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Advising Minority Pre-Med Students: Perceptions of Pre-Med Advisors at Institutions in the
Southeastern Association of Advisors in the Health Professions Region

A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis
East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Educational in Educational Leadership,
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by

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May 2023

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ABSTRACT

Advising Minority Pre-Med Students: Perceptions of Pre-Med Advisors at Institutions in the Southeastern Association of Advisors in the Health Professions Region

by

Victoria Vance Street

The purpose of this qualitative study was to explore pre-medical advisors' perceptions on their role in the pathway to medicine for students historically underrepresented in medicine (URiM) and to gain insight into barriers these students face. While a small amount of research exists on the perspective of URiM pre-medical students on the pathway to medicine, no analysis has been conducted on the role pre-medical advisors play. The underlying framework of this research study focused on the experience of advisors through the lens of academic advising approaches, self-authorship theory, and capital theory to make a strong collective framework to begin understanding the role of advising in the pathway.

Data were gathered through interviews using a non-random purposeful sampling strategy. Study participants were pre-medical advisors at undergraduate institutions in the SAAHP. Participants discussed their role in the pre-medical pathway for URiM students, advising approaches they employ, and their advising experience.

Key themes emerged during data analysis. Advisors tend to approach their student encounters as individual experiences but draw from a variety of advising approaches. URiM students experiences a variety of barriers but most frequently encounter financial barriers, academic challenges, and concerns over lack of belonging. Advisors face a variety of challenges in

addressing barriers faced by URiM students. Advisors indicated that early intervention for academic support, collaboration with others tangential to the process, and more visibility for URiM students were approaches that would help retain URiM students on the path to medicine. There is perceived value in utilizing the role of pre-medical advisors as a method of support to keep URiM students moving forward as they can both an advocate for their success and help them navigate the challenge of being a pre-medical student.

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DEDICATION

To my parents who never missed a game, award ceremony, and graduation. While the journey was longer than I imagined, I hope I've made you proud.

To my brother who, despite my terrible teasing and childhood shenanigans, always shows up for me and sees me for me.

To my husband who had put up with too many years of me being a professional student, I absolutely could not have done this without you. You jump, I jump remember?

To my wonderful children, you are precious and loved and you too can do hard things.

To the family we choose, may everyone find themselves a community of friends that becomes family.

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I would like to thank my committee for their encouragement and support, I was ready to give it up and you gave me the push I needed to complete. I would also like to thank my participants in this study. It was wonderful to hear your stories and inspiring to hear your passion for the work you are trying to do in this space.

I would like to thank my family. To my parents and parents-in-love, thank you for all the prayers, babysitting, meals, working around my crazy schedule, and for your unwavering support. This could not have been accomplished without your support. Mike, you can finally stop asking me when I'll be done. Thank you, Robby, for always hyping me up and keeping me in style – you will always be the real MVP of the family. My husband and children have put up with my never-ending anxiety while continuing to be encouraging, for that I will be forever grateful. Sawyer, reach for the stars and know that you can do big hard things. Bo, find your passion and do not be afraid to stand out. I love you both more than I could ever express. Spencer, you have seen the joy, tears, pain, laughter, frustration, insanity, and exhaustion play out in real time. You really have always been a home run.

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Chapter 1. Introduction

Entering the medical field can be a lengthy and arduous process, particularly for those who want to become a physician. This difficulty becomes more apparent when aspiring physicians enter the pre-medical arena as undergraduate students. The added personal, professional, and academic rigors assumed as a pre-medical student can cause students to rethink the pathway into medicine and opt for less strenuous opportunities (Alexander et al., 2021; Emery et al., 2018; Freeman et al., 2016; Gonzalez et al., 2010; Odom et al., 2007). This already difficult process is compounded for students of color interested in entering the medical field. “The underrepresentation of ethnic minorities as both healthcare professionals and student populations of the health professional schools/programs has been a major problem for many years” (Goode & Landefeld, 2019, p. 74). Most noticeably, the departure of students who are underrepresented in medicine (URiM) from the path to medical school occurs at a much higher rate than that of their majority peers (Barr et al., 2008). Although the reasons behind higher attrition rates for URiM students are not well understood, researchers suggest undergraduate academic performance, negative experiences, as well as disparities in primary education and institutional culture could all play a role (Alexander et al., 2009; Barr et al., 2008; Grumbach & Mendoza, 2008). Commonly cited for the attrition rate of students planning to pursue the pre-med pathway, and notably the attrition of minority students, are the rigorous science courses (Lam, 2017; Lin et al., 2013). Even though demanding coursework plays a role, it is somewhat unclear how having access to additional resources, like high-quality advising, may assist minority pre-medical students in their pathway to success. Pre-health advisors are in a unique position to play a role in one of the earlier stages in development of future health professionals, placing them in the ideal role to impact the retention of students, particularly minority students,

in the pre-medical pathway. While there is evidence that the lack of access to mentoring and advising is intertwined into the many barriers that face URiM students (Freeman et al., 2016), there is little current research on the premedical experience and what role advisement may play in the pre-med pathway for students, especially minority pre-medical students (Lin et al., 2013). Despite a minimal amount of information on the benefit of having a pre-medical advisor specifically, there is significantly more information on the benefits of having an academic advisor to guide students through their undergraduate degrees (Center for Community College Student Engagement, 2018; Young-Jones et al., 2013).

Increasing the level of support and resources at the undergraduate level could be essential as minority pre-medical students are preparing themselves to be competitive applicants for medical school. Capturing students early on in their undergraduate education through advisement, mentoring, and educational resources could allow more time, attention, and education focused on potential challenges they will face on the path to medical school.

Early research recognizes the importance of advisor support for minority students (Smedley et al., 2001) and subsequent research reinforces the importance of advising and mentorship at the undergraduate level (Barr & Matsui, 2008; Bos & Schneider, 2012; Chang et al., 2014; Hadinger, 2017; James et al., 2012). The perception of value placed on advising may provide a starting point in investigating potential resources that could assist minority pre-medical students in persisting towards medical school. The existing body of literature regarding the advisement of pre-medical students is small and research that focuses specifically on minority pre-medical students even smaller. Research that provides data from the advisor's point of view is virtually nonexistent. Providing an advisor perspective on their experiences advising minority

pre-medical students could afford an opportunity to discover innovating perceptions from those working at the undergraduate level that best understand the pathway to medical school.

Statement of the Problem

At present there is relatively little research on the perceptions of advisors regarding the medical school pathway for URiM students or the role pre-medical advising plays for URiM pre-medical students. Discovering more information from those who work most closely with pre-medical students could provide ideas to assist URiM pre-medical students succeed in the medical school admissions process. Understanding the perceptions of advisors on the pathway to medicine and establishing new ideas and practices for advising URiM pre-medical students could provide better opportunities for engagement and future success for URiM pre-medical students before they choose to leave the premedical pathway prematurely. Therefore, the purpose of this qualitative study is to explore pre-medical advisor perceptions of the role advisement plays in the pathway to medical school for pre-medical students who are under-represented in medicine (URiM) and to gain insight into advisors' knowledge base on barriers and solutions.

Research Questions

1. How do pre-medical advisors perceive their experiences working with URiM pre-medical students?
2. What are pre-medical advisor perceptions of approaches to increasing the number of URiM students?
3. How do pre-medical advisors perceive the role they play in the pathway to medical school for URiM pre-medical students?

Significance of the Study

This study is significant because it will add to the small body of literature surrounding advisement of URiM pre-medical students and provide ideas from the professionals working most closely with pre-medical populations on how to improve outcomes for increasing the number of URiM physicians. The findings of this study could identify the roles advisors may play in improving the pathway to medical school and could broaden the understanding of the barriers that URiM pre-medical students face potentially providing ideas for solutions that could be applied to improve the quality of advising and support offered to URiM students. Improving advising opportunities could positively impact the number of URiM students that choose to remain in the medical school pathway and allow them to present a more competitive application when applying for medical school. There is evidence that advising plays a significant role for students and their ability to be successful (Barr & Matsui, 2008; Bos & Schneider, 2012; Chang et al., 2014; James et al., 2012). Effective pre-medical advising for URiM students is an opportunity to assist in the initial stages of obtaining the overall goal of increasing the number of URiM physicians in medicine through assisting in the matriculation of more URiM students into medical school.

Definitions of Terms

The following terms are defined to clarify meaning and standardize usage for the purpose of this study.

BCPM GPA (Biology, Chemistry, Physics, Math): science GPA that is calculated on the medical school application. This GPA includes courses in Biology, Chemistry, Physics, and Math – the traditional pre-medical pre-requisite course subject areas (Johns Hopkins University, 2022).

Medical College Admissions Test (MCAT): “a standardized, multiple-choice examination created to help medical school admissions offices assess your problem solving, critical thinking, and knowledge of natural, behavioral, and social science concepts and principles prerequisite to the study of medicine” (AAMC, 2020a, para. 1).

National Association of Advisors in the Health Professions (NAAHP): “an organization of health professions advisors at colleges and universities throughout the United States, and abroad...it serves as a resource for the professional development of health professions advisors” (National Association for Advisors in the Health Professions, 2018, paras. 1-4).

Pathway: the journey to medicine that students follow in order to ultimately become a physician. A term formerly used for this was ‘pipeline.’ This term is decreasing in use as it has negative and limiting associations with things such as the ‘school-to-prison’ pipeline or oil pipelines. Both of which have serious negative impacts on populations of color (Collier, 2019).

Under-Represented in Medicine (URiM): “racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population” (AAMC, 2019a, para. 3).

Delimitations and Limitations

Delimitations

The design of this study focused on pre-medical advisors in the SAAHP region and is therefore delimited to pre-health advisors at undergraduate institutions in the SAAHP region. The study was delimited to the examination of pre-health advisor’s self-efficacy when advising URiM pre-medical students. The results may be generalizable to pre-health advisors who advise

URiM students at undergraduate institutions in the SAAHP region and may not be generalizable to pre-health advisor in other locations or other groups of advisors.

Limitations

This research is focused on undergraduate institutions within the southeastern region as defined by the Southeastern Association of Advisors in the Health Professions (SAAHP) consequently reducing the transferability of the study. The study is limited by the assumption that participants responded openly and honestly to the interview questions. Advisors may not feel comfortable responding to questions that they feel may reflect negatively on their quality of work or work ethic and therefore may have answered in a way that they feel would be approved of by the researcher. In addition, this study may be limited by the interview protocol which utilizes some interview questions I created and informed by other seasoned pre-health advisors working in the field. I conducted virtual interviews with participants, thus potentially limiting the rapport I was able to build with the interviewee.

Overview of the Study

Chapter 1 provides introductory information about the need for more underrepresented minorities in medicine. Chapter 2 provides an overview of the literature as it pertains to the history of admission of minority students in medicine and higher education, advising methodology and approaches, and current programs that focus on improving the number of minority students in medicine. Chapter 3 contains the methodology of the study. Chapter 4 provides the results of the analyses. Chapter 5 is a summary of recommendations for both further research and practice.

Chapter 2. Review of Literature

Healthcare disparities can be found in every community across the nation. Unfortunately, many of those disparities are more prevalent for minority populations (Agency for Healthcare Research and Quality, 2017). There is substantial evidence that increasing the number of health care providers from diverse backgrounds, including underrepresented racial and ethnic groups plays a critical role in tackling the projected primary-care physician shortage and healthcare disparities while also providing more patient centered and patient-concordant care (AAMC, 2021; Jackson, & Gracia, 2014; Marrast et al., 2014; Peek et al., 2012; Street et al., 2008). Several interventions have been attempted at multiple levels of the medical community to address the concern of ethnic minority underrepresentation. Although some of these efforts display promise, none have been able to initiate the significant level of change necessary to negate the historical problem of underrepresented minorities presence in the field of medicine (Campbell et al., 2014). The National Academy of Medical Perspectives contends that in order to address the urgent need for a diverse physician workforce, new and innovative tools are required to meet these demands (Emery et al., 2018).

A substantial number of high school graduates desire to pursue a career in the medical field. Bastrikin (2019) found health professions programs to be the second most popular field of study among 4-year college students. Despite this level of interest, in many cases, underrepresented in medicine (URiM), pre-medical students depart from the pathway— that is the departure of undergraduates that previously declared an interest in medicine—early on in their undergraduate careers (Barr et al., 2008; Williams et al., 2019). The resource of pre-medical advising has been identified as a contributing factor to the persistence of URiM students (Freeman et al., 2016), while the quality of pre-medical advising, or lack thereof, can

significantly impact a student's navigation through the medical school admissions process (Atkinson et al., 1994; Hadinger, 2017). Despite the fact there have been studies of barriers to medicine for URiM students, little attention had been focused on the pre-medical advisement process and virtually no literature discusses the perspective of advisors in their role.

This literature review is designed to provide a broad overview of the scholarly literature that is relevant to the topics of underrepresented minorities in medicine, barriers in the pathway to medicine for URiM students, and the impact of advising on student success. Additionally, this chapter will discuss the history of URiMs in medicine and medical school admissions and education, advising strategies and their impact, and the various perceptions of advising as a practice. Through reviewing the literature on URiM students and advising, the researcher hopes to provide foundational context for a unique research area, the advisement of URiM pre-medical students.

Conceptual Framework

A variety of different theories inform student development and learning. The conceptual framework employed for this study includes academic advising approaches as well as self-authorship theory and capital theory to undergird the experiences of pre-medical advisors in working with students who are underrepresented in medicine. Examining pre-medical advisors through this lens allows participants to share their own stories and experiences regarding their perception of the pathway to medical school for URiM students including identifying barriers these students face. It also aids in identifying which approaches advisors are using that they believe to be the most effective in assisting students on the journey to medical school.

There is no unified theory of advising but rather, advising scholars borrow key theoretical insights from other disciplines to inform each approach to advising. More specifically, some of

the most significant knowledge to inform advising strategies comes from work on student development theory (Drake et al., 2013). “An advising strategy is a purposeful attempt to facilitate student learning and the development of a holistic and appropriate educational plan” (Drake et al., 2013, p. 8). Academic advising can be thought of as an intentional process shaped by a variety of different ways of thinking about students (Drake et al., 2013). Academic advising is linked to student success and retention thus having value to inform this study (Emekako & Van der Westhuizen, 2021; Drake et al., 2013; Hawthorne et al., 2022; Lynch & Lungrin, 2018; Young-Jones et al., 2013). “Sociologically, academic advising draws from interactionist theory; that is, individual views are modified or reinforced through interactions with others” (Drake et al., 2013, p. 5). For this study’s framework, the specific advising approaches that will be applied will be appreciative advising and proactive advising. It is necessary to use academic advising theories in this instance because framework dedicated specifically to pre-medical advising does not exist.

Appreciative advising emphasizes students’ cognitive development through advising. This method “is a social constructivist advising framework and approach rooted in appreciative inquiry (AI), an organizational change theory focused on the cooperative search for the positive in every living system and leveraging this positive energy to mobilize change” (Drake et al., 2013, p. 83-4). Appreciative inquiry is a coordinated approach to organizational change that utilizes reflection, introspection, and collaboration to leverage collective strengths.

“Proactive advising as an advising strategy first appeared as, *intrusive advising*, in the work of Glennen (1975), who sought to blend the practices of advising and counseling into a form of student intervention” (Drake et al., 2013, p. 137). This approach utilizes qualities from both prescriptive advising and developmental advising, which gives the proactive advising model

a more personal approach, while incorporating intervention strategies that actively engage the student and advisor. This continued interaction fosters a relationship whereby advisors cannot only disseminate relevant information to a student, but they may also listen to problems and give advice. This allows the advisor to understand the role of the family, which lets the advisor get to know the whole student. Proactive advising requires that the advisor take the initiative to work with students rather than waiting for a student to come to them with a concern (Drake et al., 2013).

Self-authorship empowers students to think for themselves rather than being told what to learn. According to Jones and Stewart (2016), “the theory of self-authorship is considered a holistic theory of student development because of the integration of the cognitive, interpersonal, and intrapersonal domains of development” (p. 20). This theory helps explore how URiM students make meaning of their experiences as pre-medical students. Self-authored students are able to use advisors as collaborators and reflective conversation partners on their academic journey.

According to Bourdieu, a capital is a resource that provides the holder of such capital power and advantageous position in a social space (Greenspan, 2014). Bourdieu indicates that capital can present itself in “three fundamental guises: as *economic capital*, which is immediately and directly convertible into money...; as *cultural capital*, which...may be institutionalized in the form of educational qualifications; and as *social capital*, made up of social obligations (“connections”)” (p. 242). According to this theory, all human activity occurs within socially constructed fields. Within these fields, the three forms of capital (economic, social, and cultural) are recognized as valuable and those who possess more of those forms of capital have the advantage (Bourdieu, 1986; Carrington & Luke, 1997). In applying this theory to the pre-medical

pathway, we can utilize a simplified conceptualization of Bourdieu's theory found in the work of Michalec and Hafferty (2022) to view

(a) *financial (economic) capital* as monetary-based funds needed and utilized to pay for goods and services related to various aspects of medical school admissions and the progression through the PMP; (b) *cultural capital* as the accumulation of knowledge, behavior, and skills in knowing how to “play the game,” having a map, compass, and advice from guides to effectively navigate the premed realm and medical school admissions process, and (c) *social capital* as the presence and utilization of interpersonal relationships and group connections (i.e., social networks) that can provide emotional, social, and informational support. (p. 5)

“Dominant cultural capital facilitates success within mainstream institutions and organizations. Nevertheless, some individuals employ both dominant and non-dominant cultural capital, negotiating strategically between their community, family, peer, and school spaces” (Carter, 2003, p. 139). “Unfortunately, this forces students of color to ‘negotiate strategically’ between spaces” (Marcucci & Elmesky, 2017 p. 88). Educational institutions require students of color learn to negotiate educational spaces with dominant social and cultural capital. The voices of traditionally marginalized students can be overlooked if they do not adopt dominant capital in some settings. Additionally, these students are at a disadvantage when attempting the transition to college as the lack of capital can not only limit their possibilities, but also can limit what possibilities these students are even aware of (Ovink & Veazey, 2011). This dynamic establishes an opportunity for intervention thorough the work of advisors.

The current study's focus on the experience of advisors through the lens of academic advising approaches, self-authorship theory, and capital theory make a strong collective

framework to begin understanding the role of advising in the pathway to medicine. Using this conceptual framework to explore the experiences of pre-medical advisors working with URiM students will describe how the role of advising can impact a URiM student's ability to stay on the pathway to medicine. This framework considers a proactive way of thinking about advising as a vehicle to improve the path to medicine for URiM students.

Inequalities in Health Care

The societal burden of health and health care disparities in America demonstrates itself in numerous and significant ways. Murray et al. (2006) indicates a difference of 33 years between the longest living and shortest living groups in the U.S. The Economic Burden of Health Inequalities in the United States concluded that “the combined costs of health inequalities and premature death in the United States were \$1.24 trillion” between 2003 and 2006 (Andrulis et al., 2010, p. 6). Such health disparities arise from both biologic factors and social factors that affect individuals across their lifespan (U.S. Department of Health and Human Services, 2015). The World Health Organization (2023) defines the social determinants of health as the conditions in which people are born, grow, live, work and age that can contribute to or detract from the health of individuals and communities. Noticeable differences in social determinants exist along racial and ethnic lines, for instance, poverty, low socioeconomic status (SES), and lack of access to care. These differences can contribute to poor health outcomes (Centers for Disease Control and Prevention, 2011) with minority and low socioeconomic status populations bearing an unwarranted burden (Richardson et al., 2012). Individuals, families, and communities systematically experiencing social and economic disadvantage are met with larger obstacles to health. Characteristics including race or ethnicity and other qualities historically linked to

exclusion or discrimination are known to influence health status (Office of Disease Prevention and Health Promotion, 2022).

The Agency for Healthcare Research and Quality (2017) recognizes that health disparities are pervasive, persist in most quality measures and in some areas (particularly access to care) are widening. One of the largest contributors to the inability to address health disparities is the dangerous shortage and maldistribution of health professionals which is worsened by the persistent under-representation of minorities (Mittman & Sullivan, 2011). The United States health care system is believed to function most efficiently when individuals from diverse backgrounds combine their talents and perspectives to work collaboratively in order to enhance health and health care outcomes for all (Madara, 2012; Marmot et al., 2012). This is displayed in a variety of ways. Racial and ethnic minorities are more likely than non-Hispanic Whites to report experiencing poorer quality patient-provider interactions, a disparity particularly pronounced among the 24 million adults with limited English proficiency (HHS Action Plan, 2011). Non-white physicians care for 53.5 percent of minority patients and 70.4 percent of non-English-speaking patients, highlighting the crucial link between diversifying the physician workforce and reducing health disparities (Marrest et al., 2014). When patients see themselves as similar to or understood by their physicians it strengthens the physical-patient relationship. This perceived personal similarity is thus associated with higher ratings of patient satisfaction and adherence (Street et al., 2008). Furthermore, health disparities due to language barriers are reduced when care is provided by language-concordant clinicians. For example, studies demonstrate patients with language-concordant physicians report receiving more education about their care, have fewer unasked questions, and have better medication adherence and fewer emergency room visits (Eamranond et al., 2011; Manson, 1988; Ngo-Metzger et al., 2007).

“Diversity in the healthcare workforce is a key element of patient-centered care. The ability of the healthcare workforce to address disparities will depend on its future cultural competence and diversity” (HHS Action Plan, 2011, p. 3). In addition, medically underrepresented minority physicians are crucial for delivery of primary care through providing care to indigent and minority populations and improving access to health care services in underserved communities (Grumbach et al., 2008; Grumbach & Mendosa, 2008; Saha, 2014; Walker et al., 2012). Data collected from various studies across the last 40 years continue to show that minority medical school graduates disproportionately serve in minority and underserved communities. Minority physicians provide access to care where it is needed the most as they care for poor, sick, and uninsured Americans at significantly higher rates than nonminority counterparts. Subsequent studies across these years have validated that URiM medical students express a stronger commitment to serving in underserved communities and are more likely to follow through and fulfill that commitment (Marrast et al., 2014; Moy & Bartman, 1995; Saha, 2014; Saha & Shipman, 2008). While the lived experiences and perspectives of minority and underserved physicians enhance the care they provide to patients, it is equally important to note that “student body diversity is also associated with increases in students’ academic performance, retention, community engagement, cooperation, and openness to different ideas and perspectives” (Thomas & Dockter, 2019, p. 473). All future physicians, regardless of race or ethnicity, benefit from learning in an environment that fosters multiplicity.

It is estimated that by 2060 minorities will make up 56% of the population of the United States (Colby & Ortman, 2015). This growth creates a need for minority groups to be represented in the health care workforce in larger numbers to ensure all patients have opportunities for quality, competent care. Building a diverse workforce is a critical component of addressing

health disparities and “moreover, a diverse profession will contribute to the depth and breadth of medical research and improve medical educational outcomes for majority and minority students” (Metz, 2013, p. 33). To best achieve these outcomes, it is imperative to focus on the underrepresentation of URiM students in the physician workforce, starting with the matriculation of individuals who are considered under-represented in medicine into medical school.

Medical School Admissions & Diversity Initiatives

Understanding the admissions process for medical school is important in discovering how to overcome the barriers for URiM students. Identifying the barriers impacting underrepresented minorities, requires recognition of the historical changes in medical education that perpetuate these barriers. Over a century ago, Abraham Flexner undertook an assessment of medical education in the United States as part of his work as a research scholar with the Carnegie Foundation. This report transformed medical education in America and emphasized scientific knowledge and the biomedical model as the gold standard for medical training (Cooke et al., 2006; Duffy, 2011). Although this report stimulated reform that ultimately improved the quality of medical education, it also created barriers for students of color to enter the medical profession. In particular, African American students were largely affected as the Flexner report resulted in the shutdown of five of the seven predominately Black medical schools. Furthermore, the report resulted in widened the gap of academic requirements and marginalizing the role of African American physicians in society (Metz, 2013). This perpetuated underrepresentation on multiple levels until 1985 when former Health and Human Services (HHS) Secretary Margaret M. Heckler organized the first comprehensive study on the health status of minorities. This study served as the impetus for changes in policies, programs, research, and legislation to advance health equity at all levels of government (Dankwa-Mullan & Maddox, 2015). While the Heckler

Report elevated discussions on the health of minorities to the national level, it would be five years before changes would begin at the educational level. There were no significant changes seen in medical school enrollment of minority students until 1990 when the Association of American Medical Colleges (AAMC) initiated the *Project 3000 by 2000* which sought to encourage medical schools to increase the number of minority students by 3,000 over the next ten years. Specifically, this initiative recognized that while medical schools had the means and responsibility to improve education opportunities for minorities, additional support from outside organizations, like the AAMC, was needed to help solve the issue of underrepresentation. Enrichment programs for college students and training for medical school admissions committee members were initiated and ultimately lead to a slow rise in minority enrollment which capped at a level of 2,014 students in 1994 (Smedley et al., 2004).

Despite the *3000 by 2000* project not meeting its initial goal, efforts continued to expand and a decade later, the National Association for Advisors in the Health Professions (NAAHP) began to voice their support through a demand from the Sullivan Commission report in 2004 to bolster the importance on roles that multiple parties play in the success of minority students through a call for action to leaders in the country and key stakeholders in health and education systems to act on recommendations from the Sullivan Commission report to solve the crisis of underrepresentation in health care (Sullivan, 2004). The Sullivan Commission report stated that there are minorities missing from the ranks of health care professionals and that access to career in the health professions remains largely separate and unequal for the minority members of the population. Cohen et al. (2002) makes the point that the United States is a country with a rich variety of races and ethnicities. Because of this fact, inaction in minority representation will have unwelcome consequences for the health of the entire nation. The proposed solution from the

report was to target reforms at the precollege system. In order to create a structure in which all sectors of the population had equal access to high-quality primary, secondary, and college education so that academics become a level playing field for all, there must be a fundamental shift in public policy. Since 2004, the amount of resources available to minority premedical students has increased and includes opportunities in engagement and education through campus student organizations like the Minority Association of Pre-medical Students (MAPS) and Student National Medical Association (SNMA), in addition to support from individual undergraduate institutions, undergraduate pre-medical students, medical schools, and national organizations (American Academy of Family Physicians, 2019; Kaplan, 2019).

Over time, in response to the continued demands for an increase in diversity, more specific measures by medical schools have been taken to enhance diversity through the implementation of programs designed to increase the number of applicants from underrepresented backgrounds. These strategies have included hiring recruiters with a focus in diversity, creating pathway (formerly known as pipeline) programs, and the development of pre-professional programs and summer camps that are designed to engage an early interest in the health professions and establish relationships with students that will offer future support and resources (Epps, 2015; Giordani et al., 2001; Grumbach & Chen, 2006; McDougle et al., 2008).

Even with the introduction of increased programming and support systems, there is still a visible chasm between the aspirations and outcomes of these changes. URiM students often face structural and cultural barriers like marginalization, intellectual isolation, and benign neglect that make the path to success more difficult (Ray & Brown, 2015). Through a combination of factors, at some point in the education process the pathway of underrepresented minority students begins to. Attrition in the pathway is evident, but there have been relatively few studies published on

why students leave premedical studies (Zhang et al., 2020). Since there continues to be significant evidence to advocate for the addition of more underrepresented minorities in medicine, a multitude of efforts focused on recruiting and matriculating a diverse group of students into medical schools continue to develop. These efforts include pathway programs beginning at the elementary, middle, and high school levels, mentoring programs during college, and post-baccalaureate programs (Achenjang & Elam, 2016). Many of these programs tend to place a large focus on the academic preparation of students interested in entering STEM fields. Attempting to cultivate a more diverse and culturally competent workforce, professional schools have hired recruiters, developed summer pre-medical programs and STEM enrichment programs to encourage the development of an early interest in the health professions (Achenjang & Elam, 2016; Grumbach & Chen, 2006; Talamantes et al., 2019). Institutional programming such as this provides support and guidance that can positively impact URiM students in their pursuit of careers in STEM.

Despite movement towards better programming and admissions processes, medical school admissions as a whole still rely heavily on the ideals laid out in the 1910 Flexner Report. The value of some of the qualities important in medical school applicants has remained consistent in the admissions process over the years with some slight shifts in how these items are conveyed. In 1982, Wechsler and Gale described an outstanding medical school candidate as “one who had excellent grades, a high score on the Medical College Admissions Test, an excellent record of work experience and extracurricular activities, and superb recommendations” (p. 29) and also indicated that a successful medical school applicant would be described by medical school admissions deans as “well-rounded” or “broadly educated.” Despite the appearance of well-rounded variety in these early descriptions,

Admissions committees at U.S. medical schools have, for the past century, focused their attention largely on predictors of success in the foundational science curriculum, relying heavily on academic performance in the biologic and physical sciences and scores on the Medical College Admission Test (MCAT) in selecting applicants for medical school.

(Witzburg & Sondheimer, 2013, p. 1565)

This approach persists the already enormous barriers for URiM applicants and continues to contribute to the historical challenges facing the ability to increase diversity in medical school admissions. Placing such weight on the measure of readiness for medical school as determined by academic metrics, which include overall GPA, a science or BCPM GPA, and scores from the Medical College Admissions Test (MCAT), create a barrier for URiM applicants who, on average, have lower scores in these areas (Association of American Medical Colleges, 2022).

Currently, the Association for American Medical Colleges endorses 15 core competencies essential for entering medical students that medical schools will look for in applicants (AAMC, 2022a). These core competencies include: Capacity for improvement, cultural competence, ethical responsibility to self and others, oral communication, reliability and dependability, resilience and adaptability, service orientation, social skills, teamwork, knowledge in human behavior, knowledge of living systems, critical thinking, quantitative reasoning, scientific inquiry, and written communication (AAMC, 2022a). These competencies have helped shaped quest for a more equitable admissions process through the use of holistic admissions. Holistic admission strategies promote review in the admissions process which endeavors to consider each applicant individually by balancing their academic metrics with experiences and attributes” (AAMC, 2022b, p. 1). While holistic review attempts to reduce inequality and promote college access, it does not directly confront the systemic barriers facing URiM students.

Barriers in the Pathway to Medicine for URiM Students

Despite efforts at a variety of levels, certain racial and ethnic groups continue to be underrepresented in medicine, even as their proportion within the U.S. population grows (Metz, 2013). In 2010, Steinecke and Terrell noted that the proportion of African American doctors to the African American population in the U.S. was lower than it was in 1910. Between 1997 and 2017, the number of matriculating students at U.S. allopathic and osteopathic medical schools who were from racial and ethnic groups underrepresented in medicine increased by 30%. However, overall matriculation in medical school increased by 54%, in effect, causing the actual proportion of underrepresented minority entering medical students to decrease from 15% to 13% (Talamantes et al., 2019). Current data recognizes Black or African American physicians make up just 5% of all active physicians, while Hispanic physicians compose 5.8% of all active physicians (AAMC, 2019b). When considering medical education, underrepresented minorities are even more poorly represented among medical school full-time faculty. According to recent data, Black or African Americans represent 3.8%, Hispanic or Latino – 3.5%, and American Indian or Alaskan Native – 0.15% of the full-time medical school faculty (AAMC, 2022c).

Finding a remedy to improve these numbers requires looking back far earlier in an applicant's journey than the medical school admissions process itself. "URiMs often face challenges with inequitable primary and secondary education and encounter barriers accessing resources for success in postsecondary education and career specific mentoring" (Derck et al., 2016, p. 260). Access to equal educational opportunities presents a barrier, unfortunately it is only one of multiple issues impacting URiM students. Other contributory factors include: poor academic preparation, lack of exposure, lack of training for standardized examinations, admissions committee compositions, and racist attitudes (Goode & Landefeld, 2019). Additional

contributing factors to the decline in career persistence for minority pre-medical students include: motivation, advising, past academic achievement, career aspirations upon entering college, satisfaction with college, engagement, peer groups, academic major, standardized test scores, Grade Point Average (GPA), campus climate, faculty student interactions, academic major, student perception of the environment, and the number of pre-medical students (Antony 1996, 1998; Barr et al., 2008; Fries-Britt, 1997; Hollow et al., 2006; Tucker & Winsor, 2013). Barr et al. (2008) concluded that many URiM students struggled persisting when confronted with academic challenges. Highlighting the struggle students faced lacking insight on course selection and its ability to impact GPA while supporting the development of basic skills need to become successful in future coursework. One of the greatest hindrances for many underrepresented minority students in the pursuit of admissions to medical school is thought to be the lack of preparedness (Atherton, 2014; Owens et al., 2010). “Inadequate preparation is a major limiting factor in efforts to increase the pool of qualified applicants for advanced education. Poverty, subpar resources in minority serving schools and poor mentorship contribute to losses of minority students at each level of education” (James et al., 2012, p. 474). The reality and perception of educational inequality can plant a seed for distrust in academic systems. Talamantes et al. (2019) found “Black and Hispanic students are much more likely than White students to have attended high-poverty primary and secondary schools; such environments strongly affect their educational achievement, often leaving them less competitive on traditional academic measures such as the Medical College Admissions Test scores and grade point averages” (p. 804). Although systemic issues play a major role in the barriers faced by URiM students, the culmination of many factors result in a disproportionate amount of URiM students applying to medical school.

To attract more minorities into medicine, we must address factors that inhibit the submission of application to medical school. Studies (e.g. Rao & Flores, 2007; Toretzky et al., 2018) reported that URiM students encounter many barriers including: academic barriers, financial constraints, lack of mentorship, limited exposure to the health fields, and poor advising. In respect to the lack of African American medical school applicants specifically, “differences in education based on socioeconomic status, poor advise, bias/stereotypes, and difficulty with preparedness for a rigorous premedical curriculum are other barriers affecting both the quantity and quality of applications” (Prince & Williams, 2017, p. 1281). While URiM students are just as likely as White students to initially choose majors in science related areas, they are substantially more likely to leave these majors prior to graduation (Williams et al., 2019). Similar barriers can be seen with first generation students who encounter challenges with comprehending the college process, the ability to finance college, finding a community, balancing both family and educational obligations, and attempting to navigate their higher education experience while lacking in cultural capital (Romero et al., 2020). It is worthy to note that a large proportion of first-generation students in health professions are also URiM students (Ackerman-Barger et al., 2016). In fact, 51% of first-generation undergraduate students are from minority backgrounds, while only 30% of non-first-generation undergraduates are from minority backgrounds (Redford & Hoyer, 2017). Alexander et al. (2009) provided one example of how an academic environment might affect the chances of success among premedical students from underrepresented racial minority (URiM) groups. After statistically controlling for differences in pre-college characteristics such as academic preparation, they found that Black and Latino students still earned significantly lower grades in premedical gateway courses. The lower grades

earned in those courses was explained not only by academic preparation but also by other environmental factors which contributed significantly to those race differences.

Academic preparation is a key component in the pathway to both admission to and success in medical school. For URiM students, academic barriers begin as early as Pre-K and continue through their primary and secondary education years (Goode & Landefeld, 2019). Early academic disparities are the product of a variety of issues. Disproportionate numbers of minority students are subjected to harsher disciplinary standards that lead to loss of class time and perception of future educational goals (Epstein et al., 2018; Losen, & Skiba, 2010; Onyeka-Crawford et al., 2017; Wallace et al., 2008). Discipline issues and self-perceptions may be worsened as children of color are more likely to attend schools that are under-resourced (Goode & Landefeld, 2019). The objective effects of these issues can be seen in test scores. Considering the NAEP National Reading Score differences, minority students achieve score significantly below 'proficient' levels (Department of Education, 2017). The barriers encountered early on by URiM students persist as they continue on their educational path. The lack of academic preparation resulting from the barriers discussed previously presents persistent challenge at both the undergraduate and graduate levels for URiM students. The majority of health professions, medicine in particular, require prospective students to complete a pre-requisite list of classes in the fields of math and sciences. As URiM student enter the college setting less prepared than their majority peers, these gateway courses prove to be an area of struggle that ultimately cause URiM students to lose interest in pursuing a career in medicine (Toretzky et al., 2018). The effects of educational disparities can be seen later in the educational continuum as URiM students who manage to stay in the pathway as they prepare for and take the Medical College

Admissions Test (MCAT). Data from the newest iteration of the MCAT indicate that URiM students still regularly scoring below the 50th percentile of all test takers (Elks et al., 2018).

Financial constraints and hardships are another factor that contribute to the various barriers faced by URiM students in the pathway to medical school (Rao & Flores, 2007; Toretzky et al., 2018). Hadinger, in his 2017 study, reported a majority of participants specified that financial challenges were the biggest barrier they faced. Freeman et al. (2016) found that students were concerned about their ability to pay for both undergraduate tuition costs as well as the costs associated with other key steps in the path toward medical school. Applicants face the costs of multiple fees for exams, application submission, and secondary application submissions which can amount to exorbitant amounts not including the costs of travel and lodging for the interview portion of the admissions process (AAMC, 2020a; Hadinger, 2017).

The lack of a mentor is another obstacle in the pre-medical pathway for URiM students (Thomas et al., 2011), particularly the lack of mentors who are racially or ethnically concordant (Toretzky et al., 2018). While peer mentoring “is especially critical to providing a welcoming and inclusive atmosphere for URM...URM students also need faculty mentors” (Toretzky et al., 2018, p. 8). Mentorship can be a successful tool, but it is often found lacking for students of color as there are few minority faculty and clinicians to serve in mentor roles (Toretzky et al., 2018). Lack of mentoring resources and social support is a recurring theme in literature about the success of URiM pre-med students. When examining obstacles that racial and ethnic minority medical students face, URiM students cite that lack of support was a hindrance to their student success. Without the benefit of having family members who have had exposure to higher levels of

education, URiM students feel that they cannot discuss questions and concerns with their support system. Additionally, persistence in the pre-medical path for URiM students is fueled by exposure to medicine, medical practice, and social support from mentors (Gasman et al., 2017; Odom et al., 2007; Thomas et al., 2011). The inability to obtain support through a mentor is yet another issue that perpetuates attrition in the pathway.

Lack of mentorship can go hand-in-hand with limited exposure to health care. The lack of connections to physicians as mentors has a negative impact on an already difficult pathway (Barr et al., 2008). ‘You can’t be what you can’t see’, a common phrase to sum up this limited exposure, holds some truth as the number of URiM physicians is sparse in comparison to the overall physician population (Grumbach & Mendoza, 2008; Hadinger, 2017). “Many URMs come from socially and economically disadvantaged backgrounds and may not have any health professionals in their families or their families’ social networks” (Toretsky et al., 2018, p. 9). Accessing internship opportunities that would provide health care exposure can become a barrier as many of the opportunities are not paid and URiM students need to earn an income to pay for their education and in some circumstances support their families (Barr et al., 2008; Thomas et al., 2011; Toretsky et al., 2018).

Viewing these barriers through the lens of capital theory can give insight into the reasoning why URiM students experience challenges at a higher rate than majority peers. According to Bourdieu (1986), all human activity occurs within socially constructed fields. Particular aspects of capital within these fields are recognized as more valuable. As such, the accumulation of this capital is advantageous to maintain upward mobility in society. Bourdieu’s theory of capital presents itself in three categories: economic capital, cultural capital, and social

capital. Each of these categories is applicable in relation to the aforementioned barriers for URiM students.

First, financial barriers play a role in the ability for URiM students to pursue the path to medicine. Not only is the concern present for the cost of education itself, but the pre-medical pathway had a variety of other financial requirements outside of the cost of tuition (Rao & Flores, 2007; Toretsky et al., 2018). There is evidence to support the argument that the economic capital possessed by families impacts the educational achievements of its offspring (Treiman & Yip, 1989; Wang & Huang, 2021). In addition to increasing the perspective of personal education, families with higher economic capital have the resources to invest more capital into educational resources and development of their children (Matthews et al., 2011; Shi et al., 2013).

The possession of cultural capital allows those pursuing medicine as a career to have access to knowledge and resources on how to effectively and efficiently navigate the pre-medical pathway. “Bourdieu’s concept of cultural capital refers to the specialized skill set—‘knowledge, skills, and competence’— children acquire from their environment (primarily parents, but also peers and schools)” (Ovink & Veazy, 2011, p. 371). Cultural capital can be leveraged by URiM students to navigate higher education and overcome barriers. URiM students, more often than not, lack the resources of someone in their household or community who can share the cultural capital needed to navigate towards higher academic endeavors (Augustin, 2010).

The disproportionately small number of URiM students in medical schools demonstrates opportunity gaps that could be attributed to a lack in social capital (Smith et al., 2009). Social capital is defined by Bourdieu (1986) as,

the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance

and recognition—or in other words, to membership in a group—which provides each of its members with the backing of the collectivity-owned capital, a credential which entitles them to credit, in the various senses of the word. (p. 248-249)

Michalec and Hafferty (2022) found that social and cultural capital were intertwined and reflected the availability, or lack thereof, to resources that were necessary to navigate the pathway to medicine effectively. Michalec and Hafferty also discovered that concerns regarding the challenges related to social and cultural capital were “expressed specifically by students from racial and ethnic minority groups” (p. 13).

The theory of capital is applied specifically to the pre-medical pathway through the work of Michalec and Hafferty (2022). This study utilized a simplified conceptualization of Bourdieu’s theory as it applies to pathway to medical school stating:

(a) *financial (economic) capital* as monetary-based funds needed and utilized to pay for goods and services related to various aspects of medical school admissions and the progression through the PMP; (b) *cultural capital* as the accumulation of knowledge, behavior, and skills in knowing how to “play the game,” having a map, compass, and advice from guides to effectively navigate the premed realm and medical school admissions process, and (c) *social capital* as the presence and utilization of interpersonal relationships and group connections (i.e., social networks) that can provide emotional, social, and informational support. (p. 5)

The use of these conceptualizations can be applied to explore the role and presence they play within the pathway to medicine as this path also reflects society at large as these forms of capital are unevenly distributed. Lacking in capital, premed students from minoritized groups are at a

disadvantage as their pathway to medicine contains more capital related hurdles than their peers (Michalec & Hafferty, 2022).

Although the opportunities for URiM students to pursue a medical degree have increased since the mid-1960s, many students leave the field and never make it into medical schools or fail to obtain a degree once in medical school. Current research on why it is difficult for URiM students on the premed track attributes their struggles to a variety of reasons that range from lack of mentors to inadequate educational background to unsupportive academic environments (Antony 1996, 1998; Barr et al., 2008; Fries-Britt, 1997; Hollow et al., 2006; Tucker & Winsor, 2013). One profession that underscores a possible resolution to all of the barriers represented is advising. While no single factor plays the most prominent role in pre-medical training and preparation, a combination of factors including: curriculum, institutional resources, enrichment programs, teaching approaches, and premedical advisement create more successful outcomes of acceptance for minority pre-medical students (Atkinson et al., 1994). According to Atherton (2014), a student's lack of preparedness can be proactively addressed through face-to-face advising practice and the advisor's ability to modify practice to effectively address the issues specific to students from a minority background. Tucker and Windsor (2013) found "students struggling with these challenges could benefit from critical academic interventions or advising that are more conducive to improving their career decision making, therefore improving their academic persistence" (pp. 38-39). Effective pre-medical advising at the undergraduate level could assist with an increase of minority students who go on to gain entrance to medical school. Despite the fact the burden of medical education and successful completion lies primarily with the medical schools themselves, the journey starts with preparing students at the undergraduate level so that they are competitive enough to be accepted.

Advisement and its Impact

Advisors in higher education play an integral part in the success of undergraduate and graduate students. Gordon (1998) identified academic advising as an important vehicle for assisting individuals with academic planning. Academic advisors are essential in promoting development and success in college age students (Kuh, 2008). Broadly defined, student success includes, “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills, and competencies, and attainment of education objectives” (Kuh et al., 2006, p. 1). Quality academic advising has been described as the cornerstone of student retention (Dannells et al., 1992), and a common method of providing student support in higher education (Chan et al., 2019; Drake et al., 2013).

As the higher education student body becomes more diverse, academic advisors can play an increasingly crucial role in addressing the needs of nontraditional students. Possessing less of the ‘cultural capital’ that provides familiarity with how to negotiate successfully through a university system, traditionally underrepresented students can benefit tremendously from quality academic advisement. (Tsui, 2007)

Several studies (e.g. Noel-Levitz, 2009; Pitt et al., 2012; Schoeman et al., 2021; Tudor, 2018) indicated that students' retention in college is directly related to their experience in and satisfaction with academic advising. Alternative to the positive associations with advising, student dissatisfaction with academic advising, career counseling and job placement services has also been reported (Kotler & Fox, 1995; Saenz & Barrera, 2007). Some students report advisors as unhelpful and possibly detrimental to the pre-medical experience (Hadinger, 2017). Even with marginal negative opinions, academic advising can be a lifeline for students and is crucial in their development and success. Research demonstrates that academic advising significantly

contributes to student success (Klepfer & Hull, 2012). It is worth noting that the research on the relationship between academic advising and learning outcomes is limited (Smith & Allen, 2006) as examining results from an institutional and student perspective have been the focus of past studies (Atkinson et al., 1994; Corts et al., 2000; Hadinger, 2017). However, research regarding an advisor's perspective is absent.

The Global Community for Academic Advising (NACADA) is on the forefront of academic advising, providing education and professional development opportunities for professional advisors. Academic advising relies heavily on the input of NACADA. While each institution may tailor its definition of advising to meet their own institutional needs for advising, NACADA endorses four pillars (documents) of academic advising that lay out guiding principles for institutions to utilize. These four guiding principles include: The Concept of Academic Advising, Core Values of Academic Advising, Core Competencies of Academic Advising, and CAS Standards for Academic Advising. As the global community for academic advising, NACADA provides additional framework and an abundance of resources to assist new and seasoned advisors in pursuing best practices in advising (National Academic Advising Association, n.d.). Historically, academic advising was a faculty responsibility (Goetz, 1988), however higher education institutions are moving towards advising models that employ full-time professional staff to meet the many needs of their students (Grites et al., 2016; Troxel et al., 2021). Advisors are often 'jacks of all trade' because they must be knowledgeable in many areas in order to meet the needs of the students they advise. The concept of students having an advisor is not new, in fact, O'Banion (1972) and Crookston (1972) identified a concept of academic advising as similar to what typically had been faculty-student relationships (Gordon, 1998). Advising could also be seen as a collaborative partnership that facilitates the development of

students as they learn how to identify and achieve their goals (Bloom, 2005). This partnership focuses on student learning about themselves through interactions with their advisor that should empower a student to develop a plan to reach their educational potential. It is an essential element of a college system and while institutions have a variety of infrastructures for their advising, every institution has some form of advising for their students. The prior employment experiences of advisors vary greatly with advisors coming to the field from a wide variety of backgrounds (McGill et al., 2020).

Advising can have both positive and negatives effects on students. For example, in a study on the role of academic advising in STEM student retention Rozhenkova et al. (2022), students identified advising as problematic and one of the main reasons that pushed them out of the STEM major they were pursuing. Rozhenkova's research,

emphasizes the responsibility of academic counselors in students' decisions to leave STEM majors and the importance of care in their work. The findings suggest a need for STEM departments to re-assess academic advising philosophies and practices while creating more supportive learning environments. (par. 1)

Negative experiences within the major, including interactions with counselors, make students feel unsupported and unwelcomed, negatively affecting their sense of belonging within the major (Seymour & Hunter, 2019).

Although positive feedback about advising is more common, the overall lack of information about advising and its impact provides an opportunity to improve the advising process as a whole. Structure and continuity across the academic advising spectrum could ensure that each student receives a comprehensive and equitable experience. A more efficient

advisement session could create substantially higher engagement at each meeting (Aiken-Wisniewski et al., 2015).

Academic advising provides an opportunity for an institutional representative to share information with students regarding a variety of subjects. The advising session may inform, counsel, or coach a student toward their degree requirements or future professional goals (Kuhn, 2008). Typically described as a collaborative relationship, an advisor can provide guidance and support in the planning of a student's educational goals and clarify personal and career goals while consistently evaluating the progress towards those goals (NACADA, 2014). Advising theories have not been established (Creamer, 2000), but The Global Community for Academic Advising (NACADA) highlights three main types of advising that are most commonly used by academic advisors and informed by the goals of the advisor-student interaction. These three principal approaches include developmental, prescriptive, and intrusive or proactive advising. (Noaman & Ahmed, 2015).

Developmental advising is the most fundamental and comprehensive approach to advising practice (Crookson, 1972; White, 2006). This approach fosters shared responsibility between the advisor and student, enabling the academic advisor to take a holistic view of each student. Creating this type of relationship can maximize the student's educational experiences in an effort to foster his or her current academic, personal, and career goals towards future success (Drake et al., 2013). Developmental advising "is focused on helping students explore and define academic, career and life goals and pathways, and develop problem-solving and decision-making skills through collaborative and process-oriented advising" (Noaman & Ahmed, 2015, p. 360). In addition, a student is able to develop a more meaningful relationships with their advisor which builds stronger bonds of trust between the student and advisor (Winston et al., 1982). In practice,

this allows advisors to identify a student's capabilities so that they can then utilize their knowledge of resources and opportunities to support the advancement of the student towards their academic and career goals (Drake et al., 2013). The relationship building developed in this advising approach makes the student more prone to trusting and thus following the guidance laid out by the advisor. The developmental approach is based on both the adult and student development theory (White, 2006) and although evidence supports students prefer this approach (Broadbridge, 1996; Crookston, 1972), it can require a more significant commitment of time and resources in comparison to other models (Mottarella et al., 2004).

The prescriptive approach to advising allows the advisor to assume all authority and responsibility for students' progression through their academic programs (Gordon, 1992), in a role where the advisors main purpose is dictating information to the student. This style of advising places the advisor as the main source for information on curricular matters, institutional rules, regulations, and processes while placing the student as a passive receptor of information rather than an active participant process (Folsom et al., 2015, p. 16). For some populations—such as international, first-generation, at risk, exploratory, and military veteran students—this authoritative approach creates a positive response to the instruction that prescriptive advising offers (Folsom et al., 2015). Prescriptive advising is typically originated by the student in order to address immediate questions related to student progress in their academic program of study and ultimately their graduation rather than assisting in the formation of long-term goals beyond academics (Noaman & Ahmed, 2015). This type of advising is sometimes equated to a doctor-patient relationship model. Prescriptive advising is an important element in the dynamic process that defines academic advising, however, it is not recommended to be employed in isolation (Drake et al., 2013).

Proactive advising, formerly known as intrusive advising, combines “the practice of advising and counseling into a form of student intervention that allows advisors to provide students information before they request or realize they need it” (Varney, 2013, p. 137). The premise of this approach is that advisors and institutions should not wait on a student to experience difficulty, but that the advisor should be proactive in reaching out to students before they face crisis (Folsom et al., 2015; Noaman & Fouad, 2006). Proactive advising first appeared as intrusive advising, which sought to combine the practices of advising and counseling into a form of student intervention that allows advisors to provide students information before they request or realize they need it. This approach promotes relationship building similar to that found in counseling sessions (Drake et al., 2013). This is a direct, focused effort that facilitates active interpersonal engagement between the advisor and student. This engagement is generally initiated at critical periods in the student’s academic career (Noaman & Ahmed, 2015), thus giving the students a stronger opportunity for informed, responsible decision making. In this approach, “particular cohorts of students may be targeted such as academically at-risk students (e.g. students on probation), or high-achieving students” (Noaman & Ahmed, 2015, p. 360). Proactive advising also allows the advisor to understand the role of the family which lets them get to know the “whole” student. Allowing advisors an opportunity to understand that a student may be dealing with multiple issues, dynamics, and influencing factors that affect his or her decision-making and academics. If an advisor is knowledgeable about programs and support on campus, it also allows the advisor many opportunities to help the student form campus connections. The better they get to know the student, the more sensitive they may become to the role of culture and background and its effect on the students’ academic and personal achievement (Roscoe, 2015). In practice, students prefer this approach over prescriptive advising (Mottarella

et al., 2004) and there is evidence that this approach has a positive impact on student retention and degree attainment rates (Schwebel et al., 2008).

While not included in the principal approaches to advising (Noaman & Ahmed, 2015), there are two additional advising frameworks to discuss. First is appreciative advising, this approach to advising is “a social constructivist advising framework and approach rooted in appreciative inquiry” (Drake et al., 2013, p. 83). According to the co-founder of the appreciative advising approach,

AA involves a six-phase model highlighting the appreciative mind-set that empowers advisor and students to a) build trust and rapport with each other (disarm); b) uncover their strengths and assets (discover); c) be inspired by each other’s hopes and dreams (dream); d) co-construct plans to make their goals a reality (design); e) provide mutual support and accountability throughout the process (deliver); and f) challenge each other to set higher expectations for their educational experiences (don’t settle). (Bloom et al., 2008, p. 83)

Appreciative advising is one of only a few research-based advising models. This approach has “demonstrated impact and effectiveness on student academic performance, academic success, and retention in various advising settings” (Drake et al., 2013, p. 84). Appreciative advising has also been found to be a powerful framework for retaining and mentoring students (Bradfield & Knutson, 2015; Cooney et al., 2016; Isreal, 2013). This approach focuses on specific verbal and non-verbal behaviors in advising thereby emphasizing the process of communication between advisor and student (Drake et al., 2013). The Appreciative Advising framework features a two-way interaction that will help students optimize their educational experience and achieve their goals (Drake et al., 2013).

“Learning-centered advising demands reflection and self-assessment” (Drake et al., 2013, p. 39). Self-Authorship theory enables students to learn how to comprehend and think for themselves rather than being told what to learn. Baxter Magolda (2014) defines self-authorship as the “internal capacity to construct one’s beliefs, identity, and social relations” (p. 25). The ability to make internally based decisions is the key to many college learning outcomes that include thinking critically about concepts, building relationships that are interculturally mature, and making wise moral and ethical decisions (Baxter Magolda, 2014; Baxter Magolda & King, 2012; Kegan, 1994). “Self-authorship theory is part of a family of constructive-developmental theories in cognitive psychology, which as a whole represents a major theoretical tradition within academic advising” (Drake et al., 2013, p. 121). According to Drake et al. (2013),

Like other developmental theories, self-authorship lends itself quite naturally to advising applications and points toward certain strategies that can be used to encourage students to more aggressively engage the developmental process. Because advising situations naturally include discussions of how students come to know themselves and their world, personal beliefs, and relationships with others, self-authorship theory forms a particularly applicable advising strategy to help students grapple with complex situations and gain empowerment to make difficult decisions. (p. 121)

This approach focuses on the way individuals understand the world and make decisions within it, making it a particularly powerful lens for advising (Drake et al., 2013). It is notable that the early work in this model of student development was based on research completed on white male populations, thus there would be benefits to a reexamination of self-authorship theory as the original research informing this theory may not reflect experiences of minoritized students (Perez, 2019). More recent literature has investigated this approach in relation to the impact it

has on under-represented students in higher education. Torres and Baxter Magolda (2004), found that Latina/o undergraduates who had experienced racial discrimination in their college years were motivated to contest their current ways of making meaning and develop a more visibly defined voice. Barber et al. (2013), found that 30% of participants who experienced substantial transformations in self-authorship were students of color. Carpenter and Pena (2017) found that participants in their study had the capacity to be in the final stages of self-authorship during their undergraduate experience.

Advising Minority Students

A report from researches at the US Census Bureau estimates that minorities will make up over 50% of the US population by 2060 (Vespa et al., 2018). In addition, the volume of minority students entering higher education will increase rapidly over the next 35 years. Statistically, many minority students are under-prepared both academically and socially for higher education (Roscoe, 2015). If success in higher education continues to be defined by high rates of retention and graduation then the minority students who are already entering underprepared will face even greater challenges as they have historically struggled to be successful in these categories (Berger et al., 2012).

For several years researchers have recognized the importance of advisor support for minority students. For example, Smedley et al. (2001) underscored the importance of undergraduate institution providing the programmatic and personal support necessary for persistence and highlighted the unique role that effective undergraduate pre-health advising has in the successful advancement of URiM students to careers in the health professions. Penick and Morning (1983) reviewed an NACME funded retention research program, finding evidence that retention success of minority engineering students is related to the monitoring of student

performance and early warning of academic difficulty. Subsequent research supports the impact of advising for URiM students. In their review of the literature on advising, Pascarella and Terenzini (2005) concluded that low-quality advising may be better than no advising and advising earlier is likely to be better than later. Habley et al. (2012) identified specific programming central to URiM student success that includes: assessment and developmental education, academic advising, and student retention programs. Advising is an important part of helping minority students overcome the barriers they face in higher education. But in order for advisors to be effective, it is imperative that they understand the disadvantages and cultural differences of the students they serve. In order to do so, advisors must understand their own cultural lens from which can be shaped and influenced by many factors in their lives (Roscoe, 2015).

As attention to diversity increases, it will continue to be an important issue in higher education. Former Penn State University President Graham Spanier (2004) addressed this issue stating, “minority populations may require more from the advising relationship, particularly for those who find themselves on a predominately White campus” (p. 22). Pre-health advisors could become the conduit to effect change most quickly by becoming more aware of the experiences faced by students of color and taking these experiences into consideration when advising. Advising with empathy could be paramount in establishing an experience that matters to the individual advisee. It is essential for academic advisors to continue improving their multicultural competency as part of continuing education through professional development. Part of this continual education not only involves addressing racial and diversity issues, but also gives the opportunity for feedback, self-reflection, and the challenge of traditional stereotypes (Deutsch et al., 2008). Academic advisement is a collaborative relationship that is focused primarily on a

student's educational attainment at their institution. This role is expanded in the field of pre-health advising as the approach is no longer solely focused on the student's academic program but rather students' career goals and guidance on what it will take to get there.

Pre-Health Advising

Similar to an academic advisor, pre-medical advisors engage in a different set of challenges in their work with students. "The role of academic advising in health professional education differs from that in general undergraduate education in that the advisory process extends beyond course planning for individual degrees, and provides ongoing support for academic success" (Barnes & Parish, 2017, p. 1). Pre-Health advisors have their own association outside of NACADA. The National Association of Advisors for the Health Professions (NAAHP) was established in 1974 to coordinate the activities and efforts of health professions advisors across the nation. Its mission is to serve as a resource for the professional development of health professions advisors (National Association of Advisors in the Health Professions, 2018). In addition, it assists pre-health advisors in fostering the development of students outside of their academics as they prepare for careers in the health professions with a sincere focus on the personal and humanistic growth students need to undertake on their journey (National Association of Advisors in the Health Profession, 2018). Pre-health advisors herald in one of the earliest stages in the development of future health professionals and may play a critical role in the development of academic skills, personal growth, and professionalism among students across the health professions spectrum (Barnes & Parish, 2017). According to the National Association of Advisors in the Health Professions (2018), premedical advisors serve as a liaison between medical schools and applicants. This role places the advisor in a position to provide information about the application process to students who are interested in going to medical school. Perhaps

more importantly premedical advisors can counsel students on the qualities needed to be competitive in the application process. Advisors working with pre-health students play a significant part in helping students navigate challenging coursework, extracurricular involvement, and rigorous admissions procedures (Arnold & Scheider, 2010). Institutions devoting a greater effort to premedical training by maintaining a pre-medical or pre-health professions office tend to have higher acceptance rates for medical school (Atkinson et al., 1994), while student perspectives credit health-related programming in preparing them for the admissions process describing advisors as an important source of information and support (Hadinger, 2017). Conversely, despite Hadinger's evidence toward the benefits, some participants found advising unhelpful and ultimately detrimental to their admission experience. The advisor/advisee relationship is referenced as an important part in a student's pre-professional pathway (Morgan et al., 2016), however there are no specific degree requirements for this role and no set standard for training. Pre-Health advisors often find themselves learning on the job from colleagues and drawing from the experiences and perspective they bring with them into their advising role. According to Selzer (2014), "...pre-health advisors often simply do what they think works, but don't always have data to undergird practice" (p. 47). Despite these findings, advisement itself still plays an important role in the satisfaction and success of students in college (Folsom & Scobie, 2010; Habley, 2009; Kuh, 2008; Noel-Levitz, 2009). Campus officials listed one-on-one advising, in combination with academic support, as the top-rated practice for student success and retention (Ruffalo Noel Levitz, 2017) while Klepfer and Hull (2012) found, that students working with an advisor had significantly higher persistence rates when compared to those who did not. Shifting the focus to minority students, Barr et al. (2008), when investigating attrition of underrepresented minority undergraduate pre-medical students,

found that when asked to identify the most important resources that help students succeed in premedical studies, students consistently identified a combination of personal strength, plus institutional support as key factors in their success.

If the requirement for attaining professional diversity in medicine would be a substantial increase in the racial and ethnic diversity of students who apply and are selected to enter medical school; then bridging the gap would require undergraduate programs contributing to resources that will help cultivate success and provide support for underrepresented minority students as they prepare to apply to medical schools that will train them to become physicians. Researchers have suggested several factors, that could be addressed at the undergraduate level, are at play in the continued decline in career persistence for minority students including motivation, advising, academic challenges and campus climate (Antony, 1996, 1998; Barr et al., 2008; Hollow et al., 2006). These factors share commonalities in that they can all, in some way, be addressed by a pre-medical advisor. Current pre-health advisors' perspectives define the role of pre-health advisors as guides who assist with navigating the journey to become a competitive applicant, resources experts or gatekeepers to identify credible sources and information, and liaisons to aid in networking opportunities (AAMC, 2020b). Because admission to medical school relies on so many factors (strong GPA, competitive test scores, and copious amounts of relevant extracurricular activities), making oneself competitive for medical school can be a challenge for any student (Stern & Gallardo, 2014). Struggling with these types of challenges, URiM pre-medical students could benefit from the critical academic interventions or advising that is conducive to improving their decision-making (Tucker & Winsor, 2013). Despite the perceived benefits, little effort has been made in addressing the role of advising in promoting long-term success for URiM students (Dumke et al., 2018). Access to quality advisement and mentorship

could play a role in increasing the number of underrepresented minorities in medicine. In order to further investigate this topic and add to the literature regarding advisors' perspectives, this research will examine the perceptions and opinions of currently practicing pre-med advisors.

Chapter Summary

This chapter examined the scholarly literature related to the disparities of minorities in medicine to lay a foundation for understanding why minority students are missing in the field of medicine. The process of applying to medical school can be difficult to navigate and barriers abound for underrepresented minority students in this process. Academic advising has been shown to be effective in student retention and success. Understanding approaches to advising and focusing on the potential impact advising might have for both URiM students and pre-medical students is relevant to exploring opportunities to keep URiM student on the pathway to medicine. Currently, research on the perspectives of pre-medical advisors non-existent demonstrating an opportunity for research in this area of study.

Chapter 3. Research Method

The purpose of my study was to explore pre-medical advisor experience and perception of their role in the pathway to medical school for pre-medical students who are under-represented in medicine (URiM). I used a qualitative design, employing a general inductive approach to explore and describe the advisement of URiM pre-medical students. My focus centered on describing participant's experiences advising URiM pre-medical students and analyzing themes from the participants to understand how pre-medical advisors perceive their role in the pathway to medicine for URiM students.

A qualitative methodology was used for this study with an inductive analytical approach to provide insight into the experiences and perceptions of pre-medical advisors and to understand the techniques they employ when advising minority pre-medical students. Qualitative research methodology is intended to inquire into the meaning attributed to a social problem by individuals or groups (Creswell, 2007). It is an opportunity to discover the reasoning behind the decisions that individuals make and primarily a process of organizing data into categories and identifying patterns (Hoy, 2010; Pathak, 2011). The inductive analytical approach to qualitative research allows findings to emerge from frequent or dominate themes found in raw data, forgoing restraints imposed by structured methodologies (Thomas, 2006).

The rationale for choosing to complete a general qualitative study is the methodological flexibility it provides. This approach is "more flexible in theoretical support than other qualitative approaches and the valuable parts of all theory-specific approaches are also retained" (Liu, 2016, p. 130). The inductive approach involves working through the research obtained exclusively from the participant experiences, using detailed readings of

the raw data to derive concepts and themes to drive the analysis (Azungah, 2018; Thomas, 2006). Through this approach I was able to build clear connections between my research objectives and findings while ensuring transparency confirming the defensibility of a general design. This approach allowed me to draw on the empirical findings to develop a conceptual model that facilitates a better understanding of the role of a pre-medical advisor in the pathway to medicine for URiM students. Data collected from advisors were used to understand their experiences and perception of the advising practices. I employed a multimethod strategy approach to data collection with the primary method being in-depth interviews and secondary methods including the use of participant researchers, mechanically recorded data, and participant review.

Research Questions

1. How do pre-medical advisors perceive their experiences working with URiM pre-medical students?
2. What are pre-medical advisor perceptions of approaches to increasing the number of URiM students?
3. How do pre-medical advisors perceive the role they play in the pathway to medical school for URiM pre-medical students?

Role of Researcher

The researcher's role establishes the position of the investigator and their relationships with others in the study, this role often changes as data are collected (McMillian & Schumacher, 2022). Qualitative research is interpretive and the researcher is "typically involved in a sustained and intensive experience with participants" (Creswell, 2018). The researcher themselves is a key instrument in qualitative research. Researchers in

the qualitative approach use the concept of reflexivity to not only establish potential biases but also to describe how their own background may shape the direction of the study. In 2015, I began serving in the role as pre-health advisor at a mid-sized university in the SAAHP region. In this role, I worked with students who intended to go on to a health-related professional school after graduation. By far, my largest population of students was pre-medical students. During this time, I became aware of the lack of students of color within my cohort of advisees while consistently hearing from a variety of national groups that increasing representation in medicine was of the utmost importance. As I tried to better educate myself on what an advisor could do to address this issue, I was unable to find educational materials that could assist in advising minority pre-health students. As I transitioned into my current role as Assistant Dean of Admissions for a college of medicine, this national disparity became more apparent as the target population of pre-medical students with whom I interacted expanded immensely. Seeing the clear lack of minority students in the admissions process continued to fuel my desire to be proactive in a solution. Due to my background in these roles, I suspect that the role of pre-medical advisor may present an opportunity to provide stronger support and ultimately improve outcomes for pre-medical students of color.

In qualitative research, the primary instrument for data collection and analysis is the researcher. Using a human instrument always presents an opportunity for biases that could impact this study. “Rather than eliminate these biases, it is important to identify and monitor them in relation to the theoretical framework in light of the researcher’s own interests” (Merriam & Tisdell, 2015, p. 16). This reflexivity allowed me to be clear on how personal experience might shape the collection and interpretation of data and will assist to promote

the trustworthiness of the data as the findings will emphasize the experience of the participants rather than my perception. I used several strategies to promote trustworthiness and reduce bias. These strategies included member checks, reflexive journaling, and triangulation through comparing my study to others, interview transcripts, and member-checking, and triangulation through comparing my study to current research, interview transcripts, and member-checking.

Ethical Considerations

The design and methodology of my study addressed ethical considerations in multiple ways. Prior to beginning research with participants, I received approval through the Institutional Review Board and implemented the recommended guidelines to prepare for this research. Participation in this study was voluntary, and consent and confidentiality forms were distributed electronically to each participant for review and signature before their participation in the process. These forms detailed the purpose of the study, information on how the responses would be deidentified and stored securely as protected electronic files, and contact information for the researcher. Interviews were conducted virtually through Zoom and participants were able to select times that were amenable to their schedule. Prior to each interview, participants were again informed about the purpose of the study and assured about the confidentiality of their responses.

Setting

The primary method for gathering data were face-to-face interviews completed via Zoom. In addition to interviews, preliminary data included a questionnaire response to better guide the interview questions and help triangulate data later during analysis. Prior to each interaction, I explained the purpose and process of the research thus far and informed

participants regarding confidentiality and consent forms. Interviews were conducted for approximately 60 minutes. At the end of each interview, participants were notified that they would receive a transcript of their interview to engage in member checking.

Participants

Participants for this study were pre-medical advisors employed at higher education institutions located within the professional organization, Southeastern Association of Advisors in the Health Professions (SAAHP) region. A non-random purposeful sampling strategy was employed to identify individuals that would make up the sample. The strategy was selected to target advisors who (a) had minority students enroll in medical school and (b) were advising at an institution located in the SAAHP region. I contacted pre-medical advisors at institutions in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Virgin Islands, and West Virginia. These specific states were identified because they are located within the SAAHP region. The target population was contacted via email for the purpose of requesting participation in the study, see Appendix A to review initial email requesting participation. The goal was to interview 15 participants or until data saturation is achieved. A purposeful sampling strategy was selected to involve all possible participant groups. The position of pre-medical advisors is not consistent across institutions. Some institutions may employ professional advisors, faculty advisors, or a mixture of both professional and faculty. In addition, there is a wide variety of undergraduate institutions in the SAAHP region that include public, private, small, large, and historically black colleges and universities. This sampling strategy allowed me to consider participants coming from diverse populations rather than a more rigid approach that singled out one type of advisor from one type of institution.

Measures of Trustworthiness

Lincoln and Guba (1985) presented four criteria to develop trustworthiness in qualitative research. These criteria include credibility, dependability, confirmability, and transferability. The researcher conducted all data collection and analysis based on these criteria using a variety of methods. These methods include triangulation, reflexivity, member checks, purposive sampling techniques, coding strategies, and rich descriptions.

A credible study requires data to be represented fairly and accurately (Krefting, 1991). I confirmed credibility through triangulation and member-checking. Triangulation is the extent to which multiple sources support data and was completed in this study using a variety of data sources including comparing my data and analysis to that of others, interview transcripts, and member-checking facilitated the definition of themes and categories to expose relationships in the study. Member-checking was also implemented to increase the credibility of the study (Creswell, 2014; Denzin & Lincoln, 2018; Whitemore et al., 2001).

Dependability refers to the reliability of data over similar conditions (Polit & Beck, 2012; Tobin & Begley, 2004). This ensures that findings are repeatable if occurring within the same context so the process must be logical, traceable, and clearly documented (Tobin & Begley, 2004). The coding process I used was the code-recode strategy to establish dependability. Using the strategy outlined in Saldana (2021), I was able to code and recode the data to ultimately refine the coded data into the categories used for the data analysis portion of the research.

Confirmability refers to the demonstration that the data represents participants responses rather than research bias (Polit & Beck, 2012; Tobin & Begley, 2004). Researcher reflexivity was utilized to establish confirmability throughout the process using interview notes and member-checking as well as providing a transparent view of how data were collected and

analyzed. This worked to establish reasoning behind the findings and interpretations that were derived from the data.

Transferability refers to the ability to apply research findings to other settings or groups (Polit & Beck, 2012). The ability to generalize is key because the researcher does not know the sites that may wish to transfer the findings in the future. I used purposeful sampling to meet the specific criteria necessary for inclusion in the study. Additionally, thick, rich descriptions were used to provide transferability in this study.

Data Collection

The criterion of the inductive analytical approach for data collection is to collect rich data for interpretation until added data no longer yields new information (Liu, 2016). For this study I selected a semi-structured, in-depth interview approach to understand the topic and question (McMillian & Schumacher, 2022). Interview protocols were employed during this interview process to provide questions and collect notes. An interview guide, see Appendix B, was used to work through standardized questions and provide continuity between interviews. I utilized a reflexive journal during the interview process to take notes. These interviews were recorded and subsequently transcribed in addition to my notes taken during the interview. Each interview transcription was then shared with the interviewee for participant review. The collected information was analyzed by coding the data, identifying patterns in the data, sorting the patterns into themes, and subsequently developing a system to categorize the data (McMillian & Schumacher, 2022).

Data Analysis

According to Thomas (2006), “the outcome of an inductive analysis is the development of categories into a model or framework that summarizes the raw data and conveys key themes

and processes” (p. 240). The categories are developed from the coding process. Inductive coding begins with close readings of the text acquired from the data collection with an intended outcome of creating a small number of summary categories to capture the themes identified within the raw data as the most important themes (Thomas, 2006). Flick (2014) described data analysis as “the classification and interpretation of linguistic material to make statements about implicit and explicit dimensions and structures of meaning-making in the material and what is represented in it” (p. 5). Data collected included video recording, transcripts, and memos to be used for later reflection. I adopted the strategy of inductive analysis as suggested by Thomas. In this approach the inductive coding process begins with data cleaning and preparation of the raw data files. This is followed by a close initial reading of the text is completed to consider the multiple meanings. Once this is complete, in-vivo coding was employed to identify specific sections of text that were related to the study objectives. These segments of text were then labeled to create emerging categories. These categories were then reviewed and condensed to reduce overlap and redundancy. Finally, through continuing revisions and refinement, the key themes identified were assessed to be the most important themes given the study objectives (Thomas, 2006).

Chapter Summary

This study was conducted using a qualitative research method, in order to learn the perceptions of pre-medical advisors on their role in the pathway to medicine for under-represented students. I performed the researcher using a sample of participants who fit a specific description and volunteered for the study. A general inductive approach was used in the research design. I interviewed 12 participants who had the title of pre-medical advisor and were employed at college or university that fell within the Southeastern Association of Advisors in the Health Professions region. Through this design, common themes were identified and recorded. Chapter

3 described the research plan and methodology for this study. Chapter 4 conveyed the descriptions and themes through a qualitative narrative summary. This narrative included direct quotes and interview descriptions to add depth and clarity to the research findings. Chapter 5 contains a discussion of findings and conclusions.

Chapter 4. Findings

The purpose of this study was to explore pre-medical advisor experience and perceptions of their role in the pathway to medical school for pre-medical students who are underrepresented in medicine (URiM). The researcher collected data regarding the perceptions of pre-medical advisors through interviews with pre-medical advisors currently working at institutions in the Southeastern Association of Advisors in the Health Professions (SAAHP) region. Analysis was based on the following research questions:

1. How do pre-medical advisors perceive their experiences working with URiM pre-medical students?
2. What are pre-medical advisor perceptions of approaches to increasing the number of URiM students?
3. How do pre-medical advisors perceive the role they play in the pathway to medical school for URiM pre-medical students?

Participant Profiles

I recruited 12 participants using non-random purposeful sampling. All participants were currently serving as pre-medical advisors at undergraduate institutions in the SAAHP region.

Table 1 outlines participants' experience, institution type, and institutional size.

Table 1*Participants*

Name	Years of Experience	Institution Type	Approximate Institution Size
Celaena	<1	Public	13,000
Maya	2	Public	40,000
Sarah	10	Public	30,000
Rowan	14	Private	12,000
Taylor	6	Private	14,000
Harry	3	Private	14,000
Meredith	4	Private	26,000
Theo	8	Public	39,000
Olivia	11	Public	7,000
McKayla	15	Public	21,000
Elsie	1.5	Public	13,000
Robby	4	Public	22,000

Interview Results

Data collected in the participant interviews were transcribed and coded. I utilized the coding process for inductive analysis as suggested by Thomas (2006). This process began with identifying specific sections of text that related to the research questions. After this initial identification, the sections of text were labeled to create categories. I then reviewed the categories for redundancy and combined categories that overlapped. For the final stage of analysis, the categories were then developed into themes by research question. I determined the

themes that emerged in response to Research Question 1 dealt with approach to advising, barriers URiM students face, and challenges for advisors. Themes that emerged in Research Question 2 were early intervention, collaborative initiatives, and visibility. Themes that emerged from Research Question 3 were advocating for students, and navigation of the pathway. The results of this study are organized by the research questions that guided the study.

Research Question 1

How do pre-medical advisors perceive their experiences working with URiM pre-medical students?

The participants were asked about their experiences working with URiM pre-medical students. The themes that emerged when advisors discussed their experiences with URiM students included: approach to advising, barriers impacting URiM students, and barriers impacting advisors.

Advising Approaches. Pre-Health advising brings a different set of challenges for advisors in their work with students. It goes beyond the traditional academic advising role which focuses on degree planning, scheduling, and support to include career planning and navigation of the application process (Barnes & Parish, 2017). There are no specific degree requirements for pre-health professions advising and no set standard for training. Pre-Health advisors often find themselves learning on the job from colleagues and drawing from the experiences and perspective they bring with them into their advising role. Participants in this study stated they had a similar experience when they were first hired, quickly discovering that they had to rely on colleagues in their office to mentor them or in some instances that they had to teach themselves. Additionally, participants indicated that they employed a variety of techniques in their advising methods. Some participants did indicate that their approach shifted when working with URiM

students in order to better accommodate their needs. However, most advisors indicated that their approach did not change because they treated all students individually thus giving specific advice tailored to each student and their unique needs.

Celaena has been working in a pre-health advising role for less than a year and indicated that her training for this position came from talking with peers but that she would often Google information or watch YouTube videos to help her understand what information she needed to share with students. She was recently able to attend a nationwide conference for health professions advisors through NAAHP and indicated this was invaluable as she was able to connect with so many other advisors and learn more about what her role as a pre-health advisor should encompass. Regarding her approach to advising, Celaena stated:

I live everything pretty transparently, I'm very honest with them...I don't want to discourage anyone from doing what they want to do. I just want them to be realistic and know where they need to focus and where they need to work...You know the way you speak to each person is different... I let them kind of lead... I break it down on an individual basis. Of course, I speak to everyone differently... I try not to put people in boxes.

Celaena is employed at a primarily White institution (PWI) and indicated that, while the population of students from racial minorities is small, she works with a lot of socio-economically disadvantaged and rural students. The concept of individuality and advising students based on their own unique situations was frequently mentioned by other participants. Some participants did indicate that they approach every encounter with students in a similar way, working from a specific outline but would veer from the outline if students initiated a discussion on their barriers as an underrepresented student. Rowan is a faculty pre-med advisor with fourteen years of

experience. He was the only participant in this study who served in roles as both a faculty member and pre-health advisor. The duality of his position necessitates that he spends time students on their academic schedule but he indicated that more time is spent in a counseling role.

Rowan said:

So, it's five minutes of helping students build their schedule and then twenty-five minutes of academic and pre-professional counseling and again it's very developmental. For the first-year students, the conversation I'm having right now is, you know you it's not going well, what's happening, you know. Diagnosing what's happening academically...So then it's conversations about study strategies. We talk a lot of strategy.

Rowan also indicated that in his early years advising pre-health students he did not pay specific attention to which students were underrepresented in medicine nor did he consider that his office should do anything differently to support URiM students. He indicated that this changed around five years ago after his office hired a staff member who was a person of color. This staff member indicated to Rowan that URiM students brought up in discussion that they did not feel a sense of belonging within the program. This encounter led Rowan to recognize that he had never had a conversation with any URiM students in the program about their sense of belonging. This experience ultimately led the office to institute a peer mentorship program and caused Rowan to become more intentional in thinking about the URiM student experience and in his interactions with URiM students.

Harry regards his advising approach as moving towards upward mobility. Harry said:

I really think in terms of upward mobility, I'm just here to help students achieve the highest form of career path that they can achieve, if it's medicine. I'm there to guide

them, to push them along so that they can become a physician...that's my mindset, upward mobility and how do I get the student from wherever they are to the next step. Harry has a background in public health and discussed that his knowledge of the health care system and health care inequities often inform conversations he has with his students. He also mentioned the importance of having a good advising approach based on the population of the institution. Coming from a private institution that admits very high achieving students, he recognizes that he can approach the advising process a bit differently than a pre-health advisor at a public institution.

Olivia, similarly to Rowan, has a more structured approach to the advising process.

Olivia said:

What I'm trying to do is help students figure out how to get to where they want to go after graduation...I always start out with kind of basic information. I've created these spreadsheets that outline the path... and that's probably the most useful piece of information that I have for my students...I'm a big believer in what I call a parallel plan...my goal is simply to plant the seed that the field of health care is incredibly broad...I tend to use the same words over and over again.

Olivia has served in a professional advisor role for 11 years and is the only staff member in the pre-health advising office. This requires her to often be repetitive in giving general advice and is why she provides handouts of an outline of the pathway so that she is able to use her time wisely. She also indicated that her approach to advising is consistent across the board and only varies for URiM student if they initiate a discussion about topics specifically related to the URiM experience. Coming from a small school, the population of URiM students Olivia works with is quite small and while providing more opportunities for these students is something she would

like to do it is not something she has been deliberate about. Her ability to do more is likely impacted by the fact that she does not have a budget and is the only staff member for pre-health advising. Elsie reiterated that the consideration of students as individuals was an important part of her advising process when she stated, “every student is different, if that makes sense. The advice just depends on the student.” There are specific advising approaches outside of the ‘students as individuals’ concept that were utilized by advisors in this study.

Advising approaches and theories are often referenced in use for academic advising specifically (Drake et al., 2013). However, four participants indicated that they utilized advising models or theories in their approach to advising pre-health students. Two of the participants described the approaches by name and the other two used descriptions that matched up with specifically defined approaches. Meredith stated:

What I will say is, this is where you need to be. This is where you are. How do we bridge the gap? And here are some very realistic steps that you need to take... really treating them as an entire person. So also, seeing like, if they aren't doing well, are there any extra like external things that are happening. I always try to approach my advising from a growth perspective. Really, looking at yeah, you might have struggled but how can we move forward? What did you learn from that?... I think the main one that I kind of adhere to is Baxter Magolda’s self-authorship theory, like really focusing on students writing their own story, not letting them be discouraged by others and really focusing on that self-efficacy.

Baxter Magolda (2014) defined self-authorship as the “internal capacity to construct one’s beliefs, identity, and social relations” (p. 25). College is a time of transition and Meredith feels that her role in a student’s journey is to support her students transition from dependence on

authority to self-authorship during their time at her institution. McKayla indicated that her office utilizes an appreciative advising approach. This approach to advising is “a social constructivist advising framework and approach rooted in appreciative inquiry” (Drake et al., 2013). When discussing her approach, McKayla stated:

We work very much from an appreciative advising model in our office. And we've just been really intentional about it and include training on appreciative advising with what we do in the office... I'll never tell Student that they can't do something. It's about meeting students where they are and help them figure out what is it that they're gonna need to do in order to be successful and to be a resource for them to have the conversations as they work through, if that's really what they want to do or not.

Robby and Sarah specified a more proactive approach with URiM students. Proactive advising involves intentional contact with student by and advisor such that the advisor and student develop a caring relationship with improves student motivation and persistence (Drake et al., 2013). This approach requires the advisor to take the initiative in working with students, something that Robby recognized needed to happen when he took over his role four years ago.

Robby stated:

We are being more proactive...we've definitely shifted that knowledge base where we're taking ownership of it all...How can we best serve our students, in my view it's on the scene showing them this is safe...It's not our job to say you can't. It's my job as a pre-health advisor to say how can we...It's our job to help them understand how they can fit into this system and how they can achieve it.

While Sarah said:

I think that group requires a lot more attention, because I see where they are starting in the conversation from like I have no idea what I'm doing. I have no one, I don't know anyone who went to college in my family in my close circle. So, we do break down a lot more like soft skills in our workshops together. I do a lot more check-ins with that group. And I think that type of approach does bleed out when I encounter other URiM students that are not in that program because they have similar characteristics.

The idea of encouragement and support towards a goal was as part of the advising approach was echoed through participants responses. These comments fell outside of any discussion on specific advising approaches and described more of the atmosphere participants try to provide during an advising session. Participants also indicated that regardless of where a student is at, they would not tell them to consider another path. Rowan said:

I also feel like I spent a lot of time trying to encourage them, letting them know it's going to be okay. And then those conversations evolve over time. And typically, as we get to Junior/Senior year it's you know them believing in themselves, trusting in their accomplishments, that is what the conversations become.

While Taylor said:

I'm never going to tell somebody that they can't go to med school. I don't set like cut offs on GPAs, or anything like that that specifically hinder students...I have to speak truth and do it in a compassionate way.

Theo indicated that when he is working with students, he wants them to understand where they are in the process so they can manage the expectations they have on the way forward. Theo stated, "it's no longer a sprint. It's a marathon...but we just try to really manage those expectations, but in a supportive of a manner as possible we never tell them you should consider

another track.” The idea of support was echoed by Elsie who stated, “so a lot of times I feel like I need to encourage them to keep going.”

There were multiple mentions from participants about the impact that negative interactions with other advisors had on themselves and their URiM students. Three participants specifically mentioned that their approach varied from other advisors in their office or departments. Maya said:

I advise differently than anybody in my office, probably because when I meet with students who have been told that they can't or won't get to medical school. And right there I'm like I don't ever tell someone that they're not going to be able to get into medical school because I read a lot, and I've read a lot of different stories, and I've seen that people can get to where they want to go. It may take them a little bit longer, and so I see myself as encouraging people.

While Meredith stated that because of feedback her students have heard from other advisors:

I am never going to tell a student that they cannot do something. I don't care what their GPA is, I don't care what their experience level is, I'm never going to tell them: you cannot be a doctor, or you cannot be xyz, because the only thing that accomplishes is that the students will never seek out my help again, and even worse, they might never seek out help from any other advisor again.

Theo mentioned he advises a graduate level post-baccalaureate program that works with pre-medical students from a variety of undergraduate institutions. He indicated that many of the students that enter this program received little to no pre-health advising support from their undergraduate institutions. He stated:

Among the things that I try to emphasize is that we should provide a very collaborative, cooperative, inclusive environment...by being as inclusive as possible, and keeping open door policies and the like, I try to quell that shut door policy that they may have received from undergraduate advising.

The issue of negative advising experiences is discussed later as a barrier for URiM students, but was mentioned as impactful towards the approach that pre-health advisors take when working with students. The participants of this study tended to agree that their methods left the door open for student success while creating realistic expectations and planning.

Barriers Impacting URiM Students. A wide variety of barriers impact URiM students. Among those barriers, advisors tended to focus on institutional and personal barriers the most frequently. Institutional barriers referenced lack of preparedness, academic struggles, and campus climate. Personal barriers were often indicated by financial need and a sense of lack of belonging.

Celaena recognized that a large portion of the students she serves come from lower socio-economic circumstances. She stated:

Really, I just get like underfunded areas that come to mind as far as like a minority group of students. I haven't really seen a large population of students that I would consider to be in a minority section. Um, but I would say, underfunded students are one of the biggest things I notice. And you know one of the biggest things is, how am I supposed to afford to study for the MCAT... it's like you almost have to have a lot of money to apply to medical school and be successful. So, I see a lot of students who really struggle with that.

As a new advisor, she discussed that she often feels at a loss when trying to help students overcome the financial barriers in place. She mentioned that she is not aware of all of the resources out there yet but as she learns about financial support programs, she does incorporate that information into her advising sessions. Taylor is employed at a top tier private school where most of her students come from an affluent background and have an abundance of monetary support for their families. She indicates that for her URiM students she knows that financial barriers affect them but knowing exactly who those students are is hard. She stated, “certainly there are financial barriers, but it's hard to know who's falling in.”

Harry discussed the financial barriers his students encounter upon graduation that impacts their ability to get through the application process. At Harry’s institution, there is a program that provides financial support for students who demonstrate high financial need. This program impacts his URiM students as it covers the cost of their education and housing. He recognized how crucial this program is for students, but also indicated there are some setbacks. The timeframe for funding leaves his students struggling to move toward the next step in admissions to medical school. Harry said one of the first barriers that comes to his mind for students is:

the need for immediate funds. We have some students that are supporting their family and so, once they get off of the financial assistance at my school, they immediately have to get a job and start paying for that themselves. And so that kind of puts a lot of stress on them in a lot of ways.

This impacts their ability to focus on the application process or prepare for and take the MCAT exam. He mentions that if students could put off that need for assistance by even just two months then that would make a significant difference in their journey. Meredith discussed how financial responsibilities play a big role in the experience of the URiM students she serves. This financial

burden impacted the student's ability to pursue extracurricular activities needed to build their application to medical school. Meredith stated:

I had students who were working a full-time job or several part-time jobs because they had to pay for food. They had to help their family. They were mainly the only one working... so those are barriers that a lot of our white students don't have to deal with... And so, they're trying to figure out how to do college. They're trying to pay bills.

The need to work for URiM students impacts their ability to pursue clinical experiences like shadowing or getting a certification as a certified nurse aid or emergency medical technician.

Outside of the burden of employment, URiM student are also considering the cost prohibitive nature of pursuing medicine. Olivia stated, "I'll have a lot of my URiM students ask about financial aid, or the cost of medical school, or the cost of the application." When discussing URiM barriers, Elsie stated:

A lot of its money because a lot of times they may not have the finances. You know they know that they have to take out student loans for four years here, and they start thinking, I have to take out loans now you know, to get to medical school, and that stresses them out... I think finance is a big...it can be a really big burden for them.

Theo also agreed that financial worries are a barrier for URiM students. This not only includes immediate financial burdens but also consideration of the financial strain they will be under in the future. Theo stated:

I think that's a huge barrier... And there's a reluctance on the part of some thinking either I don't want to take on the debt or I don't think I can pay it back, or I don't even know it's out there, or this is feeling that they're not going to qualify and then if they do take it on then what kind of repayment barriers are there? Because the risk is, I don't succeed now I

have this big debt that I can't pay back, and so I want some assurance that I'll be able to succeed, and I think the student loan framework makes it much, much more difficult.

Robby encounters similar struggles. He indicated that one of the inherent problems he discovered when he began his role was the belief from students that medicine was just such an elite system that they would never be able to afford it. Robby mentioned that the sheer cost of medicine 'scares the crap out of people' and with a student population that is well over fifty percent Pell Grant eligible, he said many times students will write off medicine and shoot for something lower because they just do not believe they can afford it.

Another personal barrier specified by participants in this study was the lack of belonging and the struggle with imposter syndrome encountered by URiM students. Sarah said:

I have heard from students that they initially are scared to even show up. They feel a lack of belonging, especially in the classrooms. Individuals, other peers, don't look like them, and as you get into the upper-level coursework, there are less and less students who look like them. There are no faculty who look like them.

Sarah also indicated that there is a "hidden curriculum" and the URiM students she works with have all of these factors contributing to a hidden curriculum that are so foreign to the students. She uses the following example to describe the thought process her students go through, "For example, say research: Am I allowed to do research? Am I good enough for research? How do I talk to professors? Are they going to think I am just like taking up space?" She goes on to say, "that idea of taking up space and facing that imposter syndrome. Those things are really critical." Sarah also states that those questions follow them all the way up to the application process when students then question, "What does a good essay look like? What story am I allowed to tell? Maybe I should..." and the students lose their story as they are working upstream lacking the

cultural capital of knowing what is expected on this path. Sarah rounds out her discussion to say, “all of these barriers add up and ... I think there's just, there's endless amounts of barriers for them.”

Rowan mentioned that in general the URiM students he works with have more barriers to overcome than a majority student. He mentioned a barrier that stands out for him is more common among first generation students. Rowan stated:

It's really common amongst first gen students for them to have these really heavy, and I would say, unrealistic from the perspective of the family expectations to be engaged with life at home. I think that must be symptomatic of you know: you're first gen, the family isn't really aware of the demands that are being placed on their time. And so, for those students that becomes a struggle.

Theo and McKayla also recognize that first generation students struggle with direction. Theo recognized that, for a URiM student being the first in their family to pursue higher education, there are barriers on where to even start. Theo stated, “many of our students didn't get guidance from their parents or their uncles, or whomever about things like, how do we even apply for college?” McKayla indicated that often being the first in their family to pursue higher education also means they are the first in their family to pursue a career in health care. McKayla said, “to some extent our underrepresented students are not connected to families in health care and finding them shadowing observation experiences can be difficult.” McKayla mentioned that they run a peer mentoring program so that URiM students can connect with peers who are pursuing the pathway for support since they do not have the opportunity to get that from family members. The idea of being the first person you know of to pursue the health field brings us back to the

concerns over sense of belonging. Rowan goes on to reference the struggle with sense of belonging. McKayla said:

The other one, I guess that would also be common amongst all URiMs, I mean. But it seems like, but especially first gens again, this sense of belonging. Feeling that they certainly often don't feel like they're fitting in which then leads to when things don't go well (which that happens for basically every first-year student to some degree). Instead of thinking like well, I don't know how to study, I'm going to fix that. They think, well, I didn't think I belonged, and now I can see I don't.

Additionally, Rowan states, “there's these tangible things of time demands that are often on them and these sort of more so emotional intangible type of things they have to deal with.” Taylor discussed that imposter syndrome has an impact on her URiM students. This barrier is not something that is new for her as she referenced personal experiences with her own family as they experienced feeling like outsiders in their own community. Regarding the specific experience with her students, Taylor said, “Imposter syndrome is huge... this huge thing with imposter syndrome is if people feel like they can't, they don't. They don't feel like they can ask for help. And I know that some students really do struggle.” Harry echoed the struggle with imposter syndrome as a perceived barrier by URiM students stating, “in the sense of the perceived barriers of a student is that maybe they've got imposter syndrome. They don't feel like they belong here.”

Institutional barriers were frequently mentioned by participants as having an impact on URiM students. These barriers manifest in different ways, the first being a lack of preparedness for the rigor of college and academic performance. As an advisor at a private institution with a high achieving program, Rowan discussed that most first-year students come in unprepared to

handle the college environment but the outcome of this disproportionately affects URiM students. Rowan stated:

The big one for me is they're not prepared. I would say most students aren't prepared to just come in and pick up the workload we're expecting and they don't have the study skills. So, it's not unique to URiMs but when they experience the same hardship and higher percentages than leave the program.

Harry also serves at a private institution that admits very high achieving students. He indicated that even though students are competitive when they are admitted, that does not mean they will fare well in the curriculum. When asked to consider barriers that URiM students faced, Harry said:

I will say the academic barriers is one that I dwell on a lot, and while it's one of those things where a student gets in and they've got the scores to get into my school. But once they are put in Gen Chem, with some students who've gone to some of the best prep schools in the nation, how do they fare? I'll be honest it's not as well... I see it time and time again. Where a freshman from an underserved background comes in thinking they want to be a physician, get in the Gen Chem and they are just, you know their heart is ripped out from them, and it's because they took too large of a step.

McKayla also recognized that URiM students can arrive unprepared and find that they struggle. She also specifically mentioned chemistry coursework as a struggle. McKayla said, "they can be academically unprepared to handle that rigor when they first get to our school in terms of handling the chemistries and those courses... The academic preparation is to some extent part of it." Elsie also recognized a lack of preparedness for URiM students coming in, "you know it's the first time here in college, and they're just lost. They know their parents haven't come to college

and you know, they didn't really prepare them.” Theo advises a graduate level post-baccalaureate program that works with pre-medical students from a variety of undergraduate institutions, many of whom fall into the category of underrepresented students. Theo said:

A typical student for us is one who went to high school, did well in high school because they were able to handle what's typically an AP curriculum. But they learned how to take the test. They didn't learn well enough critical thinking skills, sequential learning skills. They didn't learn a lot of the stuff that college just expects.

This lack of skill is often how students end up in Theo’s program. They did not perform well enough in their undergraduate programs to make the cut for medicine and they need to improve their academic record so they are more competitive when they apply.

A variety of other institutional barriers were also mentioned by participants. Knowledge about institutional resources and negative experiences with institutional faculty or staff members were specifically mentioned as additional barriers that URiM students face. Meredith indicated that many of her student’s are not conscious of the opportunities available to them. Meredith stated, “it's not that the resources don't exist. It's that they are even aware of them, or they don't know whether they can trust those resources to actually help them.” This advisor indicated that, “some of the students had explored resources and were discouraged, like actively discouraged, by advisors.” Theo works with students who have had similar experiences with other advisors they’ve seen. Theo stated “we know of schools where the advisors, if you're not showing up with a 3.7 or 3.8, they don't want to talk to you, they'll suggest you consider a different career path.”

Experiences like this make URiM students hesitant to utilize other resources because they are not sure who they can trust. Elsie sees this first hand stating, “I think a lot of the minority students I get; they stick to what they know. And so, a lot of times they may be scared to venture

out and even talk to other staff or faculty members.” Elsie also indicated that she feels this is where her office may also miss out on building relationships with other URiM students. If the student has been recommended by another office to see her for advising, they may not come in because they have not established a relationship of trust with her.

Additionally, there were a few references to some additional barrier’s students are facing. Meredith indicated that often many of these issues snowball and create an even larger problem. She stated, “I think that's one of the major barriers also, just not knowing how to manage their time and how to study, which then led to them not utilizing resources because they're like I don't have the time.” Robby also indicated that there are a few intrinsic problems for URiM students that occur when they arrive to college. Robby stated:

There are a few inherent problems. One of them was more cultural, just that medicine was out of reach for minority communities because it was this elite system and I can't afford it. I don't know how to do it. I don't have connections to get into it... there's so much misleading information out online.

Olivia identified worldliness as a problem. She defined this by stating, “what I mean by that is that...they’re competing against students how have been all over the place and had access to all of these different populations.” She indicated that this can make it harder for them to show cultural competence and understanding in the admissions process. Olivia stated that she also felt her underrepresented students, which includes a large population of student from rural areas, “just don’t know, they don’t come from a culture that knows how to push them.” Theo discussed that there are no barriers he could point to that are specific to URiM student but that he did feel that barriers were more frequent for this population of students.

Overall, advisors were able to affirm that their URiM students encounter barriers that populations of majority students do not. Barriers for URiM students were not the only challenge mentioned by advisors as preventing URiM students from succeeding in the pathway to medicine. Participants also mentioned that there are challenges that confront them specifically in this process.

Challenges for Advisors. Participants indicated that their students were not the only ones that encountered barriers. Due to the nature of responsibilities associated with pre-medical advising, participants felt they often did not have the bandwidth to provide additional programming and support that could better engage their URiM students. Additionally, participants indicated a lack of institutional support and issue of the spread of misinformation by those tangential to their work. After participants were asked to discuss barriers for their URiM students they were asked to identify things that may improve their ability to assist their URiM student in overcoming those barriers. Maya felt that she was doing all she could but was unsure that it was enough. Maya said:

And we're hitting all of the other places that we should be hitting. But there those students may still not be coming, so I don't know, and if the sky was the limit like I would do more things. I would do more things...But basically, I have to do like all of the other, leg work too, so just trying to do all of that. I really don't know how we like how we could do more, because I think we're already doing a lot... I don't know that there's how much more that we can do. We're kind of stretch thin.

Elsie also indicated that the workload in her office makes it hard to do more. The current responsibilities of her office already cut into one-on-one time with her students. She stated:

It is hard because it is just three of us, and we're teaching, and we have a learning community. And then, you know, we have all these other recruitment events that are just for the high achieving students...We're everywhere. So, it's kind of hard. Our calendars are booked up, but so students want to come in to see us, but we're always like on campus and doing all this other stuff. It cuts our time with students actually coming in and talking to us, one on one.

Taylor established that some of the traditional responsibilities that her office has impacts the ability to create new programming because it eats up so much of her time. Taylor stated:

The recommendation letter issue...Can we stop writing the letters? I can't write the same letter for everybody and it's very, very time-consuming... it eats up my entire summer, so there's very little time for new programming and stuff like that.

Other responses included discussion on how much work happens outside of working hours already particularly for advisors working in offices that are understaffed. Sarah mentioned that pre-pandemic her department had six advisors serving pre-health students and organizing pre-health programming. Since then, they are down to four advisors which is impacting their work with students. When asked to identify improvements that could assist, Sarah said,

I think the very, very obvious one is filling our missing advisor roles. We are currently in process of registering student to get a committee letter. That's a year long process...and so being able to get through enough students, but not lose that quality of communication. It's been a really big point of tension with my office. How much stuff are we automating, and then does it sound robotic when we communicate with them? And I have found that pre-pandemic I was able to tell student stories a lot better. I feel like I built rapport a lot more... so, I think that's a huge loss that we ended up experiencing.

Understaffing for Sarah's office has impacted student rapport and the ability to build a relationship that goes deeper than a few short encounters through programming events. Olivia is in a similar situation at her institution. Olivia stated:

As far as the University goes, I got very little support, and even now they're very supportive of me in name, but you know I have no budget. And yeah, I'm literally the only person in my office, I'm the only one who does what I do. I don't have student help. I don't have other advisors that I work with.

She began her role 11 years ago when her institution wanted to improve their acceptance rates into health professions program. Prior to Olivia becoming the institutions pre-professional advisor, pre-med advising was done part-time by a faculty member in the sciences department but no one wanted to take ownership of it. Because of the transient nature of the role, Olivia had to build the pre-health advising program from the ground up. She was not able to receive any training on the role and had to rely on reaching out to advisors at other institutions for mentorship and then to the NAAHP to receive her initial training and ideas to build on.

Robby also feels the strain from both working after hours and a lack of resources. His office staff consists of himself and one other advisor. He mentioned that they are working on weekends and weekdays until 8pm to best serve their students. This work is primarily focused on partnerships within the community. Robby, like so many others, is impacted by lack of funding and resources at the institutional level. He states, "the resource pool is getting smaller, budgets are tightening, I can't afford to do everything with the budget I have." Not only is Robby losing the bandwidth battle with his own program, he is also making time to see students from another undergraduate institution in the area. Robby said, "I am advising students from another school because they basically just say no to these students. You can't use our resources because your

GPA wasn't in this range. They are just turning them away." While Robby's bandwidth issues are impacted by student populations that are technically outside of his job description he states, "it's not our job to say you can't. It's my job, our job as pre-health advisors, to say how can we."

Taylor believed that bandwidth issues are one of the reasons that pre-health advisors at certain institutions initiate cut-offs in the first place. Taylor said:

I think the biggest issue is there's not the bandwidth at certain institutions to I mean, most people have to make a cut off somewhere. I don't make a cut off, but can I tell you we work a lot of freaking hours, to make our stuff work.

Taylor indicated that these problems can begin when institutions do not support pre-med advising. She mentions there is a mentality among higher-education professionals and institutions that nobody considers the importance of pre-med advising to the student experience. They do not find it to add value to the student experience. In her involvement with those constituents, they view the role of pre-med advisors as entry level jobs. Taylor disagreed, "I feel like pre-med advising should not be an entry level job. It should not be a job where there's a ton of turnover." Meredith also referenced bandwidth as an issue stating, "there's not the bandwidth to do more active outreach to those populations to build affinity groups, to really build mentorship programs for underrepresented students."

Meredith agreed that the lack of institutional support feeds the cycle of treating pre-medical advisor roles like they are expendable. This impacts turnover which in turn impacts the students. When asked what would help advisors contest the URiM barriers, Meredith stated,

Paying advisors more so that you have less turnover. Because there's so much turnover that you know really the goal here, I think, is to build a relationship between the pre-health advisor and the students. That you have one advisor or a team of advisors that stay

with the students for all four years and beyond, right? To have a mentor that's consistently with them. If you are underpaying your advisors, and you're treating them like expendable objects and they leave, you know that's discontinuity... I think that's a big part of it as well, is this advisor turnover, which I know it's not just amongst pre-med, it's higher ed in general. The turnover is crazy.

Turnover rates in higher education at large are outside of the scope of an advisors' control but can impact the advisors' ability to work effectively in their role. Participants indicated that partnering with other offices on their campus could increase their impact and visibility with URiM students but that is sometimes a challenge. McKayla said:

I always wish we could have a stronger connection with our Intercultural Diversity Center. We've reached out to them at various points to try to host joint sessions and things of that nature, and those conversations might get started, but don't seem to, we never seem to really be able to make that connection that we want. And some of that's related to there's been quite a bit of turnover in that office. So just in terms of trying to get connected to resources on campus that under-represented students might be connected to, this is an opportunity that we've just not been able to completely tap into.

Outside of building relationships with other offices, Harry indicates that addressing national issues related to race and racism at a campus level is an important place to start because it is hard to build programming that supports minority students when the topic itself is the cause of so much debate on campus. Harry said:

I think one of the things that's going on at my campus, it's a national thing, the awareness in equity and in equality across the you know...I mean, there's things have been contentious on campus... because there are, it ends up being racial tensions across

campus. And I think to me I'm a believer in the first one of the very first things that it that needs to be addressed is culture, campus culture. And when there's it's so contentious.

Yeah, it's hard to build off of anything.

Faculty beliefs and approaches present another challenge for advisors. On Robby's campus, there has been an assumption of base knowledge for entering students by the faculty. Robby stated that the faculty are assuming that incoming URiM students have a base working knowledge and understanding of the expectations of higher education when in reality, the gap in knowledge for these students is massive. In addition to faculty misconceptions, Robby is also managing misinformation on the medical school front. He stated, "we are having a problem with the local medical school; they re-did their pre-health scholars program and I had to reach out to them because they were giving incorrect advice and making students weaker overall." McKayla also discussed faculty mentalities as a barrier. McKayla stated:

There is still a little bit of faculty mentality out there that it's all about grades. And so, if a student is hasn't been doing well in a course, they're hearing from faculty, that if you don't get an A in organic chemistry, you'll never go to med school. And if they haven't been connected with us at that point, they may feel like that they're gonna just hear the same message from us and are less likely to connect with us.

Finally, one of the challenges indicated by advisors was a lack of training in their roles. Some participants stated this out-right, others description of the training they received in their roles left something to be desired. Rowan felt that he had received some training from mentors regarding the nuts and bolts of pre-med advising, but when it comes to the soft skills of advising he had to learn more intrinsically and pieced that together over the years. He said, "there was certainly no sit down and describe the developmental advising model to me." Celaena shared that

her training was “less than perfect,” indicating that she relied on YouTube videos in the first few months of her role. Celaena indicated that there was a turning point when she attended the national conference for NAAHP. Here she was able to talk to and learn from other advisors from across the nation. This experience provided her more help than her self-taught skills from YouTube. Elsie also indicated that she really did not receive any training on how to do her job and that it became “up to her to figure it out.”

Sarah shared a different experience. When she was hired, she joined a team of seasoned advisors who were able to teach and mentor her in the role. She sat in on their advising appointments to learn what the pre-health advising process looks like in practice. She also indicated that her state has a very active association for pre-health advisors, which she compared to the SAAHP. These resources were key for her as she had no idea what pre-health advising was prior to obtaining the job. Harry also indicated that he was able to learn a lot from his supervisor about pre-health advising. He indicated that the NAAHP resources were very helpful starting out as a pre-health advisor, but now that he has been in this role for some time the NAAHP resources feel repetitive. Similarly, Olivia was able to work with a mentor to learn about pre-health advising although the mentor was not at her institution. When she was hired as a pre-health advisor, she was tasked with creating the program from the ground up. A faculty member at her institution connected her with another pre-health advisor in her state who became her de facto mentor. She also utilized the NAAHP resources for her initial training and just built up from there. McKayla came from a background working with a medical school so when she was hired in a pre-health advising role, she was able to use the connections from her prior role to learn about what it takes to get to medical school. This knowledge informed her advising moving

forward. Those networking connections also introduced her to administrators from other medical school which helped her build her knowledge base.

Though it does appear that some participants had guidance in transitioning to their roles, there was no establish training modules to guide them. The level of training received by participants could indicate a lack of concern on the part of institutions.

Research Question 2

What are pre-medical advisor perceptions of approaches to increasing the number of URiM students?

The themes that emerged when advisors discussed their ideas to increase the number of URiM students included early intervention, collaborative initiatives, and visibility. Participants felt that there were a variety of things that should be happening at multiple levels in order to increase URiM student representation in medicine.

Early Intervention. The participants were in agreeance on their concerns that URiM students arrive to their undergraduate campuses less prepared than their majority counterparts. They felt that an important way to increase the URiM students in the pathway was to engage earlier with these populations. This early engagement could include showing students as young as middle school that there are opportunities for them in health care and medicine. It was also suggested that institutions provide opportunities to bridge the gap from high school to college for incoming students that may be underserved or for those who come from high schools that are under resourced. Taylor put this succinctly stating, "I think it starts in, without a doubt, starts in K-12" indicating that both recruitment and academic support and training were necessary to improve opportunities for URiM students.

Celaena has been in her role for less than a year but already recognizes the importance of reach students early. Celaena said:

Early recruitment, that's where it starts. You know, traveling to high schools and getting in high schools and meeting students early...show them it's attainable...and so, how do I get to them early if you don't give them a choice. You, of course, feed the medical professions until they realize that it's attainable. And so yeah, if I could spend a whole budget on that I would literally be at high school three days a week just getting them early.

This advisor already attempts to incorporate early recruitment into her current role. She indicated that she makes high schools visits now and tries to plan to talk to at least two classes of students on these visits. Rowan focused more on the academic preparation that a bridge program could provide for URiM students. This advisor mentioned that students, both majority and URiM, often encounter barriers with juggling responsibilities. Rowan indicated that this alone does not cause students to move out of the medical school pathway. That happens for URiM students at Rowan's institution when those student encounter academic difficulties. Rowan recommendations included,

Being an advocate for bridge programs, meaning things that are going to help people bridge the transition from high school to the prerequisite course. Because for us it's through the coursework that we lose people. It's not because we certainly have students who are so busy that they're having trouble with so many family responsibilities at work. They're having trouble getting some of the traditional type experiences, they're not the ones who leave. It's the one who encounter difficulties in their coursework, and don't

have the support to know they can improve. I would recommend a summer bridge to get them academically ready.

Rowan also indicated that early recruitment would be beneficial as well. He indicated that if he could have “resources dedicated to going out and recruiting URiM students and the funding to help them get here” then it would make a big impact. Help with funding and scholarships was mentioned by other participants and will be discussed in the Collaborative Initiatives section. Rowan also offered a more radical idea to help with academic barriers. He indicated that some institutions allow the first year for undergraduates to be graded as pass/fail. This could take the stress off of worrying about achieving a specific grade, particularly in the sciences, to be competitive and could give students a better opportunity to focus on the transition to college coursework and study skills. Harry also felt that it would be good to start early and identify at risk students before they make it to campus. Harry said:

I would just go back to the real, the basics of it, from a school level, I think to identify students, maybe as an incoming freshman class, identify students from an underserved background that may be at risk to not doing so well in Gen Chem. Give them a head start essentially, to allow them to catch up and to get to a point where they're at a better spot to do well in their first semester, because the first year is just where we see the biggest drop off because of Gen Chem.

Early intervention continued to be a theme with other participants. Theo said, “Intervention at college when those high school students are coming in and they're having difficulty making the transition, or whether it be the kind of advising to show that there are support networks out there.” While Olivia said, “I really think it has to start even before they come to college, when they're in high school they have to be there. They do not have an option, so that captive audience

gives them a great opportunity to start.” Olivia elaborating that providing programming to high school groups ensures that students hear the message. For undergraduate students, pre-medical advising appointments and programming put on by pre-medical advisors is optional so there is no guarantee if there will be attendance and there is always a chance that undergraduate students are unaware of the opportunity. McKayla also supported the path of early intervention stating, “there is quite a bit of data that supports that if we're not doing outreach until they get to college, we're missing the boat.” McKayla goes on to say that middle school and high school are where we should capture students and start planting the seeds of careers in medicine. She agreed that it is also important to consider academic resources when discussing early intervention.

McKayla stated:

I think if there are students who are interested in careers in health care, if they are coming out of school environments that haven't prepared them well for what college or university life is going to be like academically then that struggle is something that could be a hindrance and a deterrent from sticking with a path.

She also mentioned that she pushes summer programs with her undergraduate students, so they can get into settings that show URiM students they can do it. McKayla believes adapting this approach for high school students would be one place to start. She stated, “I really think opportunities to connect with populations earlier on with mentoring, it could be even academic stuff is the first step. So, they come in with a better foundation hopefully when they get to the college environment.”

Elsie also indicated that early outreach is the area she would most like to focus on to improve the number of URiM students in the pathway. Elsie stated:

I would love to reach as many students as possible before they even come to my institution. Let them know who we are when they're in high school, even community colleges, if we could travel and talk to them more about who we are and just let them know that you know they can come to us for help before getting here. Just going out to let them know before they get to the institution what they need to be doing and things of that nature.

Robby indicated that his office already worked with high school students and recognized that they really should be connecting even earlier in a student's educational journey. Robby said, "We commonly engage with high school students, but that K-8 grade is where they are starting to formulate, what do I want to do for the rest of my life."

According to participants, early outreach and bridge programs are important aspects to increasing URiM students on the pathway. Maya agreed that high school outreach is where we need to start but does not feel that we will improve the numbers until some major societal changes take place. Maya stated:

This is really a structural, a society structural issue. Because if you consider what's going on in public schools now, and particularly public schools and under-resourced areas that have been for a long time been under-resourced that's one place to change it... there needs to be some sort of shift on how we teach students... But really, I think the until people decide that they really want to change some things in our society. I don't know that it's going to happen.

Collaborative Initiatives. Participants suggested that collaboration on initiatives to support opportunities and mentorship for URiM student with other stakeholders could improve retention in the pathway. One of the first methods of collaborations mentioned was partnerships

that provided financial support and scholarships for URiM students. Participants indicated that is not only impacts the student's personal ability to stay in the pathway but also the types of programming that can help prepare them for the application process to medical school. Maya said, "you have to have other people supporting you, and there's like a financial side. In some ways there's financial things that also need to happen to keep having those type of supportive programs." The supportive program mentioned by participants were outside of traditional academic programming offered by institutions and included content that was centered in helping URiM students gain experience and guidance in making a competitive application to medical school. Sarah said it would be her dream to "support more scholarships because I think, as soon as they could relieve some of the burden of knowing how to pay for classes, that's a huge one." Financial burden was mentioned as one of the most frequent barriers for students. Rowan also suggested that funding much better scholarships for URiM students would be an area he would choose to focus on. Theo also indicated that financial support would be a big area of recommendation for improvement. This advisor indicated that students are not only worried about current financial needs, but they are thinking well into the future about how they will pay back the massive amount of student loan debt they will accrue over the span of undergraduate and medical education. When asked what she would do if offered unlimited support, monetary or otherwise, Olivia indicated that she would request financial support that could help her provide programming that would support other areas of engagement for students. Olivia stated:

I would also pay to have an MCAT prep course on my campus. The MCAT is a huge, huge barrier for a lot of my students... I would ask to fund the CNA program so that I could have my students go through a CNA course and give them the opportunity to get it out there and to work because I think that a lot of my students need that hands-on

experience. It's hard to find a place where they can do that around here, because we are so small in our resources, we just don't have enough places for students to go.

The idea of financial support for programming segues into a discussion on experiential opportunities for URiM students.

Participants shared a variety of ideas on expanding experiential opportunities for URiM students. This became a frequent suggestion as it aligned with recommendations to overcome the barriers participants saw their URiM students encounter. Before expanding opportunities, Theo felt it was important to have a number of systems in place that look at the barriers students encounter and then provide opportunities to improve those barriers rather than, “waiting until they've finished undergraduate studies with a compromised GPA, and try to fix it.”

One of the recommendations mentioned regarding collaboration on experiential initiatives was the creation of shadowing programs. Sarah indicated that setting up structured shadowing programs would be the first step in provided supportive programming. She recognized that shadowing programs require a lot manpower and maintenance and she would need to partner with others to make that happen. Elsie also indicated that she wished there was a shadowing program to connect students to as that would provide them a resource they desperately need. Meredith took a ‘dream big’ approach and recommended the idea of an all-encompassing opportunity in the form of a center for pre-health students. Meredith said she would like to:

Have a pre-health center...it would be a really holistic pre-health center to focus on the entire person. There would be current med students there that could mentor them. There would be someone in charge of setting up shadowing, someone for research, and someone for community service...We would have regular community-building

activities...maybe have regular group counseling sessions where we talk about imposter syndrome and low confidence, and low self-esteem, and how to build that.

This idea of a one-stop-shop sounds like what an ideal pre-health advising office should be. Elsie had a similar thought process when she indicated that in order to improve URiM student success it would take institutional support beyond the pre-health advising office. Elsie said:

I think it just takes the whole university, the whole community to help. I mean just different resources. We're here to help them as much as possible, but I think just everybody here on campus, their professors, their advisors, our office. I think it just takes everyone to kind of help them, and I've noticed that the students that have really used a lot of institutional resources...I think they're the most successful.

Programming to keep students inspired on the pathway was also mentioned. Taylor said:

I think that institutions need to create programming to keep students inspired instead of beating them down with general chemistry right off the bat...I think there needs to be space to develop programming to keep students inspired, from the thing that brought them in, so that they want to work harder in chemistry, and they actually want to understand it, because they truly are putting people's lives in their hands, and you don't want somebody who's doing that halfway... I think programming to inspire students is the biggest gap, because they feel like they can't do it and they need to be told that they can.

Ideas discussed for collaborative programming involved a variety of recommendations for partnerships. Some suggestions remain at the institutional level, but some participants went beyond that for a wider scope of involvement.

Some participants indicated that collaboration to make programming happen needs to occur between undergraduate institutions and medical schools. McKayla recommended, “partnership opportunities with medical schools and undergrad institutions...we really want to get them in settings that show them that they can do this.” She indicated that this is why she pushes summer programs to her current students so much, so they can see themselves as a physician. She postulated that if this partnership could happen earlier and more frequently, that could increase students in the pathway.

Robby went beyond the undergraduate level, recommending undergraduate institutions and medical schools’ partner for programming. He believed that medical schools could provide the support to help address the equity issues that URiM students face. Robby said:

What medical schools can do is address the equity issues...Looking at is this MCAT score that may seem lower than your average as student of a non-traditional background and how does that compare to a higher score from a student that was able to spend \$5000 on a prep course. Equity issues are huge and if medical schools could help contribute to MCAT prep, goal setting, things like that...One aspect is partnerships with medical schools...perhaps guaranteed interview to get them in the door...we’re not talking about equality, we’re talking about equity, a fair shot.

Robby also recommended looking at opportunities to partner with community businesses and organizations. He mentioned the idea of a shared resources pool and how everyone could benefit from that approach. He recognized that there may be hospitals and clinics in the area experiencing a shortage of nursing assistants. If his institution and those health care centers combine resources then students can get their medical related experiences and the hospitals and clinics are able to adequately staff their facility. Robby stated it’s a win-win for everyone.

Rowan felt that improving the pathway begins with mentoring and community building activities that are specifically created for URiM students to utilize. He believed that this can only happen through a partnership with medical schools. Rowan stated:

We need more mentors from medical schools, particularly that are that are members of URiM groups themselves... And so, I do think there's a really important role for not only medical schools, but physicians in the community to partner with undergraduate institutions, partner with real offices.

Rowan stated that these types of partnerships can come with their own set of challenges. He shared his experiences stating:

More often than not though I see the offers to help, but our office is being told what's gonna happen or what we need. You know what we need, and usually people's instinct is not what we need... Big-hearted, well-intentioned attempts to help could actually cause harm and that's an area that I think these sorts of partnerships can be really powerful, but we also need some recognition by the community that you know, it's not just the untrained people who are gonna jump in and fix this issue.

He recognized that there are specific benefits to a mentoring program like this that his office alone cannot provide. However, he has had interactions with medical schools in the past that reached out to partner only to be told how he was supposed to do his job for the program to work. His assessment in this type of situation is that he is the advising expert, he knows what students need in that realm. Medical school partnerships can provide the expertise through mentors on what it is like to be a medical student or physicians, but they are not the experts on pre-medical advising. Rowan offered a logical solution to this challenge stating:

I've wondered if there could be some sort of, maybe it's a NAAHP/AAMC partnership or something to address this and create some canned material, some prepackaged stuff...Here is a fifteen-week list of topics, you know, weekly list of topics you could cover. That would be appropriate, given what you know. And then that could be given to every Med School student group across the country. So, when they reach out to pre-health offices, they can say we're going to follow this curriculum, which is then rubber stamped by NAAHP and AAMC.

Rowan also stated that having dedicated small groups for mentoring and community groups for students would be another great way to partnership with medical schools.

This was not the only suggestions for partnerships on a national level. Harry stated, “maybe more of a national level would be more help for prep, more free resources for MCAT...All I can say is, I think that there's potential for better free resources for the MCAT.” Financial support for MCAT preparation was identified as collaborative opportunity but Harry indicates that his suggestion would be to partner with educational services to offer the resources at no cost.

Another recommendation for pathway improvement through collaborative initiatives was to provide programming, training, or resources to family members, advisors, and those peripheral to the work of furthering the URiM pathway. Rowan had mentioned that familial expectations can present a barrier for this URiM students. Because of this he recommended programming for parents and families. This programming could focus on education families about what their student will be doing while they are in college. This would include helping families understand what their academic workload will take, but also helping them understand that as a pre-medical

student there are extra-curricular activities that they have to engage in. This could help parents and families set realistic expectations on when their student will be able to come home or work.

Participants discussed that educational opportunities for other advisors and faculty are necessary to change the more traditional narrative those parties have of what the pathway to medical school looks like. Olivia said:

I think that getting the academic advisors to be a little bit more positive would help, I know that some of my academic colleagues have a tendency to look at their job as weeding out students, and I understand where they're coming from but I don't agree with it... If they students just got a little bit more support and cheerleading from them...

Meredith identified that her recommendation stems from negative interactions both herself and her students consistently have with faculty. Meredith said a suggestion for improvement would be:

Having faculty who are there to teach, not just do research. I think that there's a lot, especially in the STEM departments, where professors are proud of having really high DFW rates and pride themselves on having a class that's difficult to pass. And I'm like you're proud that you are a barrier. That's not what education is about... So, I think, having faculty who are encouraging, who are not just there to do research, but who actually like to teach...we need faculty who work with advisors instead of against us.

McKayla focused more on the benefits training can have overall. She stated, "I think there's always going to be an opportunity to do more training. So, training for advisors, training for people who are tangential to the work like faculty." She felt this work could improve the way folks engage with URiM students and may support better outcomes in the future.

Visibility. Increasing the visibility of URiM students and recognizing the issues that impact them was indicated by participants as another way to move forward. Providing more literature and experiences that showcase success from other students who look like them could show URiM students that their dream is possible. Sarah is a big proponent of research which informed her response regarding visibility. Sarah stated:

I think adding more literature about URiM students to show that this is totally a possible pathway and not such an unattainable dream is something really big and could easily require more money to be funneled that way, so kind of breaking those barriers of that messaging that only the best of the best who come from best backgrounds can do this.

This participant and others mentioned that URiM students need to see and hear the success stories from students and physicians who look like them or come from similar backgrounds. Rowan said, “having a community of support with you know people from similar backgrounds, they could have that community get to know each other, maybe have some professional topics, they’d be thinking about imposter syndrome. That could help.” Elsie agreed stating,

I think like just finding them a mentor or someone that has, you know, a similar story to theirs or gone through what they've gone through, or whatever it may be, to motivate them. I think a lot of times they need that mentor, someone to really look up to show them that, hey I've been there, and now I'm here.

Participants also recognized that visibility goes beyond URiM student seeing themselves in someone who’s found success in medicine. They mentioned that it makes a positive difference when URiM students recognize that their advisors see them for who they are. When referencing improvement of the pathway, Rowan said:

I think it's recognizing that many URiMs are going to be facing a different set of pressures and a program that is, you know, just appealing to, or you know it's kind of set to give the masses may miss opportunities to help URiMs dealing with some of the specific things we talk about: lack of time, lack of confidence, lack of preparation. I think being willing to just understand that.

If advisors can show that they understand, or are making an effort to understand, the journey of URiM students then those students feel seen. Advisors can also provide a level of visibility to URiM student through their programming if they are intentional. McKayla said,

One of the things that we're intentional about is trying to represent the diversity of students across campus, not just in terms of major or career interest. But also, from rural to urban to racial ethnic diversity there as well. And so, we're always actively looking for folks who are under-represented that can serve as peer advisors in the office so students who come to the office have that experience of seeing someone who looks like them that's on this path.

One participant mentioned that this level of visibility could also extend to the advisors themselves. Meredith said:

Have more advisors of color. That's I think the best thing is, just they need to see themselves in their advisors. And they need to be reassured that this is a path that they too can pursue. I think that's really important.

The recommendation of visibility showcases the importance of URiM's seeing representation and feeling seen by their advisors.

Research Question 3

How do pre-medical advisors perceive the role they play in the pathway to medical school for URiM pre-medical students?

The themes that emerged when advisors discussed their role in the path to medicine for URiM students included: advocating for students and navigation of the pathway.

Advocating for Students. The role of an advisor in the pathway for URiM student includes providing encouragement and support as stated by participants. These topics inform the approach participants take with their students and participants indicated they felt that encouragement, support, and being an advocate were ways that their role impacts the pathway to medicine for URiM students. As they get to know their advisees, participants recognized that they are able to see someone's whole story, including the barriers they face. As professionals charged with assisting the pre-health populations at their institutions, they can advocate in a variety of ways for URiM students. This can include creating, improving, or informing others on institutional programming that negatively impacts URiM students as well as providing suggestions to current programs and practices that will positively impact the experience of their URiM students. Participants mentioned that they can help URiM students tell their personal story in their medical application in a way that improves their level of competitiveness in the process. Participants can also advocate on the student's behalf regarding their potential for success in things like recommendation letters. This could show admissions committees what a URiM student may have been up against that prevented them from obtaining experiences similar to the general pre-med population. Sarah indicated that URiM students also have a variety of responsibilities outside of their academic commitment which has caused her to investigate ways that her URiM students show that they are competitive for medical school. She recognized that due to the variety of responsibilities they needed to juggle, URiM students often bring in more grit than their counterparts who did not have the weight of those responsibilities. Sarah said:

One theory that I dabbled in is community cultural wealth. All these forms of capital that they bring in from their experiences the fact that they had to work through high school, throughout college and maybe not in a health-related job. Just having that kind of work experience in food service, or retail and balancing courses or having to take over responsibilities or translating for their families. I feel like I'm a really big proponent of pushing them to tell those stories.

Because URiM students may not have anyone in their family to help them navigate the path to medicine they need to rely on others for advice. Sarah also indicated that these students come in not knowing anything about the pre-medical pathway and need to rely on the knowledge of the pre-medical advising staff to guide them forward. Taylor discussed the process of writing committee letters for students stating, “you know we're here to kind of help serve as an advocate for students.” This process happens towards the end of a student’s journey prior to them applying for medical school. Taylor also indicated that her bandwidth also impacts the ability to advocate equally for each individual student because the letter writing process is so time consuming. Harry strongly suggested that the advisor role in the process for URiM students was to advocate and tell their stories. Harry said:

Telling stories of the students that we interact with to admissions committees. They don't see a student who has an underserved background... And so, to tell admissions committees like these are students, there are students out there who don't make it to you that you need to be aware of... I just think um highlighting those students, the students that they don't see, and just kind of sharing their stories.

Harry could think of specific instances with student where he needed to advocate on their behalf. He mentioned one of his URiM students who was one of his best students that would make a

phenomenal physician but did not have the high GPA of other pre-meds because he was working to provide for his family while also taking care of a family member who had special needs. Harry indicated that this is the type of story that admissions committees do not see if they disqualify an applicant based on GPA alone. The particular URiM student in this story he shares is now deterred from the pathway because he sees that his odds are low due to his academic struggles.

Meredith fell in love with the population of pre-health students. She found their dynamic peculiar because “they’re so passionate about what they do. They’re so ambitious and so excited and so lacking in confidence, lacking in self-esteem.” This drew her to working with them, because she wanted to encourage them and help them build up their confidence. Meredith advocates for her students to tell their own unique stories to show their growth along the pathway.

The study participants also indicated that because of the many extracurricular responsibilities and burdens their URiM students carry they can find themselves with a few lower course grades or overall GPA than their peers. Sarah and Harry recognized that experiencing academic difficulty often did not take away from a student’s overall level of competitiveness, it was discouraging to the students who considered this a failure that deterred them from the path as they think their odds at acceptance will be low because of the lower GPA alone. Advocating on a student’s behalf played an important part in how participants view their role in the pathway to medicine for URiM students.

Navigation of the Pathway. Participants specified that another role an advisor has in the pathway for URiM students is one that helps the student navigate the complex journey to medicine. There are many factors that play into the culmination of a student applying to medical school. Participants indicated that it is up to advisors to be a guide for URiM students in this

process. Participants discussed that many of their URiM students come from families that do not have anyone who has gone to college, let alone medical school. Because of this, participants indicated they needed to be a guide for students through the process. Celaena said:

Really, I feel like our position is to get you to application... My theory of what else, you know everyone has an MCAT and GPA. What else are you bringing to the table...And that's kind of where we come into play, you know here's the realization of what medical schools are accepting, who they are accepting, and what the expectation is. So academic advisors to graduation, us to application.

There are many sections that make up a medical school application and advisement would need to happen regularly in a student's undergraduate career to make an impact that helps students strengthen a wide range of areas. Celaena also stated that the application process to medical school goes beyond a test score and GPA which is why her engagement with students is so important, so they can navigate the other pieces of the process. Maya said, "I really try to help students think about all the things that they have to do. I know that this is a process. I often say it's a marathon, not a sprint." The journey to medicine cannot be accomplished as directly as other career paths and participants understood that it takes time for their students to build a competitive application. Maya also indicated that she feels she talks with students like she would talk to her children or anyone who is "trying to do something where there's a lot of stress related to it and there's a lot of moving pieces for them to think about." She identified her role as helping students think about all the things they have to do while understanding they cannot do it all in one semester. She also tried to make them feel as comfortable as possible when speaking to her, something that Sarah also indicated was important. Maya currently works only with third year students, fourth year students, and alumni and at that point in the process she really is just

navigating through the application process. She also felt that her approach makes them more comfortable and is effective because the students she encounters will make repeat appointments throughout a semester when only one appointment is suggested.

Sarah stated that the pre-medical advisor role provides more nuanced support for students than academic advising. She works with many URiM students and gets to meet them where they are at one point in their life and from there support them to get a bit closer to where they want to be. She also gives them more clarity on what they want to do and how to get there. This participant also mentioned that just as important as the support she provides is the ‘alignment’ of factors on the student end. Sarah said, “that alignment, in order to get through this pathway, is super important, and at times its resources. It's people who support you that can help you get through those different nooks and crannies in the path.”

Taylor described the role of an advisor in the pathway is to help students discover and then once a student discovers what they want to pursue an advisor can help chart the way forward. Taylor said:

I think it really is to sort of make sure students are aware of all the opportunities that are there, to think broadly about health professions. So, diving a little bit, you know sort of challenging them to think more deeply about why it has to be medicine...So that navigational part, I suppose, is probably the key thing of making sure that students really are thinking through their decision and are aware of all the options... my goal is to help students discover and navigate their path forward towards the career and the health professions... my job here is to help figure out where the gaps are and make sure you don't have any, or that we fill them so there aren't any massive ones...so know that I'm in

it with you. I will coach you through it. If you don't get in, we're going to keep working with you till we figure it out.

Taylor formerly worked in admissions for an MD/PhD program. She indicated that while in that role she had the opportunity to read through many applications to medical school. She felt, based on what she was seeing in these applications, that pre-health advising was lacking and could provide the direction and support students needed to help them understand why they were doing what they are doing.

Meredith recognized that there are a lot of steps in the pathway to medical school. Her students often do not realize how intense it is, how time consuming it is, and how expensive it is to apply to medical school. She indicated that there is no reason students should have to navigate the process alone, that's where she comes in. Meredith said:

I am someone who guides students who are interested in a pathway to health care and helps them become competitive applicants through advising them on what classes take, on what it is that they need to do for extracurriculars and helping them realize their own potential. But overall, I'm just providing that guidance.

Like Maya, Olivia likened the role of an advisor to that of a mother. Olivia said, "I call myself a professional mother. I see myself as providing information, support, encouragement, and a reality check as they go through this process." Olivia indicated that jokes that she knows more about getting into medical school than about the institution where she is employed. She indicated that this is her expertise because her role is not advising them on anything related to the undergraduate academic journey, but rather Olivia stated, "I'm trying to help students figure out how to get to where they want to go."

McKayla compared her role to that of a high school guidance counselor but that a pre-medical advisor is someone who is really knowledgeable about the health professions in general.

McKayla stated:

We're here to help guide and support students in their future goals. And we also like to talk about our sort of mantra within our unit and on our campus, as we help students explore, we help students plan, we help students succeed. So, helping them understand what health professions programs are out there based on what their interest are. A lot of times it's exposing them, perhaps to things they didn't know existed. Once they have some ideas and then sort of setting forth that plan on how to be successful.

Part of the navigation process is discovering if and why medicine is the right pathway for a student. While the subject of this study aims to uncover idea of advisors as important players in increasing URiM students in medicine, we do not want to place students in a career field they do not enjoy simply because they did not know what other healthcare options were out there.

Descriptions given by participants when discussing their role in the pathway also aligned with some of the academic advising theories discussed in the literature review. Academic advisors are essential in promoting development and success in college age students (Kuh, 2008). Broadly defined, student success includes, “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills, and competencies, and attainment of education objectives” (Kuh et al., 2006, p. 1). Word choices like motivate, counsel, help, and guide were commonly used in participant interviews to describe participant feelings about the process. Elsie said:

I mean just helping the students, I think we are just to here to of course motivate them... I mean we're here to counsel them, motivate them when they're down. I find we wear many

hats. But just trying to help them find shadowing, internships, and letting them know all the resources that are out there really to help to better help them get into medical school or any other health care program that is out there. just basically helping them be the best student and the most competitive student they can be in order to get into their program and succeed at their goals.

Robby said, “Our job as a pre-health advisor is to talk them through that. Why are you here? I you want this then we’re going to help you get through it.” It is evident that participants felt their role to be crucial in students navigating the ‘how’ and ‘why’ questions when pursuing medicine. The literature agrees with participants indicating that the role of pre-health advising extends beyond course scheduling and requires that advisors foster the development of students outside of their academics as they prepare for careers in the health professions with a sincere focus on the personal and humanistic growth students need to undertake the journey (Barnes & Parish, 2017; National Association of Advisors in the Health Professions, 2018).

Chapter Summary

Chapter 4 presents the data analysis of the data from twelve participant interviews. The purpose of this study was to examine the perspective of advisors on their experiences and role in the URiM pathway to medicine. The interviews were conducted via Zoom and transcribed by the researcher. After transcription, data was coded, establishing categories from the emerging patterns of responses. The following themes emerged from the interviews: a) approach to advising, b) barriers URiM students face, c) challenges for advisors, d) early intervention, e) collaborative initiatives, f) visibility, g) advocating for students, h) navigation of the pathway.

Chapter 5. Summary, Conclusions, and Recommendations

Statement of Purpose

The purpose of this study was to explore pre-medical advisor experience and perception of their role in the pathway to medical school for pre-medical students who are under-represented in medicine (URiM). The focus of this work centered on describing participant's experiences advising URiM pre-medical students and analyzing themes from the participants to understand how pre-medical advisors perceive their role in the pathway to medicine for URiM students. The following research questions were used to guide the examination of advisor perceptions of their experiences.

1. How do pre-medical advisors perceive their experiences working with URiM pre-medical students?
2. What are pre-medical advisor perceptions of approaches to increasing the number of URiM students?
3. How do pre-medical advisors perceive the role they play in the pathway to medical school for URiM pre-medical students?

The qualitative method employed for this research study was an inductive analytical approach. This approach to qualitative research allows findings to emerge from frequent or dominant themes found in raw data, forgoing restraints imposed by structured methodologies (Thomas, 2006). Data were collected through semi-structured interviews with pre-medical advisors. These interviews were collected via Zoom meetings that were performed separately. This allowed me to gain a deeper understanding of the experiences shared by each advisor.

Research Question 1 Discussion

How do pre-medical advisors perceive their experiences working with URiM pre-medical students?

All participants indicated that their path to pre-medical advising was somewhat circuitous and not necessarily intentional. Their lived experiences both personally and in previous roles informed the way they approached the advising process. Three themes emerged from the data for research question 1:

- Approach to advising
- Barriers impacting URiM students
- Challenges for advisors

The findings from the analysis of the interviews indicate that advisors approach their interactions with the student they advise, both URiM and majority populations students, as individual encounters. Therefore, each student they advise receives some level of individualized information based on the student's specific needs. It was noted that because URiM students have barriers that vary from those encountered by majority population students, advisors may go more in-depth with their URiM students in breaking down specific topics. Additionally, participants were adamant that it was not their position to tell a student that they would not be successful on their path to medicine. Statements from participants often include some version of the phrase "I am never going to tell someone they can't do it." While advising individually based on a student's specific situation was mentioned most frequently, many aspects of participants approach to advising aligned with a specific advising framework. Four participants indicated that they subscribe to a specific advising theory or model in their approach with students.

It is important to note that when participants discussed how they came into the role of pre-med advisor, many began their response with referencing their own personal experiences in undergrad. Several indicated that they had poor experiences with advisors themselves or had been told a particular pathway was not a good option for them. It is also relevant within the discussion of the study framework to point out that over half of the participants in this study were first-generation college students. They themselves were lacking in capital when they began college and many had to navigate the journey on their own. Participants described their own experience as impacting their understanding of the URiM students they advise because they know what it's like to be lacking in the social, cultural, and economic capital necessary to navigate higher education. Because they are now able to recognize that the students they work with may lack capital in one or more of these areas, they can tailor their advising approach to help students increase their capital during the students undergraduate experience.

When discussing advising techniques, the first theory referenced was Baxter Magolda's theory of self-authorship. Baxter Magolda (2014) defines self-authorship as the "internal capacity to construct one's beliefs, identity, and social relations" (p. 25). The ability to make internally based decisions is the key to many college learning outcomes that include thinking critically about concepts, building relationships that are interculturally mature, and making wise moral and ethical decisions (Baxter Magolda, 2014; Baxter Magolda & King, 2012; Kegan, 1994). This approach has been investigated in relation to the impact it has on under-represented students in higher education. Torres and Baxter Magolda (2004), found that Latina/o undergraduates who had experienced racial discrimination in their college years were motivated to challenge their current methods of making meaning and develop a more visibly defined voice. A study by Barber et al. (2013), found that 30% of participants who experienced substantial

transformations in self-authorship were students of color. Carpenter and Pena (2017) found that participants in their study had the capacity to be in the final stages of self-authorship during their undergraduate experience. This study focused on first-generation students and many of the participants were members of other under-represented groups as well. Carpenter and Pena stated:

Institutions of higher education have a significant role to play in the epistemic development of undergraduates. It is imperative for higher education practitioners and policymakers to understand the needs of this historically marginalized group given the isolation first-generation students often experience during their undergraduate education. The goal is to provide opportunities for development and supportive learning contexts to strive toward equitable outcomes in higher education. Our findings demonstrate that institutional agents, such as faculty members and staff, play a key role in mediating potentially destructive experiences for first-generation students. (p. 97)

Participants in this study echoed the literature in discussing their URiM students journey to self-authorship. Sarah did not mention self-authorship theory by name but stated that she builds on the capital that her students bring with them into college to lay the foundation of self-authorship. She indicated that through encouraging her students to recognize and give a voice to the way their background shaped the cultural, social, and economic capital they possess upon entrance to college, it moves them further in the path to self-authorship. Meredith described a similar approach with her students as she purposefully employs self-authorship theory. She indicated that as she guides students to focus on their own story while also recognizing the wide array of barriers they have overcome as URiM students, barriers that were largely the product of lack of capital. Meredith's goal is that this recognition and understanding can then allow her students to

focus on their self-efficacy and movement towards the final stages of self-authorship where they become a more independent autonomous person.

Applying the framework of this study to the findings specified that advisors subscribing to self-authorship theory felt more confident in their ability to help their URiM student continue on the path to medical school. Not all participants in this study were able to reference theory specifically, but some of their approaches align with the framework of self-authorship. This leads to the idea that perhaps self-authorship could be employed within an advising framework to expand their approach in working with URiM students on the pathway to medicine. Participants indicated that their URiM students faced a variety of barriers, some that may prevent them from possessing the necessary tools for success. As stated in Carpenter and Pena's 2017 study,

the role of the institution becomes critical to support the developmental needs of first-generation undergraduates. Creating inclusive learning environments where first-generation students are encouraged to bring their vast life experiences to the center of their learning will not only create developmental learning opportunities but also enrich the classroom learning setting overall. (p. 97)

Participants in this study agreed as they felt they held an important role within their institutions to support the development of the students they encounter. Participants also recognized that their URiM students, which in the case of this study includes first-generation students, are bringing more life experience, or "grit", to the table which can be a positive thing for a student if they have a supportive advisor to help them navigate and apply those experiences towards their goal.

The second advising theory mentioned by participants was appreciative advising. This approach to advising is "a social constructivist advising framework and approach rooted in appreciative inquiry" (Drake et al., 2013). Appreciative advising is one of only a few research-

based advising models. This approach has “demonstrated impact and effectiveness on student academic performance, academic success, and retention in various advising settings” (Drake et al., 2013, p. 84). Appreciative advising has also been found to be a powerful framework for retaining and mentoring students (Bradfield & Knutson, 2015; Cooney et al., 2016; Isreal, 2013). The appreciative advising approach focuses on specific verbal and non-verbal behaviors in advising thereby emphasizing the process of communication between advisor and student (Drake et al., 2013). Participants in this study frequently mentioned that they work to establish a welcoming environment when working with students. They indicated this was particularly important for them to show their URiM students that they were a safe resource to use. Creating a safe and welcoming environment for students is a key part of the appreciative advising approach. The first phase of the appreciative advising approach is to make a positive first impression with a student to quell fears the student might have about meeting with an advisor. This is employed in practice through advisors providing a welcoming environment that can help assure the student that the advisor wants to help them rather than impede the path to their goals (Drake et al., 2013). The use of this approach was evident in the findings of this study as participants indicated a significant step in their process of advising was to ensure their students felt welcome and knew they were there to help.

The appreciative advising framework features a two-way interaction that will help students optimize their educational experience and achieve their goals (Drake et al., 2013).

Harper (2019), found that:

The appreciative advising framework, on the other hand, recognizes social norms are not conducive to the learning environment for students of color academic advisors to self and recognize the requirement for reflect and examine their own values and beliefs. Indeed,

race must be included in the conversation and training to advance the framework in the future transformation of higher education towards equity. The appreciative advisors seem to include social justice within their space. (p. 168)

Several participants in the current study operated within the appreciative advising framework indicating that they incorporated discussions on race, equity, and social justice in the pathway when meeting with URiM students. Being open with these discussion topics created an environment of trust for URiM students and opened the door for participants to navigate the students through understanding a path to increase their capital and facilitate the journey to self-authorship. Appreciative advising endeavors to enhance the success of both advisors and students engaging in the process. This approach necessitates advisors not only know what to do in advising but that they are also able to reflect on why they do it and how they may improve to provide better services for all students (Drake et al., 2013). Participants in this study applied the concepts of appreciative advising in a variety of ways. The findings of this study showed that participants knew what and how to advise, but that they also frequently reflected on how they could do more to assist their URiM students. Multiple participants indicated that they wanted to improve their process to provide better opportunities, resources, and services for URiM students. Although there is some research indicating the applicability of appreciative advising specifically for URiM students, there is not definitive data to indicate that this is the best option. McKayla's use of this approach indicates that it allows her to meet students where they are which also aligns with the individualized approach that all participants discussed they use in their approach to advising students. The appreciative advising approach was recognized and employed by other participants and while they were unable to name this specific advising framework, they were utilizing it. McKayla reinforced the idea that within an advisors' experience with URiM students,

the advisor will need to recognize that URiM students often have a different student experience based on their background and life experiences. Outside of the appreciative advising model, the experience of these students impacts the capital they bring with them to the college setting. As was discovered many times throughout this study, the economic, social, and cultural capital URiM students possess puts them at a disadvantage on the journey to medical school.

Utilizing an appreciative advising model appeared to be effective for participants in this study and indicated that this advising approach could be applied as a method that would strengthen the interaction between advisor and URiM student and increase URiM student self-efficacy and persistence on the medical pathway. Notably, appreciative advising is the application of appreciative inquiry and can positively influence a student's journey in self-authorship (Olsen, 2009). Perhaps employing both the theory of self-authorship and the appreciative advising method in tandem could offer an opportunity to increase success in URiM students.

The final advising model mentioned specifically by participants was proactive advising. Proactive advising was formerly known as intrusive advising and involves "intentional institutional contact with students such that personnel and students develop a caring relationship that leads to increased academic motivation and persistence" (Drake et al., 2013, p. 137). This is a direct, focused effort that facilitates active interpersonal engagement between the advisor and student. This engagement is generally initiated at critical periods in the student's academic career (Noaman & Ahmed, 2015), thus giving the students a stronger opportunity for informed, responsible decision making. In this approach, "particular cohorts of students may be targeted such as academically at-risk students (e.g., students on probation), or high-achieving students" (Noaman & Ahmed, 2015, p. 360). The participants that discussed their use of this approach also

identified that the population of URiM students they served needed more support in their pre-medical journey because they were the first in their family to navigate this journey or they had so many other responsibilities to consider. This need for more support was explained by the lack of capital that their URiM students possess in comparison to their majority peers. Looking to the literature, Museus and Ravello (2021) indicated the importance of academic advisors specifically championing proactive philosophies. “Specifically, when asked how advisors contribute to racial and ethnic minority success on the GEMS campuses, participants discussed the importance of academic advisors who proactively assume a responsibility for connecting minority students with the resources (e.g., information, opportunities, and support) they need to succeed” (p. 21). Participants of this study indicated that their use of a proactive advising model complements their ability to expand their students social and cultural capital. Additionally, participants in this study identified that the URiM students they work with encountered academic related barriers. This aligns with literature as proactive advising has been shown to be an effective strategy in working with at-risk students (Drake et al., 2013). Participants in this study identified that they feel this method is working for them in their interactions with URiM students. Much like appreciative advising, participants felt this was an advising strategy worth considering when working with URiM populations.

It is also important to recognize that while several of the participants in this study implemented specific advising approaches in the interactions with students, the advising approaches mentioned are grounded in the world of academic advising. There are a variety of differences between academic and pre-health advising and there is currently no literature to support (or deny) that utilizing academic advising strategies in the pre-health advising setting is effective. As discovered in the literature review, pre-health advisors herald in one of the earliest

stages in the development of future health professionals and may play a critical role in the development of academic skills, personal growth, and professionalism among students across the health professions spectrum (Barnes & Parish, 2017). Participants echoed the literature on this topic, agreeing that they play a critical role in the aforementioned areas. Despite the perceived benefits, little effort has been made in addressing the role of advising in promoting long-term success for URiM students (Dumke et al., 2018). Despite the fact the advisor/advisee relationship is referenced as an important part in a student's pre-professional pathway (Morgan et al., 2016), there are no specific degree requirements for this role and no set standard for training. Pre-Health advisors often find themselves learning on the job from colleagues and drawing from the experiences and perspective they bring with them into their advising role. Experiences discussed by the participants in this study supported this claim and indicated that there was little to no formalized training given to them when they started their pre-health advising roles. Only one participant indicated that they received specialized training in implementing a specific advising approach into their practice, while the other participants chose the use of a theory or advising framework based on personal preference and their own research. The literature supporting the framework of this study enforces the importance of educating advisors in student development theory as it is crucial to understanding the process of advising. Some participants felt adequately supported despite the lack of training because they were able to rely on mentors within their office or advisors at other regional institutions to guide their learning and approach to working with pre-health students, but this left much to be desired as far as training in specific theory. Lack of institutional support and the view of pre-health advising as an entry-level role in higher education were referenced by participants and informs the understanding as to why there is a lack of emphasis placed on training pre-health advisors. Equipped with a better understanding of

the framework and theories that informed this study, participants recognized they could be even more effective in their roles. While it was encouraging to hear that the participants did not utilize their advising role to play gatekeeper to the world of medicine, the participants responded in unison throughout the interviews that there were a variety of barriers in place that impact their interactions with URiM students.

Financial barriers, academic preparation, and imposter syndrome were most commonly mentioned as frequent barriers that participants experienced when working with URiM students. Here participants applied an understanding of Bourdieu's theoretical concept of capital. According to this theory, all human activity occurs within socially constructed fields. Within these fields, there are forms of capital (economic, social, and cultural) that are recognized as valuable and those who possess more of those forms of capital have the advantage (Bourdieu, 1986; Carrington & Luke, 1997). Participants indicated that their URiM students often came from lower socio-economic backgrounds which caused more stress for those students in the pathway as they worried about the amount of student loan debt they would accrue and their ability to pay it back. Furthermore, participants shared that some of their students also assisted in supporting their families at home and thus had to maintain a variety of responsibilities which often included having a job. As participants indicated, the impact of a student's economic capital was highly detrimental in their pursuit to medicine as a career. Participants' experiences aligned with findings in Joseph et al.'s, 2021 study that found underrepresented students frequently indicated concerns about the financial burden of the medical school pathway. According to participants, their students financial worry also bled out into their plans to prepare for application to medical school as the cost of taking the entrance exam and application is significant. Participants in this study cited concerns with the extensive debt accrual throughout the process

and lack of financial resources for things like the application, interview travel, and other related fees presented major barriers for them (Joseph et al., 2021). Financial concerns and the cost of medical education is a prominent barrier identified in the literature (Rao & Flores, 2007; Romero et al., 2020; Toretsky et al., 2018). The National Academy of Sciences et al. (2011) indicates that financial support is strongly correlated with postsecondary completion and the data supports the assertion that financial support is a more prominent issue for underrepresented minorities. One participant in the current study shared a specific experience with a student where the student's financial situation prevented him from moving forward to application because he had to provide for his family. This barrier is identified in the literature. At a joint workshop for the National Academies of Sciences, Engineering, and Medicine and the Board on Population Health and Public Health Practice (2018), one of the speakers indicated:

Financial barriers to medical education include not only medical school tuition, but also costs related to applying to schools, preparing for and taking standardized tests, and tuition for schooling prior to medical school. Not only do individual students bear these costs, but their families do, as well.

The results of this study confirm that the financial barriers students deal with not only impacted them, but also their families. Participants in this study referenced the family connections of URiM students impact a student's journey on the pre-medical pathway. For many URiM students, their families lack of economic capital becomes an obstacle they are not able to surpass. Additionally, without the cultural and social capital to know the stages of the journey to medical school, families (and in turn their students) don't know that they should be saving early to even get their students through the application process. The path to medical school remains cost prohibitive for some, particularly URiM students who will consider both the financial impact on

themselves but also their family. Additionally, participant responses showed that if a student with financial barriers encountered an academic struggle, such as the failure of a General Chemistry course, then that alone was often enough to discourage them from the path to medicine.

Academic related issues were also mentioned by participants as a barrier that URiM students face. One participant indicated that academic barriers were something he thought about the most, as he often sees students who come from underserved backgrounds struggle in their first year of college because their high school experience did not prepare them for the transition, particularly when many of the majority peers attended some of the best prep schools in the nation. Academic barriers are indicated in the literature as a common barrier for URiM students. URiM students often received lower grades in the pre-medical gateway courses because they are not as well prepared as their majority peers (Alexander et al., 2009). These gateway courses have been shown to cause students to lose interest in the path to medical school (Barr et al., 2010; Barr et al., 2008). Toretzky et al. (2018) stated,

specifically, organic chemistry is one course cited several times in the literature and during the interviews as being problematic for URM students. At many universities, these courses enroll large numbers of students and course instructors do not provide much support for struggling students (p. 7).

I found that participants were vocal in support of employing proactive approaches to help URiM students overcome the academic barriers they face. Participants frequently referenced the use of bridge programming to help students' transition. They indicated that this would not only include preparation academically but that advising should play a role in this early intervention. These findings indicate support of the proactive advising model as it incorporates intervention

strategies that allow the advisor to become an active part of a student's experience (Drake et al., 2013). Participants in this study indicated that their URiM students struggle with academic barriers stemming from a variety of reasons. These included both lack of preparedness to tackle college coursework and poor experiences with premed coursework, specifically chemistry.

Participants also noted that there was a sense of lack of belonging among their URiM students. Imposter syndrome was also mentioned as a problem that URiM students are facing. Imposter syndrome is a psychological experience that causes those who suffer from it to “attribute their success to external factors, rather than their own merit, and believe that most or all of their achievements are the result of chance or error” (Feigofsky, 2022, p. 861). Participants indicated that the URiM students they work with may also come from households where they are the first in their family to attend college. As first-generation college students who do not have the support from family members to give them advice, they arrive to college unable to build connections with students from similar backgrounds in the pre-med pathway. Through these descriptions, participants continued to discuss Bourdieu's theory of capital and its impact on the URiM students they encounter. Participants shared that when their URiM students are unable to see themselves in their faculty and peers which causes them to question whether or not they belong. Literature indicates that it is common for URiM students' express concerns about self-doubt through self-imposed pressures and fears that they are not good enough to matriculate into medical school (Joseph et al., 2021). When URiM student struggle finding a sense of belonging, they can feel out of place with limited connection to their non-minority peers. “Students need to see themselves represented among their peers, faculty, and curriculum” (Johnson et al., 2021, p. 127). Participants in this study echoed the literature stating that it was important for their URiM students to see themselves represented as part of building their confidence and belief that

medicine is attainable. This also impacted participants ability to foster the journey to self-authorship for their students. Self-authorship can be enhanced through mutual partnerships that give students more control and responsibility for their journey (Cohen et al., 2013). Pre-medical advisors are in a unique position to build this mutual partnership that can validate a student's learning experience and ability to know, thus mutually constructing meaning.

The variety of barriers facing students could be understood through the lens of capital theory. This theory is relevant to students within the URiM classification as it has been applied in previous research on underrepresented students' academic adjustment (Pascarella et al., 2004). Pascarella et al. (2004) indicated that students from underrepresented backgrounds may have lower cultural and social capital than their peers which leaves them disadvantaged in accessing and persisting in higher education. This study supported the literature on capital theory as applied to underrepresented students in higher education. I found that participants clearly recognized students lack of capital, including economic capital and noted that it certainly presented a barrier for their URiM students. Participants in this study also indicated that recognizing this lack of capital allows them to focus on the students' strengths by empowering them to apply their life experiences to the pre-medical path and leverage it for success. Additionally, participants were able to tailor their advice and recommendations for resources to increase their students social, economic, and cultural capital during their pre-medical journey. These findings aligned with more current research which found that advisors may find success in assisting underrepresented students if they tailor their interventions with this population of students around cultural capital/wealth (Garriott, 2020). Rather than focusing on what these students lack, Garriott (2020) indicated,

practitioners should leverage their strengths and assets. For example, interventions designed to leverage family and community capital may strengthen FGEM students' perceptions of student–family integration. Empowering FGEM students to understand how their positionality affects their college experience while encouraging self-reflection on the factors (e.g., familial, financial, values) that shape their perceived career self-authorship may promote academic success, persistence, and career choice satisfaction. (p. 93)

Participants in this study shared that they work with their students through advising interventions that empowered URiM students to reflect on the factors that shape their journey and leverage those realizations for growth and persistence. One participant in this study indicated that she employs capital theory through the lens of self-authorship. She helps her URiM students recognize the social and cultural capital they lack while providing resources and support for them to grow their social and cultural capital through the journey to self-authorship. Throughout the analysis of the data in this study, I identified that the student barriers referenced in interviewee responses corresponded with the barriers indicated in the research on barriers for URiM students (Alexander et al., 2018; Antony 1996, 1998; Barr et al., 2010; Barr et al., 2008; Fries-Britt, 1997; Hollow et al., 2006; Joseph et al., 2021; National Academy of Sciences et al., 2011; Toretzky et al., 2018; Tucker & Winsor, 2013). Participants were relying on advising as an intervention for some of the barriers that their URiM students encountered.

The barriers described in the data were not always student central and occasionally came from the advisor side of the interaction. Although the discovery of barriers impacting students was not surprising, an unexpected finding was the occurrence of barriers that advisors themselves face. Participants indicated that bandwidth, institutional support, and other advisors

negatively impacted them in working with students. High rates of turnover and limited office staff have contributed to participants taking on more work which has become a high point of tension amongst the participants and their colleagues. Several of the participants mentioned the frequency with which their schedule gets booked up and when combined with the other commitments they have on campus it is hard to have time to see all the students who want to meet with them. One participant stated that certain institutions do not have the bandwidth to support the pre-med student load which often causes those advisors to institute ‘cut-offs’ for the students. In these instances, participants recognized that some pre-med advisors are limiting the ability of students to expand their social capital to move forward towards medical school.

One of the several advisor-centric barriers mentioned by participants was the frequency in which other advisors their URiM students encountered were a roadblock on the students’ journey. Participants stated these ‘other’ advisors set restrictions on the student populations they would support based on academic achievement in pre-medical gateway courses which left out student populations that proportionally contained more URiM students. This discussion point is supported by other studies that demonstrate advising or other interaction with institutional personnel can be a barrier for underrepresented students (Edwards, 2007; Peterson, 2019; Pierszalowski et al., 2021). Participants in the current study indicated that those tangential to their work (like other advisors or faculty) employed a more traditional approach to advising through one-way knowledge delivery rather than employing advising framework that engages the student as a participant (like appreciative or proactive advising model). Some participants indicated that this barrier could be managed if these other advisors employed the framework of appreciative advising in their work with students. The appreciative advising approach can be expanded to be used in a wider range of other student affairs areas to employ a broader

appreciative education model (Drake et al., 2013). Additionally, this approach could also impact a student's sense of belonging as it relates to the interaction students have with instructors and others (Freeman et al., 2007). The appreciative advising framework can also impact an advisor's professional growth as well as it allows advisors to "enhance their cognitive abilities in analyzing and evaluating resources to facilitate students' academic development" (Drake et al., 2013, p. 91). Howell (2010) found that advisors felt more effective in their role and better able to utilize their own skills and strengths after incorporating the appreciative advising approach into their advising practice. Participants in the current study who described using this approach expressed more confidence in their ability to assist URiM students.

Another barrier impacting participants was the lack of support given by their institutions. Participants indicate that in addition to their offices being understaffed, they often had very small budgets. This obstructed their ability to provide programming for their students, particularly programming that they indicated would have been specifically beneficial to URiM students. It was also indicated that the lack of this type of programming also impacted students' ability to self-author. Without access to programming that inspires students to discover their own sense of self through a clear direction of career paths that suite the students' needs and interests, students cannot move forward to the next stage of self-authorship. Study participants indicated that engaging programming that happens throughout the school year is important to help their students engage with other perspectives which them gain a sense of self and develop their internal belief system. These are all important stages in the journey to self-authorship. Participants also mentioned that their role as a pre-medical advisor may be seen as just an entry-level role in higher education and not considered a professional career which impacts the levels of support shown by their institutions. Currently, there are no specific degree requirements for

the role of pre-health advisors and no set standard for training. Participants in this study found themselves learning on the job from colleagues and drawing from the experiences and perspective they bring with them into their advising role. According to Selzer (2014), "...pre-health advisors often simply do what they think works, but do not always have data to undergird practice" (p. 47). This was true for some of the participants in the current study and may shed light on the level of importance institutions place on pre-health advising. This study found that pre-health advising offices were typically not adequately supported by their institutions. I am unable to compare this finding to current literature as there is no definite data that identifies how much, or little, pre-health advising offices are supported by their institutions. Participants indicated there may be value in other organizations, like the NAAHP or AAMC, advocating on a national scale for more support to be given to these roles.

Finally, participants indicated that colleagues and others tangential to their work contributed to the barriers they faced when working with URiM students. Within their institutions, participants indicated that the faculty teaching pre-med coursework tended to subscribe to antiquated ideas that any grade received in the sciences other than an "A" automatically disqualifies a student from pursuing medical school. According to participants, this thought process caused faculty members to discourage students who struggle from the path to medicine and disproportionately affects students from under-resourced backgrounds. Additionally, one participant indicated that some instructors prided themselves on having a 'weed out' course with high DFW (Drop, Fail, Withdraw) rates. Participants also indicated that their URiM students had interactions with other advisors, at both their own institution and others, who told them they would never make it based on their GPA alone. These interactions were

stated to be detrimental for students and created a barrier for participants as they then had to find ways to build trust with students and help them believe they could still pursue medicine.

Research Question 2 Discussion

What are pre-medical advisor perceptions of approaches to increase the number of URiM students?

The participants were adamant in their suggestions that there were tangible ways to improve outcomes for URiM students. Analysis of the interviews revealed these themes: (a) early intervention, (b) collaborative initiatives, (c) visibility. URiM students struggle with the transition from high school to college, particularly those coming from public secondary schools in under-resourced areas. Participants identified that one of the main ways to improve students' readiness for college and ability to succeed in the sciences was to make societal changes that improve educational access and outcomes for students prior to college. According to the literature, academic disparities can begin as early as Pre-K and continue through students primary and secondary education years (Goode & Landefeld, 2019). The suggestion to improve education in the K-12 system would require some significant structural shifts in the way our country is managed and thus a more realistic solution would be to provide bridge programs to incoming freshman students that would assist them in their transition to college. Participants indicated that a bridge program could work with students who were identified as coming from underserved schools and build their skills so they would be ready to handle to academic rigor of the pre-medical courses. Bridge programs were identified in current literatures as a specific strategy to increase the number of URiM students in the health professions (Toretsky et al., 2018). According to Kitchen et al (2018),

College summer bridge programs are educational interventions that typically occur during the three months between high school and college, and may offer an impactful, economically viable intervention that facilitates successful transitions for high school graduates of all abilities, backgrounds, and preparation levels. (p. 700)

These programs are widely used in higher education to compensate for uneven educational opportunities. Bridge programs can also address the socialization of students into the academic community and provide networking opportunities, both of which work towards the expansion of social and cultural capital. Analysis of the findings in this study supported the approach to using bridge programs to both increase academic success and social/cultural capital for URiM students. While bridge programs can focus on a wide range of topics, it has become particularly common for bridge programs to focus on the transition from high school to college for underrepresented minority students (Brady & Gallant, 2021). URiM students who participate in bridge programs explain that the programming provided through these types of curricula facilitated their acclimation to college and preparation for coursework (Brady & Gallant, 2021). The suggestion by participants in this study to provide bridge programming for URiM students interested going to medical school is a realistic endeavor to increase URiM student success on the pathway as support by the literature.

The recommendation of early intervention by participants of this study could also include suggestions for hands-on exposure to medicine and health care which may help solidify a student's desire to pursue medicine as a career. A bridge program could be an ideal place to implement this exposure. Bridge programs, while focusing on academic transitions, have programmatic opportunities to include subject specific content related to medicine. Early intervention is a key concept of the proactive advising framework. This approach has been

shown to provide support to students who are at the greatest risk of departure from their pathway or the institution (Finnie et al., 2017; Valentine & Price, 2020). The proactive advising approach can “facilitate other important outcomes such as improved grades and retention rates” (Van Jura & Prieto, 2021, p. 28), benefits which have been shown to accrue over time (Bettinger & Baker, 2014). Analysis of the findings in this study showed that participants employed intervention strategies to proactively engage students and build relationships. Those in this study utilizing the proactive advising framework shared that they provide valuable support to URiM students at critical moments in their journey to medical school. Participants also shared other institutional resources, like bridge programs, could improve their ability to work proactive with students. In addition to increasing academic confidence and skills, bridge programs could increase URiM students’ sense of belonging and self-efficacy (Strayhorn, 2011; Tomasko et al., 2013). It would be relevant to note that self-authorship theory provides a mechanism to develop a student’s self-efficacy. Participants indicated that their URiM students needed to be told they can do it and that they as advisors help foster the development of self-efficacy through proactive approaches.

Two participants in this study mentioned the possibility of making the freshman year of college pass/fail, which they agreed would be a radical approach. This idea is not yet wide spread in the realm of undergraduate education despite the COVID-19 pandemic which forced the hand of many undergraduate schools to make all courses in their Spring 2020 semester pass/fail. Pass/Fail coursework is not a new concept in medical education. Data supports that this system improves levels of stress among medical students and promotes group cohesiveness (Rohe et al., 2006). None of the participants in this study were employed at institutions that have adopted the pass/fail first year approach. But the participants who mentioned this approach postulated that adopting a pass/fail first year in undergraduate education may have positive effects on student

well-being as well as providing a method to bridge the gap in academic barriers URiM students encounter in the first-year transition.

The need for collaborative projects was also identified by participants as a way to improve the pathway to medicine for URiM students. Participants recognized that they do not work in a silo and would need the support of others to improve outcomes for students. Support for scholarships and financial support for MCAT prep and application costs were mentioned as a way that other stakeholders could contribute. Because of the financial stressors URiM students encounter, funding to relieve some of that burden could help them stay the course. Programming for both students and others was also recommended. Participants indicated that this student programming could include opportunities for hands on experience, mentorship, and shadowing. Participants specified partnership with medical schools, community groups, and businesses could help accomplish improvements in programming. Partnerships such as these would continue to positively impact a student's capital beyond what participants indicated they could provide. Current literature shows that in an attempt to cultivate a more diverse and culturally competent workforce, professional schools have hired recruiters, developed summer pre-medical programs and STEM enrichment programs to encourage the development of an early interest in the health professions (Achenjang & Elam, 2016; Grumbach & Chen, 2006; Talamantes et al., 2019). When studying approaches using the proactive advising framework, Van Jura and Prieto (2021), found that when designing proactive advising models, utilizing a coordinated care approach that included additional support systems outside of advising would improve the process overall. Multiple participants indicated that part of a proactive approach to working with their URiM students includes working with other offices like student affairs, career services, equity and inclusions offices, and science faculty. There are likely a variety of institutional programming

opportunities that could be initiated, but perhaps a need for guidance on how to set up collaborative programs as well as recommendations for best practices in these types of programs should be the first step. Leveraging the knowledge from the variety of frameworks informing this study could also inform the creation of collaborative approaches that go beyond the impact of an advisor to include faculty and other institutional resources and services.

One participant mentioned that while these types of programs were necessary, it was also necessary to provide some guidance on how to set up such programs. Rowan recommended that national organizations like the AAMC and NAAHP partner to provide some sort of curriculum that could guide the creation of partnership programs. Currently the AAMC and NAAHP collaborate as national committees to inform national messaging regarding both pre-medical student and medical school admissions content. Another participant indicated that in the past these groups partnered to put on educational conferences, although I could not find any other source to confirm. The concept of standard practice is applicable to this suggestion. A standard of practice is “a set of guidelines that delineate the expected techniques and procedures, and the order in which to use them” (American Psychological Association, 2023). Participants in this study shared a variety of different ways they interact with other groups that are involved in the pathway to medicine. Setting a standard of practice that could be applied to pre-health office programming would ensure that pre-medical advisors would have access to a standardized framework that has been informed by stakeholders from both the medical school and advising side of the process giving a dynamic perspective. Defining a standard of practice could include training on specific advising framework and how to employ it effectively. The creation of such a standardized practice would should be informed by both student-learning theories and advising approaches much like the framework of the current study.

Participants stated that programming for advisors and others tangential to their work could provide another layer of enhancement. This recommendation was more focused towards faculty and advisors that become barriers for students due to their lack of knowledge about what medical schools are looking for in applicants, only relying on academic success as a means to getting into medical school. Only two advisors specifically indicated that they would suggest advisor training as a way to improve the pathway for URiM students. However, based on all participants responses to the training they received when they began their role as a pre-health advisor, it was clear that advisor training could perhaps be a bigger need than participants recognized. Literature indicates that advising impacts the success of students. “Empirical research on the effects of academic advising is clear and consistent: Advising can have an impact on persistence and graduation” (Museus & Ravello, 2021, p. 14). Literature has also identified that academic advisors can play a crucial role in addressing the needs of underrepresented students (Tsui, 2007). Museus and Ravello (2021) found that academic advisors appear to contribute to the success of ethnic minority student success which was congruent with earlier research on faculty-student advising interactions. Though participants in the current study felt that their role in the URiM pathway to medicine was important, most indicated that their level of training was incongruent with the level of importance placed on the role itself. There are a variety of studies that show the positive impact of academic advising, but the paucity of literature on the impact of pre-health advising is problematic. In the small amount of research available, there is a juxtaposition of findings that show pre-health advising is both important and detrimental to pre-med undergraduate students (Atkinson et al., 1994; Hadinger, 2017; Morgan et al., 2016). Participants in my study indicated that while they were able to use some of the NAAHP resources for training, they heavily relied on their own research or the support of a

mentor. If advising models like appreciative and proactive advising are to be used effectively, then both advisors and parallel staff need extensive training in these frameworks in addition to student development theories, such as self-authorship and cultural capital/wealth, in order for the utilization of these theories and frameworks to be successful (Van Jura & Prieto, 2021). As was seen with participants in the current study, there is already a basic level of understanding of the framework applied in this research. There was not always the ability to name the theory specifically, participants were applying theoretical concepts to their work with students. Stronger training resources, including content on advising framework and approaches, could contribute to more positive pathway outcomes for URiM students.

Participants indicated that improvements to help URiM students feel seen could increase the number of students in the pathway to medicine. Some participants referenced that this visibility begins with the advisors not only recognizing that their URiM students are likely facing a different set of pressures than the majority of students they advise. This is advanced by advisors being intentional in representing the diversity of students in their programming and initiatives. While advisor recognition and action are important, participants also indicated that having the ability for URiM student to see themselves on this path would be most impactful. The lack of a mentor is another obstacle in the pre-medical pathway for URiM students (Thomas et al., 2011), particularly the lack of mentors who are racially or ethnically concordant (Toretsky et al., 2018). Although peer mentoring “is especially critical to providing a welcoming and inclusive atmosphere for URMs...URM students also need faculty mentors” (Toretsky et al., 2018, p. 8). The literature indicates that persistence in the pre-medical path for URiM students is fueled by exposure to medicine, medical practice, and social support from mentors (Gasman et al., 2017; Odom et al., 2007; Thomas et al., 2011). Lack of mentorship can go hand-in-hand with

limited exposure to health care. The lack of connections to physicians as mentors has a negative impact on an already difficult pathway (Barr et al., 2008). “You can’t be what you can’t see,” a common phrase used by participants to sum up this limited exposure. Participants recommended increased access to mentors (upperclassmen, medical students, physicians) who are also underrepresented in medicine in an effort to motivate their URiM students and give them encouragement to continue. Current literature supports this suggestion as mentoring has been shown to be a mechanism to help URiM students persist (Mondisa & Adams, 2022).

Additionally, a mentors’ engagement with a student can facilitate the students’ development as self-authors in their own experience (Mondisa & Adams, 2022). As seen in the literature, strong self-authorship is linked to improvements in performance, critical reasoning, cognitive thinking, and motivation (Baxter Magolda, 2007). The ability for a mentor to construct self-authorship strategies with their mentee could bolster the work of advisors who also incorporate self-authorship theory into their approach. Participants did not have the resources to accomplish this recommendation on their own and indicated they would need to partner with community organizations and medical schools to make it work. Creating a curriculum for specific programming, as mentioned by Rowan, and establishing a standard of practice would be two areas of focus that would require partnerships to accomplish.

Research Question 3 Discussion

How do pre-medical advisors perceive the role they play in the pathway to medical school for URiM pre-medical students?

The participants response indicated that the role of an advisor on the pathway to medical school for URiM students goes beyond helping them navigate the path by necessitating they also be an advocate. Participants indicated not only do they advocate on the student’s behalf, but that

they provide the student with the resources and support to advocate for themselves. This aligns with the proactive advising model wherein advisors use the relationship they have with students to help them get past obstacles and setbacks (Drake et al., 2013). Participants recognized the value of URiM students telling their stories as they often had to overcome a variety of barriers. This included responses from participants who not only advocate for the students to share these stories, but also those who advocated to medical schools on the student's behalf. The role of pathway navigator can have a positive impact on URiM student persistence. One study indicates that URiM students feel "a lack of complete understanding and information needed to navigate the training process" (Joseph et al., 2021, p. 354). The URiM student participants in the Joseph et al. study also indicated that many of them were first-generation college students and found it challenging to navigate undergraduate work without guidance. The current study found that participants felt it was their responsibility to step-in and provide information and resources to increase URiM student social and cultural capital. There was also concern that participants were not always aware of the resources that could impact a student's economic capital on the journey to medicine. Romero et al. (2020) found that underrepresented students attempting to navigate their higher education experience encountered barriers that were impacted by their lack of cultural capital. URiM students can enter their higher education experience at a disadvantage due to their lack of capital. Researchers who were attentive to differential outcomes by race or ethnicity found that when cultural capital matters for educational attainment, underrepresented students were at evident disadvantage (Martin & Spenner, 2009; Tierney, 1999). "Because minority students are typically economically disadvantaged relative to whites, they must struggle not only to acquire the economic capital necessary to attain a college education, but also the cultural capital that more privileged students simply inherit" (Ovink & Veazey, 2011, p. 374).

This dynamic establishes an opportunity for intervention thorough the work of advisors.

Participants in this study stated it was a part of their job to intervene on the student's behalf and assist students in acquiring the social and cultural capital to navigate college.

Study participants views aligned with current data on pre-health advisors' perspectives which define the role of pre-health advisors as guides who assist with navigating the journey to become a competitive applicant, resources experts or gatekeepers to identify credible sources and information, and liaisons to aid in networking opportunities (AAMC, 2020b). Because admission to medical school relies on so many factors (strong GPA, competitive test scores, and a large number of relevant extracurricular activities), making oneself competitive for medical school can be a challenge for any student (Stern & Gallardo, 2014). Lacking the capital to navigate these challenges, URiM pre-medical students could benefit from the critical academic interventions or advising that is conducive to improving their decision-making (Tucker & Winsor, 2013). As discovered in my study, pre-health advisors are well-informed on the factors that impact levels of competitiveness for medical school admission and can assist their URiM students in both decision-making and navigation of the pathway through the development of a student's self-ownership and understanding of the social and cultural capital students may be lacking when they arrive at an institution.

To help URiM students navigate the pathway to medical school, participants indicated that they wear many hats. While they provide students with information about the pathway and support, oftentimes they go beyond this and challenge students to explore and push themselves. Participants shared that they assist their students in finding experiences and additional resources that will help them succeed. They also participate in events hosted by other departments that impact their URiM students to show their support. It was evident that the participants are

passionate in their desire to support their students and feel very invested in the outcome through their dynamic employment of a proactive approach. One participant stated, “I’m in it with you...we are going to keep working till we figure it out.” Participant responses indicated that they do see value in the role they have in advancing students toward achieving the ultimate goal of acceptance to medical school. These views support the idea that it is valuable to utilize advising frameworks that both actively engage with and collaborate with students. As indicated by participants, proactive advising and appreciative advising approaches provide framework that supported participants in this type of collaborative role. Additionally, students pursuing self-authorship could use advisors as an important collaborator on their academic journey as was described by participants in this study.

There is no definitive answer in the current literature that informs on what specific role of pre-health advisors may have in the pathway to medicine for URiM students. However, the existing literature supports the claim that advising is beneficial to underrepresented students during their undergraduate education (Habley et al., 2012; Roscoe, 2015; Pascarella & Terenzini, 2005). Participants in this study affirmed that they do indeed play a role in the pathway for URiM students. With a supported programming curricula and standard of practice for utilizing effective advising approaches, pre-health advisors could become the conduit to effect change most quickly by becoming more aware of the experiences faced by students of color and taking these experiences into consideration when advising.

Recommendations for Practice

After a review of the relevant literature and an analysis for the data collected, the following recommendations are given:

- Advisors should consider the possibility of utilizing an advising framework that combines the use of self-authorship and appreciative advising.
- Undergraduate institutions and administrators should provide structured opportunities for pre-health advisors training that includes the opportunity to continue that training beyond the initial transition into the job role.
- Undergraduate institutions should investigate the level of preparedness of their incoming student population through research on success levels of freshmen students in their first two semesters. This would provide information to institutions on the viability of a bridge program for incoming students that could assist in decreasing academic hurdles for students coming from under-resourced secondary schools.
- Undergraduate institutions should examine the level of support they are providing their pre-medical advisors. Often these advisors are working with all students interested in the health professions (not just pre-med) and are likely impacting a larger number of the student population than an institution may realize.
- Programs should consider the importance of mentorship opportunities for URiM student through engagement with more diverse staff and faculty
- The creation of material that should be shared with all stake-holders interested in supporting collaborative programming for URiM pre-medical students is necessary. It is recommended that this material be created and endorsed by national organizations like the AAMC and NAAHP. A guideline of best practices would help prevent well intentioned folks from causing harm due to lack of knowledge.
- Medical schools and the AAMC should reconsider the level of importance pre-medical advisors may play in the path to medicine for under-represented students. More research

into this subject could provide some direction on where to focus efforts to increase the number of underrepresented students in medicine.

- The NAAHP should partner with NACADA to create educational content for pre-health advisors that focuses on employing specific advising strategies.

Recommendations for Further Research

Recommendations for further research include:

- Qualitative studies should be conducted on the perceptions of medical school admissions representatives on common weaknesses they see in URiM applications.
- Qualitative studies should be conducted on the perceptions of URiM populations who are at the undergraduate level, in medical school, or are practicing physicians regarding the barriers they faced or are facing in the pathway.
- Mixed method studies should be conducted focusing on the success of programming initiatives such as Bridge programs and partnership programs in increasing the number of URiM students applying to medical school.
- Mixed method studies should be completed that explore specific advising theories and how they may impact advisement for URiM students.
- Quantitative studies should be completed that investigate the frequency of academic advising theories employed by pre-health advisors.

Conclusion

The purpose of this study was to explore pre-medical advisor experiences and perceptions of their role in the pathway to medical school for pre-medical students who are underrepresented in medicine (URiM). The central focus of this work balanced on describing participant's experiences advising URiM pre-medical students and analyzing themes from the

participants to understand how pre-medical advisors perceive their role in the pathway to medicine for URiM students. Chapter 1 introduced the need for research related to pre-med advisors' perspectives and included the statement of the problem, research questions, definitions, and the limitations and delimitations of the study. Chapter 2 presented a literature review exploring the inequalities in healthcare, advising and its impact on student populations, and pre-health advising. Chapter 3 described the research methodology and study design. It included the role of the researcher, ethical considerations, setting, sample, measures of rigor, data collection, and data analysis. Chapter 4 presented my interpretation of the study's data which included interview results for all research questions and researcher notes and memos. Chapter 5 presented the emergent themes to conclude the study and summarize the key points related to each research question and included recommendations for future practice and research.

Although I recognize that the findings apply to one region of the country, the results of this study are supported by relevant literature. This includes consistency in identification of the barriers faced by URiM students on the pathway to medicine and the use of self-authorship theory, capital theory, and the use of specific advising theories in their approach to working with URiM students. By examining pre-medical advisors' perceptions in this study, the stakeholders, such as undergraduate institutions, medical schools, and potentially even health care systems, involved in increasing representation in medicine can begin to look at advisors as a resource to improve outcomes and increase representation moving forward. This study arose out of curiosity on the impact that pre-medical advisors may have on increasing the number of underrepresented students in medicine. This study presented suggestions for future research to inform the goal of having more representation in the medical field.

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APPENDICES

Appendix A: Letter of Request for Participation

Dear X,

Hello, my name is Tory Street. I am a doctoral student at East Tennessee State University (ETSU). I am conducting a study that involves investigation the perceptions of undergraduate pre-medical advisors on advising underrepresented minority students. As a former pre-medical advisor myself, I found that I was interested in hearing the perspective of other advisors within the region I served.

This study involves a short electronic survey focusing on demographic information and a one-on-one interview. Projected time commitment from participants is 60 minutes. The interviews will occur virtually via Zoom. Participation is voluntary. Participants for this study must serve in the role of a pre-medical advisor at their institution. If you have any questions, please contact me (principal investigator) via email at streetv@etsu.edu

Sincerely,

Tory Street

Appendix B: Advisor Interview Guide

Demographic profiles will be created for each interviewee prior to the interview

1. How would you define the role of a pre-medical advisor?
 - a. Why is it important, in your opinion, for students to have access to pre-medical advising?
2. Tell me about your path to becoming a pre-medical advisor
 - a. What was your educational and employment experience prior to becoming a pre-med advisor?
 - b. How has your prior educational and academic experience impacted your abilities in your current role.
 - c. How long have you served as a pre-medical advisor?
 - d. Describe the type of training you received prior to advising pre-medical students.
3. How would you describe the approach you take to advising pre-medical students?
 - a. Why did you choose your selected approach?
 - b. What aspects of this approach benefit you and your students in comparison to others?
 - c. Does this approach differ when interacting with different student populations, specifically underrepresented minority students?
 - i. If so, describe how
 - ii. If not, why
4. Tell me about your experience working with URiM pre-medical students.
 - a. Describe any barriers you encounter as an advisor in your work with URiM pre-medical students.

- b. Are there any specific areas where interactions with you impact students the most?
 - c. Can you identify anything that would improve your ability to assist URiM students?
- 5. How do you utilize educational or training tools from NAAHP or AAMC?
 - a. What tools do you use?
 - b. How do they assist you in advising URiM students?
 - c. If not utilizing, can you tell me more about why?
- 6. Describe any commonalities you've noticed among your students who are successful in gaining entry to medical school.
 - a. Have you noticed any distinct differences in these commonalities for the URiM students you work with?
- 7. Do you feel that pre-medical advisors have an obligation to increase the number of URiM students entering medical school?
 - a. Why is that or Why do you feel that way?
 - b. If no,
 - i. How do you believe we increase the number of URiM students in medicine?
 - c. If Yes,
 - i. What actions are you taking, if any, to increase the number of underrepresented minority students who apply to medical school?
 - ii. What resources would you need in order to increase (or continue increasing) the number of URiM students in medicine?

VITA

VICTORIA STREET

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M.P.H. Public Health Administration, East Tennessee State University, Johnson City, Tennessee, 2019
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Professional Experience: Assistant Dean - Admissions & Records, Quillen College of Medicine; Mountain Home, Tennessee, 2019-Present
Associate Director of Medical Professions Advisement, East Tennessee State University; Johnson City, Tennessee 2018-2019
Academic Counselor, Medical Professions Advisement, East Tennessee State University; Johnson City, Tennessee, 2015-2018
Information Research Tech II, Quillen College of Medicine; Mountain Home, Tennessee, 2012-2015

Honors and Awards: Outstanding Fraternity/Sorority Advisor Award, 2020
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