HIDDEN BIASES, VISIBLE CONSEQUENCES: UNVEILING THE IMPACT OF THE HIDDEN CURRICULUM OF MEDICAL SCHOOL ADMISSIONS ON WOMEN OF COLOR AND ITS RIPPLE EFFECT ON HEALTHCARE EQUITY

by

Chelsea Wesnofske

(Under the Direction of Ginny Boss)

ABSTRACT

This study uses discriminatory design theory and intersectionality as a framework to illuminate how pre-med women of color experience the admissions process for medical programs. Additionally, I examine how participants made decisions about what to censor and what to divulge in the stories that they shared with admissions committees through their personal statements. The findings demonstrate the barriers women of color experience accessing medical school education and how these perpetuate disparities in healthcare more broadly. Several recommendations for practice have been derived from the findings and are provided.

INDEX WORDS: pre-med women of color, medical school admissions, hidden curriculum, discriminatory design, healthcare disparities

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DEDICATION

I dedicate this study to our students, our future leaders, healers, teachers, thinkers, and stewards of our communities. I also dedicate this research to my participants. Without you, this would have been impossible. Thank you for trusting me with your stories and using your experiences to be agents of change for the women who come after you.

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CHAPTER 1

Introduction

As a previous pre-health advisor and career consultant for pre-health students, I have encountered hundreds of students pursuing the pre-med track at our university. Over time, I have noticed a trend among my students who identify as women of color as they prepare for their medical school applications. While they may not use this specific language, what it appears they are doing is trying to anticipate the implicit racial and gender biases of medical school admissions committees. I mostly observed this as I reviewed application materials with students such as essays and personal statements and helped them prepare for the interview process. There is a concern among women of color of how their words, language, and even experiences will be perceived by admissions committees that oftentimes, they assume to be comprised of mostly White men.

I distinctly remember one student who was concerned that she may need to reword her essay because another advisor on campus informed her that it came off as too aggressive toward White people as the student named racial disparities in the healthcare system that ultimately led to her father's premature death. Her father was Black and a previously incarcerated man with known chronic illnesses and no insurance and the student openly discussed her observations of the discrimination her father experienced in the healthcare setting. She also discussed the immense lack of representation of people of color in healthcare which directly impacted her clinical experiences. For example, all but one physician that she shadowed was White. When speaking with this student, while she felt these experiences were her most authentic inspiration

for pursuing medical school paired with her desire to increase representation in the field, she was concerned about what she perceived to be a committee of mostly White men would think of her words and experiences in her application materials. She was anxious about being labeled the "Angry Black Woman" and not be accepted to any of her programs of interest (Jones & Norwood, 2017). Tropes, like the one previously mentioned, stem out of implicit bias which is a result of longstanding oppression against Black women in the United States (Jones & Norwood, 2017). I started to notice similar concerns among other racially minoritized women and became curious about this phenomenon of anticipating implicit bias in medical school admissions processes, an added barrier and burden to students of color. I noticed though, that my conversations with students who identified as women of color versus those that identified as men of color were quite different. Even though both groups of students experienced some of the same challenges to gaining access to medical school, the students of color who identified as women were more specifically concerned with how they would be perceived in their personal statements, frequently making comments like "I don't want to be stereotyped," "Do I sound too emotional?" "Does this sound too aggressive?" while the students who identified as men were more concerned about being competitive overall in their applications. Women used explicit language around being worried that admissions committees would perceive them as too emotional or uncredible or risk being stereotyped. Because of how gendered these comments and anxieties seemed, I decided to specifically examine how women of color experience the medical school admissions process.

The focus of this research is on how college women of color navigate and experience the medical school admissions process at institutions in the state of Georgia. Through interviews, and document analysis, this study examines how these students find support on their pre-med

track and prepare for the admissions process. Through these various methods, I strive to offer a better understanding of how students persist through the pre-med hidden curriculum, prepare for the admissions process, find support throughout the process, and experience bias and/or barriers of the admissions process. The purpose of this study is twofold. First, I aim to contribute to the literature on women of color pursuing medical programs, because as I conducted my literature review for this study, I observed a tremendous gap in work that elevates the experiences of women color specifically on the pre-med track and how they navigate medical school admissions. Second, this study offers meaningful recommendations for institutions to consider in supporting this population of students on their campuses and to bring awareness to medical school admissions committees to consider the important findings of this study as they prepare for their application cycles. The lack of diversity in healthcare has direct implications on the health and well-being of marginalized patients (Daley et al., 2021). This study contributes to a deeper understanding of one reason why this dearth of diversity in the field exists; discriminatory design elements embedded in the medical school admissions process that leads to the perpetuation of gatekeeping to the field at large.

Problem Statement

Literature shows that implicit bias against women and more specifically women of color exist in the medical school admissions process (Capers et al., 2017). It is also evident that there is a severe lack of gender and racial representation in the healthcare and STEM fields that directly impact students of color in their pursuit of medical school (Rosenthal et al., 2013). While it is evident that these students may anticipate implicit bias within the admissions process, it is less clear how these students have learned to anticipate such biases either consciously or subconsciously and how they experience the admissions process specifically. There are many

known barriers to medical school such as standardized tests, financial burdens, and lack of representative personnel (Hadinger, 2016) but there is little that provides a more holistic understanding of the experiences of women of color seeking medical school. There lacks discussion around the ecosystem that these students navigate that consists of known structural barriers both material and immaterial. This pre-med ecosystem that is laden with discriminatory design elements such as bias and hidden curricula, provides valuable insights into the perpetuation of disparities in healthcare broadly and in medical education specifically. To this point, studies have shown that women of color in STEM programs have indicated that the race and gender of their advisors impacted their experience in their graduate programs (Wilkins-Yel et al., 2023). This study offers a more holistic and deeper analysis of the experiences of pre-med women of color with the medical school admissions process and the implications this may have on healthcare equity.

Purpose of the Study

The purpose of this study is to better understand the experiences of pre-med women of color in the medical school admissions process. This study is interested in learning how students navigate the admissions process, find support in their pre-med track, and understand the pre-med pathway. To examine these aspects, I employ narrative inquiry methodology as my approach to my methods of individual semi-structured interviews with students who have experienced or are currently experiencing medical school applications and document analysis of their personal statements for applications. These methods will help to reveal how women of color experience/d the admissions process, challenges they encountered, and what support looked like for them both formally (e.g., academic advisor or pre-med advisor) and informally (e.g., peer support). It is my hope that the results of this study will provide some practical recommendations for institutions in

terms of supporting women of color on the pre-med track as well as provide data for medical programs to address inequities in their admissions processes. An additional purpose of this study is to provide a contribution to the literature that includes an examination of both race and gender of students as it pertains to accessing medical education.

Research Questions

1. How do pre-med women of color experience the medical school admissions process?
2. How do pre-med women of color censor or divulge their authentic selves through the stories they tell in their application materials?

Theoretical Framework

This study is informed by two theoretical lenses. The first is discriminatory design theory (DDT) which has traditionally been used in the urban planning realm and is being applied here to better illustrate the structural ecosystem built around women of color pursuing medical education to help explain the disparities embedded within this ecosystem. Examples of some of the discriminatory design elements that make up these pre-med structures include financial barriers and access to resources such as advising (Hafferty & Michalec, 2023). The second theoretical framing stems from critical race feminism (CRF), an offshoot of critical race theory (CRT). CRF centers women from racial and ethnic backgrounds that have historically been excluded or marginalized (Few, 2007). Specifically, I apply the tenet of intersectionality for the framing of this study because intersectionality centers both gender and race simultaneously. Given the nature of this study which explores the racialized and gendered experiences of students, drawing on a theoretical framing that facilitates this simultaneous examination is imperative. Both discriminatory design theory and intersectionality are used as theoretical pillars for this study as

they provide the important framework necessary to analyze the structural design of medical education admissions and how the intersections of race and gender impact the admissions experience.

As mentioned, one primary theory grounding this study is discriminatory design theory. Originating in the field of architecture and urban planning, discriminatory design has historically described exclusive practices in the built environment (Weisman, 1994). Structures built to exclude people with disabilities, women, and other underrepresented identities is the basis of discriminatory design theory (DDT). This theory is beginning to be applied to immaterial structures as well as it pertains to medical school admissions and the pre-med track. Michalec and Hafferty (2023) draw on this theory to consider the structural social barriers embedded in the pre-med pathway for underrepresented students. Such structural barriers include socioeconomic status, standardized test preparation, major selection, and curriculum to name a few (Michalec & Hafferty, 2023). Because this study is interested in understanding how pre-med women of color experience the admissions process for medical programs, I found the concepts of DDT to be exceedingly helpful in understanding how the pre-med track is designed to be exclusive. I found parallels between Weisman's (1994) description of the built environment being socially constructed and therefore reflective of the values and power of the ones designing the space along with the oppressive design elements that comprise the pre-med track. Much like how a park bench might have armrests to dissuade people experiencing homelessness to lay down or how a building may not include an elevator which excludes wheelchair users from accessing the premises, the pre-med pathway and admissions process too, are riddled with structural design elements that work to exclude students, particularly women of color. The purpose of this study is to go beyond identifying the discriminatory design elements in the pre-med experience of

women of color, and to more productively examine ways of dismantling and/or establishing anti-discriminatory approaches to pre-med requirements for admission consideration. Because of this motivation for this research, the application of DDT is crucial for informing this study.

Folded into DDT is implicit bias theory. Implicit bias is entangled with DDT as implicit biases (along with explicit biases) perpetuate the discriminatory construction of the pre-med track in higher education. Admission committees serve as architects of the admission process and shapers of an often-concealed curriculum within the pre-med pathway, who ultimately determine acceptance into medical programs, do so influenced by their personal biases. Chatterjee et al. (2020) demonstrated that the implicit bias of medical school admissions committees contributed to the discrimination of non-male and non-white applicants in the admissions process. The individuals who make up these committees and make admittance decisions are inextricably linked to the design of the pre-med track and therefore their biases may inform the design elements of the entire pre-med system.

Similarly, the concept of a hidden curriculum is another side effect of DDT in the pre-med track for underrepresented students. An example of part of the hidden curricula for pre-med students is the knowledge that experiences such as volunteering and shadowing hours are necessary for medical school applications and furthermore knowing how to gain those experiences is an additional layer. These factors fall into what Michalec & Hafferty (2023) refer to as "(Extra)Curricular Capital" (p.75). The authors assert that in addition to cultural, financial, and social capital, the knowledge and access to the extracurricular expectations of the pre-med pathway are their own kind of capital, aptly referred to as (Extra)Curricular Capital (Michalec & Hafferty, 2023). While volunteering and shadowing are part of the norm for pre-med pathways, they are typically not included in any formal curriculum offered at institutions of higher

education. Without knowing ahead of time that one needs to seek these experiences, it can often be difficult for students to know about these unspoken requirements, or they may learn of these norms later than other students, putting them at a disadvantage. The concepts of implicit bias and hidden curriculum are additive to my conceptual framing situated within discriminatory design theory.

The second framework contributing to my theoretical framing of this study is intersectionality which examines the racialized and gendered experiences of women of color (Bowleg, 2012). The concerns of this study are both gendered and racialized and therefore gender, race, and ethnicity need to be considered simultaneously. Intersectionality provides the framework for reconciling multiple, simultaneous identities such as race and gender. It also provides an understanding of how these identities experience interlocking systems of power and oppression (Bowleg, 2012), which in this case, is embedded in the pre-med track and manifesting in the admissions process of medical schools, perpetuating disparities in healthcare broadly. The careful consideration of where sexism and racism intersect for these pre-med students and how their experiences as women of color impacted their pre-med trajectory is foundational to this study. Intersectionality is situated within critical race feminism (CRF), a branch of critical race theory (CRT), thus CRF is derived from Critical Race Theory (CRT) broadly. CRT has five tenets: (1) Race is endemic and embedded in the fabric of American society, (2) dominant ideologies are contested and challenged, (3) requires a commitment to social justice, (4) prioritizes the centering of marginalized voices, and is (5) interdisciplinary (Evans-Winters & Esposito, 2010). CRF centers gender, specifically women of color, to focus on and elevate the experiences of women of color (Evans-Winters & Esposito, 2010).

Intersectionality is the precise examination of both race and gender that informs the framing of this study situated theoretically within CRF.

Finally, while my positionality and experiences working with pre-med students is situated at a predominantly white institution (PWI), through my data collection, I recruited participants from a variety of institution types to examine commonalities and differences among support structures for students in their preparation for the application process. I was curious about the potential role that identity mismatch may have in preparing students. Research demonstrates that when students have access to mentors, faculty, and other role models that share similar identities such as race and ethnicity, they are more likely to have higher academic performance (Dahlvig, 2010). Students of color attending PWIs can experience isolation and challenges to cultivating a sense of belonging on their campus (Dahlvig, 2010). Turning to the medical field and the sciences at large, men tend to dominate these areas and this lack of female representation has an impact on the persistence of women in their pursuit of medical school (Rosenthal et al., 2013). Identity mismatch among professionals in the field as well as faculty advisors in graduate programs directly impact the persistence and performance of women, so I was interested to see if this showed up in students' undergraduate pre-med experiences as well. How important is it for the preparation of pre-med students, that faculty and staff advising them share dominant identities such as race and gender?

Both discriminatory design theory and intersectionality serve as the primary frameworks for this study because of their emphasis on the systematic exclusion and discrimination of non-white, non-male pre-med students. DDT provides the important framework for understanding the inequities structured within the pre-med pathway, consisting of a constellation of systemic barriers while intersectionality provides the framework for examining how racism and sexism

perpetuate those barriers and inform how students experience the medical school admissions process.

Significance of Study

This research aims to make a multitude of contributions. From a practical perspective, the results of this study recommend important changes in support structures, resources, and practices across institution types in supporting women of color on the pre-med track. Additionally, this study contributes to the literature in important ways. First, this study offers not only an examination of the racial experiences of pre-med students, but also a discussion of the gendered experiences of medical school applicants which is significantly lacking in the literature. Second, it provides a more robust understanding of the kinds of support these students had access to at their institution that aided in their navigation of the admissions process. Additionally, it will be immensely additive to the literature on the influence of hidden curricula on admissions processes. Finally, this study is significant because it helps to demonstrate the use of discriminatory design theory to be applied to how we analyze the pre-med ecosystem that contributes to gatekeeping in healthcare.

Definition of Terms

The following terms will appear throughout this dissertation. I have provided the term and its definition:

- *Hidden curriculum*: implicit learning demands that are outside of the formal curricula but are still expected of students to meet (Semper and Blasco, 2018)
- *Implicit bias*: a person's unconscious beliefs that impact their choices (Holroyd et al., 2017)

- *Pre-med*: short for pre-medical which describes the undergraduate track an undergraduate student takes in their pursuit of medical school which typically consists of specific courses and experiences required for medical programs (https://www.berry.edu/articles/blog/2022/pre-med-path-from-college-to-medical-school)

Chapter Summary

The pre-med track is brimming with discriminatory design elements such barriers associated with the MCAT, financial burdens, and a severe lack of representation in the field (Michalec & Hafferty, 2023) that impact an applicant's experience with admissions should they decide to go that far. Structural implicit bias and hidden curricula around pre-med requirements and inaccessibility to resources contribute to the institutionalized discrimination that non-white women encounter as they pursue medical school. As a pre-health advisor, I have had numerous conversations with students about their anxieties around being judged or discriminated against in their essays and interviews for medical programs. Their concerns stemmed from their intersecting identities of being a woman and being non-white. The purpose of this study is to better understand their experiences as pre-med students and how the kinds of support they have or don't have impact their navigation of admissions processes. This study works to illuminate the discriminatory design elements present in the medical school admissions process and offers strategies in supporting students through this process.

CHAPTER 2

Literature Review

Background of the Problem

Women of color experience a multitude of barriers to gaining access to medical school admissions (Ejiogu, 2020). Among the most prevalent outlined in the literature are standardized tests, financial burdens, and lack of support (Hadinger, 2016; Lucy & Saguil, 2020). These barriers often result from or contribute to a hidden curriculum around admissions processes and directly impact how students engage in the process (White et al., 2012). A brief description of these specific barriers is provided below.

One of the primary barriers to medical schools is the requirement of the standardized exam, the medical college admissions test (MCAT). The MCAT has been examined across many studies for bias within the test itself and while many have found that biases do not exist, there are some external factors that do influence how well a student will perform on the exam (Lucy et al., 2020). One study found that structural racism has led to major educational disparities for people of color and significantly impacted students' abilities to access quality resources to prepare for the exam and necessary coursework (Lucy et al., 2020). Additionally, due to racial and economic disparities in K-12, these same students are often limited in their access to higher education as well as being well prepared for higher education studies (Lucy et al., 2020).

Another barrier to medical school admissions including the MCAT and equitable access to higher education from K-12, is a financial barrier. The MCAT is expensive, costing $330 at the time of this writing for the initial exam (excluding any retakes) and then paying for test

preparation materials on top of the exam itself makes it exceedingly challenging for students to afford (Hadinger, 2016). Applications also contribute to high costs with an initial fee of $170, plus $40 for each school a student adds to apply to, excluding processing fees (American Medical Association, 2023). Shemmassian Academic Consultants (2023) found that on average, students apply to 16 programs. This means that the average student is spending a minimum of $1,140 for one round of applications and one MCAT attempt, excluding any test prep materials. These numbers relate only to the ability to apply to programs. It does not begin to take into account the additional costs of admissions such as traveling for medical school interviews which can be significant expenses (Hadinger, 2016). The tremendous financial burden of admissions to medical programs can automatically discount many students from accessing medical school.

Tests and finances can be tremendous barriers to admissions, but Hadinger (2016) also discusses that students who lacked a network that could provide guidance and support during the application process also had a significant impact on aspiring medical students' applications. In Hadinger's study, students attributed successful medical school applications to pre-med advisors, family, and faculty that had counseled and encouraged them through the entire process (2016). Students who lack this kind of capital experience an added barrier of not having easily accessible knowledge and guidance. This challenge may be exacerbated for first-generation students. While there are numerous barriers that students of color encounter throughout their educational experiences, these seem to be some of the most prevalent in the literature regarding gaining access to medical school admissions.

These barriers are compounded with the overarching hurdle of a lack of representation within the field of medicine. Many students shared with me that they were unable to shadow or gain clinical experiences with healthcare providers of color and instead were consistently

exposed to White physicians. Only about 4% of physicians in the United States identify as Black, 4.6% as Hispanic, 12.5% as Asian, and less than .5% American Indian or Alaskan Native (Filut, et al., 2020). These statistics explain why students of color struggle finding racially and ethnically diverse medical professionals to work with. The culprit of this gross lack of representation in the field seems to be strongly related to implicit bias within medical education that has a ripple effect on the field of healthcare. Daley et al. (2021), claimed:

> There is evidence in the COVID-19 pandemic that unconscious bias by white physicians may be contributing substantially to the disparities seen in clinical outcomes by Blacks. In the current crisis, the absence of Black physicians has likely led to more deaths and disability that will persist long after the pandemic recedes (p. 2).

As cited by Daley et al. (2021), implicit or unconscious bias is rampant in the profession and has real effects on patients of color with regard to the care that they receive. Additionally, they note that only 7% of all medical students identify as Black (Daley et al., 2021). Because there is no evidence that suggests that students of color are less interested in medical school as a career trajectory, these devastatingly low numbers of people of color within the profession are likely linked to biased admissions processes and exclusionary practices such as hidden curriculum at the undergraduate level and implicit bias among admissions committees.

The context of these barriers demonstrates some of the unspoken norms around gaining access to medical school admissions or the hidden curricula embedded in the admissions processes (Esposito, 2009). For example, it is expected for undergraduate students to first know that they need clinical hours, assuming students know what is meant by clinical hours, and then second students need to know how to gain these hours. There is no textbook or systematically formal means for students to acquire this knowledge, but it is an assumed and unspoken rule that

medical school admissions expect applicants to know. This contributes to a hidden curriculum around the medical school admissions process and what is required for an applicant to be considered competitive.

Furthermore, this curriculum is informed by and perpetuates dominant ideologies (e.g., in this case, typically White, male ideologies) and thus students who do not share these identities and ideologies will be even further disadvantaged (in this study, women who are racially minoritized in the United States) (Kamasak et al., 2020). The hidden curricula around admissions processes point to the potential for bias in the admissions process by the dominant group. Research has found that medical school committee members demonstrate a White, male preference in their admissions decisions (Capers et al., 2017). This research affirms my students' concerns around being discriminated against in the admissions process. Understanding implicit bias and how it shows up in the admissions process is important as it speaks to the anxieties these students are experiencing as they embark on the medical school admissions process.

Because of the nature of the biases and the particular student group, both gender and race are essential factors in this study and theoretical perspectives that center both gender and race are most helpful in informing this research. Intersectionality, a tenet of critical race theory (CRT) provides the concept of the intersection of an individual's identities such as race and gender (Crenshaw, 1989). This theory acknowledges that individuals possess multiple simultaneous identities that each hold varying degrees of power and oppression (Delgado & Stefancic, 2017). Intersectionality aids in understanding the significance of both the gender and racial identities of the students applying to medical programs and how these identities show up in the admissions process to inform a student's experience with admissions. Literature around the hidden

curriculum of medical school admissions and implicit bias as discriminatory design elements, and intersectionality will provide the foundational background of this study.

Historical context of barriers and bias in higher education

While I have provided an overview of the numerous barriers and biases that students may encounter in their academic and professional journeys, it might be helpful to briefly discuss how higher education came to institutionalize racism and sexism for historical context. The origin of American higher education began as early as the 1600s with the founding of what we know today as Ivy League schools such as Harvard University. While viewed as prestigious, Harvard and all early institutions of higher education were built, maintained, and operationalized by the labor of slaves (Wilder, 2013). "Human slavery was the precondition for the rise of higher education in the Americas," (Wilder, 2013, p. 114.). University presidents (among other personnel) purchased children and adults alike to create the literal foundation of American higher education and exploited their bodies to serve the demands of the institution (Wilder, 2013). The primary purpose of higher education back then was to expand Christianity, a mechanism used to control and oppress the indigenous populations in the United States to further the displacement and genocide of native and enslaved peoples to promote the expansion of White colonizers (Wilder, 2013). Only affluent, White, males could access early universities, excluding anyone who was female and/or non-white. American higher education found its greatest expansion at the height of the Transatlantic Slave Trade (Wilder, 2013). As merchants who bought and sold souls to make profits gained more economic control, colleges too, conformed to the demands of the slave trade (Wilder, 2013). Profits from the selling of humans contributed to the funding of building campuses as well as growing trusts and pools of money for institutions (Wilder, 2013). Even many donations to universities from wealthy families and organizations were traced back

to the slave economy (Wilder, 2013). Presidents and trustees of universities bought, sold, abused, and in some instances murdered, humans that they exploited for campus as well as their own personal uses (Wilder, 2013). Indigenous and Black persons were used on campus to maintain the colleges, cook, and clean in addition to building and maintaining the physical structures of campuses (Wilder, 2013). It can then be concluded that the American college is but an extension of, not only colonial wealth generated from the Atlantic Slave Trade, but of colonialism itself in its most fundamental form of promoting and actively engaging in the violent oppression of all those that are not White.

This legacy of exclusion, oppression, and violence laid the foundation of medical education and science in the United States as well. Wilder described how medical students stole bodies and exhumed graves for their own purposes of supplying corpses for anatomy dissections (2013). This explosion in American science and anatomy also gave rise to race science which used the discipline to promote racism and white supremacy (Wilder, 2013). It was this very knowledge production of colonial scholars that led to the institutionalization of racism in higher education as well as within the fabric of every part of our nation (Wilder, 2013). Thus, the institutionalization of racism and sexism stems from (1) the purpose of the early American university to expand Christianity and to dominate and oppress the indigenous and enslaved populations and (2) both the physical built environment and the day-to-day operations being carried out by enslaved individuals that the universities and their leaders purchased. It is evident then, that institutions of higher education and learning and specifically as it relates to this study, medical education and science, were intentionally designed to oppress non-white individuals and perpetuate the tenets of white supremacy. This paved the way for the neoliberal plantation

politics of campuses that are rampant today and perpetuate racism and sexism embedded within their systems and processes.

Neoliberalism is the commodification, privatization, marketization, and objectification of human bodies for capital gains (Squire et al., 2018). It consists of dehumanizing actions, policies, and theories that contribute to the profit of bodily commodification (Squire et al., 2018). Squire et al (2018) draw the parallel that during the plantation era of America, the goal was the realization of white supremacy through slave codes in spaces of plantations whereas today, the goal is commodifying bodies of color for profit through neoliberal actions and policies in spaces of college campuses. Neoliberalism acts as the new slave codes at universities by commodifying bodies of color for marketing and recruitment materials, profiting from student athletes of color, and using statistics to tout diversity for the sake of rankings and institutional reputation (Squire et al., 2018). This compendious history of the birth of American higher education through our current neoliberal campus politics, makes it clear how racist and sexist processes came to be embedded within institutional structures and continue to manifest and exclude. Because systematic exclusion and oppression were an intentional part of the design of American higher education both broadly and within the sciences, I posit that discriminatory design theory is a helpful and appropriate framework for contextualizing the medical school admissions process and the copious obstacles women of color are burdened with to navigate within it.

Discriminatory Design Theory

Michalec and Hafferty (2023) described discriminatory design as the "fashioning and fabrication of physical and social entities that can (intentionally or not) negatively affect particular groups of people, and in turn, sustain power and status differentials nested within social hierarchies," (p.73). The origin of this theory is housed within urban planning literature.

DDT was initially used to describe discriminatory design elements in zoning, transportation, parks, and other city planning features (Schindler, 2015). Schindler (2015) explained that the "exclusionary built environment -the architecture of a place- functions as a form of regulation," (p.1934). In other words, DDT is a highly effective mechanism for gatekeeping. Michalec and Hafferty (2023) adapted this theory by arguing that the requirements such as coursework, extracurriculars, and test scores comprise the "architecture" of the pre-medical track for students. Pre-med students are expected to take specific science and related coursework, make a certain score on the MCAT, have strong relationships with faculty and professionals for letters of recommendation, obtain shadowing and clinical hours, volunteer regularly, and be involved in numerous extracurriculars. These expectations are a lot for any college student, but for students who have marginalized identities, are required to work through college, are parents or caregivers, are first generation college students or any combination of these identities, it makes it nearly impossible for them to participate in the pre-med track (Michalec &Hafferty, 2023). The combination of these pre-med requirements may discourage some students because of the lack of feasibility, but in some cases these requirements actively work to exclude students. Similar to how elements of the built environment can serve as a means for gatekeeping, so too are elements entrenched in the admissions process for medical schools.

One specific example of how these aspects of the pre-med track can act as discriminatory design elements is the required curriculum. Dalen and Alpert, 2009 acknowledge that the pre-med curriculum requirements have not changed in 90 years despite many professionals agreeing that courses such as organic chemistry and calculus are not needed for the practice of medicine. To take this even further, literature shows that organic chemistry specifically has been the reason for many students to not pursue the pre-med track and is used as a "weed out" class (Dalen &

Alpert, 2009). In one study that followed 362 first-year pre-med students, 85% of those who discontinued the path after 2 years cited organic chemistry as their reason (Barr et al., 2008). This means that a significant number of students are dissuaded from the path primarily due to one course that is largely considered irrelevant to the practice of medicine. There lacks literature supporting the correlation of receiving a good grade in organic chemistry and the success of a physician or medical school student. The fact that organic chemistry and others, but most significantly organic chemistry, is utilized as a way of "weeding out" students is itself discriminatory and exclusive and founded on no real evidence to be beneficial in the preparation of medical students. This exemplifies the concept of discriminatory design as I apply it to the admissions process of medical programs and pre-med pathway.

I draw on DDT as a framework for analyzing the admissions process as a whole, considering the numerous requirements for admission, the application process, and the interview phase of admissions. Michalec and Hafferty most notably use DDT as a framework in a similar way in their study of discriminatory design practices in the pre-med pathway for students and analyze the role of different kinds of capital students need (2023). Because DDT is concerned with institutionalized discriminatory practices, this theory helps to explain the exclusionary elements embedded within pre-med admissions. DDT also pairs well with the critical perspective of intersectionality as it pertains to this particular student population which examines gender, race, power, and oppression.

Implicit Bias Theory

In tandem with DDT, is implicit bias theory. Implicit bias is generally understood to refer to a person or persons' unconscious evaluations, attitudes, and beliefs that impact their choices without self-awareness (Holroyd et al., 2017). It has been linked to discriminatory hiring

practices and college admissions decisions (Capers et al., 2017; Holroyd et al., 2017). Implicit bias has been the center of hot topics and debates in recent decades. One of the reasons that implicit bias has been written about, thought about, studied, and debated is that many scholars have taken issue with the word *implicit* (Holroyd et al., 2017). Researchers have asked what it means to label these attitudes and behaviors as unconscious; does this impact an individual's accountability toward those potentially discriminatory practices? While the literature provides a rich discussion around the presumably divisive language of implicit bias, this paper will not delve into those conversations but will instead use the specific language of implicit bias as it relates to medical school admissions processes since that is the most widely used and accepted terminology at the time of this writing. It is important to acknowledge though, that I recognize the importance of language and agree that a deeper look at using the term implicit is needed though not within the scope of this paper. The term implicit bias used throughout this study will be defined using the general understanding from the literature mentioned previously as referring to a person's attitudes towards another person or situation based on unconscious awareness.

Implicit bias can be measured in a number of ways, most frequently by using an implicit association test (IAT). Most frequently these tests are used to observe associations and attitudes around race. These tasks require respondents to distinguish between races using categorical online responses (Greenwald et al., 2006). They are encouraged to make their selections as quickly as possible, but with as few errors as possible as well as to prevent participants from overthinking about their responses. One of the most notorious IATs is Harvard's Project Implicit which offers a number of free assessments that help participants understand where they exhibit biases (Holroyd et al., 2017). Project Implicit is a website that includes dozens of questionnaires to test the implicit bias of participants not only regarding race and ethnicity but also includes

sexuality, gender, religion, body image, disability, and other social categorizations (Project Implicit, 2011). A survey is the most used mode for measuring and testing for implicit bias among participants. IATs have been applied to admissions committees to test for implicit bias among committee members. One study measured the implicit racial bias of all medical school admissions committees of the Ohio State University College of Medicine and found statistically significant levels of White preference (Capers et al., 2017). This study further found that men and faculty who served on the admissions committees displayed the highest levels of White preference (Capers et al., 2017). This study is important because it validates the concerns my pre-health students have regarding the attitudes and potential bias of admissions committees. In my appointments with students, many mentioned concerns of how committee members might label them based on how they wrote their personal statements and essays. The research provided by Capers et al. (2017) validates the students' concerns around committee member bias.

While the implicit bias of medical school committee members is an important element to this study, unfortunately, it is not the only place implicit bias shows up in the medical school admissions process. Another study found implicit bias embedded in the interview process for medical programs (Chatterjee et al., 2020). IATs found the majority of the biases were against women and non-white interviewees (Chatterjee et al., 2020). Additionally, the authors found that of their participants, over 20% reported experiencing bias in the interview process for medical school (Chatterjee et al., 2020). The respondents indicated that they experienced bias in the interview process at multiple institutions, so this indicates that it was not an isolated event or the result of one particularly problematic program (Chatterjee et al., 2020). In addition to reporting bias on the more typical categories of race, gender, and religion, these participants also reported experiencing bias based on their economic background, body image such as height and weight,

and their age (Chatterjee et al., 2020). The participants experienced bias during the interview in a variety of ways. One way was through direct comments made by the interviewer that were microaggressions or discriminatory in nature (Chatterjee et al., 2020). Additionally, many of the interviewees found bias in the specific questions being asked or even by other interviewees that were present for group interviews (Chatterjee et al., 2020).

Implicit bias also helps to explain the tropes and stereotypes that my students strived to avoid being labeled in their application materials. I recall the student who did not want the admissions committee to view her as the Angry Black Woman based on what she shared in her personal statement. Such tropes are indicators of both implicit and explicit bias. Implicit bias is the side effect of a history steeped in racism and sexism (Brown, 2018). Because our history informs our systems and institutions and historically in the United States we have oppressed and excluded people of color, we have also learned to associate negative affiliations with nonwhite individuals. One study demonstrated this by asking participants to identify criminals. Overwhelmingly, participants selected Black males over White males as looking like criminals simply based on implicit bias that originates from the narrative that has been told that Black and Brown men are dangerous (Brown, 2018). Similarly, Jones and Norwood (2017) describe how Black women encounter confused looks from contractors who express surprise that they are the homeowners when they arrive to provide services on their homes. They also discuss how perceived Black sounding voices versus perceived White sounding voices on the phone evoke different reactions from people (Jones & Norwood, 2017). Our racist and sexist history has shaped our education system (among other systems) and entrenched racial and gender biases both implicitly and explicitly (Brown, 2018). Studies have shown how in healthcare, White physicians listen less to Black patients and therefore Black patients are less likely to trust the

physician, Black students are disproportionately disciplined in school, among countless other examples of how implicit bias shows up and impacts individuals and communities (Cherry, 2020).The understanding of how implicit bias manifests at the macro-level is important, but perhaps more relevant for this study is how students have internalized these narratives and are intentionally or unintentionally anticipating experiencing bias in the admissions process. Studies have shown that girls at a very young age have internalized implicit biases which have directly impacted their behaviors and decisions (Cherry, 2020). Data show:

> By the age of 9, girls have been shown to exhibit the unconscious beliefs that females have a preference for language over math. The stronger these implicit beliefs are, the less likely girls and women are to pursue math performance in school. Such unconscious beliefs are also believed to play a role in inhibiting women from pursuing careers in science, technology, engineering, and mathematics (STEM) fields. (Cherry, 2020)

This example demonstrates the kinds of decisions girls make even as young as age nine regarding their capacity to perform in certain subjects and career areas. This internalized bias combined with outward bias that women of color experience may contribute to how students are engaging in medical school admissions processes.

Understanding implicit bias theory is foundational to this study as it is an important aspect of discriminatory design. The literature demonstrates implicit bias as it manifests across various aspects of medical school admissions processes including the biases of individuals who make up medical school admissions committees. The students that I worked with had a healthy understanding that they may experience bias in their applications due to their gender and/or race even though they did not explicitly call it implicit bias. Implicit bias theory is an important

contributor to this framework as it runs throughout the admissions process and serves as one of the most impactful discriminatory design elements embedded in the admissions process.

Hidden Curriculum

In addition to implicit bias, the hidden curriculum of medical school admissions processes is another element of discriminatory design within the constellation of admissions requirements. Sambell and McDowell (1998) define hidden curriculum as "what is implicit and embedded in educational experiences in contrast with the formal statements about curricula," (p. 391-392). One of the many facets of pre-med hidden curricula is what Michalec and Hafferty call (Extra)Curricular Capital (2022). They describe (Extra)Curricular Capital as consisting of all the involvements and clinical experiences that students need to know about and be engaged in to be considered competitive for medical programs. It can be difficult for students who do not have access to individuals who have gone through this process, to help them be aware of the expectations of medical programs to know that these expectations even exist, let alone know how to acquire such experiences. In addition to the formal curricula of the pre-med track that includes specific science coursework, there is a curriculum consisting of implicit norms such as gaining shadowing and clinical experiences that are also inherent to the pre-med pathway that can be much more concealed.

While hidden curricula are abundant throughout higher education and the pre-med pathway leading up to admissions, the application process itself includes its own hidden curriculum. White et al. (2012), describe in their study how essay requirements in the admissions process demand a specialized understanding of the application and admission committee expectations. They found that the students they interviewed that were successful in gaining admission to medical school, admitted conforming their essay responses to what they thought

admissions committee members might want to hear. The authors explain that students actively considered "who will be reading my answer, and what do they expect me to say?" (White et al., 2012, p. 4). This understanding of who makes up committees and anticipating what kinds of essay responses they are looking for, exemplifies the concept of hidden curriculum. One participant in their study admitted in his first attempt to medical school, he was modest and genuine in his responses and was not well-received. However, in his second-round application attempt he had a better understanding of what was expected and conformed his essay answers to be more in line with those expectations which yielded him acceptance this time around (White et al., 2012). While the bulk of pre-med hidden curricula may take place prior to the admissions process and still contribute to the overall discriminatory design of the pre-med track, White et al (2012) provide an example of how hidden curricula may be evident within the admissions process as well.

Intersectionality

Kimberle Crenshaw coined the term intersectionality to capture the important intersection of race and gender specifically of Black women. She discusses the exclusion Black women face in both feminist theory and antiracist policy as neither of these movements reconciled the interactions of both gender and race simultaneously (Crenshaw, 1989). Intersectionality is often referred to as a tenant of critical race theory which originated in legal studies. Since its inception, critical race theory (CRT), has become an umbrella for a number of other theories including LatCrit and AsianCrit as examples, which examine Latinx and Asian critical theories respectively (Delgado & Stefancic, 2017). Though CRT is a growing and expanding family of theories, it maintains several tenets that ground a theory as critical and typically, intersectionality is represented as a basic tenet. CRT's five essential tenets consists of:

> (1) that race and racism are central, endemic, permanent and fundamental in defining and explaining how U.S. society functions, (2) challenges dominant ideologies and claims of race neutrality, objectivity, meritocracy, color-blindness and equal opportunity, (3) is activist in nature and propagates a commitment to social justice, (4) centers the experiences and voices of the marginalized and oppressed, and (5) is necessarily interdisciplinary in scope and function (Evans-Winters & Norwood, 2017, p. 15-16)

Out of CRT, stems critical race feminism which brings into focus intersectionality and the intentional inclusion of race and gender (Evans-Winters & Norwood, 2017). CRF intersects with the tenets of CRT but is distinct in that it focuses on the multiple ways women of color are discriminated against, examines oppression through the simultaneous lens of gender and race, and centers the experiences and perspectives of women of color as unique from both men of color and White women (Evans-Winters & Norwood, 2017). These two larger theoretical concepts (CRT and CRF) house the concept of intersectionality which is a specific tool used to aid in framing this study.

Delgado and Stefancic (2017) described intersectionality as considering the many multiple identities that a person holds simultaneously that may include race, ethnicity, gender, class, and sexual orientation. Intersectionality is not exclusively about acknowledging multiple identities concurrently. It also captures the interlocking and overlapping layers of oppression and privilege associated with those identities because with each of those identities, a person may experience discrimination, or a privileged status given the situation (Delgado & Stefancic, 2017). Delgado and Stefancic (2017) provided an example:

> Imagine a Black woman. She may be oppressed because of her race. She may also be so because of her gender. If she is a single working mother, she may experience

> discrimination by virtue of that status as well. She experiences, potentially, not only multiple forms of oppression but ones unique to her and to others like her (p. 59).

Some health researchers, clinicians, and scholars are turning to intersectionality as a means to offer more transformative care to marginalized patients and communities (Muirhead et al., 2020). Muirhead et al. (2020), encourage health providers and researchers to integrate intersectionality into their work and to take a multidisciplinary approach to public and global health to better understand the roles of power, oppression, and privilege that come with the various identities a person holds that impacts health. Though the use of intersectionality as a theory to inform practice and research in healthcare does not seem to be widely used in the literature currently or in particular in clinical settings, it seems that a small population is recognizing the importance of understanding intersecting identities, power and oppression with regard to patient care and public health. Unfortunately, across sectors in healthcare, there exists a dearth of physicians of color despite the fact that our national population is rapidly increasingly diverse (Goode & Landefeld, 2018). This brings us back to admissions processes for medical programs.

While there is a need for more diversity among healthcare providers and there exists equity gaps in care provided to patients of color, the reality is, there are low rates of acceptance and training of physicians of color are being produced in the United States. This may be influenced by admissions processes of medical programs. Intersectionality offers an important approach to this study on examining medical school admissions processes and the experience of women of color applicants, because there lacks a reckoning of how women of color in particular experience discrimination and bias in the admissions process. While the literature offers insights on racial disparities in admissions processes, there is little that discusses race and the

simultaneous intersection of gender. Because of the gendered responses from my students regarding their application materials and because we know that women experience more discrimination in the interview process (Chatterjee et al., 2020), it is paramount that both race and gender are examined together. Intersectionality contributes to this exploration of how women of color experience the medical school application process as well as how to better prepare and support these students as they navigate the admissions process.

Identity Mismatch

Where intersectionality examines the simultaneous connection of identities that an individual holds, such as race and gender, identity mismatch considers the identities of others in relation to one another. Studies have found that the lack of exposure to successful women in their desired field directly impacted students' abilities to persist within their STEM tracks (Rosenthal et al., 2013). The authors of one such empirical study claim that

> exposure to women in traditionally male-dominated fields, such as science, technology, engineering, and math (STEM), seems to improve women's general engagement in those fields, including their self-efficacy in, identification with, and commitment to the domain," (Rosenthal et al., 2013, p. 465-466).

They refer to these successful women as role models and link the impact of having role models in the field to the persistence of women pursuing STEM careers broadly, and pre-med tracks specifically. Similarly, research supports that mentorship offered through a mentor that shares one's racial or ethnic identity also positively impacts the trajectory of female students (Dahlvig, 2010). In addition to the research demonstrating the positive effects of role models and mentors who share identities, studies also show that a mismatch in identities can create contextual and structural barriers for students (Wilkins et al., 2023). Results from one study that examined

women of color in STEM graduate programs, indicated that while graduate advisors' behaviors had the capacity to support and enhance the doctoral experience which helped overall to mitigate the adverse toll of marginalizing encounters in STEM, they also served as barriers that exacerbated the structural barriers that women of color navigated in STEM (Wilkins et al., 2023). A recurring theme in this study is that pre-med women of color lack access to role models who look like them in the field of medicine and this identity mismatch has greatly impacted their experience as pre-med students.

Chapter Summary

Discriminatory design theory, a theory conceived to discuss the exclusionary practices of the built environment in urban planning, is being applied to this study as a means to better understand the constellation of discriminatory elements that make up the pre-med track and admissions process. Implicit bias in medical school admissions is a prevalent symptom of DDT. Implicit bias describes admissions committees' unconscious beliefs and attitudes as potentially impacting their decisions and perpetuating gatekeeping to the field of medicine. Another side effect of DDT in medical school admissions comes in the form of hidden curriculum. Michalec and Hafferty (2023) sufficiently describe the abundance of hidden curricula rampant in the pre-med track, but it is also evident that there is a unique hidden curriculum apparent within the application itself (White et al., 2012). Intersectionality provides the critical lens for understanding how these discriminatory design elements are both gendered and racialized. Because the focus of this study looks at the experiences of women of color, it is imperative to utilize a critical perspective that examines both gender and race simultaneously.

Chapter 3

Methodology

The purpose of this study is to better understand the experiences of pre-med women of color in the medical school admissions process. This study uses a narrative inquiry methodological approach. I collected data through individual semi-structured interviews with students and document analysis of their personal statements. These methods help to reveal how women of color experienced the admissions process, any challenges they encountered, and how they were supported or not supported throughout the process. This study addresses the following research questions.

Research Questions

1. How do pre-med women of color experience the medical school admissions process?
2. How do pre-med women of color censor or divulge their authentic selves through the stories they tell in their application materials?

This study draws on a postmodern, poststructuralist paradigm that utilizes narrative inquiry as the methodological approach. There are multiple factors that I considered in deciding my methodological approach for this study. A poststructuralist standpoint rejects the notion that there is a single, objective truth which typically stems from a more positivist paradigm (Mitchell & Egudo, 2003). This is important as it relates to this study as I am interested in honoring the multiple truths of my participants. Because no one student identifying as a woman of color is a monolith and because of each of their lived experiences, histories, and interactions with the admissions process are so varied, there cannot exist a single objective truth. Situating this study

with a poststructuralist framing provides the framework to support methods that acknowledge multiple truths (Mitchell & Egudo, 2003). Additionally, Mitchell and Egudo (2003) explained that poststructuralism questions power and the researcher and participant relationship. This paradigmatic framing creates space for discussions of positionality and the consideration of bias. Since this study considers the presence of bias within higher education, specifically around medical education, this framing is particularly appropriate. Additionally, this allows for a more transparent discussion of the relationship and associated power dynamics of the researcher and participants. In relation to this, I have provided a positionality statement that clearly articulates my identities and privileges which were important considerations throughout the data collection and analysis phases. This provides a framework for co-creating knowledge with participants. To summarize, from an ontological stance, poststructuralism takes issue with traditional and typically positivist conceptions of truth, knowledge, and power as absolutes. How we know and understand the world and thus create and recreate knowledge is relative and socially and historically contingent. From an epistemological framing, poststructuralism rejects the notion that there is one reality and instead embraces the plurality of multiple, simultaneous realities (Mitchell & Egudo, 2003). Accordingly, categorizing humans into neat labels is unproductive because we maintain multiple positionalities at once. Furthermore, a poststructuralist lens projects that everything that we know, and experience is socially constructed and based on histories therefore, there can be no capital 'T truths' or one single reality. As an example of this ambiguous mode to meaning making and understanding, Foucault intentionally uses 'power relations' instead of power centrally, because everything is relative (Belsey, 2002). Therefore, there cannot be power if there is not also resistance (Belsey, 2002). Power is always in relation to the individuals, and it is not that one individual possesses ultimate power, but rather that power

ebbs and flows through and from individuals. The way poststructuralism posits power relations, ambiguity, and accepting of multiple truths that are contingent on socially constructed histories is a most appropriate paradigm for supporting narrative research, particularly for a study that examines how histories have constructed discriminatory elements to exclude students holding multiple marginalized identities (Mitchell & Egudo, 2003).

Situated within a poststructuralist framing, narrative inquiry is the methodological approach I utilize for this study. The foundation of this study consists of hearing the stories of women of color experiencing the admissions process of medical schools. Through storytelling we can co-create knowledge, acknowledge multiple truths as no single woman serves as a monolith on this experience, and examine bias across multiple layers of the research. Storytelling, both through interviews and through the document analysis of participants' application documents aligns with a narrative approach to research. Mitchell and Egudo described narrative research as the story being the primary point of the study and that narrative analysis focuses on "how individuals or groups make sense of events and actions in their lives through examining the story," (Mitchell & Egudo, 2003, p.2).

Because language is such an important aspect of narrative research, two common methods of data collection used in narrative inquiry are interviews and document analysis (Wells, 2011). I employed both of these methods which allowed me to answer my research questions. Both methods of interviewing and document analysis for data collection facilitate the capturing and elevation of participants' stories, which is essential to narrative research. Thus, these methods felt most appropriate to utilize for this study. Additionally, "narratives may be considered in relation to their co-construction between, for example, an interviewer and a research participant," (Wells, 2011, p.6). The process of co-construction between myself as the

interviewer and my participants is an important one as it allowed me to build rapport quickly and intentionally with my participants to ensure trustworthiness. Narrative as an approach to research makes space for this co-construction to occur (Wells, 2011), aiding in research trustworthiness. My narrative study uses interviews as one method for data collection where I captured the stories of my participants through their own voices and analyzed the transcripts. Additionally, I utilized document analysis to analyze the stories that they shared in their personal statements for their medical school applications. Due to the nature of this study, I deemed a narrative approach to be most appropriate for informing data collection and analysis.

Research Design

This is a qualitative study that utilizes a narrative approach guided by the theories of intersectionality and discriminatory design. I used interviews and document analysis as methods for data collection. This study is interested in the stories students share within their application documents to medical schools for admission. As such, I chose to interview participants about their experiences, discuss their approach to their personal statement, and use document analysis to code their documents. These methods aided me in answering my research questions:

1. How do pre-med women of color experience the medical school admissions process?
2. How do these students censor or divulge their authentic selves through the stories they tell in their application materials?

The emphasis on storytelling along with the specific methods I employed, justified my decision to select narrative inquiry as my research approach.

Research Site

I collected data and recruited participants from across several institutions and institution types in the state of Georgia. I am interested in how students who have attended different

institutions for their undergraduate studies experience the medical school admissions process. In order to give me enough diversity in potential institution types but also keep some commonalities among them, I limited my site to being the state of Georgia. I anticipated the potential of having transfer students who may have transferred from out of state institutions or other in state schools. In considering the potential for transfer students, I still required that participants graduate from a school in Georgia. An additional reason for selecting Georgia is that it is accessible to me as I live and work in the state and have the opportunity to utilize my networks to reach potential participants.

Data Collection

In the application process for medical schools, applicants are encouraged to tell a story. Through a variety of application artifacts including personal statements, essays, transcripts, test scores, letters of recommendation and application questions, students convey their story to admissions committees, typically situated around why they want to attend medical school and become a doctor. This study is also interested in the stories students are telling through their application materials. Methods of document analysis and interviews were used to provide a holistic interpretation of students' narratives. I began by conducting document analysis of personal statements and essays submitted by participants via a brief survey supplied in the recruiting materials. The intake survey asked demographic questions to ensure that my sample met my eligibility requirements of identifying as a non-white woman (both cisgender and transwomen were encouraged to participate), and they must have completed a medical school application cycle within the past three years including the most recent open cycle. In addition to collecting demographic data, the survey provided a space for participants to upload a copy of their personal statement for me to review for document analysis. I used thematic coding to

analyze the documents they provided. I coded their personal statements prior to beginning interviews, because I did not want the stories that they shared in their interviews to influence the themes that emerged from my document analysis. I thought it to be most meaningful to use a thematic coding approach to the document analysis independent of the interviews. Having reviewed their personal statements first, also provided me with context for the interview phase.

Accordingly, next as part of my data collection, I conducted semi-structured interviews with participants. I segmented the interviews into three main sections consisting of how students prepared for admissions and where they found support, what their experience with the admissions process was like including any specific challenges or aspects they would change, and the final section focused on their personal statement and how they made decisions about the story they chose to share. I asked students to reflect on their personal statement with me in the interview to provide context and elaborate on their stories and motivation for sharing certain aspects of themselves in the application process. Similarly to the analysis employed coding their documents, I used an inductive thematic approach to coding the interview transcripts as well. By coding their documents prior to the interviews, asking questions in the interviews about how they made decisions about what to share and what to censor in their statements, and then having them reflect on their documents with me created a more iterative process that allowed for a more holistic narrative of students' experiences with the application process. This iterative process also aided in facilitating the co-creation of knowledge between participants and myself as the researcher which aligns with the narrative approach of this study. This approach helped to establish trustworthiness for the study.

To summarize, this study employed two primary methods of data collection and a supplemental brief intake survey. The first method is document analysis, and the second method

is semi-structured one-on-one interviewing with participants that included a variety of questions regarding their experience with the admissions process as a whole. I analyzed at each step of data collection and performed a meta-analysis of all of my data upon concluding the data collection stage. The brief survey used in the recruitment communication provided me with demographic information about the participants to ensure eligibility criteria had been met.

I recruited through the use of emails and social media. The inclusion criteria consist of women of color who have recently (in the past three years) applied to medical schools. They were able to indicate if they (a) have been accepted, (b) have been rejected, (c) deferred enrollment, (d) are taking a gap year, (e) are currently a first- or second-year med student or (f) other (in which case they may indicate multiple statuses with their application). I recruited across institution types in the state of Georgia by sharing my recruitment materials with colleagues at other institutions. I excluded sampling from outside of the state of Georgia. I included a brief intake survey (see Appendix B) in the recruitment documents to collect demographic data and provide details regarding the interview process. I compensated participants with $30 gift cards upon completion of their interview. I conducted all interviews on Zoom and used Zoom to record the transcripts. I then manually cleaned the transcripts and applied a thematic approach to coding the data.

Interviews

Narrative interviews are "characterized as unstructured tools, in-depth with specific features, which emerge from the life stories of both the respondent and cross-examined the situational context," (Muylaert et al., 2014, p.185). To elaborate on this concept from Muylaert et al (2014) narrative interviews are a method for examining both the participants' stories and how those stories interact within the social constructs of a particular situation. Given this

understanding of narrative interviews, it is evident that this is an appropriate method for this study as the storytellers I am interested in hearing from are pre-med women of color and the phenomenon I am interested in understanding regards their experiences with the medical school admissions process. Specifically, I used semi-structured one-on-one interviews for the interview protocol (see Appendix A for the interview protocol). The use of semi-structured interviews provided the flexibility to ask follow-up questions and further explore a topic without being too rigid. While interviews allowed me to collect and analyze language from transcripts, they also allowed me to capture non-verbal data. For example, silences, body language, tone, changes in intonation, and expressions all contributed to interview data which in turn aided in the richness of the data (Muylaert et al., 2014). Because both the non-verbal and verbal aspects of the interview are valuable data, I took notes throughout the interviews to indicate when a non-verbal point was being made.

Using this method allowed me to answer both of my research questions. My first research question is 'How do pre-med women of color experience the medical school admissions process?'. Interviews allow researchers to understand "the lived experience of other people and the meaning they make of that experience" (Seidman, 2006, p.9). Because of the nature of wanting to understand their experience for this research question, interviews best allowed me to achieve that. For example, asking them to tell me what navigating the application process was like for them and to describe their experiences with support at their institution during the interview allowed me to explicitly answer my first research question. Additionally, I am able to answer my second research question with this method. My second research question is 'In what ways do these students censor or divulge their authentic selves through the stories they tell in their application materials?'. Through interviews, I was able to ask direct questions around how

students decide what to share in their materials. By asking questions such as, "Do you feel that what you wrote is authentic to you/your experience?" and "Is there anything you wanted to share in your personal statement but chose not to include?" guided our conversation centered on their personal statement stories. These questions, among others during the interview significantly aided in answering my research questions effectively.

Document Analysis

Document analysis is a crucial method of data collection for this study as specific documents play an important role in the admissions process of medical programs. Bowen (2009) describes document analysis as a "systematic procedure for reviewing or evaluating documents," (p.27). Generally speaking, documents may include both text and visual sources such as websites, notes, photographs, and reports (Morgan, 2022). The documents used for analysis are not random, but instead should be selected with great intentionality (Morgan, 2022). It is the researcher who serves as the tool for data collection and interpretation and therefore holds immense responsibility in selecting documents that will provide context, help answer specific questions, provide historical information, and impact decisions throughout the research process (Owen, 2014; Bowen, 2009). In considering which documents should be included for analysis, Bowen (2009) suggested that the researcher identifies the purpose of the document and motivation for why the document was created.

This point that Bowen made resonates with this project for two reasons. First, the specific documents that were reviewed for this study are participants' personal statements needed for the applications for medical programs. The purpose of the personal statement for the participant is (a) it is a required document for the application process to be considered for admission to medical programs, and (b) it is an opportunity for the student to share their story as it relates to

medical school. The purpose of the document then, is that it is a required essay that contains a specific story shared by the applicant. The motivation for writing the document is to provide a convincing story to aid in being accepted to medical school. My purpose and motivation for including the personal statement for document analysis is to see if patterns emerged from the stories shared in the essays among participants. This process is known as thematic coding (Bowen, 2009). This kind of coding is not necessarily precise but more interpretive (Owen, 2024). Generally, identifying large categories of what is important to the study and what is not important are the first phases of thematic coding (Bowen, 2009). Then the codes begin to signify more specific themes. Owen, (2009) described coding as operating in a similar way to a title of a book or film which symbolizes the content or essence of the subject. Themes, like titles to books, represent patterns that emerge from the data. Max van Manen (1990) described themes as:

> interpretive, insightful discoveries, written attempts to get at the notions of data to make sense of them and give them shape. Overall, a theme is the form of capturing the phenomenon one tries to understand, but the collective set of researcher-generated themes is not intended for systematic analysis; themes are the fasteners, foci, or threads around which the phenomenological description is facilitated (p. 87).

Data Analysis

Data analysis occurred at multiple stages of the study. First, I used an inductive thematic coding approach to document analysis, analyzing the personal statements participants shared with me. I reviewed each personal statement three times to code for emerging categories and subsequent themes. I began the process with an initial read through or what Bowen (2009) might have described as a superficial examination of the documents, prior to conducting the interviews for those categorical codes. Next, I performed what Bowen (2009) referred to as a thorough

examination by analyzing the documents. The final phase of document analysis is interpretation, and this is where I make sense of the themes coded throughout the analysis process (Bowen, 2009).

Next, I analyzed my interview transcripts. I conducted my interviews through Zoom because it was free and accessible to me. Because many of my participants were not local to my area, it made interviewing significantly easier. Zoom also provides recordings and transcripts of meetings. I decided to use this feature of Zoom to obtain my transcripts. Upon completing an interview, I immediately read through the generated transcript to clean up any errors (e.g. correct acronyms that Zoom did not recognize, or slang that it did not pick up on). An important aspect of the interview that I noticed Zoom missed in the transcription was laughter, so it was important to make notes in the transcripts as quickly as possible while the interview was still fresh to capture all reactions that took place during the interview. After considering using a qualitative coding platform such as Dedoose, I ultimately decided that coding my transcripts manually would be the most ideal approach, even if perhaps a more tedious one. My reasoning for manually coding each transcript, is that I was able to make notes and capture non-verbal cues as I reviewed the transcripts that I feared would not be easily conveyed in a platform and may result in me missing important themes. I used the same approach to analyzing the interview transcripts as I did with the document analysis. I employed an inductive thematic coding analysis process.

Upon completing the analysis across both methods of data collection, document analysis and semi-structured interviews, I reviewed the themes collectively. Because I had the opportunity to discuss the stories participants shared in their personal statements in the interview process, I was able to compare themes they shared in their interviews with themes that I observed in their personal statement. For example, I coded that ‘disparities in healthcare’ was a

primary theme across personal statements for each participant, meaning that in each document I reviewed, in some way disparities in healthcare showed up. In the interviews, participants discussed struggling with conveying frustrations of disparities they observed in clinical settings in their personal statements. This was an interesting theme, because while all of them mentioned disparities in healthcare being a primary motivation for pursuing medicine as a career in their personal statements, they also admitted in the interviews that this exact theme was difficult to talk about because they felt they couldn't explicitly say that they wanted to go into medicine to address the problems that they observed as results from healthcare disparities. Their rationale for censoring their frustrations with healthcare inequities stemmed from being concerned of how admissions committees would perceive them.

Trustworthiness

Williams and Morrow (2009) discuss three primary ways researchers can achieve trustworthiness in qualitative work: data integrity, balance between what participants mean and what the research interprets, and clear articulation of findings. I strived to employ all three of these to achieve trustworthiness to ensure credibility within my study.

Having a systematic approach to data collection and analysis aids in ensuring the integrity of the data (Williams & Morrow, 2009). To achieve this first requirement of trustworthiness, I used a triangulation approach to promote the integrity of my data. Using an iterative triangulation approach to data collection and analysis helped to reduce bias that may have emerged from my positionality and relationship to the research. First, I analyzed the content of their documents independently of my participants for major themes. Next, I conducted data analysis of my interview transcripts using an inductive approach, meaning that I did not take the themes coded from the document analysis to deduce themes in my interview transcript analysis.

Then I reviewed all of themes that had emerged across both sets of data, the document analysis and the interview transcript analysis. This systematic approach to coding the data aided in ensuring data integrity and mitigating bias because I had the themes that I generated independently, and then I had the themes generated after speaking with the participants who provided significant context to their stories. Because this process includes the participants' voices via interviews, I am better able to achieve balance between what the participants mean and my own interpretation of language used. Additionally, during the interviews, I asked participants to elaborate on their stories which offers a more authentic representation of what they mean.

Positionality Statement

My positionality to this research is important and certainly impacts the lens through which I perceive and understand the phenomenon. I identify as a White, cisgender woman who works at a public institution in Georgia. In my role, I serve STEM students in their career paths, many of whom are pursuing pre-professional tracks such as pre-med. I lead a pre-health team of consultants and collaborate frequently with advisors and partners across campus to support our pre-health students. This research interest stems from my employment as a pre-health consultant and previous pre-health advisor at this institution. It is my students that I work closely with that inspired this study to examine how women of color experience the medical school admissions process. It is significant to mention that while I may share a gender identity with these students, the way in which we experience our gender identities is bound to our racial and ethnic identities, which I do not share with my students as a White woman.

Because of my race and employment status at the university, I hold a position of power and privilege both realized and perceived by my students, and I held myself accountable for mitigating this power dynamic throughout the data collection and data analysis phases of the

study. Returning to my positionality and checking my own biases has been especially important while I investigated language being used in documents and in the interview process. I made a concerted effort to document any reactions that came up with my own positionality and apply an approach of curiosity towards my methods for data collection. This practice helped to remind me that language I feel empowered to use may not be the same or appropriate for women with historically excluded racial identities as we review their documents.

Given that this is a narrative study, I dutifully take on the role of narrator in this work (Jones et al., 2014). As narrator/researcher, I am tasked with making intentional decisions about sharing the stories shared with me. It is my discretion to select what should be included and excluded. I acknowledge that too holds power and with the immense power of retelling others' stories, it is my responsibility to deliberately and diligently apply ethics, integrity, and transparency to the best of my abilities to this work. I owe it to my participants to allow their voices to be elevated and understood through the lens of narrative research. This specific aspect of my positionality directly informed how I approached my interviews and developed interview questions as it is the responsibility of the narrator to hear across stories and decide what is story worthy (Jones et al., 2014). This concept is steeped in power and privilege, and I did not approach this research design lightly.

Chapter Summary

I intentionally selected narrative inquiry as my approach to this study given the emphasis on storytelling in this project. Narrative inquiry situated within a poststructural paradigm provides the space for the co-construction of knowledge and acknowledgment of the multiple truths of my participants. This methodology supports the methods of interviewing and document analysis which allowed me to answer both of my research questions comprehensively. I

established trustworthiness in this study through transparent communication, balancing participant meaning with my interpretations, and using a systematic approach to analysis.

Chapter 4

Results

Participant Data

After gaining approval from the institutional review board, I recruited participants through email messages and social media outlets such as LinkedIn. Email templates and recruitment materials are provided in the appendices as Appendix C and Appendix E respectively. Six participants completed the consent forms to move forward with the study. The sample criteria for this study includes participants who have applied to medical programs within the past three cycles including the most recent cycle and graduated from institutions in the state of Georgia. Participants attended undergraduate programs at public institutions in Georgia, though one indicated that she transferred from a community college into a large public university which meets the eligibility criteria for the study. They each provided a copy of their personal statements that they used in their medical school applications to be coded for document analysis and agreed to 60-minute individual interviews which were conducted via Zoom.

Table 1 highlights demographic characteristics of the participants. To provide additional context from Table 1, three participants identified as having a first-generation immigration identity, meaning that they moved to the United States at a young age. Three participants indicated that their parents, aunts and/or uncles, and grandparents immigrated to the United States, and this is notated in the table under the 2nd + 3rd Generation Immigration Status column. Identities regarding immigration status are important to note as they came up both in participants' personal statements and interviews. Table 1 also shows that three participants are

applying to medical programs in the current cycle for the first time. Two of those participants are anticipating a gap year and reapplication while one has already been accepted to at least one program at the time of the interview. Two participants are reapplying in this cycle and have taken at least two gap years. One participant took two gap years before applying and is currently in her first year of medical school.

Table 1

Participant Demographic Data

Pseudonym	Race/Ethnicity	Gender	Transfer Student	1st Generation Immigration Status	2nd + 3rd Generation Immigration Status	Number of Gap Years	Application Status
Ana	Latinx	Cisgender Woman she/her	Yes	Yes	No	3	Reapplicant-waiting in current cycle
Bina	Black	Cisgender Woman she/her	No	No	Yes	0	First-time applicant-waiting in current cycle
BJ	Black	Cisgender Woman she/her	No	Yes	Yes	2	Reapplicant-waiting in current cycle
Hana	Black	Cisgender Woman she/her	No	No	No	2	First Year Med Student
Joy	Indian	Cisgender Woman she/her	No	Yes	No	0	First-time applicant-accepted in current cycle
Grace	Latinx/Hispanic	Cisgender Woman she/her	No	No	Yes	0	First-time applicant-waiting in current cycle

Themes from Document Analysis

Personal statements are a required component of the medical school admissions process. They are the first of usually multiple essays an applicant will write for their applications. A prompt and guidelines for writing and formatting the statement is provided. While the language of the prompt may change to some degree from application cycle to application cycle, generally the essence remains the same. Typically, applicants may be asked to discuss why they want to be a doctor or attend medical school, any particular obstacles they encountered in the process, and what are their motivations for learning about medicine. They are given a character count of 5300. It is important to distinguish that it is a character count, not a word count, so this is a very brief document equating to about one page of single-spaced writing. Because this study is interested in how participants experienced the medical school admissions process as a whole and how they made decisions about the stories they shared in their application materials, the inclusion of their personal statements for analysis was vital in addressing the research questions.

I conducted three rounds of coding using an inductive approach. First, I read through all of the documents and took notes of observations I made from each document. Next, I coded for any words or phrases that appeared across the texts. Then, I coded the statements again to ensure I did not miss any potential themes. I counted each time a label was mentioned in a statement. Labels that included ten or more counts, I deemed to be significant, resulting in six themes that emerged from the personal statements. Those themes include family, identities and advocacy, disparities in healthcare, barriers to medical school, values and traits, and relevant experiences. Table 2 shows the six themes and their counts. The names of themes are not necessarily the word

or words used by the participants. I named the themes based on common patterns of language. For example, each participant mentioned their family or specific family members at least once in their personal statements as impacting them in some way, thus I derived the theme, Family. Participants discussed their various identities and associated advocacy based on these identities as motivation for pursuing medical school. For example, Ana shared in her personal statement how she observed the challenges that non-native English speakers such as herself encounter in accessing healthcare. She ties her identities of being a Latinx woman who immigrated to the United States as a motivating factor in advocating for her community to provide more inclusive practices through multilingual healthcare. To demonstrate this, she discusses how she learned three languages in order to better serve her community. Similarly, Bina discussed the impact a doctor who identified as a woman and Ghanaian made on her and how that experience helped her identify how she would like to advocate for underrepresented patients as a woman whose parents immigrated to the United States from Nigeria. Participants shared their multi-faceted identities in connection with their desire to advocate for patients who share similar identities. Because of the connection between identities and advocacy and how frequently they showed up together across the statements, I named the theme Identities and Advocacy. Every participant explicitly shared experiences and observations with disparities in healthcare. Both BJ and Bina discuss disparities affecting maternal mortality rates of women of color, Ana describes the impact of financial and language barriers on accessing healthcare, and Hana shares how her grandmother's mistrust of healthcare providers stemmed from racist practices in the field, motivated her to be a physician that can help rebuild trust for patients of color. These are just a few of the many examples participants shared that mentioned healthcare disparities resulting in 28 unique mentions of disparities in some way across the six documents. The language used to discuss disparities in

healthcare was direct and explicit across their statements, so I aptly named this theme Disparities in Healthcare. Participants also shared challenges they encountered in their pre-med pathway. These ranged from needing to retake MCAT, explaining a decline in grades or challenges with coursework, accessing higher education and resources more generally, and in one case an illness that greatly impacted a participant's ability to proceed in her track. While these obstacles to medical school were not shared across all of the personal statements, a barrier of some kind was mentioned 10 times collectively, so I included this theme named, Barriers to Medical School to capture the various challenges some participants faced leading up to their application cycle. While three personal statements discussed barriers in getting to medical school, all participants wrote about the values and traits that meant the most to them that they wish to emulate as a physician. Participants shared 32 traits that they deemed valuable for a physician to have. While there was variety among the characteristics mentioned, these traits can be categorized into two primary values: trust and inclusivity. Participants shared that they desired to build and restore trust between patients and healthcare providers, so trust became a primary trait mentioned though they used a variety of words to discuss how they might go about achieving this. For example, participants used words such as communication and connection as means for restoring trust. Additionally, participants desired to provide inclusive care comprising of compassionate service, welcoming environments, and culturally competent care. Participants used a variety of terms, but all related to inclusive practices for patient care. The last theme is named Relevant Experiences. Participants frequently discussed experiences that they deemed relevant for medical school admissions including research experience, volunteer experiences, study abroad programs, and clinical work that they participated in. This is important to include because it highlights some of

the topics that they felt obligated to share alongside their personal stories. I elaborate on each of these six themes below.

Table 2

Themes and Counts from Personal Statements

Theme	Count
Family	12
Identities and Advocacy	20
Disparities in Healthcare	28
Barriers to Medical School	10
Values and Traits	32
Relevant Experiences	20

Family

All six participants wrote about family or specific family members as a motivating factor to pursue medical school. Bina and Hana discuss their observations of the medical needs of their aunt and grandmother respectively and how those observations led them to the field of medicine. Ana discusses the many hardships her father who was chronically ill experienced which ultimately and tragically resulted in his early death while she was in high school. This experience motivated her to become the doctor that her father didn't have. BJ shared ways that her parents have been tremendous sources of support and motivation in her statement. Grace attributes her motivation to pursue medicine to her relationship with her cousin who has autism and additionally mentions how the obstacles her grandparents encountered immigrating from Cuba to the United States, pushed her to continue on her pre-med path when it felt difficult. Joy shared a story about her younger sister having seizures as a baby and the impact this had on her and her family. Across all of these stories, family played a vital motivating factor for pursuing medicine. Every participant referenced a family member whether in the context of that family member's health and wellbeing or in the context of being the source of drive for medical school or both. BJ

and Bina shared motivating words from their Nigerian parents that helped them to stay focused on their path while Ana, Hana, Joy, and Grace shared their experiences with their family members as it pertained to their health and wellbeing. The stories they shared were diverse and varied, but the tremendous influence of their family was present across all of their statements.

Identities and Advocacy

It was evident across all personal statements that the identities of a participant were directly related to their desire to serve as an advocate for patients as a doctor. For some participants, they aim to advocate for communities while increasing representation in the field. Grace exemplifies this by saying, "As a member of the Latinx community, I hope to be a source of comfort for Latinx patients who may be more comfortable with a provider with a similar background to them." Ana shared that she plans to advocate for patients by being a multilingual physician to bridge the gap in care for non-English speakers. She recounts the hardships her father encountered with the healthcare system as a non-English speaker and in her statement declared her intent to contribute to finding ways to better support minority communities who do not speak English. As part of this endeavor, she shares that she plans to leverage her "Spanish, English, and Portuguese speaking skills with future patients to create a more profound physician and patient connection." Hana discussed her intent to advocate for patients like her grandmother and her patient from her clinical experience who both maintained a great distrust of the healthcare system and healthcare providers due to racism they had experienced as Black women. She describes that as a physician she plans to serve as "a bridge and advocating for my future patients so that they feel confident and comfortable with the quality of care I will provide."

Every participant wrote about their desire to be an advocate for others who share their identities. Several specifically mentioned wanting to be the representation in healthcare that is

currently lacking to make patients of color feel comfortable and seen. Nearly all participants mentioned wanting to create and/or restore trust for patients who look like them through advocacy. Ana specifically discussed the importance of being multilingual to provide quality care to diverse patients and so she has become fluent in three languages to better prepare her to advocate for her patients. Because it was evident that there existed a resounding relationship between identity and advocacy, I named this theme Identities and Advocacy.

Disparities in Healthcare

All participants wrote about systemic disparities in their personal statements. Multiple participants referenced the specific disparities experienced by women of color. BJ recounted stories she had heard from loved ones or from the news on this issue and realized there was a need for "an equitable and sustainable change." BJ attributed the disproportionate rate of COVID-19 deaths of African Americans to their White counterparts to "medical racism." Understanding that these disparities existed motivated BJ to pursue medicine to contribute to making healthcare more equitable through providing "impartiality, integrity, advocacy, and compassion for patients." Bina also shared her observations of disparities in healthcare. She described her involvement with a longitudinal research project that "seeks to advance health equity and promote wellbeing of Black birthing persons by examining the disparities in America's maternal mortality rate." Other writers focused on additional social determinants of health such as how being low income or experiencing a language barrier may impact one's ability to access healthcare. Grace explains that her understanding of disparities in healthcare and her corresponding desire to eliminate these barriers stems from what she was told by her "Abuelos" who immigrated to the United States from Cuba and experienced numerous challenges. She explains how they were discriminated against for not being "true Americans."

She described how those with marginalized racial identities such as Latinx communities, experience additional barriers to accessing quality healthcare. She reflects on how this impacted her family and cousin who is autistic. Ana shares that because her father experienced cultural and language barriers after moving to the United States, he was very limited in his ability to access sufficient job opportunities which ultimately impacted his ability to access healthcare. Additionally, Joy shares her observations of how patients with disabilities who are financially insecure are particularly disadvantaged in accessing medical care.

Participants shared a deep understanding and acknowledgement of disparities in healthcare and tied these to how they chose some of their extracurricular involvements. Both BJ and Bina were inspired to get involved with research that examined issues around healthcare disparities focused on women of color. Grace also shares being involved in research that examined healthcare disparities whereas Ana was motivated to volunteer in her community to provide support. Joy helped her patients connect with resources to help mitigate financial strains. All participants demonstrated a profound understanding of disparities in the healthcare system and how underserved communities are directly impacted by these disparities. They also leveraged this conversation around disparities to discuss ways they plan to contribute to eliminating inequities in the healthcare system. Additionally, their understanding of social determinants of health informed many of their extracurricular involvements that they chose to discuss in their statements.

Barriers to Medical School

While not explicitly mentioned across all of the personal statements, half of the participants wrote about barriers they encountered in their pursuit of admission to medical school. Two mentioned reapplying to medical school and retaking requirements such as the

MCAT. Ana shared how being a first-generation college student presented her with unique barriers because she lacked access to valuable information about navigating higher education. She also shares how finances can serve as a barrier and discusses the significance of obtaining a scholarship to help her pay for college. BJ discusses the importance of having access to someone who shares your identities in the field and how this lack of mentorship can prove to be a significant barrier for students seeking to gain clinical experiences. She was fortunate enough to meet a medical student who shared her identities. Upon discussing her surprise at meeting a Black woman in medical school, she writes, "I realized the value in having someone you can identify with in places you aim to be." This is an important realization as it later shows up more significantly in the themes from the interviews with participants. While the pre-med pathway is not easy for anyone, these participants discussed the challenges that they encountered with reapplication, the MCAT, difficulty balancing courses, the challenges of being a first-generation college student, and the importance of seeing your identities represented in the field and how these can act as barriers for applicants pursuing medical programs. While these obstacles were diverse for participants, I attributed any specific instances that they discussed as directly impeding their process to accessing medical education as barriers to medical school. Interestingly, three participants did not openly discuss any specific challenges they encountered leading up to applications, but for the three that did, they discussed multiple challenges that they experienced.

Values and Traits

It was interesting to me that all of the participants named a multitude of values and/or traits that are important to them to embody as doctors or that they admired in physicians that they observed. While these traits were numerous and varied, a few stood out to me as they were

mentioned repeatedly across personal statements. I nest their dozens of valued characteristics for physicians under two primary values trust and inclusivity. While writers used a variety of words such as empathetic, empowering, comforting, welcoming, equity and more, they utilized this language to demonstrate methods for building trust and providing inclusive care broadly. Participants used words like compassion and connection with working with patients multiple times to express their desire to be a source of comfort for their patients. Across personal statements, participants shared their goal of empowering patients by providing empathetic care. In many cases, it appeared that this value of practicing medicine in a compassionate and comforting way was a direct response to the lack of that experience in their own lives either through personal experience or in observations with others. It is through this compassionate care that participants hope to (re)establish trust in healthcare from their communities. Both Joy and Hana remark on facilitating trust with their patients by building relationships through connection and considerate care. Hana states that she intends to leverage her position as a doctor and identities as a Black woman to diversify the field, advance research, and "regain the trust of my patients through thorough and transparent communication." Participants shared that disparities in healthcare contributed to the mistrust patients of color have of healthcare provides. It makes sense then that building trust with their patients through intentional and empathetic medical practices would be an important value for them.

Another value shared in their personal statements is that of inclusivity. They acknowledge multiple angles of providing inclusive care. Bina describes "creating an environment that is accessible to all." BJ, too, discusses her plans of creating an environment "where all patients feel respected, acknowledged, and heard while being able to trust their provider." Ana specifically discusses how being multilingual will allow her to provide more

inclusive care and communicate more effectively across patient populations. Grace reflects on how her grandparents were discriminated against for being immigrants and how she strives to fill a gap where everyone has equal rights to access healthcare. Hana shared in her statement how she plans to dismantle inequitable systems in healthcare through "representation and communication." Each participant shared their recognition of disparities in healthcare and offered a response as to how they might combat these disparities by providing culturally competent, compassionate care that was inclusive for all.

Relevant Experiences

All six participants discussed relevant experiences in their personal statements, but to varying degrees. One participant only mentioned one relevant experience in her entire personal statement, a volunteer experience she had, while another participant mentioned seven unique experiences. These experiences ranged from campus involvements and volunteer work to research experience. The other participants were somewhere in between mentioning two or three experiences that they wanted to highlight to admissions committees. When asked in the interview portion about their personal statements about what they would change, if anything, many mentioned that they might focus more on their experiences. Whether they mentioned one extracurricular experience, seven or anything in the between, it was evident that across all the statements, relevant experiences of some kind were deemed to be important topics to include in a personal statement. The interviews further explore how participants made decisions about what to include in their personal statements and how their perceptions of admissions committees influenced these decisions, but their personal statements constructed a narrative that there are experiences that a competitive applicant ought to share in their personal statement.

Themes From Interviews

Through inductive thematic analysis across the interview transcripts, four overarching themes emerged from the data. Those themes consist of the hidden curriculum of medical school applications, impact of advisors, mechanisms of support, and pay-to-play approach to medical school admissions. The process for deriving these themes was very similar to the process for document analysis. I read through each transcript and coded any patterns of language that emerged from the transcripts. After completing this three times, I coded across all of the themes to determine if there were any universal patterns. While conducting the interviews, I took notes to capture responses that were particularly emphasized, nonverbal communication, and any other observations I made during the interviews. I chose to code my notes as well as additional support for the transcripts. I then synthesized codes across both the transcripts and my interview notes to name the four major themes discussed in this paper. All participants explicitly expressed frustrations around the hidden curriculum of not only the application process, but the entirety of the pre-med pathway experience. While they may not have all explicitly used the term "hidden curriculum" they used language that referenced this. For example, when describing how she learned about pre-med application requirements, BJ described it is very "hush" and "secretive." She explains how difficult it was to determine the timeline and no one was able to explain the process to her. All participants shared similar sentiments about not knowing enough about the process, soon enough. Because this was such a resounding experience across all interviews, I named this theme the hidden curriculum of medical school applications. Another important theme that arose discussed the impact of advisors both negatively and positively on them in their pre-med trajectories. In each interview, participants shared their experiences with various advisors at their respective institutions and how these interactions had a tremendous impact on

them. In many cases, participants discussed how working with advisors who were unaware of pre-med requirements or were not empathetic to their circumstances, contributed to negative advising outcomes. This left them feeling frustrated and discouraged. To contrast this experience though, participants also shared how working with an advisor who employs culturally competent, compassionate approaches to advising and are knowledgeable of the requirements for medical school left them feeling motivated, even if the conversation was direct. There was a significant focus on the role advisors played in these students' pre-med trajectory. Because of this, I included the theme: the impact of advisors. While advising acted as a form of formal support (or lack of support) provided by the institution, participants discussed how the pre-med pathway felt "isolating" and that they were "mostly on your own;" thus, another theme that emerged was around informal mechanisms of support, primarily stemming from their peers. Universally across all interviews, participants shared how their primary modes for gaining pre-med specific support came from peers both directly and indirectly. A direct example of peer support is that all of these applicants were involved in some kind of minority serving organization and this is where they received some guidance on their pre-med pathway. An indirect example is that one participant shared that she learned about important application requirements while in a study abroad program and another student in the program was discussing the requirements. This had been the first time she had learned about these aspects of the application process. Because participants collectively shared significant frustrations with hidden curricula and mixed formal support from advisors, informal mechanisms of support became an important theme for understanding how they persisted through the application process. Lastly and unanimously, participants openly critiqued the incredible financial burden of the medical school application process and how this pay-to-play approach to admissions maintains an immense barrier for historically excluded

applicants. Participants shared how they employed intentional strategies to program selection, inaccessibility of fee waivers, and their overall experience with the exorbitant costs of the admissions process. In addition to frustrations with costs in general, participants also shared the narrative that the costs excluded many of their peers from engaging in the application process because they could not afford to apply. Because of this discussion of finances being an exclusionary admissions practice, I named this theme the pay-to-play approach to admissions. I elaborate on each of these themes below.

The Hidden Curriculum of Medical School Applications

When I asked BJ how she learned about all of the requirements for the pre-med track during our interview, she stated, "It's like a secret. I don't know why it's so secretive." This sentiment was shared across every interview with participants. All participants mentioned doing their own research to learn about what they needed to prepare for medical school applications, and they still found pieces to be missing or confusing. Ana describes not realizing she could do a postbaccalaureate program during her gap year and then when initially presented with that option, admitted she didn't understand what a postbaccalaureate program even was because this was never a topic discussed with her. She shares an exchange she had with an advisor that suggested she take postbaccalaureate classes. Ana recalls saying, "What is a post-bac? And then she was like, 'there's so many like special science programs.' And I was like, what is a special science program?" More than half of participants expressed frustrations of not knowing about secondary applications and the immense stress this evoked because they had to hurriedly complete their secondaries before the deadlines. Bina shared how frustrating it was to try to learn about the various aspects of the application process such as secondaries and taking the CASper exam, while simultaneously applying. She explained her frustrations of not knowing about these

application components sooner by sharing, “It was, it was just a big domino effect. Like I wish I would have known earlier how the cycle really is so I would have given myself enough time to like prewrite my primary application.” She explains that if she had known about all these different components sooner, she would have planned accordingly. Similarly, BJ described her application experience as feeling “like a fish out of water because I was learning the process on the fly.” Grace discussed how challenging it was trying to figure out how to use the platform for the applications because it was not user friendly. This was an added burden for her as she continued to try to navigate the application process. Grace goes on to discuss how she did not know about secondaries and did not realize until late into the cycle that some schools had never received her MCAT scores because it was not clear in the application platform how to check for this. She explained that “just the platform itself was challenging to navigate.” Aside from specific application frustrations, Hana described her grievances with finding out late that she didn’t need to major in Biology to be pre-med. She stated that “I found out really late that you did not have to major in biology to essentially get all your requirements for pre-med.” She wanted to major in chemistry and ultimately added the major, but this presented challenges to her timeline and almost exhausted all of her Pell grant funding which would have meant she would have to pay out of pocket to complete her graduation requirements not to mention the extra work required to complete both degrees that incurred. Ultimately this led her to take a gap year for her applications. Had she known that she could major in something else sooner, this would have streamlined her graduation process and reduced her academic load so she could focus on more pre-med experiences to better prepare for applications. Most participants discussed wishing that they had someone who could explain what the entire process would entail and explicitly they wish they had a clearer understanding of the pre-med timeline. Bina described an instance where

she was in a study abroad program during the summer; she was actively applying to medical schools, and it wasn't until she was on the trip that another student asked if she had already completed the CASper exam, among other requirements. She explained in the interview how she didn't even know what that was or that it needed to be done until this student in the study abroad program mentioned it to her. She shared with me, "I didn't know a lot of things like CASper. I didn't know about preview. I didn't know that we had to still take like secondaries after the primary applications." Finding out about these requirements so late resulted in her completing those requirements very late in the cycle.

In addition to most participants articulating an extreme lack of awareness around the necessary requirements for admissions and the timeline of when these requirements need to be completed, unanimously participants expressed that they wished they had known about the process and timeline so much sooner. To this point Bina states, "Having the knowledge of what the application would be like would have been more helpful. And then, like for me, like I said, I kinda like was finding out things like really late." In every interview, participants discussed a desire to have known about the timeline and requirements earlier and that they would have started on their materials significantly sooner. Across interviews, most participants attributed their greatest challenges with the admissions process with just not knowing enough about it, soon enough. BJ explained, "Like no one is dispelling the timeline of like even like the gap years, like if you're not sure about it, like no one makes it clear..." It is interesting to cite that the curriculum for medical education has not changed in 90 years (Dalen and Alpert, 2009) yet accessing the curriculum remains a continuous mystery for many aspiring doctors.

The Impact of Advisors

In speaking with these participants, it became evident that academic, pre-health, and career advisors have a profound influence on the trajectory of pre-med women of color in their pre-med pathway. It is important to note that participants came from a variety of institutions, and the advising structures varied across institutions. Some had access to advisors who specifically provided consultation on the pre-med pathway; others had no access to pre-health-specific advisors. Some were advised by professional academic advisors while others worked with faculty advisors. Despite the variety in advisor type and structure, participants shared common themes when it came to advising support during their undergraduate studies.

Overwhelmingly participants disclosed that overall, they had a deeply negative experience working with advisors. For those who worked directly with a pre-med advisor, they described the experience as "intimidating" and "discouraging." Ana, who transferred from a community college during undergrad reflected on meeting with her academic advisor and described feeling deflated afterward because he recommended that she take more introductory courses because he was not confident that she would perform well having come from a community college. Ultimately, taking these extra introductory courses that were not required to progress in her program put Ana behind in her schedule because she was taking classes that she technically didn't need to graduate but felt compelled to take because her academic advisor eroded her confidence in her ability to perform well academically. Ana goes on to elaborate on how problematic it was for her advisor to harp on "weed out" classes like chemistry. She explained that by telling students they are unlikely to perform well in certain courses like chemistry, it almost becomes a self-fulfilling prophecy. She said instead, she wished her advisor had been direct that chemistry will be a hard class, but here are some resources to help you be successful instead of framing the course as a "weed out" class that she will be unlikely to

perform well in because she transferred. For those who had access to pre-med advising, they all mentioned finding out about pre-med advising late because it was voluntary and not required like their academic advising was, so many had already started the application process before they realized they had access to pre-med advising as a resource at their institution. BJ reflects on her first encounter with her pre-med advisor and laments how discouraging the experience was. She explained feeling stressed coming into the meeting and then the advisor recommended that she not apply this cycle, that she would not be competitive. BJ discussed how exasperating this experience was because she didn't know about resources like free MCAT study materials their office offered until after she had already taken the MCAT and then to have someone say her scores were not good enough, that all the work she had been trying to figure out on her own wasn't enough was incredibly deflating. She said it was "really hard to hear like when like this is someone's dream." She goes on to say that the admissions process "isn't about capability, it's about opportunity," explaining that she and other students she knows are more than capable to be successful in medical school, however because they lack the opportunities to access resources to help them like MCAT prep materials and early advising, they are almost forced to be behind. Then to finally find a resource like pre-med advising and to be told that she wasn't competitive created a discouraging experience. Ana remembers in her first meeting with a pre-med advisor she was instructed to change career paths altogether. Ana shared being surprised with the lack of empathy from her first pre-med advisor. She explained that even though he was a person of color, he did not seem empathetic to her experience as an immigrant, first generation student who had sacrificed so much to be able to even have the opportunity to pursue medical school and then in a matter of moments he recommended that she explore a new career path. When discussing her reaction to this response from her pre-med advisor, Ana shared, "oh my goodness

I was broken." Other participants echoed similar experiences of feeling deflated, discouraged, and exasperated by advisors who did not seem to be sympathetic to their experiences and the unique challenges they encountered in their pursuit of medical school. Half of participants felt that they were behind in coursework or taking extra classes they didn't need for their tracks because their advisor assumed they would need additional classes to prepare them or simply misadvised them because they were unfamiliar with pre-med requirements.

While all but one participant highlighted the negative experiences they encountered with advising in the pre-med track, there were a couple of examples that participants shared that demonstrated how powerful a positive advising experience can have. Returning to Ana's story whose initial advising experience left her searching for a new career outside of medicine and feeling distraught, she took her advisor's guidance and sought a new advisor who counseled in a different field. She recalled how empathetic and supportive the new advisor was. The new advisor acknowledged how hard a route it is for immigrant students and first-generation students, but she believed in Ana. This motivated Ana to continue on the pre-med track. Her new advisor equipped Ana with alternative ways of getting to medical school such as pursuing a special science master's program. Ana stated that "she really changed my life." Similarly, Hana shares that she too, sought out a new advisor for her pre-med journey and while her new advisor was direct and realistic about what she needed to do to be competitive, she provided Hana with actionable steps she needed to take along with supportive advice. It took time, but ultimately Hana was accepted to a medical program. BJ shares that while she experienced similar discouraging transactions with advisors, when she met with a career counselor for pre-health they were patient and encouraging. Instead of dwelling on what she perceived to be the less

competitive pieces of her application, she explains how the counselor focused on guiding her. She elaborates:

> Once you told them like what you want to do and like they help guide you, I think that was really priceless and that's not something that probably as minority women we hear very often especially like if (we) have goals that is maybe outside of this fear of what people think that we can do or you know, (fields that are not) highly populated with people who look like this (woman of color).

It is evident that despite the advising structure at an institution, advisors have the unique power and thus responsibility to influence the lives of their students whether they realize that or not. For these students, the impacts of advising transactions profoundly impacted their career trajectories and experiences in undergrad. While this may be an important point for advising practices in general for pre-med students, this is especially important for women of color. In her previous statements, BJ alludes to people potentially underestimating women of color because they may not be used to seeing them occupy fields like medicine and STEM. This may indicate that a level if implicit bias may be showing up in advising appointments. Studies have shown that young girls have internalized biases that impact their academic and career decisions (Cherry, 2020). Furthermore, "Such unconscious beliefs are believed to play a role in inhibiting women from pursuing careers in science, technology, engineering, and mathematics (STEM) fields," (Cherry, 2020). While more evidence is needed to definitively make a claim that implicit bias is informing some advising practices, it is reasonable to suggest that based on the experiences of these women, that to some degree it may have been present. Additionally, the literature suggests the importance of students meeting with women of color in their STEM tracks as having a positive impact on the persistence of women of color students in STEM careers (Wilkins et al.,

2023). Participants shared that while in some cases they met with a female presenting advisor or an advisor of color, it was rare that they met with a woman of color. Only in one instance was a participant able to connect with a woman of color advisor. The lack of representation among professional and faculty advisors in STEM fields may contribute to real and/or perceived implicit bias that participants alluded to in their interviews. This may also offer an understanding of why there lacked substantial instances of empathy in their advising experiences.

Informal Mechanisms for Support

While advising provided a method of formal support for students, all participants expressed that their most significant source of support came from peers. All participants cited speaking with peers as their primary way of learning about the requirements for medical school admissions. Bina mentions that her boyfriend's sister aided her significantly. In our conversation around who helped her learn about the pre-med requirements she shared, "My boyfriend's older sister applied the previous cycle before me so she, she was really like my biggest help." Bina continues to share this person helped her with her personal statement and provided advice on the process. Classmates and other peers who were on the same pre-med trajectory shared information with each other on requirements, how to prepare materials, and even reviewed each other's personal statements. Ana shared how impactful social media was in finding support for her pre-med pathway. She shared:

> I know like what's it called social media is not always the best but in my experience, I have to say that I found a lot of helpful tips, you know, from a lot of (pre-med people) you know, cause that there's so many, you know, people that look like me, they're going through the same struggle with the application cycle and there's so many people that already gone through it.

All participants shared that they used some form of online resources whether that was social media or online forums to find support on their pre-med pathway.

Another tremendous source of support for participants was through involvement in minority-serving programs and organizations such as the Louis Stokes Alliances for Minority Participation (LSAMP), an NSF funded program focused on supporting minority students in STEM. Bina shared that she participated in r all four years of her undergraduate program and said that it, "helped me more than anything," on her pre-med path. To this point, Grace shared that she found support through joining "a program for minority students who helps with like you know getting like experiences and like MCAT study groups." She explained that in this student group she was also offered personal statement assistance and interview preparation. Participants shared that aside from their friends and classmates, it was through LSAMP or similar organizations that they learned more details of the medical field and requirements of the pre-med track.

Lastly, participants sought support from individuals in the field that looked like them. While most admitted to the limitations of being able to access people of color in general let alone women of color in the medical field, the few who were able to gain a mentor discussed how profoundly helpful it was having that voice. Ana who identifies as Latinx, discussed her surprise at meeting a doctor who "looked like me and he spoke some Spanish." Her doctor sat down with her and gave her advice about moving forward on the pre-med track. She states, "it was a blessing, you know, to have him. He gave me a lot of hope." Throughout interviews, participants discussed the importance of representation in the field. They also shared observations they made in clinical settings that showcased a lack inclusive care.

In contrast to benefiting from interacting with a physician that shared her identities, Hana shared an instance when shadowing that revealed the lack of cultural awareness regarding post care between a White doctor and a Black patient. She recalls that she was shadowing:

> a White woman as a dermatologist and she had a Black patient that she was like depending on a lot of the person that does her hair to do a lot of her, I guess post care. And so like it was very obvious that she didn't know about the hair style that the woman was wearing.

Hana recounted being glad that she could be present in the room to offer a source of validation for the patient, but also felt frustrated with the lack of understanding about the patient's hair and culture around hair which came across as insensitive and didn't appear to be a consideration in the patient's care plan by the physician. This exemplifies the tension that can be created in shadowing experiences.

Pay-to-Play Approach to Medical School Admissions

Every participant discussed the substantial financial barrier to medical schools. Joy shared that one student she knew going through the process spent $10,000 on the entire application process, the MCAT, and MCAT preparation materials. Participants admitted that in some cases the expenses of applications forced them to be highly selective in where they chose to submit because they did not want to waste funds on applying to programs that they were unlikely to attend. BJ shared that she knew of students she felt would be great medical students and were seemingly highly competitive, but simply could not afford the application process. Hana explained that thankfully, she had someone tell her about the fee waiver for applications for qualifying applicants, but it is not widely known so if no one tells an applicant about it, they may not be aware that they can apply for it. Still, the waiver only assisted with initial application

fees, it did not help with other costs such as the MCAT or prep materials. Each participant expressed their frustrations with how expensive the application process was and for those who reapplied, they continued to pay fees multiple times over.

Metanarrative

During the interviews, I asked participants if they felt they could bring their whole authentic selves into their application materials. Joy responded by saying 95% of her authentic self was present and the rest she simply tailored to the mission of the particular school to which she was applying. She explained though that she was very selective with the schools that she applied to. She only applied to a few schools whose missions and values closely aligned with her own, so she found it easier to share more of herself. The other five participants shared that they engaged in a greater practice of censorship when it came to their materials, particularly regarding their personal statements. Across interviews, participants shared the challenge of striving to find the balance of sharing their story with "what does the committee really wanna know?" as Ana put it. Ana shares, "I definitely censored myself…you know, certain parts of your story, you can't share because you can't talk bad about this (the health system)." Bina also shared that she had to make cuts to her original story because her friend said, "'If a White man is reading this, do you want him to be offended?'" It quickly became evident that across participant experiences, they all had a conscious or subconscious notion to not come across as overly critical of the inequities in healthcare which seemed at odds with their motivation for pursuing healthcare since every single one of them voiced their passion for combating disparities within the health system. Even Joy, who mentioned only mildly feeling a sense of censorship admitted that she felt that she could not share frustrations she observed during shadowing hours because the admissions committee would not want to hear that, but instead she focused on other things to help ensure

that they would want to let her into their program such as relevant experiences. BJ expressed that the story she shared was authentic, but she did need assistance from trusted peers to help her not come across as using "inappropriate emotion." Overall, to varying degrees, all participants engaged in censorship when writing their statements. They seemed to be hyperaware of coming across as overly emotional or too critical of barriers in healthcare despite their primary motivators for pursing medicine was rooted in increasing representation and eradicating disparities.

I asked participants to discuss how they received feedback for their personal statements. In most cases, they received feedback from peers. When I asked how they handled receiving feedback, they all seemed open to most feedback with the exception of feedback that directly critiqued their personal narrative. Ana explained that at times it was difficult to take some feedback because the reviewer didn't know her story. She responded with "Because they don't know what I went through. They don't know exactly my whole story, you know…" Similarly, Bina shared that initially she included a piece on how she experienced imposter syndrome, but ultimately decided to take it out because she was concerned it would not be received well. When asked what they wished they had done differently in their preparation for applications, they all responded with getting more assistance with their personal statements and much sooner in their process. These applicants were consistently put at odds with their own lived experiences during their applications in order to put together what was perceived to be a more competitive application. They collectively censored the pieces of their stories that were simultaneously the deepest motivating factors for them in pursuing medicine.

A pattern of what participants excluded from their application materials became clear. Don't be overly critical of healthcare inequities, don't highlight negative clinical experiences,

and be mindful of how a reader who does not share your dominant identities might interpret your tone and stories. Hana recalled that in an initial draft of her personal statement she shared the story mentioned previously regarding her observations during a shadowing experience of a White doctor being dismissive of a Black patient as it pertained to hair and her post-care guidance. She felt compelled to share it because this experience helped to solidify her reasoning for going into medicine and providing much needed representation in the field. However, she decided to cut this excerpt out of her statement because:

> I felt like I could still make that statement by saying I want to diversify medicine rather than, you know, like explaining the specifics of that incident without like having someone knock it or something, I guess, like I guess hurt me.

In addition to demonstrating examples of what they felt should not be disclosed in their application materials, it was evident that participants felt that were certain aspects of themselves that they should divulge to admissions committees, namely relevant experiences. As is apparent in the themes from the document analysis I conducted, relevant experiences proved to be an important topic participants covered in their documents. Because many of the relevant experiences shared were grounded in their understanding of healthcare disparities, discussing involvements seemed to be a way to constructively discuss how they may contend with a conversation around inequities. For example, BJ, Bina, and Grace discussed undergraduate research experiences they were involved in that centered disparities in healthcare. Additionally, Ana shared her engagement through volunteer experiences within her community and a study abroad program. Nearly all participants discussed clinical and shadowing experiences as a way to highlight specific traits such as compassion and empathy that they practiced with patients. While participants valued these experiences and obviously felt compelled to share them in their

application materials to demonstrate their well-roundedness to admissions committees, when I asked if there was anything they would have liked to change about their statement, half of them mentioned expressing a desire to focus more on their personal story. Ana shared that she wanted to talk more about why her father was so integral to her need in becoming a doctor. Similarly, Bina shared that she felt she had to leave out important parts of her personal story in an attempt to design a competitive statement. While emphasizing relevant experiences was strategic for participants to include in their personal statements, it was still clear that they felt they had censored important pieces of themselves or their story because of concerns around how they would be perceived.

In addition to providing context on how participants developed their stories in their application materials for medical programs, a larger narrative emerged from across their stories regarding gatekeeping of the field and the perpetuation of disparities in healthcare via the medical school admissions process. All of the themes from this research point to exclusionary design within the pre-med pathway. Specifically, the themes of hidden curriculum of medical school applications and mechanisms of informal support demonstrate the enormous lack of available information regarding the pre-med pathway as well as guidance and support by individuals who share their identities. Because participants primarily found information about the admissions requirement through their own meticulous research and peer support, they voiced their frustrations of finding things out late. Bina shared that she found out about requirements such as CASper only after the application cycle had started and she was on a study abroad trip. Many articulated feeling forced into a gap year because they were finding out about various aspects of the application process too late and there lacked clear, consistent communication that disseminated information in a meaningful way for this group of students. Of the three

participants who had previously taken gap years, they shared seven years in gap years collectively as shown in Table 1. Two of three participants who were first-time applicants in the current cycle shared anticipating the need to take at least one gap year and reapplying, largely due to finding out requirements too late. To this point, Bina shared, "I think we often get trapped into taking a gap year, not necessarily because we want to, but because like we have to because we just didn't know."

The themes of hidden curriculum and lack of support from professionals in the field seem inextricably linked. As expressed by the participants, because many women of color may be forced into a gap year there is already an automatic disconnection from them and women who may be further in the process, but are already gone from the institution and in their gap year so are therefore not easily accessible to students who are early in their pre-med pathway. This perpetuates this gap of information which is exacerbated by the fact that there is already a tremendous gap in representation in the field to begin with continuing to feed the cycle of gatekeeping and exclusion. Bina articulates this point eloquently by saying:

> And we don't really have a lot of people go straight through. It's like people take a gap year so by that time there's already a disconnect between the people who are in gap years and the people in undergrad so then it's really not a lot of opportunity to like pass on information, like, "oh this is how it went for me."

Bina's point demonstrates the perpetuation of gatekeeping for women of color and how this contributes to a gap in communication and mentorship in the field. This metanarrative supports findings in the literature that point to a broken pre-med pipeline for students of color as a major contributing factor to the dearth of physicians of color in the field (Goode & Landefeld, 2018). Furthermore, the lack of representation in the field has been directly tied to inadequate care for

patients of color, exacerbating healthcare disparities discussed both in the literature and explicitly addressed by participants in their stories (Goode & Landefeld, 2018). The resounding themes around the hidden curricula of the medical school application process, a need for more formal support through advising and mentorship to dismantle barriers associated with this hidden curriculum, excessive financial costs among other barriers to medical school, all culminate across participant stories to suggest that the design of medical school admissions is actively exclusionary and inherently entrenched with discriminatory design elements perpetuating disparities in healthcare (Goode & Landefeld, 2018).

Chapter Summary

My analysis is broken into themes from my document analysis, interviews, and a metanarrative that offers a discussion across both sets of themes from document and interview analyses. I identified six major themes in my document analysis that I conducted independently of speaking with students about their storytelling process. Those themes include family, identities and advocacy, disparities in healthcare, barriers to medical school, values and traits, and relevant experiences that participants wrote about in their personal statements. Four themes emerged from the inductive thematic coding of the interview transcripts: hidden curriculum of medical school applications, impact of advisors, informal mechanisms of support (informal meaning, not a formalized resource or service provided by an institution), and a pay-to-play approach to admissions which captures the incredible financial burden of the medical admissions process that gave the impression that it is more important to be able to pay to play than being capable of being successful in medical school. Finally, after reflecting on their personal statements, during the interview process I asked participants questions that allowed them to elaborate on the decisions that they made with regard to what they shared in their personal

statements with admissions committees. When asked if they felt they needed to censor their stories, they all admitted to censoring to varying degrees. They were mindful of how people who may not share their identities might interpret their critiques or attitudes about the healthcare field. Through feedback, primarily from peers, they elected to shy away from appearing overly critical of barriers and systemic issues in healthcare which seemed to be at odds with their primary motivators for pursuing a career in medicine. One of the major themes that arose from the document analysis was that of disparities in healthcare where participants shared their desire to combat inequities in the health system but in the interviews, participants shared that they felt they had to engage in a great deal of censorship when discussing this topic in their statements to avoid coming off as negative or overly critical. The contradictory nature of these major themes demonstrated a tension in their storytelling to admissions committees.

To summarize, the findings answer both of the research questions which are how do women of color experience the medical school admission process and how do they censor or divulge their authentic selves in their application materials. Most felt as though they were finding out information way too late for their application cycle. Grace even shared her frustrations with using the platform itself. Overwhelmingly, the hidden curriculum and lack of formal means of communication and support for these students in their undergraduate studies attributed to confusion, frustration, and for most, applying multiple times. This results in what Bina described as “forced gap years.” To this point it is evident that the themes support the impression participants shared regarding the admissions process serving as a mechanism of gatekeeping in medicine. This in turn, perpetuates disparities in healthcare (Goode & Landefeld, 2018), the very motivation that each participant discussed for pursuing the medical field.

Chapter 5

Conclusion

Discussion

The findings of this study support the findings from the literature as well as offer new perspectives that are additive to research on pre-med women of color and accessing medical education. There is substantial evidence in the literature that students of color experience a multitude of barriers accessing higher education in general (Lucy et al., 2020) and especially professional medical programs (Esposito, 2009). The most significant barriers cited are the hidden curriculum of the pre-med pathway and medical school application process, the MCAT exam, and the exorbitant costs of applying to medical school (Hadinger, 2016). The findings from this study substantiate what is in the literature as participants unanimously named these same barriers as having the greatest impact on their pre-med trajectory. Participants shared that they had to conduct much of their own research on preparing for medical school applications and that there were numerous gaps in information. For example, participants shared that didn't know about requirements such as the CASper exam or secondary applications until they were already applying. Additionally, every participant mentioned wishing they could have started earlier on their application materials, but it was difficult gaining access to the application timeline and guidance on how to adequately prepare. Additional aspects of the hidden curriculum consisted of not knowing they could pursue majors other than biology or that they could gain additional educational experiences after graduation such as postbaccalaureate and master's programs. The hidden curriculum of the pre-med pathway proved to be an incredible hinderance for participants

in their pursuit of medical school and for many, resulted in gap years. Moreover, Hadinger (2016) found that the MCAT and financing the application process provided tremendous burdens on students and when I asked participants what they would change about the admissions process, the two resounding responses were: MCAT and the financial costs of being pre-med.

In addition to supporting current research examining barriers to medical school for students of color, this study contributes new perspectives to enhance the literature in two important ways. First, the findings of this study make evident the use of applying discriminatory design theory as a theoretical framing to understand the exclusionary elements embedded in the pre-med pathway and application process. While not a new theory, as DDT originated from urban planning literature, it is a newer theoretical approach in its application to student affairs and higher education research broadly. This study demonstrates the utility of DDT to understand not only the specific exclusionary components of the pre-med pathway such as hidden curricula, MCAT, and the substantial costs of the admissions process, but also situates these barriers in a greater narrative on gatekeeping and the perpetuation of the exclusion of women of color in the field of medicine. DDT helps to reveal the individual discriminatory design elements embedded in the pre-med track while also providing the framework to see this process as a mechanism that perpetuates disparities in healthcare broadly. This is a significant contribution to the literature as it offers a unique theoretical lens that when paired with other critical theoretical perspectives, provides a robust framework for analyzing intricate issues around equity and identities in higher education and student affairs work.

The other important contribution this research makes is that the findings provide a contextual understanding around the concept of "forced gap years" for pre-med women of color. Among three of the participants, they exhibited a total of seven gap years between them with two

more participants anticipating taking at least one gap year. This means that of the six participants, only one was situated to avoid taking a gap year at the time of the interviews, while others are engaging in multiple gap years. This is significant not only from the perspective of what these typically unplanned-for gap years mean for women personally and professional, but they also seem to attribute to the widening gap between pre-med women of color students and potential mentors who could offer guidance on their pre-med paths. With multiple gap years accruing combined with length of medical school and residency, these added years could potentially negatively impact women applicants with regard to family planning and possibly pitting them into the classic binary for women of having to choose career or family. Another side effect of multiple unintentional gap years could be maintaining the hidden curriculum, hidden. By this, I mean that without actively unveiling the hidden curriculum and with limited representation in the field resulting in limited access to physicians of color (Daley et al., 2021), these gap years help to keep access to crucial pre-med information and social capital covered by sustaining a void among pre-med women of color. Forced gap years are a result of students finding out about requirements and the timeline for medical school applications late into their cycles, resulting in them entering their cycle underprepared. While taking a gap year or more is not necessarily problematic and as statistics show are quite common (Georgia Board of Health Care Workforce, 2023), having the inability to plan accordingly for a productive gap year and the incredible financial burden this places on women of color is problematic. The impact of forced gap years for female applicants projects a multitude of possible consequences ranging from widening a mentorship gap to implications on family planning and wellbeing to maintaining the hidden curriculum. This expands on work done exposing the numerous barriers

students of color encounter in pursuing medical education by offering an additional manifestation of these barriers (Esposito, 2009; Hadinger, 2016; Lucy & Saguil, 2020).

This study is significant in that it substantiates what is currently found in the literature regarding access to medical education for students of color through the examination of various barriers, biases, and disparities in healthcare. Furthermore, this study enhances the literature by offering the application of DDT as a theoretical framework for student affairs research and contextualizing the concept of forced gap years experienced by women of color. Additionally, it emphasizes the experiences specifically of women of color and highlights the importance of examining their experiences with the medical school application process with considerations for the intersections of gender, race, and ethnicity simultaneously. I expand upon the limitations of this study, opportunities for further research, and offer recommendations for both student affairs practice and medical programs below.

Limitations of This Study

The greatest limitations to this study include geography and sample size. This study was bound by only selecting participants who attended undergraduate schools in the state of Georgia. By including various institution types from across states, the findings may be deeper and illuminate more specific themes for different institution types. Because I included various institution types and not a single type (only public research institutions for example), it is difficult to make any conclusions about specific institution types. While I find many benefits to including a variety of institutions, namely, to confirm that despite the kind of school a participant attended, they shared similar experiences, this too is limiting in that I am unable to dive more deeply into the nuances of diverse types of institutions and how their unique structures may impact the student's experience in their pre-med pathway.

Additionally, the study included six participants and while the data was rich, including a larger sample size will provide deeper insights into these themes. The sample size consisted of participants who have applied to medical school in the most recent past three cycles. This limits the examination of experiences with one specific cycle. For example, the prompt or essay for someone who applied in an earlier application cycle verses the present cycle may have variations within it, therefore applicants may have experienced slightly different applications. Some participants shared in passing how the COVID-19 pandemic impacted their preparation for medical school applications. This study did not explicitly include consideration of how a global pandemic may have affected the experiences of women of color engaging in the admissions process which is an additional limitation.

Opportunities for Further Research

There are many opportunities to expand upon this research. Studies that examine specific institution types and their respective structures for supporting pre-med women of color would be beneficial to this research as it would provide more nuanced data and recommendations for practice. In the current study, I did not capture experiences of women of color who attended private institutions or historically Black colleges and universities for example. While students attended different institutions, they primarily graduated from larger, public schools. Including a deeper analysis of additional institution types would complement this research in a meaningful and productive way.

In addition to more research on supporting pre-med women of color across different institution types, studies that include the perspective of medical school admissions committees and program faculty and coordinators would be incredibly valuable. Being able to analyze findings from research that focuses on medical programs and those who make decisions about

who is accepted into medical programs as it relates to women of color would offer important insights to a greater narrative of how the admissions process is experienced from both sides of the application. Examining findings from this study with a study that centers medical programs could offer a more holistic understanding of the process.

In this study, it became evident that advisors play a crucial role in the pre-med trajectory of pre-med students in general, but especially for women of color who are experiencing a number of barriers in their pre-med journey (Ejiogu, 2020). Further research on proactive and informed approaches to advising would offer student affairs practitioners more data and insights on how to better support this specific student population during their undergraduate studies. Because advising structures and styles vary greatly based on institution type, I envision numerous opportunities for research in this area that would be exceedingly additive to this conversation of supporting pre-med women of color as they seek guidance on preparing for their application process.

Another important theme that arose in this study was the concept of the pay-to-play approach to admissions. An important element related to this theme worth further investigation, may be examining the impact of an applicant's socioeconomic status on the admissions process and ability to access medical education. All participants discussed the enormous costs associated with preparing applications for medical schools. In some instances, participants disclosed that they came from low-income families and communities and some of the challenges they encountered associated with the financial burden of applying to medical school. While examining the role of socioeconomic status (SES) was not a specific goal of this study, it is clear that there may be important implications for considering the role SES plays in experiencing the admissions process for medical programs.

One goal of this study was to contribute to the literature the specific elevation of the experiences of pre-med women of color because currently there is a substantial gap. Additional studies that employ intersectionality to illuminate the specific experiences stemming from both gender and racial and ethnic identities are paramount. In this study, all participants self-identified as being cisgender women. More extensive studies that include the experiences of transwomen and nonbinary medical school applicants are needed. This is an incredibly significant area for further research as the need to provide safe and inclusive healthcare practices for transgender patients is vital (Heng et al., 2018). Drawing from intersectionality and/or other critical theoretical approaches such as critical race theory, gender identity theories, and critical queer theory could offer productive theoretical framings for further research in this area. Additionally, while this study employs intersectionality to examine how race, ethnicity, and gender inform experiences with admissions, this research should serve as a starting point for deeper exploration of what it means to be a woman pursuing medicine. For example, how do biological differences such as menstruation, pregnancy, breastfeeding, loss of pregnancy, concerns around (in)fertility, caregiving roles, and body image impact the experiences of women with MCAT preparation, application preparation, and interviews for medical programs? A deeper analysis of the bodily experiences of women and women of color specifically would expand this research a meaningful and holistic way.

Recommendations for Practice

The purpose of this study was to use the framing of discriminatory design theory and intersectionality to understand how women of color experience the medical school admissions process, censor and divulge their stories in their application materials, and ultimately understand how the relationships between the responses to these questions perpetuate the gatekeeping of

women of color in medicine. The findings support that the hidden curriculum of the pre-med path coupled with the limited access students have to role models in the field perpetuate a cycle of barriers, making it more challenging for pre-med women of color to access medical education. Based on the findings of this study, I have devised recommendations to inform student affairs practice and support medical school admissions processes.

Recommendations for Student Affairs Practice

Unveiling the Hidden Curriculum

While I believe more research examining the nuances of various institution types would aid immensely in offering more in-depth, specific recommendations for colleges and universities, in speaking with my participants, we have co-created several suggestions for providing more robust support to pre-med women of color during their undergraduate experience. First, it is imperative that the curriculum around the pre-med pathway is unveiled and becomes less "secretive" as BJ described it. This research demonstrates the substantial adverse effects experienced by women of color in pre-med programs when they learn about essential requirements and the application timeline late in their pre-health journeys as supported by numerous findings from the literature (White et al., 2012). Making this information more readily available and earlier to students is key.

One way to achieve this could be through offering specific resources at orientation or to incoming students in their first year. Providing handouts or creating a QR code that links to what a general application timeline looks like with resources to help them get started in their pre-med path could be included in these materials. Because we know that family is important to these students as expressed in their personal statements, this same resource could be shared with parents and loved ones who may serve as crucial support networks for these students.

Normalize alternative paths to medical school. Many participants shared that they were unaware of nontraditional pathways to the field such as using a gap year to pursue a master's degree or taking postbaccalaureate classes. Ana explained in her interview that she only ever saw traditional routes to medical school shared but offered that, "I think it would be great to have that image of like a nontraditional route." In addition to participants sharing their appeal for more diversity of avenues to getting to medical school, statistics show that the average age of a first-year medical student in the state of Georgia is 28 (Georgia Board of Health Care Workforce, 2023). With most students graduating from their undergraduate programs around the age of 24, there is an obvious gap between college graduation and matriculation into medical school (Lee, 2019). Therefore, equipping students with alternative pathways to medical school while in undergrad will help them plan out their timelines more effectively.

Additionally, leveraging technology can be a valuable tool for institutions to help diminish how clandestine pre-med requirements such as the (Extra)Curricular Capital is as described by Michaelec and Hafferty (2023). A few examples of this may include using an institution's social media accounts to feature alumni who have been successful in their pre-health career to offer advice, record videos offering tips and strategies for approaching the personal statement, partner with medical programs to provide virtual information sessions about programs and utilize emails and listservs to communicate resources and services consistently. All participants shared that they learned about requirements through their own online research, so it is clear that students are searching the virtual space for assistance, and institutions can use this information to devise strategic ways of leveraging their own digital spaces to meet students where they are in the process.

In addition to learning about pre-med requirements through their own online research, each participant shared that they learned about many aspects of the process from their peers and student organizations. Institutions may consider working more intentionally with their student organizations on campus to better serve this population in more proactive, deliberate ways. If an organization does not currently exist that supports pre-med women of color specifically, student affairs practitioners may consider sponsoring one to foster community and disseminate pertinent information about the application process and timeline. Additionally, they may find ways to help expand the work that organizations such as LSAMP offer to students with marginalized identities.

Compassionate, Informed, and Intentional Approaches to Advising

Participants shared that the most positive transformational advising sessions they experienced were facilitated by advisors who exhibited compassion and empathy and were well informed on the requirements for medical school. Additionally, even though participants acknowledged that in most cases they were interacting with advisors who did not share their same identities, advisors who were culturally competent still provided a safe and welcoming space for their students. Ideally, institutions would be able to offer specific pre-health advising that is required for students with a pre-med intention. I recognize that this is not feasible at most colleges and universities. While it may not be possible for all institutions to offer specialized pre-med advising all of the time, there may still be ways that they can equip their advisors to be better prepared to offer more compassionate, informed, and intentional advising experiences for pre-med women of color.

Educating advisors on the pre-med timeline and requirements may help them better guide their students. Advisors that have a better understanding of their students' career goals and the

general requirements of that path, may be able to help them be more strategic in balancing their schedules and connect them to campus resources like tutoring early to be more proactive than reactive. For institutions that offer optional pre-med advising, exploring ways to formalize or require pe-med advising may be worth considering as participants that had access to pre-med specific advisors wished it had been required advising like meeting with their major advisor and that they had found out this service was available to them sooner. For most participants though, they did not have access to advisors who specialized in pre-health requirements. In either case, student affairs practitioners should provide and seek out resources to help advisors access up-to-date knowledge of the pre-med pathway.

Additionally, participants shared that the most impactful advising experiences they had were not necessarily with a pre-health advisor or in most cases with an advisor who shared all of their same dominant identities. Instead, these women shared the most transformational advising experiences they had, came from advisors who listened carefully to them, empathized, or at least sympathized with their situation, acknowledged their challenges, and offered them multiple, meaningful options to move forward. They did not dismiss the students' career goals or try to discourage them from continuing in their path. It is important to note that participants did not share that these advisors were idealistic or provided them with false hope. Instead, participants described these advisors as "direct" and "very realistic". This is important because it demonstrates a balance between being realistic about a student's competitiveness for a medical program with giving them the agency to move forward by offering them resources and alternative options to achieve their goals rather than being dismissive and leaving them without resources or additional options to pursue.

Additionally, this study suggests that providing advisors with opportunities to develop multicultural competencies could aid in facilitating more empathetic advising experiences. Ana shared the immense relief she felt and the positive experience she had with her advisor who acknowledged that the professional path for first generation and immigrant students is particularly challenging. Validating the student's journey and challenges had a powerful impact on the student, who later shared that she left the appointment feeling motivated and equipped with new information about alternative ways to medical school that she didn't have before. She shared that this advisor "changed my life." It is also important to note, that Ana only met with this person one time. While rapport building can take time, this example shows that it can be achieved in a single advising session. In contrast, participants alluded to the potential of some degree of implicit bias appearing in advising. To help mitigate bias and promote intentional advising practices, institutions should strive to offer development regarding multicultural competencies, implicit bias training, and compassionate advising techniques as a means to better support pre-med women of color on their pre-health tracks.

Additionally, advisors should strive to practice intentionality in their appointments. One way to go about this is to be mindful of the language we use with students, especially students from historically excluded backgrounds. Ana suggested eliminating the term "weed out class" from advisors' vocabulary because for her this language can facilitate a self-fulfilling prophecy regarding a student's ability to succeed in a rigorous course. Instead, being direct with a student that a course has historically proven to be challenging, help them balance their schedule to provide ample time to prepare for the course, and connect students proactively to campus resources like tutoring services, may be more effective in helping the student perform well in traditionally difficult courses rather than labeling the course as a "weed out class" and suggest

they take alternative courses. Having had experience as an advisor in STEM, I recognize that, especially with transfer students because they are acclimating to so many variables, oftentimes as a means to protect students and their GPAs, we may try to push them to more introductory courses. In my specific experience, due to statistics showing withdrawals, drops, and failing grade rates in some of our chemistry classes, it was strongly advised to help students adequately prepare through more introductory courses. I am not suggesting that advisors do not make these recommendations that would be in the best interest of the student, but instead suggest an intentionality in framing that conversation so that it empowers the student rather than deflates the student. Coupling this conversation with additional campus resources such as tutoring may provide added support to help empower the student in a proactive way.

Bridging the Communication and Mentorship Gap

In Hadinger's study, students attributed successful medical school applications to pre-med advisors, family, and faculty that had counseled and encouraged them through the entire process (2016). Students who lack this kind of capital experience an added barrier of not having easily accessible knowledge and guidance (Hadinger, 2016). This may mean that students who are first-generation college students and/or who come from low-income communities may be most challenged by these barriers. This research confirms that it is essential for pre-med women of color to see themselves in the field. All participants shared challenges they encountered due to the lack of representation in the field. Two participants shared instances in their clinical experiences where they observed patients of color receiving care that was not culturally informed or compassionate from White doctors. Each participant shared that they desired to contribute to the field of medicine by increasing representation and advocating for patients of color. This motivation appears to be a direct response to their own experiences with navigating the

American healthcare system. This research makes it apparent that there is a cycle of exclusion occurring. The lack of representation of women of color in medicine contributes to the impact of disparities on patients of color (Goode & Landefeld, 2018). Additionally, because representation is disproportionate, there lacks role models and mentors that can help cultivate the next generation of women doctors (Goode & Landefeld, 2018). Studies indicate that when students are able to see successful women in fields that have historically excluded them like STEM careers and medicine, it positively impacts their success rate in accessing and remaining in those fields (Rosenthal et al., 2013). All participants in this study discussed wishing they had access to pre-med information much sooner and to have someone help them understand the process. One participant shared that this gap in information sharing may be attributed to the fact that women doctors of color are difficult to access due to the lack of diversity in the field and that for many pre-med women of color, they are forced into a gap year which creates a massive disconnect for students early in their undergraduate studies who are trying to navigate the pre-med pathway. Having the ability to access women who have gone through the process early in their academic careers is more than just seeing themselves in future careers and having role models to demonstrate that they too can achieve this career path; it can quite literally serve as a primary mechanism of information sharing. Another participant shared that she noticed there lacks streamlined communication for Black women and women of color. She contrasts this to her observation of the experiences of her White peer who has doctors in her family. She explained that her peer had access to information much earlier and was significantly more prepared for the application cycle because she had access to multiple people to guide her through each step. This exemplifies how powerful this kind of social capital can be for these students (Michaelec and

Hafferty, 2023). There are strategies that institutions can employ to help mitigate this phenomenon.

Institutions can help mitigate this gap by establishing mentor programs for students to be able to access alumni who share their identities and career interests. Inviting guest speakers of color to come to classes and events to share their experiences working in their respective fields is another strategy that colleges and universities could employ. Citing women of color and diversifying class materials in STEM classes to reflect the contributions of women of color in the field may also aid in exposing women of color in STEM to the work of professionals in the field who look like them. Additionally, institutions should strive to develop a pipeline of communication for pre-med students with opportunities for students to interact with peers and alumni who have gone through the process to help close the communication gap. This may be especially important at institutions who are limited in advising capacity and my not be able to provide specialized pre-health advising services. To achieve this, student affairs practitioners may consider scalable programming efforts, events, and online platforms to help build community for these students and create more spaces for the exchange of information.

Recommendations for Medical School Admissions

Reevaluating Academic Requirements and The Holistic Admissions Process

Research shows that standardized tests are just one of many barriers to medical school admissions for students of color (Lucy & Saguil, 2020; Hadinger, 2016). I posed the question 'What would you change about the admissions process?' to each participant during our interviews. Across all interviews, participants shared that they would change the way the MCAT impacted the admissions process by making it less of a factor in application considerations, providing more accessible support for preparing for the MCAT, or by eliminating it altogether.

Through our conversations, there seemed to be a disconnect for many of them of how performance on the MCAT equated adequate preparation for medical school. Five of the six participants shared their struggles with accessing adequate test preparation resources to help them obtain a competitive score. In previous studies, test preparation for MCAT is found to be a major barrier for students of color who may have also experienced a lack of academic preparation in K-12 (Lucy and Saguil, 2020). These students enter college being un(der)prepared for higher education and then for those seeking to continue their education to graduate and professional studies, they have additional hoops to jump through compared to their counterparts who may have had more intentional college preparation in K-12 (Lucy and Saguil, 2020). This demonstrates, again, a perpetuation of maintaining barriers to accessing medical education for students of color. In addition to obstacles to accessing adequate preparation materials for the exam, participants expressed frustrations with the cost of the test. Hana discussed that she discovered there was financial support from a mentor, but had they not mentioned the fee assistance program, she would have never known that was an option. Access to test preparation and costs have again in this study proven to be substantial barriers for admission. I recommend that medical programs critically consider what the MCAT tells them about applicants. Is it an effective measure of how well a prospective student will perform in medical school? Or is it demonstrating that those who have the financial and social capital to access the exam, possibly multiple times, have more of an advantage in admissions? If the elimination of MCAT is not possible, perhaps examining ways of making it more financially feasible could be a meaningful endeavor through offering more waivers and fee assistance programs. Additionally, reevaluating the weight of MCAT in admissions could be reconsidered.

In addition to reconsidering the role of MCAT in admissions decisions, it may be time to reevaluate the prerequisite curriculum of the pre-med pathway. Dalen and Alpert (2009) acknowledge that the pre-med curriculum requirements have not changed in 90 years despite many professionals agreeing that courses such as organic chemistry and calculus are not needed for the practice of medicine. To take this even further, literature shows that organic chemistry specifically has been the reason for many students to not pursue the pre-med track and is used as a "weed out" class (Dalen & Alpert, 2009). In one study that followed 362 first year pre-med students, 85% of those who discontinued the path after 2 years cited organic chemistry as their reason (Barr et al., 2008). This research study also supports the questioning of including "weed out" classes such as organic chemistry. It is important to note that across participants, no one mentioned decreasing rigor or that a class was simply too hard or challenging. The recommendation is not to lower the standard of rigor for medical education and no participant in this study suggested anything resembling this notion. The recommendation here, is for medical programs to reevaluate the prerequisite courses and question how they directly relate to preparing undergraduate students for medical education. There lacks evidence demonstrating that a student who receives an A in organic chemistry will be a successful medical student (Dalen & Alpert, 2009), so what then is grounding the rationale for incorporating coursework that is being operationalized as a "weed out" mechanism, which then by nature is an exclusionary practice? The field of medicine is constantly evolving to respond to an increasingly diverse world, and I challenge programs to ensure that their admissions processes too, evolve to be intentional and inclusive by regularly evaluating their criteria and requirements.

In addition to reevaluating curriculum and standardized test requirements, participants shared their skepticism of a "holistic admissions" process. According to AAMC, holistic

admissions is defined as examining an applicant as an individual and taking into consideration their academic records in combination with their experiences and attributes (AAMC, 2024). One participant criticized that they don't believe admissions committees truly engage in a holistic approach to application review because when you review the statistics for programs, it was evident to her that they still prioritized GPA and MCAT scores. Another participant commented that when she reviewed the statistics of the field and still saw that Latinx doctors barely made up 2% of practicing physicians in the U.S., she felt skeptical that they use a holistic approach. Additionally, Bina shared her concerns around the change in affirmative action for admissions. She shared:

> Yeah, it's definitely just disheartening just because like I feel there already aren't a lot of people of color in medicine, like that's already a struggle…then like knowing there is now like an additional barrier in terms of getting into a school because you're not being compared off of equity.

She goes on to explain that for women of color in particular, the playing field is already incredibly uneven, and now there is an even greater concern around holistic admissions being truly holistic. These comments by participants suggest that there is a lack of transparency about what it means to engage in a holistic admissions process. For most, their interpretation of holistic admissions means offering greater consideration of the additional barriers and work that applicants from marginalized backgrounds had to go through to submit applications. Medical school programs might reconsider what it means to offer a truly holistic application review and provide more clear communication to prospective students as to what this process looks like.

To the point of communication, participants shared that they wished programs had a more definitive communication timeline. They reflected on their anxieties of being in application

limbo, waiting to hear from programs. A recommendation for medical admissions might be to analyze how programs are communicating information to applicants and when and what changes can be made to make this process more transparent. Additionally, clearly articulating what a program is considering when they claim to utilize a holistic admissions approach could be additive to this conversation of transparent communication.

Eliminating the Pay-to-Play Approach to Admissions

It is evident that the financial burden of applications is extraordinary. Even if you remove the costs associated with MCAT, applicants are required to pay a $175 initial application fee plus $45 per additional school (AAMC, 2023). Every participant in this study discussed the tremendous cost of medical school applications. For most of these women, they are applying a second and in some cases third time due to the "forced gap years" needed, so these expenses continue to accumulate. As BJ mentions it "isn't about capability, it's about opportunity," and those who have the financial means have many more opportunities to pursue medical education than those who do not. More financial support should be given to students to mitigate the pay-to-play approach to admissions. Increasing the amount of fee waivers given, offering application scholarships to help students cover expenses, and reducing or eliminating application fees could all be tactics to consider in making medical school admissions more financially accessible.

Chapter Summary

This study unveils the pervasive discriminatory design elements entrenched within the medical school admissions process and architecture of the pre-med pathway broadly, particularly impacting women of color applicants. It sheds light on the numerous, layered barriers that women of color experience in the medical school admissions process and how these perpetuate a cycle of exclusionary practices in healthcare, contributing to disparities in the health system

overall. As substantiated by the findings, these barriers encompass the hidden curriculum of the medical school admissions process, the lack of access to women of color mentors and representation in the field, the incredible financial burden of the application process, and the MCAT exam. Furthermore, the findings demonstrate the significance of accessing early interventions to application preparation such as inclusive and compassionate pre-med advising and other mechanisms for more formal support at institutions.

Moreover, this study shows that participants actively practiced censorship in their application materials specifically around sharing frustrations stemming from their observations and experiences with discrimination and disparities ingrained in the healthcare system. A unanimous motivation among participants to pursue medicine was to serve as an advocate for change in addressing healthcare inequities. This contrasts sharply with the practice of censorship they engaged in around the topic of healthcare disparities. This contradiction of desiring to become a physician to address healthcare disparities with the obligation to censor oneself around criticizing healthcare inequities created a tension within applicants' narratives. While this study demonstrates the complicated, systemic barriers experienced by pre-med women of color that are perpetuated through the discriminatory design elements of the pre-med pathway, several recommendations have been derived from this research.

Colleges and universities can be more strategic and intentional with support at the undergraduate level for pre-med women of color by providing early interventions to unveil the hidden curriculum around the pre-med pathway and medical school applications, equip advisors to provide transformative advising approaches, and help to eliminate the communication gap between students and mentors through the development of programs. Additionally, this study offers recommendations to medical schools for ensuring more inclusive admissions processes.

Medical programs should engage in a critical reevaluation of certain application requirements such as the MCAT and specific prerequisite courses such as organic chemistry as they relate to appropriate preparation for medical education. They should examine solutions to eradicating the financial barrier of applying to programs through the reduction or elimination of application fees, increasing the amount of fee waivers offered, and providing scholarship or grant opportunities to students to help offset these expenses. Furthermore, medical programs should offer more transparent communication to applicants and evolve their holistic admissions processes. These strategies can help institutions unravel the hidden curriculum of the pre-med pathway, mitigate biases leading to the application process, and contribute to disrupting the cycle of perpetuating disparities related to healthcare equity.

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APPENDICES

Appendix A

Student Interview Protocol.

Introduction:

Thank you for participating in this interview and research study. The purpose of this study is to understand how women of color experience the medical school admissions process and what kinds of support you had access to in your preparation for medical school applications. I am extremely grateful for your time and insights. We can stop the interview at any time. You do not have to answer any questions that make you feel uncomfortable. We can take breaks if needed. This interview will not exceed 90 minutes. This interview is confidential and no identifying information will be shared. You have been assigned a pseudonym. Do you have any questions before we begin? Do you have any questions regarding the consent form? Do you agree to having our interview recorded? May I begin recording now?

Participant Information:

Part A.

1. Confirm demographic information for participant eligibility shared in the survey:
    a. Race
    b. Gender
    c. Application status (accepted but not yet matriculated, matriculated into medical program, rejected, taking a voluntary gap year, taking a forced gap year, reapplied, applied for the first time but waiting to hear back)

Part B.

1. When did you choose to pursue the pre-med track and were you pre-med the entire time in undergrad?
    a. Tell me a little bit about why you decided to be pre-med and why you want(ed) to become a doctor.
    b. Tell me how you learned about all the requirements that are unique for pre-med students.

Institutional Support:

1. Where did you go to undergrad?
2. What was it like being a pre-med student at ____ University/College?
3. Can you tell me a little more about the support that you had for your pre-med path if any)?
4. Tell me about any resources or services that your institution provided to help pre-med students and what your experience was like using or not using these resources. Examples might be pre-med advising, workshops, etc.
    a. If you worked with a pre-med advisor, tell me what that experience was like.
    b. Did you utilize these resources or services?
    c. What was your experience like with these resources or services?
5. Did you work with an advisor that specifically served pre-med students?
    a. Tell me more about what this experience was like.
    b. Did you share similar identities such as gender/race with your advisor?

   c. Describe what your advisor was like and how they interacted with you.
   d. How did you interact/communicate with your advisor?
   e. What was most helpful about this experience?
   f. What was lacking?
6. Tell me about what kind of support you wish you had at your institution in preparing for your pre-med applications?

Experience with Medical School Applications:

1. How did you learn about the medical school admissions processes?
2. How many times have you applied?
3. Who helped you navigate this process?
4. Describe your experience with the admissions process. Please discuss any challenges or concerns you had throughout the process as well as any ways you received help and reassurance.
5. Can you describe what your perceptions of medical school admissions committees are?
6. Discuss how these perceptions influenced your approach to the application.
7. If you were invited to interview, can you tell me what that experience was like?
8. What would you change about the admissions process?
9. In preparing your application, do you feel like you were able to bring your whole authentic self into your materials or do you feel as though you offered the admissions committee a specific version of you? Can you tell me about how you made these decisions?

Co-document Analysis of Personal Statement:

1. Describe your process for your personal statement including how you selected your topic and any assistance you received.?
2. Discuss your writing process and how you received feedback, if any. Who gave you feedback? Did you agree or disagree with their feedback and why??
3. Do you feel that what you wrote is authentic to you/your experience?
4. Is there anything you wanted to share in your personal statement but chose not to include?
   a. Why did you decide to not include this?
   b. How did you decide what to share and what not to share?
5. What did you hope the admissions committee would take away from your personal statement?
6. If you could do it again, what story would you share with the admissions committee or would you use the same story?
7. Having gone through the process, what would you change about your personal statement, if anything?
8. What, if anything, would have been helpful for you in preparing your personal statement?

Thank you for participating in this study.

Appendix B

Participant Survey: https://ugeorgia.ca1.qualtrics.com/jfe/form/SV_8qcX08c49J3zS2W

Q1 Please indicate your application or acceptance status for medical schools. Which option best describes your current status? I have applied to medical school in the past 3 years and I

- have been offered acceptance to a program (1)
- have been accepted and I am currently enrolled in a medical program (2)
- have been rejected or denied by all of my programs (3)
- have deferred enrollment (4)
- am taking a gap year or gap years (5)
- am currently in the application and interview process for the present cycle (6)

Q12 Please upload a copy of your application materials including your personal statement and essays here. If you are providing multiple documents, please utilize the next 3 additional file upload boxes otherwise you can skip those questions.

Q1 Please indicate your race.

- Asian (1)
- Black (2)
- Bi/multi racial (3)
- Indigenous (4)
- Latinx (5)
- White (6)

Q2 Please provide any ethnic identities that you hold (examples: Native American, Indian, Chinese, Hispanic, etc.)

_____

Q3 Please indicate your relationship to your gender.

- I identify as a cisgender woman (1)
- I identify as a trans woman (2)
- Neither of the above options apply to me, please indicate in the text box (3) _____

Q4 Please provide the name of the college or university you attended for your undergraduate studies. If you transferred between colleges and universities, please provide the name of the institution you graduated from.

_____

Q5 Were you a transfer student?

- Yes (1)
- No (2)

Display This Question:
If Were you a transfer student? = Yes

Q6 Please list all of the institutions you attended excluding dual enrollment.

_____

Q7 Interviews will range from 60-90 minutes and will take place on Zoom. If you do not have access to Zoom, please let the interviewer know by emailing clhimsl@uga.edu. Please provide your email below for the Zoom link and details to be sent to.

_____

Q8 Please select the days and times that work best for your schedule for your interview. Please select all that apply.

- date/time (1)
- date/time (2)
- date/time (3)
- date/time (4)
- None of these work for me. Please provide two days and as many time blocks that work for you below. (5)

_____

Q11 Thank you for your willingness to participate in this research study. You may leave and discontinue your participation in this study at any time in the process. If you have any questions or concerns regarding this study and/or your participation, please contact Chelsea Wesnofske at clhimsl@uga.edu.

End of Block: Default Question Block

Appendix C

Recruitment Email

Hello,

You are invited to participate in a research study that examines the experiences of women of color on the pre-med track with medical school admissions processes. The purpose of this study is to understand the means of support, preparation, challenges, and any bias that pre-med women of color encounter during the admissions process.

To participate in this study, you must identify as a woman of color and have applied to medical school in the past 3 years (including this present 2023 cycle). Whether you were accepted, are taking a gap year, were denied, or any other status on your application, you are still invited to participate in the study. This study will consist of a 60-minute interview with participants held on Zoom. Participants will be provided with a $30 gift card for their time. To participate and schedule a time for your interview, please complete this brief survey.

Thank you for your time and consideration. For any questions or concerns regarding this study please feel free to contact me, Chelsea Wesnofske at clhimsl@uga.edu or my faculty advisor, Dr. Ginny Boss at ginnyboss@uga.edu.

Sincerely,

Chelsea Wesnofske

Appendix D

UNIVERSITY OF GEORGIA
CONSENT FORM

Navigating Bias in the Medical School Admissions Process

You have been invited to participate in a research study. Participation in this study is completely voluntary and you may end your participation at any point in time. The information in this form will help you decide if you want to be in the study. Please ask the researcher(s) below if there is anything that is not clear or if you need more information. Prior to the interview starting, we will go over this form and if you have any questions or concerns, we will address those before beginning.

Principal Investigator: *Dr. Ginny Boss*
College Student Affairs and Administration,
University of Georgia
ginnyboss@uga.edu

Co-Investigator: *Chelsea Wesnofske*
College Student Affairs and Administration,
University of Georgia
clhimsl@uga.edu

Purpose of the study: The purpose of this study is to better understand the experiences of pre-med women of color in the medical school admissions process.

Eligibility criteria: You are being invited to be in this research study because you have self-identified as a woman of color who has applied to medical school in the past 3 years.

Participation:
If you agree to participate in this study:

- We will collect demographic information.
- We will ask you several questions in the interview around your pre-med experience, preparation for the application process, and your personal statement.
- Interviews will occur on Zoom and be recorded. They will not exceed 60 minutes.

Participation is voluntary. You can refuse to take part or stop at any time without penalty. If you decide to withdraw your participation, you will still be able to collect your gift card. Your identity will be protected and kept confidential. You will be assigned a pseudonym.

Potential risks of the study: There are no anticipated risks associated with this study however, there may be questions that make you uncomfortable. You can skip these questions if you do not wish to answer them. We can also take breaks if you need to pause.

Potential benefits of the study: Your responses may help us understand how institutions can better support pre-med women of color in their preparation and navigation of the admissions process while simultaneously provide recommendations to medical programs to aid in making their admissions processes more inclusive.

Protecting your privacy: We will take steps to protect your privacy, but there is a small risk that your information could be accidentally disclosed to people not connected to the research. To reduce this risk we will assign you a pseudonym and keep all data secured.

For questions regarding this study: Please feel free to ask questions about this research at any time. You can contact the Principal Investigator, Dr. Ginny Boss at ginnyboss@uga.edu or Chelsea Wesnofske at

clhimsl@uga.edu. If you have any complaints or questions about your rights as a research volunteer, contact the IRB at 706-542-3199 or by email at IRB@uga.edu.

If you agree to participate in this research study, please sign below:

Name of Researcher	Signature	Date
Name of Participant	Signature	Date

Please keep one copy and return the signed copy to the researcher.

Appendix E


Participants Needed!
Are you a pre-med or current medical student who identifies as a woman of color? Were you a pre-med student in undergrad and are taking a gap year(s)? We want to hear about your experiences!
Get a $30 gift card for participating!
If you identify as a woman of color who is actively applying to medical school or has applied in the past 3 years, you are eligible to participate! Whether you have been accepted, denied, waitlisted, or taking a gap year, we want to hear about your experience with the admissions process for medical schools. Scan the QR code for more information.
For questions regarding this study you can contact Chelsea Wesnofske at clhimsl@uga.edu