was presented as a biologically salient factor, while only 3 of the slides contextualized race by examining social differences. Of the 3 slides that contextualized race by examining social differences, 2 showed race as a "risk factor" but added that it has to do with "economic, political, and social factors", and the last 1 slide labeled race as a "socially constructed term that does not create biological differences". This means only 4% of my slide analysis mentioned race but did not acknowledge the social determinants of racialized disease disparities. Regarding methodology, 50% of slides presented race alongside epidemiology without context; 42% as a risk, diagnostic, or treatment factor; 6% as an element of a patient case; and 2% as an indication for race correction of a physiological measurement. I found that race is often presented in medical school lectures without context or justification. For example, racial categories are used as independent risk factors for diseases such as sarcoidosis, cystic fibrosis, hypertension, focal segmental glomerulonephritis, etc. These racial

associations were depicted on the slides as a tool to be used as diagnostic "hints" in medical school exams to correctly diagnose a patient. On the second-year pulmonology lecture slides that had practice questions, two questions included a patient's race. Both hypothetical patients were "African American," and both had sarcoidosis. On other lecture slides, it teaches the practice of race "correction" for highly variable physiological measures such as spirometry values and glomerular filtration rates. The principle of race correction relies on the idea that people of different racial categories are inherently and biologically different, and therefore their bodily measurements require correction when applying using a white standard (45). Race-based adjustment of spirometer values, for example, stems from data produced during the era of plantation slavery, when civil war physicians compared the lungs of black and white soldiers (45). However, recent reviews of current spirometry data find that evidence for intrinsic racial variation is poor and suggests that this practice decreases black Americans' eligibility for disability because of the difficulty of documenting disease on top of presumed worse lung function (45).

Survey Analysis

In total, I received 76+ responses. During my analysis, I found that the data was parametric, and performed an independent t-test. During my independent t-test analysis, I got a 2 tailed p-value of 0.016. This meant that I could reject the null hypothesis that BIPOC and non-BIPOC students have the same mental well being. In other words, both groups have statistically significant different mental well being scores.

Interviews of Medical Students Analysis

The experiences of students motivated me to reconstruct the curricular structure of each of the interviews, identifying when and how the instruction about race and racism occurred.

Through these interviews, I uncovered dangerous ways in which racial inequalities were taught. When race was taught in classrooms, there was a high correlation of students saying that students of color were relied on for student experiences to teach social inequalities. Many students mentioned that they were involved in small group settings instead of the lecture setting as the common format for instruction on social inequalities; the small group setting enables the participation of students of color because the small group is predicated on student participation. The notion that the small group was the more effective learning modality and "a lot better than a lecture" was echoed by other student's perceptions who believed that instructors strived to have more instruction time in a small group setting rather than in a lecture setting for their courses. Another student also stated their ratio of time as "some lecture, but that's probably less than 20 percent, easily, of our course. The vast majority of it is small group based." While the time dedicated to lecture and small groups varies by course, students mentioned how medical educators overwhelmingly pointed to the small group as the desired environment for the instruction on social inequalities like race. In general, the small group is a part of the formal curricular structure, reflecting a set of deliberate choices made by educators to teach social inequalities in this forum. These choices are undercut by the belief that students learn from one another, one student mentioned that faculty always explained that "the students themselves really learn from each other. That's one of the things we try to emphasize in the small groups is that we're in it together as a team, learning." According to one student, medical educators felt this intimate, team-like structure of the small group is what makes it so beneficial for student learning. With frequent and consistent meetings of the same 8 to 12 students and 1 to 2 faculty facilitators per group over the course of any racial conversations, this student expressed how

medical educators expressed their impression that the small group provides a place for students to talk about possibly divisive or sensitive topics in a supportive environment.

Discussion

Medical School Analysis

I found that out of 96 Medical Schools, only 2 (Emory and Johns Hopkins) met the optional LCME guidelines. With only 2% of schools meeting the LCME's optional guidelines, it shows how marginalized cultural competency or anti-racism curricula are in medical schools and how LCME's section 7.6 optional standard is inefficient to enforce important guidelines. What is depicted in the LCME guideline is insufficient to translate into the curriculum broadcasted on Medical School's websites. Even if this content is taught, the absence of language around race, equity and social justice on medical schools' websites--which are public-facing documents--signals the relative unimportance of, or lack of integration of, social understandings of race and racism in the curriculum.

Unintentionally, I found it odd that many medical schools had anti-racists ideologies plastered on their mission and vision statements but lacked actual implementation when it came to the curriculum they taught their medical students. I believe this also shows how low anti-racists curriculum ranks in the real priorities Medical Universities have. This virtual signaling of anti-racists ideologies on their homepage is an act of woke washing or brand activism (25)(26). Especially in this postmodern culture of politically aware teens, medical universities can actually have the greatest reach and impact if they include anti-racists pedagogy on their home page; however, the lack of authenticity to actually act on their "branding" falls short when looking at practice (25)(26).

Lecture Slides Analysis

During my lecture analysis, I found that out of 76 slides, 73 presented race as a biologically salient factor while only 3 discussed race as a form of social difference. This shows that even when race was talked about in the classroom (which it rarely was), it is mostly presented as a disease risk factor. In my Lecture Analysis, I found that race was talked about in only 16.3% of the slides; however, I found that of those slides that included race, it was almost always presented as a biologically salient factor while only 4 percent of slides contextualized race by examining social differences. This showed that even when race was rarely talked about in the classroom, many times it was presented as a biological risk factor that led to certain diseases.

Genetic studies demonstrate that 6.3% of genetic variance is determined by race, and that genetic differences are far higher within than between racial groups (29). There are broad bodies of literature and dominant discourses of race being taught as non-biological; however, there is a huge disconnect between discussions of race and disparities in these curricula and in core science courses (4)(13)(14)(16)(28)(29). Specifically, required preclinical science lecturers often operationalize race as a biological concept, framing racialized disparities as inherent in bodies which strengthens students' existing racial biases. This presentation of race as an essential component of epidemiology, risk, diagnosis, and treatment without social context is problematic, as a broad body of literature supports that race is not a robust biological category. The use of race without social context in these lectures is framed as a medical category which implicitly contributes to the idea that certain races are more prone to certain diseases (23)(28). On top of this, this conception of race also privileges biomedical concepts of race over social understandings of health status or disease etiology (7)(8)(11). This inaccurate portrayal of race

may cause physicians to employ racial signifiers as clinically meaningful without full examination or understanding of their complex formation like socio economic issues or historical trauma that might be more salient to the patient's illness experiences (43)(45). Emphasizing and repeating race–disease associations may lead to harms such as delayed diagnosis and medical errors (7)(8)(11). Lecturers' continued suggestion of race as explicit or implicit biology markers that differences in disease incidence can be explained by genetic or physiologic risk. This is problematic not only because race is not a firm biological category but, further, because this framing of health disparities allows ignorance of multifactorial social and structural determinants of disease. Such emphasis on biology fails to expose the complex reality of inequality in relation to race (21)(22)(28).

Interview Analysis

As I described, I focused my semi-structured ethnographic interviews on students who are already engaged in equity, diversity and inclusion work in the medical school. A key group were students enrolled in the PRIME program. The students I interviewed expressed ambivalence towards the PRIME program's goals. While several described the comfort that a small cohort of roughly 10 provides, through interviews, stories of conflict between faculty and students emerged, as well as students' concerns that this program inadvertently displaces the responsibility of social justice work onto students of color, further disadvantaging minoritized students, and enforcing the idea that their work is unimportant.

Students enrolled in the PRIME program reflected on the differences between their curriculum and the general curriculum that medical students experience. PRIME students are the only group of medical students *required* to enroll in race-based electives which means that non PRIME students who are primarily white, are not expected to develop cultural competency. This

separation in cohorts has displaced the responsibility of social justice work and hurt students of

color. As one PRIME student shared:

"I would say last year...I spent more time doing things related to anti racism and diversity than I did study. And that's saying a lot for medical school, especially when I passed all my classes. So I was basically living two jobs, medical school and being a social advocate for change, which had very bad consequences for my mental health... I had one of the worst major depressive episodes I've ever had over the summer because I just felt so overwhelmed with so many responsibilities.... There are some things that I volunteered for, but there are other things where... people asked for my input because I was Black, which I guess I appreciated. But I had so many breakdowns. And I don't ever want to be in that place ever again. *And I hated being here*. To be quite honest, I wanted to drop out, I felt *so overworked unnecessarily and just wanted to have a normal experience*."

This student experienced the social justice and antiracism work they were doing as

"extra" labor that was voluntary, a fact that reveals how this labor is often seen as undervalued or hidden from the "expected" work of being a successful medical student. Yet, simply because of their identity as a Black student, they were called upon to participate in antiracism projects, thus revealing the ways that antiracism work can fall disproportionately on students of color. Further, and more troublingly, the student described how this unaccounted for work had detrimental mental health consequences for them. This testimony reveals how PRIME students can be called upon to spend additional time, money, and emotional and cognitive energy to adhere to the social and racial justice work assumed by the PRIME program.

Second, Interviewees also expressed frustration at the ways race is taught in their curriculum, in a way that often reifies race as a category of biological difference that makes some groups of people more susceptible to disease. For example, one student problematized how they were taught that Black people are more prone to c-sections instead of highlighting economic and social factors that play a significant role that shape this outcome, such as lack of access to quality prenatal care. Another student described QUOTE "sitting in a lecture—one of five Black students in the room—and hearing that Black people are inherently more prone to disease."

These observations about how race is taught were also confirmed in my analysis of preclinical lecture slides used to teach 1st and 2nd year organ system courses at UCSD. In my Lecture Analysis, I found that race was talked about in 16.3% of the slides; however, I found that those slides that included race, almost always presented race as a biologically salient factor, while only 4 percent of slides contextualized race as a social difference. This shows that even when race was talked about in the classroom, it was most often presented as a risk factor for certain diseases. Presenting race as an essential component of epidemiology, risk, diagnosis, and treatment without social context is problematic because it contributes to the idea that certain races are more prone to certain diseases (aka pathologizing race). One student shared:

"In one practice question we were doing, it asked how we would diagnose this Black patient with these other biological markers. Since the patient was Black, it was kind of unsaid, but the professor included it as a hint to the answer- sickle cell. Since there's a link between Black people and sickle cell. Before even reading the rest of the question, you just knew the answer was already sickle cell and it didn't sit right with me that Black was used as a hint because it doesn't necessarily need to be a hint to that question... I know there are outside reasons why there is a correlation, but I knew that other people didn't know and just automatically think sickle cell when they see Black."

This student described how inaccurate portrayals of race may cause physicians to employ racial signifiers as clinically meaningful without full examination or understanding what they called "outside reasons," including complex formations like socio economic issues, colonialism, or other significant events and historical traumas that might shape a patient's biology and their illness experiences. Emphasizing race–disease associations may lead to harms such as delayed diagnosis and medical errors, while ignoring multifactorial social and structural determinants of disease. Such emphasis on biology fails to expose the complex reality of inequality in relation to race and it also harms students of color who may feel stigmatized and marginalized as a result of these experiences in the classroom.

Third, in curricular contexts where social and economic inequalities *are* taught, students of color are often required to take on additional roles as "educators" rather than function in these spaces as students, as is their right. For instance, 2 PRIME students mentioned how they were inordinately relied upon for input when instructors were teaching about social inequalities. In "The Conscripted Curriculum and the Reproduction of Racial Inequalities in Contemporary U.S. Medical Education", Lauren D. Olsen, a medical sociologist, has shown, placing burdens on students or people of color to "teach" race to white counterparts can have negative consequences to their own learning and mental health. As one student shared:

"During one of my [course subject] classes, the professor would put us in a small group where I was the only Black person. I felt the need to lead the discussion about why diversity matters [because] I had had a conversation with my roommate the previous night, in which, in one of his classes, someone had said "I don't get why we're talking about diversity," and the room had been silent and my roommate who's a Black gay man had said, "I guess I'll talk."

This incident is problematic for a couple of reasons. One, the burden of teaching about race to white students falls on BIPOC students. Students of color, especially those enrolled in the PRIME program, bear the burden of sharing their personal experiences and knowledge about race and issues of social justice to their non BIPOC counterparts and to "convince" them of their value. Students of color become instrumentalized as tools to help their white peers overcome their racial prejudices. And while there are many students of color willing to actively engage with their white peers on issues of race, there are many for whom this is unpaid and emotionally

taxing labor. This ultimately instrumentalizes students of color in transforming white subjectivities.

Fourth, the UCSD School of Medicine serves as a site of control. This form of power is not just imposed from above by the medical school, but also from below. Being a "normal" medical student means privileging westernized forms of medicine, managing their own emotions to suit the comfort of their white peers in order to survive professionally, and taking part in the culture of medicine. Many BIPOC students shared the discomforts of pushing back on inappropriate racial depictions within their own peer groups due to conflicts with the ideas of being a "normal" medical student. For instance, one interviewee shared,

"Like I know my other peers in PRIME got my back, but everyone else here was white and I know sometimes stuff like this gets dismissed or ignored. It's never, like, wow, we should be thinking about that. Or like what do you mean. And *I am just so tired of being "that person" that always talks about race. But then it's like, who else will bring it up if not me."*

Here, Biopower is demonstrated because it assumes that all medical students are working towards becoming that doctor, as a result, labeling minoritized students that push back on these problematic comments as "that person". Students that do anti-racist work are labeled as obtrusive and obstacles because in relation to the "normal" medical student, they are challenging. Due to this, students of color feel pressure to remain silent about injustice or inequalities until they graduate and afford the MD degree. This serves as a vehicle of power because it is embedded in discourses and norms that are part of the practices, habits, and interactions of the path to an MD. This unintentionally creates deep internalized conflict of insecurities and doubts of the work they are doing and manifests in forms of isolation, shame, and leads to normalizing curriculum as the only source of influential change. By stripping students of the ability and importance of social justice work, students can only internalize medicine as operating on the level of the individual and cannot see external forces. This creates docile and submissive students and staff, even when they are trying to commit to doing anti-racist work. When asked what students feel like they have lost in the process of medical training, one shared:

"Myself. I know that sounds weird, but I am always constantly choosing to have to pick between me, the social justice work I do, and being a student. Sometimes I wonder if the work is even worth it. I'm really insecure about it, but why am I putting in so much effort when clearly administrator do not care about what happens to me. And that's like what medical school are like, it's already very busy and then we put in extra time into work that our administration should be doing, and then we crash and burn because we forgot about ourselves. This is like time I could be using to do other things but it's like that's how important it is to like students. I want to emphasize, I want this, students want this, but students are like fighting really hard for this and they don't feel cared for or important. Sometimes, I wish I could just easily look away and not care. I wonder if it will be easier: I know this sounds horrible. But it's like I am in 3 different pieces and I need to cut a part of me out in order to actually care for myself."

This student's accounts of needing to cut off a part of themselves in order to become a docile submissive doctor while fighting against the obedient institution of medicine, speaks to the forms of invisible social control in the medical school. As depicted, by pushing back, you are essentially getting left behind because you are not falling within the expected standard medical student. To be a "normal" medical student is not just the right way, it is the good way and in this case healthiest. Choosing to be a medical student means you have to trade in your worldviews for those privileged by the culture of medicine.

Lastly, the UCSD School of Medicine is aware of some of these dynamics of undue burdens being placed on students of color. There are ongoing efforts to reform the curriculum; however, there are not without contestations. In an effort to redistribute the burden, the UCSD school of medicine implemented a health equity thread. Much of the focus of the health equity thread is on 1st and 2nd year organ system courses and extracurriculars. However, throughout my interviews, many students voice how they experienced immense push back to any significant structural change. One interviewee shared how,

"This thread was supposed to seamlessly intertwine with each core. But because our core curriculum is rigid and inflexible...I don't think they're necessarily open to letting the health equity thread actually permeate into the curriculum. I've heard of a lot of obstacles. [name] told me that there is a lot of push back and not enough time to incorporate this extra information into the curriculum. Even though this is probably one of the most important parts about it. *I think it's honestly just for talk and to settle us down*."

This student's mention of the health equity thread being implemented just to "settle us down" shows that students of color experience this diversity initiative as window dressing rather than deep transformations. This powerful quote raises the question, where does anti-racist work actually fall in the list of UCSD school of medicine priorities? According to students of color, there is a lack of authenticity to actually act to address issues of diversity, equity and inclusion. Even the committee meant to push this project forward is made up of overworked and unpaid students and only a single paid administrator. Being so under-resourced, supported, and staffed, individuals become paralyzed and are unable to think past curricular changes. To actually commit to anti-racist work means to undo admission, structures, cirriculum, and so much more.

Conclusion

First, this project reveals how focusing on race in the formal medical school curriculum is inadequate because so much of medical school is informally thought outside of curriculum. These aspects of the hidden curriculum are not being addressed by proposed curricular changes through programs such as PRIME. Even when the medical curriculum does address race, it does so in ways that reinforce racist ideas (race as a biological determinant of health). The lack of

understanding of how racism is embedded in existing institutional structures, the history of medicine and medical racism, are not at all addressed. Further, the microaggressions experienced by students of color both inside and outside the classroom require deeper cultural transformation.

Second, this project calls for the need for antiracist and social justice work to be truly collective, to be the responsibility of each and every medical professional, rather than the burden of a few. Rather than a "choice" or "option," all students and staff must learn how to integrate knowledge of racism and colonialism in their training. Currently, the structure--which emphasizes individual volunteers to take on this work--causes certain students who take on this work and who encounter difficulties and resistances to blame themselves, while white students (or students not in the PRIME program) are able to overlook structural violence and other health determinants.

Third, Medical schools must develop, longitudinally reinforce, and evaluate skills that will equip their graduates to combat racism and structural oppression. Competency in these areas should be enforced as thoughtfully and rigorously as 3rd and 4th year traditional clinical training is. Standardization and consistent evaluation of these structural and anti-racist practices would serve not only to bolster skills and determine the effectiveness of the curriculum but would also signal that such teaching is fundamental, not supplementary, to the role of future medical physicians.

Finally, this project calls for the creation of a mandatory anti-racist medical school curriculum that does not currently exist in the vast majority of medical schools. This will require not just one course about systematic racism, but an infusion across the entire curriculum. This curriculum should also include ways to mitigate or eliminate racism's harms, remove race-based medicine in the pre-clinical and clinical curriculum, teach race as a social construct, understand

the impacts of systematic racism on health, (CLICK) and have medical institutions recognize their own complicities in colonialism and racism. While this is not an exhaustive list, it is a necessary and an urgently needed starting point.

References

- 1. Anderson, Warwick. 2008. "Teaching Race at Medical School: Social Scientists on the Margin." Social Studies of Science 38(5):785–800.
- 2. Association of American Medical Colleges. 2016. "Diversity in Medical Education: Facts and Figures 2016." Vol. 6. Facts and Figures Report. Washington, DC: AAMC.
- Association of American Medical Colleges. 2018. "Total Enrollment by U.S. Medical School and Race/ Ethnicity, 2017–2018." Vol. 3. FACTS: Applicants, Matriculants, Enrollment, Graduates, MD-PhD, and Residency Applicants Data. Washington, DC: AAMC.
- Bastedo, Michael N., and Nicholas A. Bowman. 2010. "The U.S. News and World Report College Rankings: Modeling Institutional Effects on Organizational Reputation." American Journal of Education 116(2):163–83.
- Becker, Howard, Blanche Geer, Everett C. Hughes, and Anselm C. Strauss. 1961. Boys in White: Student Culture in Medical School. Chicago, IL: University of Chicago Press. Benjamin, Ruha. 2016. "Catching Our Breath: Critical Race STS and the Carceral Imagination." Engaging Science, Technology, and Society 2:145–56.
- Bosk, Charles. 1979. Forgive and Remember: Managing Medical Failure. Chicago, IL: University of Chicago Press. Brown, Phil, Brian Mayer, Stephen Zavestoski, Theo Luebke, Joshua Mandelbaum, and Sabrina McCormick. 2003. "The Health Politics of Asthma: Environmental Justice and Collective Illness Experience in the United States." Social Science & Medicine 57(3):453–64.
- 7. Brown, Tony N. 2000. "Being Black and Feeling Blue: The Mental Health Consequences of Racial Discrimination." Race and Society 2(2):117–31.
- Brunsma, David L., David G. Embrick, and Jean H. Shin. 2017. "Graduate Students of Color: Race, Racism, and Mentoring in the White Waters of Academia." Sociology of Race and Ethnicity 3(1):1–13.
- Byrd, Michael A., and Linda A. Clayton. 2001. "Race, Medicine and Healthcare in the United States: A Historical Survey." Journal of the National Medical Association 93(3):11–34.
- 10. Charmaz, Kathy. 2006. Constructing Grounded Theory: A Practical Guide through Qualitative Analysis. Thousand Oaks, CA: Sage. Cunningham, Brooke A., Vence L.

Bonham, Sherril L. Sellers, Hsin-Chieh Yeh, and Lisa Cooper. 2014. "Physicians' Anxiety Due to Uncertainty and Use of Race in Medical Decision Making." Medical Care 52(8):728–33.

- 11. Cyrus, Kali D. 2017. "Medical Education and the Minority Tax." Journal of the American Medical Association 317(18):1833–34.
- DiMaggio, Paul J., and Walter Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." American Sociological Review 48(2):147–60.
- Duster, Troy. 2005. "Medicine. Race and Reification in Science." Science 307(5712):1050–51.
- 14. Epstein, Steven. 2007. Inclusion: The Politics of Difference in Medical Research. Chicago, IL: University of Chicago Press.
- 15. Feagin, Joe R., and Zinobia Bennefield. 2014. "Systemic Racism and U.S. Healthcare." Social Science & Medicine 103(1):7–14.
- 16. Flinders, David J., Nel Noddings, and Stephen J. Thornton. 1986. "The Null Curriculum: Its Theoretical Basis and Practical Implications." Curriculum Inquiry 16(1):33–42.
- 17. "Four Phases in Four Years." Four Phases in Four Years | Emory School of Medicine, med.emory.edu/education/programs/md/curriculum/4phases/index.html.
- Freidson, Eliot. 1970. Profession of Medicine: A Study of the Sociology of Applied Knowledge. New York, NY: Dodd, Mead. Gamble, Vanessa N. 1997. "Under the Shadow of Tuskegee: African Americans and Healthcare." American Journal of Public Health 87(11):1773–78.
- Greil, Arthur L., Julia McQuillan, Karina M. Shreffler, Katherine M. Johnson, and Kathleen S. SlausonBlevins. 2011. "Race-Ethnicity and Medical Services for Infertility: Stratified Reproduction in a Population-Based Sample of U.S. Women." Journal of Health and Social Behavior 52(4):493–509.
- Hafferty, Frederic W. 1998. "Beyond Curriculum Reform: Confronting Medicine's Hidden Curriculum." Academic Medicine 73(4):193–97.

- Hafferty, Frederic W. 2000. "Reconfiguring the Sociology of Medical Education: Emerging Topics and Pressing Issues." Pp 238–57 in Handbook of Medical Sociology, edited by C. Bird, P. Conrad, and A. Fremont. Upper Saddle River, NJ: Prentice Hall.
- 22. Hafferty, Frederic W., and Joseph F. O'Donnell. 2015. The Hidden Curriculum in Health Professional Education. Hanover, NH: Dartmouth College Press.
- 23. Hardeman RR;Burgess D;Phelan S;Yeazel M;Nelson D;van Ryn M;, Rachel. "Medical Student Socio-Demographic Characteristics and Attitudes toward Patient Centered Care: Do Race, Socioeconomic Status and Gender Matter? A Report from the Medical Student CHANGES Study." Patient Education and Counseling, U.S. National Library of Medicine, 2014, pubmed.ncbi.nlm.nih.gov/25499003/.
- 24. "Home." Johns Hopkins University, www.jhu.edu/.
- 25. Jackson, Pamela Brayboy, Peggy Thoits, and Howard F. Taylor. 1995. "Composition of the Workplace and Psychological Well-Being: The Effects of Tokenism on America's Black Elite." Social Forces 74(2):543–57.
- Jenkins, Tania M. 2018. "Dual Autonomies, Divergent Approaches: How Stratification in Medical Education Shapes Approaches to Patient Care." Journal of Health and Social Behavior 59(2):268–82.
- Joseph, Tiffany D., and Laura E. Hirshfield. 2011. "Why Don't You Get Somebody New to Do It?' Race and Cultural Taxation in the Academy." Ethnic and Racial Studies 34(1):121–41.
- 28. J. Tsai is a second-year medical student, Jennifer. "Race Matters? Examining and Rethinking Race Portrayal in...: Academic Medicine." LWW, 2016, journals.lww.com/academicmedicine/Fulltext/2016/07000/Race_Matters_Examining_an d_Rethinking_Race.14.aspx.
- 29. Kellogg, Katherine C. 2011. Challenging Operations: Medical Reform and Resistance in Surgery. Chicago, IL: University of Chicago Press.
- 30. Lauren D;, Olsen. "The Conscripted Curriculum and the Reproduction of Racial Inequalities in Contemporary U.S. Medical Education." Journal of Health and Social Behavior, U.S. National Library of Medicine, 2019, pubmed.ncbi.nlm.nih.gov/30650990/.
- 31. Lawrence, Elizabeth. "Doctors Aren't Always Taught to Spot Racism in Health Care." Medscape, Medscape, 18 Nov. 2020, www.medscape.com/viewarticle/941163.

- 32. Liaison Committee on Medical Education. 2018. "Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the MD Degree." Washington, DC: Association of American Medical Colleges.
- Menchik, Daniel. 2017. "Interdependent Career Types and Divergent Standpoints on the Use of Advanced Technology in Medicine." Journal of Health and Social Behavior 58(4):488–502.
- Merton, Robert K., George G. Reader, and Patricia L. Kendall. 1957. The Student-Physician: Introductory Studies in the Sociology of Medical Education. Cambridge, MA: Harvard University Press.
- 35. Michalec, Barret, Tina Martimianakis, Jon Tilburt, and Frederic W. Hafferty. 2017. "Why It's Unjust to Expect Location-Specific, Language-Specific, or Population-Specific Service from Students with Underrepresented Minority or Low-Income Backgrounds." AMA Journal of Ethics 19(3):238–44.
- 36. Morrison, Emory, and Douglas Grbic. 2015. "Dimensions of Diversity and Perception of Having Learned from Individuals from Different Backgrounds: The Particular Importance of Racial Diversity." Academic Medicine 90(7):937–40.
- 37. Murphy, Marie. 2016. "Hiding in Plain Sight: The Production of Heteronormativity in Medical Education." Journal of Contemporary Ethnography 45(3):256–89.
- 38. Olds, G. Richard. "Medical Schools Don't Teach These Key Lessons and It's Ruining Our Health." The Washington Post, WP Company, 1 Mar. 2019, www.washingtonpost.com/posteverything/wp/2014/12/31/medical-schools-dont-teach-th ese-key-lessons-and-its-ruining-our-health/.
- 39. Omi, Michael, and Howard Winant. 1994. Racial Formation in the United States: From the 1960s to the 1990s. New York, NY: Routledge.
- 40. Posted byUC San Diego Anti-Racism Coalition. "Anti-Racist Demands." UCSD Anti-Racism Coalition, 8 June 2020, ucsdantiracismcoalition.wordpress.com/2020/06/07/anti-racist-demands-2/.
- 41. Saunders, Barry F., and Lundy Braun. 2017. "Reforming the Use of Race in Medical Pedagogy." American Journal of Bioethics 17(9):50–52.
- 42. Sharma, Malika and Ayelet Kuper. 2017. "The Elephant in the Room: Talking Race in Medical Education." Advances in Health Sciences Education 22(3):761–64.

- 43. Shim, Janet K. 2014. Heart-Sick: The Politics of Risk, Inequality, and Heart Disease. New York, NY: New York University Press.
- 44. White Coats 4 Black Lives. 2018. "Racial Justice Report Card." http://whitecoats4blacklives.org/wp-content/ uploads/2018/04/WC4BL-Racial-Justice-ReportCard-2018-Full-Report-2.pdf.
- 45. Williams, David R. 2012. "Miles to Go Before We Sleep: Racial Inequalities in Health." Journal of Health and Social Behavior 53(3):279–95.