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MENTORING EXPERIENCES IN MEDICAL EDUCATION: A PHENOMENOGRAPHIC
STUDY AMONG AMERICAN INDIAN MEDICAL STUDENTS
AND THOSE IN RESIDENCY

by

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Bachelor of Science, University of North Dakota 2005
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A dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

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December
2017

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This dissertation, submitted by Naomi M. Bender in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

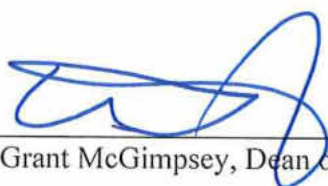

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This dissertation meets the standards for appearance, conforms to the style and format requirements of the School of Graduate Studies of the University of North Dakota, and is hereby approved.


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November 29, 2017
Date

PERMISSION

Title Mentoring Experiences in Medical Education: A Phenomenographic Study
 Among American Indian Medical Students and Those in Residency

Department Teaching and Learning

Degree Doctor of Philosophy

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Naomi Marilyn Bender
November 21, 2017

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DEDICATION

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And whatever you do, whether in word or deed, do it all in the name of the Lord Jesus, giving thanks to God the Father through him. Colossians 3:17.

ABSTRACT

The purpose of this qualitative research study was to better understand how currently enrolled American Indian (AI) medical students and recently graduated physicians in residency experienced mentoring during medical school. This study consisted of 19 participant-recorded interviews that were later transcribed, analyzed, and coded for thematic outcomes. Participants were all current AI medical students in the same Northern Midwest Medical School (NMMS) in years one, two, three, or four, or they were recent AI graduate physicians from the same institution and were in years one or two of residency. The theoretical frameworks that guided this research were Kalbfleisch's Mentoring Enactment Theory (2002) and Schooler's Native American College Student Transition Theory (2014).

A phenomenographic design was used as the qualitative research method for this study. This design required data analysis similar to a grounded theory approach, in that the interview data was thoroughly analyzed and organized with open codes and categories, subcategories in second cycle axial coding, and thematic analysis toward the study's assertion. The following three themes emerged from analysis of the data:

1. Theme One: Significant challenges among American Indian medical students contribute to extreme anxiety, stress, and the need for unique support mechanisms, such as mentoring relationships and American Indian culturally supported programming.

2. Theme Two: American Indian medical students use a variety of healthy/positive and unhealthy/negative coping mechanisms in response to immense challenges in medical school.
3. Theme Three: American Indian medical students are more likely to initiate and sustain successful mentoring relationships when the initiation is informal, in a natural or culturally based setting, with someone who is American Indian and/or has similar interests/experiences, and commits to relational maintenance through communication over time.

The study's three themes established the following assertion:

1. Related to the significant challenges and unique support needs of American Indian medical school students, their likelihood of success is significantly reliant upon the initiation and sustainment of successful informal mentoring relationships with mentors who are AI and/or who have similar interests and experiences, and who commit to relational maintenance through communication over time.

Conclusions from this study draw attention to AI medical students' significant academic and personal challenges, which contribute to the need for support from meaningful mentoring relationships. This study's findings establish implications for successful mentoring relationship's initiation and sustainment in natural and culturally based settings, through homogenous and diversified dyadic relationships, and perseverance through communicative and invested relational maintenance.

As medical schools and administrators seek ways to support medical students through informal and formal mentoring relationships (which aid their educational and career success), recommendations from this study provide valuable guidance for better practices when serving AI

and other minority students in mentoring capacities. This study also suggests the likelihood of AI medical students' success in medical school is partially reliant upon the success of informal mentoring relationships. Thus, further recommendations to current and future AI medical students suggest that the way in which they respond and cope to the academic, personal, and cultural challenges of medical school is vital to their well-being and overall success.

CHAPTER I

INTRODUCTION

Few American Indians (AI) pursue medical school (AAMC 2014; AAMC 2017; Sequist, 2007). For those who do, they face unique and significant challenges that may impact their well-being, academics, and career success (Hollow, Patterson, Olsen, & Baldwin, 2004; Hollow et al., 2006; Sequist, 2007). Although medical school is known to be challenging and stressful for most medical students (Ahmed, Banu, Al-Fageer & Al-Suwaidi, 2009; Madhyastha, Latha, & Kamath, 2014), it is particularly stressful for AI students who have endured a history of trauma, educational and financial disadvantages, mistreatment, marginalization, cultural isolation, racism, and other stressful factors (Hollow et al., 2004; Kotter, Pohontsch, & Voltmer, 2015; Metz, 2013; Sequist, 2007). Because there are few studies that have examined the challenges, barriers, and support mechanisms of AI's in medical school (Grumbach & Mendoza, 2008; Hollow, Patterson, Olsen, & Baldwin, 2004; Hollow et al., 2006; Sequist, 2007), this study seeks to examine the experiences of AIs seeking support through effective mentoring relationships to cope and succeed.

American Indian Physician Workforce

American Indians (AI) continue to experience and account for high levels of health disparities when compared with other Americans. Their life expectancy is 4.4 years less than all U.S. races, and their morbidity rates are higher than other Americans who have died from diabetes, chronic liver disease, assault, homicide, suicide, unintentional injuries, among others (IHS, 2017). To meet the needs of these significant health disparities, the call for a culturally

competent physician and health care workforce is in high demand (Noe, Kaufman, Kaufmann, Brooks, & Shore, 2014; Wieland, Beckman, Cha, Beebe, & Furman, 2010). Although the petition for health care providers who are either American Indian (AI) or culturally competent is appropriate, it has been significantly difficult and problematic to achieve.

In 2016, 19,243 individuals applied to the 147 accredited medical schools in the United States (AAMC, 2017). Of those 19,243 applicants, 553, just less than 3%, were American Indians (AI) and only 194 of the 553 actually enrolled. This low number is further troubling as it represents a decrease from the 202 AI's who enrolled in 2014 (AAMC, 2014; AAMC, 2017). In an AMMC report of U.S medical school graduates by race and ethnicity from 2002 to 2011 (2012), 123 American Indian or Alaska Native physicians graduated in 2002 whereas 135 graduated in 2011 (p.32). An increase of only approximately 10% in that time. A year later, in 2012, 153 AI physicians graduated from medical schools in the U.S., compared to 1,462 Hispanic, 1,397 African American, 4,861 Asian, and 12,296 White Physicians (AAMC, 2015). According to the Association of American Medical Colleges (AAMC) data on U.S. physician workforce (AAMC, 2014), there are 3,475 American Indian and Alaska Native Physicians in the United States who make up approximately .4% of practicing physicians overall. In the most recent U.S. Census in 2010 (2012), 5.2 million people identified as American Indian or Alaska Native; a rapid population increase of 39% since the year 2000. Current projections show that one of the fastest growing populations in our nation are AIs, and that by the year 2030, AI's (along with Hispanics and African Americans), will make up 25% of the national population (AAMC, 2014). Furthermore, in a report prepared for the AAMC, IHS Markit (2017, p. 3) projects a significant physician shortfall of between 40,800 and 104,900 physicians by 2030. As

AI's make up approximately .4% of the nation's physician workforce, this shortfall becomes problematic and concerning.

For decades, the underrepresentation of American Indians (AI) in medical schools has been a challenge in the United States (Vela, Kim, Tang, & Chin, 2010; Metz, 2013). Moreover, the need for AI medical doctors, and their ability to enter and succeed in medical school, have been profound (Patterson, Baldwin, & Olsen, 2009). The small percentage of AI men and women who are accepted to medical school often experience years of extreme challenge and stress as they navigate academics, significant time away from their family and culture, financial barriers, and other hardships (Hollow, Patterson, Olsen, & Baldwin, 2004). As the growth of the AI population, their health disparities, and the need for culturally competent healthcare providers increase, so, too, does the resolve to meet these growing needs.

Challenges of Medical School

Medical school is considered to be one of the most challenging and stressful environments for students, leading to stress, burnout, depression, decrease in life and career satisfaction, and suicide (Ahmed et al., 2009; Baldassin, Silva, Alves, Castaldelli-Maia, Bhugra, Nogueira-Martins, de Andrade, & Nogueira-Martins, 2012; Dyrbye, Thomas, & Shanafelt, 2006; Goebert, Thompson, Takeshita, Beach, Bryson, Ephgrave, & Tate, 2009; Kjeldstadli, Tyssen, & Finset, 2006; Leyerzapf & Abma, 2017). Most stressors ignite from difficult and mounting coursework, challenging examinations, a competitive environment, lack of leisure activities, and intense expectations to succeed (Baldassin et al., 2012; Kotter et al., 2015). Because medical students must find ways to persevere and succeed, it has been found that they do so through various coping mechanisms (e.g., problem solving, escape-avoidance tactics, substance abuse, seeking social and professional support, and self-reflection) (Bassols et al., 2015). An important

part of coping strategies for finding social and professional support involves establishing solid relationships with mentors (Sambunjak, Straus, & Marusic, 2010). Other strategies may be found in the ways AI medical students transition into and develop in medical school. According to Schooler (2014), medical school educators and administrators may need to educate and better inform themselves about the ways in which AI students respond and develop in medical school through AI cultural context.

Mentoring in Medical School

A key factor in the development of academic and career success among medical students has been shown to come from mentoring relationships with faculty, peers, and colleagues (Aagaard & Hauer, 2003; Coates, Crooks, Slavin, Guiton, & Wilkerson, 2008; Frei, Stamm, & Buddeberg-Fisher, 2010; Rose, Rukstalis, & Schuckit, 2005; Sambunjak et al., 2006). Although there is substantial literature that supports the need for mentoring relationships and programs in medical school, there is limited research that explains the nature of these relationships among historically marginalized and underrepresented students, such as American Indians (Hollow et al., 2006; Tekian, Jalovecky, & Hruska, 2001). According to Kalbfleisch (2007), key components to the structure of successful mentoring relationships are their phases of initiation, sustainment, and relational maintenance through communication. Personal filters, such as a mentor and mentees gender, race, culture, economic status, education, experiences, and other qualities, are characteristics that function as key factors toward the success of the relationship (Kalbfleisch, 2007). As such, examining the lived experiences of AI medical students' mentoring relationships becomes invaluable in understanding their academic and career journey.

Statement of the Problem

Health disparities among American Indians (AI) in the United States continue to rise, while the lack of a culturally competent physician workforce continues to alarm and elude our government, medical school administrators, and other health care officials. Due to the unique and difficult pathway for many AI's to be accepted and succeed in medical school, they, along with Alaska Natives, Native Hawaiian or other Pacific Islanders, make up the smallest percentage of matriculating medical students and physicians in the United States (AAMC, 2016). For the few AI's who are admitted into one of the 147 accredited medical schools, their paths are equally unique and challenging. Although medical school administrators have recognized the need for supportive mentoring relationships among students, peers, faculty, practitioners, and others, there remains a gap in the literature that examines the mentoring experiences of AI's during medical school and its effect on their success. Furthermore, the interpersonal and communicative components of their mentoring relationship's formal or informal orientation, initiation and sustainment, and failure or success, has yet to be examined.

Significance of the Study

As American Indian (AI) medical students face extreme and unique challenges in medical school (Hollow et al., 2006), it is important to understand their lived mentoring experiences which may impact their ability to cope and succeed. The findings of this study may assist medical school administrators in the development of healthy support strategies for a diverse student body, including AI medical students. This study may also better prepare AI medical students for their journey into, during, and beyond medical school, where mentoring relationships have been shown to enhance the likelihood of life and career satisfaction (Bozionelos et al., 2016; Shollen, Bland, Center, Finstad, & Taylor, 2014). Finally, this study's

findings will expand the dialogue and response to existing gaps in the literature that pertain to the mentoring needs of AI medical students during medical school.

Purpose of the Study

The purpose of this qualitative research study was to better understand how currently enrolled American Indian (AI) medical students and recently graduated physicians in residency experienced mentoring during medical school. Using a phenomenographic study design, I interviewed and collected data from 19 AI medical students and resident physicians who currently are attending or have recently graduated from the same Northern Midwest Medical School. Interviews took place at the university's School of Medicine face to face or by phone and were audio recorded, transcribed, and coded for thematic outcomes.

Research Question

This study focused on the mentoring experiences of currently enrolled or recently graduated American Indian (AI) students and physicians from the same Northern Midwest Medical School (NMMS). The research question that guided this qualitative study was: What are the mentoring experiences of American Indian medical students?

Theoretical Framework

Two theoretical frameworks were utilized in this study: the Native American College Student Transition Theory (NACSTT) and the Mentoring Enactment Theory (MET). The mentoring experiences of American Indian (AI) current or graduated medical students was studied to explore how they initiated and maintained mentoring relationships, and what mentoring outcomes emerged related to those relationships. Because AI medical students encounter significant challenges other non-AI students may not face during their transition to

medical school and in their first year, it is important to consider conceptual frameworks which focus on their unique needs.

A more recently developed theoretical framework, Schooler's NACSTT is a circular model that considers the unique, culturally-based needs of AI students who transition into college (Schooler, 2014). This model focuses on six developmental stages that "better represent the Native American student transition into higher education", while considering both the historical aspects and cultural needs of AIs, and their impact on medical education. As "the underrepresentation of Native American students in higher education is a complex issue involving several factors, such as lack of financial support and campus resources, cultural beliefs, social stigmas and stereotypes", it is important to use a model which better represents these unique needs (Schooler, 2014, p. 1). Although NACSTT may address the transition of AI students into four year institutions of higher education, I will argue that the six stages of circular student development may also apply to AI students transitioning into a multi-year commitment of a professional medical education and career.

Kalbfleisch's MET is a model that is made up of nine propositions about the initiation, sustainment, and success of a mentoring relationship. Mentoring Enactment Theory "seeks to explain what motivates individuals to enter into mentoring relationships, how they express interest in initiation mentoring relationships, and why mentoring relationships are maintained and repaired" (Kalbfleisch, 2002, p. 313). The theory provides an explanatory framework of a mentoring relationship's relational maintenance through various means of communication and experiences. While many models of mentoring have focused on the white male dominant culture paradigms, they have failed to recognize mentoring relationships that serve the unique needs of underrepresented and marginalized groups, such as AIs (Ragins & Kram, 2007).

Because AIs have exceptional and challenging obstacles during their transition into and during medical school, pairing two theoretical models which could potentially have the power to break through dominant barriers on the behalf of AI medical students, was vital to guiding the outcomes of this study.

Researcher's Study Rationale

My research interest in American Indian (AI) medical students began in 2013, when I began to work with and advise AI medical students in a Northern Midwest Medical School setting. Since that time, I have observed and worked with AI medical students who grapple with the challenge of academic, financial, emotional, mental, and physical stressors, while trying to succeed in one of the most difficult disciplines in higher education, medical school. Throughout my communications and experiences with AI medical students, I have come to find that much of their journey is often completed alone or in small cohorts, yet they thrive with varying support mechanisms and relationships. As their cultural identity sets them apart from their peers and often constitutes both marginalization and challenge, I have often observed their peer relationships and mentorship amongst one another act as a catalyst of sustainment through various difficulties. It is these peer relationships and oftentimes cultural connections that I was interested in studying. Furthermore, as medical school is a difficult education and career journey, it is important to understand the lived experiences of AI medical students and how peer mentoring relationships guide them and help them succeed to becoming medical physicians.

Delimitations of the Study

- 1) Participants in this study must have identified as American Indian, were currently enrolled as first through fourth year medical students, or were recent graduates currently in residency.

- 2) Research was conducted at a Northern Midwest Medical School with an enrollment of approximately 300 medical students.
- 3) The number of participants in this study was 19. There were 8 males and 11 females who represented 14 federally recognized tribal affiliations.

Definitions of Terminology

The following terms are used in this study and defined here to aid in the understanding of the content and context of the study:

1. *American Indian* is a “person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment” (U.S. Census Bureau, 2012, p. 2).
2. *Block* is one of several sections or spans of time within first and second years of medical school that provides grounding in the basic sciences that underlie the practice of medicine (UPSM, 2017).
3. *Initiate* means to get going by taking the first step, to introduce to a new field, interest, skill, or activity, or admit someone into membership (American Heritage Dictionary, 2011).
4. *Medical School* is a formal education program which is generally divided into two years of basic sciences and two years of clinical sciences, in which students have courses that combine lectures with hands-on learning experience in a hospital setting (Segen Medical Dictionary, 2012).
5. *Mentoring Relationship* is a “personal relationship between a more sophisticated mentor and a less advanced protégé” (Kalbfleisch, 2002, p. 63).

6. *Mentor* is a person who is “more sophisticated and has achieved personal or professional success and is willing and able to share covert and overt practices that have assisted him or her in becoming successful” (Kalbfleisch, 2002, p. 63).
7. *Mentee* is a person who is “less advanced and has the potential or desire to learn the methods used by the mentor in becoming personally or professionally successful” (Kalbfleisch, 2002, p. 63).
8. *Residency* is a period of formal graduate medical education that consists of on-the-job training of medical school graduates; completion of a residency program is required for board certification in a medical or surgical specialty (McGraw-Hill, 2002).
9. *Shelf Exam* is a term used for the National Board of Medical Examiners Subject Examinations. These exams are achievement tests in a broad sense, requiring medical students to solve scientific and clinical problems (NBME, 2017).
10. *Sustain* means to keep in existence, maintain, continue, or prolong (American Heritage Dictionary, 2016).
11. *Traditional Healing* refers to health practices, approaches, knowledge, and beliefs incorporating First Nations healing and wellness while using ceremonies; plant, animal or mineral-based medicines; energetic therapies; or physical/hands on techniques (First Nations Health Authority, 2017).
12. *Western Medicine* is a system in which medical doctors and other healthcare professionals (such as nurses, pharmacists, and therapists) treat symptoms and diseases using drugs, radiation, or surgery. Also called allopathic medicine, biomedicine, conventional medicine, mainstream medicine, and orthodox medicine (NCI, 2017).

Organization of the Study

In Chapter I, an introduction to the study's purpose, design, theoretical framework, key terms, delimitations, researcher interest and bias was provided. Chapter II is a critical analysis and synopsis of the fundamental literature which surveys and provides discussion toward understanding this study's research question and the context of which it is presented. In Chapter III, the procedures utilized to conduct the study are described. This chapter also includes a description, historical underpinning, and motive for utilizing phenomenography as a qualitative study design to interview, analyze, and code data for thematic outcomes. Chapter IV is a presentation and discussion of the study's findings with respect to the literature in Chapter II. This chapter also provides participant quotes, narrative examples, and Table 1, which depicts codes, categories, and the study's thematic outcomes and assertion. Provided in Chapter V is a summary of the study, overview of methodology, assertion, limitations, conclusions, and recommendations for its use and further research.

CHAPTER II

LITERATURE REVIEW

The purpose of this study was to explore the lived mentoring experiences of current or recently graduated American Indian (AI) medical students and resident physicians at a Northern Midwest Medical School (NMMS). The following review of the literature lays the groundwork for better understanding the unique needs and complexities of AI medical students who attend medical school.

Need for Native Americans in Health Professions

Health disparities and the need for health care and providers among American Indian (AI) populations and reservations has been on the forefront of minority healthcare awareness in the United States since the Snyder Act of 1921, and Indian Health Care Improvement Act of 1976 (IHS, 2013). According to the Indian Health Service (IHS) (2013), the life expectancy among United States men and women is an average of 76.9 years, whereas AI life expectancy is 67.3 years, with a disparity of 9.6 years. In some areas of severe health disparities, such as states in the Northern Midwest plains area, the average age of death for the white population is 75.7 years of age, and 54.7 years of age for the AI population, with a disparity of 21 years (IHS, 2013).

In a recent webinar by the Association of American Indian Physicians, Dr. Gerald Hill stated facts and figures about the low representation and greater need for AI and Alaska Native (AN) physicians (2015). He stated that the overall age adjusted death rates of AI/AN's are 20%

higher than all U.S. races combined. He also indicated that the cause of death disparities among AI/AN's are due to preventable diseases with greater percentages of mortality than other U.S. races, such as tuberculosis with 450%, diabetes with 177%, alcohol with 520%, liver disease and cirrhosis with 368%, unintentional injuries 141%, and suicide with 60%. He further posited that the shortage of AI/AN physician workforce indicated that the Indian Health Service alone has a 20% physician vacancy rate and that 120 physician positions were currently open in IHS the year this webinar was given to Association of American Medical Colleges (AAMC) (AAIP Webinar, 2015).

According to the 2010 Census, there were three million AI's who self-identified as only being AI, and five million who self-identified as AI and another race. Of those AI's who live in rural areas, nearly 75% lived in federally designated areas with shortages in health care providers (Probst et al., 2002). Unfortunately, AI's are severely underrepresented among health care professionals, including medical physicians and researchers across the United States (Hollow et al., 2006). According to the AAMC data on U.S. physician workforce (AAMC, 2014), there are 3,475 American Indian and Alaska Native Physicians in the United States who made up only .4% of practicing physicians. The U.S. Census Bureau's estimation of the fastest growing segments of the population are African Americans, Hispanics, and American Indians who will together make up 25% of the U.S. population by 2030; these three segments make up a total of 6% of the practicing physicians among these three minority groups (AAMC, 2014). As the population increases, the demand for physicians continues to grow as well. A report prepared by IHS Markit in 2017 for the AAMC, projects a physician "shortfall of between 40,800 and 104,900" by the year 2030 (IHS Markit, 2017, p.3).

Because of the low representation of AI health care providers and physicians in the workforce, a significant challenge to meet the needs of the staggering AI health disparities in rural reservation and tribal communities exists. Increasing the number of AI physicians and the health care workforce in these regions, may help develop and improve the quality of health among those living with health problems (Isaac et al., 2014; Paul, Ewen, & Jones, 2014; Sequist, 2007).

Increasing the number of AI physicians is not an easy task. In 2016, the 147 accredited medical institutions in the United States received 19,243 applicants (AAMC, 2017). Of those applicants, 553 (just less than 3%) were AI's. Historically, AI's have been below 5% of the enrolling medical students in the United States (AAMC, 2014). Increasing the need for AI physicians further, the AAMC (2014) projects that by the year 2050, the racial and ethnic population of minorities will account for half of the overall population in the United States. Patterson et al. (2011) report "the proportion of AI students in medical schools are about half that of AI's proportion in the total U.S. population" (p. 308).

With the lack of AI physicians and health care workers serving the AI population, there is a lingering concern about a lack of cultural competence among health care providers who are not AI and maybe unable to provide the same meaningful and culturally sensitive means of health care in both rural and urban areas. These concerns are perhaps addressed when the diverse population of medical students in medical schools are taught about the health disparities among those affected through diverse collaboration and methods of practice (Vela, Kim, Tang, & Chin, 2010). According to a report by the AAMC of the Diversity in the Physician Workforce (2010), diversity in medical schools influences not only education among and between medical students,

it expands the understanding and practice of cultural competency of more physicians across the workforce.

To address these significant health disparities, it is imperative to ensure access to the highest quality of culturally competent health care providers. Grumbach, Hart, and Mertz (2003), suggest that AI primary health care clinicians and family physicians have a greater propensity to care for their own people and underserved populations in tribal communities, such as those on reservations, than primary care physicians who specialize in other areas of medicine. American Indian physicians and health care providers better understand the treatment needs of their people, and they have the ability to respond in more culturally sensitive and appropriate ways, which may sometimes mix Western medicine and traditional healing.

The arguments supporting the need for AI's and other minorities to be among health professionals are many. Unfortunately, the reasons for significant underrepresentation of AI's in medicine and health professions are profound. According to Grumbach and Mendoza (2008), the most significant obstacle for a more diverse healthcare workforce is the "failure of primary education in the United States" (p. 416). Furthermore, the lack of positive, culturally inclusive environments in higher education offer few alternatives for AI's who seek admission into culturally supportive colleges. As there are limited options for AI's who seek cultural inclusiveness in their education, they must also face the daunting certainty of being confronted with medical school policies and politics that limit their ability to apply, enroll, or succeed. For example, perhaps "the toughest sell in the public debate over diversity is about reforms to admissions policies in health professions schools. No patient, of any race or ethnicity, wants to be taken care of by an unqualified doctor, nurse, or dentist." (Grumbach & Mendoza, 2008, p. 420). Yet medical schools' prescription of strict admissions policies, examination achievement,

and other stringent requirements may not be taking into consideration other factors that may pose beneficial when making decisions about admitting students. According to Grumbach and Mendoza (2008) “underrepresented minority students admitted to medical school under affirmative action programs are as likely as nonminority students are to graduate from medical school, pass their licensing boards, and enter practice, despite minority students’ having lower MCAT scores and college grade-point averages” (p. 421). They further posited (p. 413-414):

The civil rights case recognizes the nation’s legacy of racially segregated educational institutions and hospitals; it argues that measures such as affirmative action in health professions schools’ admissions policies are justifiable to redress the lack of equal opportunity. The public health case emphasizes the utilitarian benefits to society of workforce diversity as a way to eliminate health disparities. This argument rests on a substantial body of research demonstrating that racial, ethnic, and linguistic diversity among health professionals is associated with better access and quality of care, for disadvantaged populations. The educational case is another utilitarian argument, based on evidence that college students of all ethnicities perform better on several measures of intellectual and civic development when there is racial and ethnic diversity among the student body. The business case highlights the customer service and competitive advantages to the health industry of having a workforce that is culturally and linguistically attuned to the increasing diversity of the nation’s health care consumers.

It is not to say that AI physicians and health care workers must only work for their people and tribal communities, as this responsibility should be a shared responsibility among a collective and diverse group of physicians and health care professionals. Rather, the advantages of AI medical physicians working among AI patients who understand their holistic needs, substantiates the cultural advantage of treatment and care.

Difficulties and Barriers Preparing for Medical School

According to Sequist (2007), American Indians (AI) are not in high pursuit of becoming medical physicians because of factors related to intrapersonal and structural reasoning. The intrapersonal reasoning among AI’s who may consider a career in medicine is a personal one which stems from the disbelief and lack of confidence in their ability to become a physician.

Unfortunately, most young AI adults do not have family members who are working in health care. Therefore, they do not have the immediate connection, supported confidence, or understanding of health care careers and educational options to pursue them. If they have been raised on or near reservation areas, they have often been educated in watered-down education systems without core math and science curricula which would support health career choices and matriculation into higher education and medical school (Grumbach & Mendoza, 2008).

Beyond the lack of core education needed to enter and succeed in medical school, many AI's who may be interested in health career fields lack the mentoring, guidance, or access needed to navigate the pathway and prerequisites toward application and admission into medical school. This lack of support does not stop with their education environments; there is a lack of support from their families and within their communities (Sequist, 2007). As AI's lack the access to educational means and direct support, the likelihood of achievement becomes ultimately grim.

Millan et al. (2005), examined the reasons a general class of 130 medical students chose a career path to becoming a doctor. Their findings indicated that most students had investigated the possibility prior to entrance into medical schools through sources such as doctor acquaintances. Many of these students had parents or family members who were doctors. Students' other sources of inquiry and support came from visits to medical schools, conferences, media, shadowing doctors, clinical experience, vocational counseling, talking to other medical students, and the internet. When one considers the mainstream population of medical students' ability to access various means of inquiry and support, it causes one to question how AI medical students compare. According to Sequist (2007), AI's generally do not have similar access to or relationships with physicians as non-AI's and are less likely to have parents who have attended

college or are physicians. Thus, the limited support for AI's pursuing interest in medicine from their parents or physicians can become a challenge.

In a qualitative study conducted at the University of Washington's School of Medicine, 10 AI medical students were questioned about their paths to medical school (Hollow, Patterson, Olsen, & Baldwin, 2004). The study revealed eight themes for reasons why AI medical students struggle to achieve enrollment parity with non-AI's in medical school. These themes included their past educational experiences, competing career choices in other health care fields, their lifelong health care experiences, financial barriers, cultural connections, family and social factors, spirituality, and forms of discrimination (Hollow et al., 2004, p. 5). This study further highlighted the struggles and unique challenges of AI medical students that other non-AI students do not have, which included historical trauma, living in impoverished communities, insufficient education systems, and lack of resources and supportive guidance.

Many AIs may also see pursuing medical school as an unachievable or unrealistic goal due to their self-doubt regarding their academic abilities. Pursuing a medical degree is also a choice that frequently involves considerable isolation. For AI students, leaving their family, culture, and community can be a daunting decision made even more difficult with the real financial, stressful, mental, physical, emotional, social and cultural consequences of medical school (Hollow et al., 2004).

Sequist (2007) suggests the structural reasoning of AI's not applying for medical school relates to the lack of financial resources, guidance and mentoring, limited enrichment, and support opportunities prior to enrollment in medical school. Lack of preparation resources include the inability to have access or prepare for prerequisites of medical school admissions, finances and preparation to take the Medical College Admission Test (MCAT), lack of funding

to pay for medical school applications, travel costs for interviews, and the financial support to pay for medical school (Metz, 2013).

Moreover, AIs considering a career in medicine may not have tangible or realistic access to academic enrichment programs which support their interest in health careers. According to Hollow et al. (2004), academic enrichment and support programs geared toward improving the academic and educational outcomes of AI's who are seeking careers in medicine or allied health professions are invaluable toward the matriculation of AI's into medical school. Such programs often include math and science curriculum meant to support their fundamental knowledge to compete and handle the difficult academic curriculum of medical school. Unfortunately, many of these programs are not accessible to all AI's and are often dissolved due to lack funding.

According to Grumbach and Mendoza (2008), because disparities in primary education on reservations and tribal communities exist, the interventions of pipeline enrichment programs significantly increase the number of "high-yield short-term" AIs interested and applying for medical school. Although AIs have not reached parity in medical school enrollment, pipeline programming has become a vital component for helping AI students succeed. Understanding these critical disparities and the need for a broader AI physician workforce is important if we are to increase the representation of AI physicians in the United States (Hollow et al., 2004). Improving the diversity of health professionals includes AIs, and by doing so, it requires many strategies that include pipeline programming to support AI's pathway to medical school (Grumbach & Mendoza, 2008). Even if the AI student who matriculates into higher education is able to access enrichment support programming, score well on the MCAT exam and later become accepted into medical school, barriers and challenges will continue (Hollow et al.,

2006). These challenges are part of the transition many medical students face once they enroll in medical school.

Native American College Student Transition Theory

As American Indians (AI) prepare themselves to apply and enroll in medical school, their transition from higher education or the workforce, to medical school, can be daunting and difficult at best. To better understand the unique difficulties AI medical students have transitioning into medical school, a Native based transitional theory in an educational framework was used to help guide this study.

Native American College Student Transition Theory (NACSTT) is a new theory by Schooler (2014), who grounded NACSTT with existing theories of student development using elements of Chickering's (1969) Identity Theory, Horse's (2001) Perspective on American Indian Identity Development, and Schlossberg's (1995) Transition Theory. She modified these theories to meet the specific historical and cultural needs of American Indian (AI) students who were transitioning to college. As Schooler (2014) began to review the applications of Chickering's (1969) Identity Development Theory, Horse's (2001) Perspective on American Indian Identity Development, and Schlossberg's (1995) Transition Theory, she found that although the elements of each theory could help explain the overall development of most students in higher education, they were generalized and lacked the historical, cultural, and circular needs of AI students. As AI students are some of the most underrepresented students in college settings and have the highest attrition rates (Garland, 2013; Sanyal, Ward, & Becerra, 2016), it is valuable to reassess and utilize parts of theories that are applicable and further develop new ones that may help explain AI college students' particular development.

Schooler’s NACSTT (2014) examines these theories collectively and considers the addition of a culturally holistic and circular set of six developmental stages that better represent the transitional journey of AI students in higher education. They include (1) remembering history; (2) learning to navigate; (3) moving towards independence; (4) building trust and relationships; (5) re-establishing identity and reaching out; 6) developing a vision for the future. Unlike other student development theories, NACSTT does not use a step by step model to explain AI student development. Rather, it considers the holistic analysis of AI student needs through a circular model that reflects AI “orientation of space and time,” displayed in Figure 1 (Schooler, 2014, p. 2).

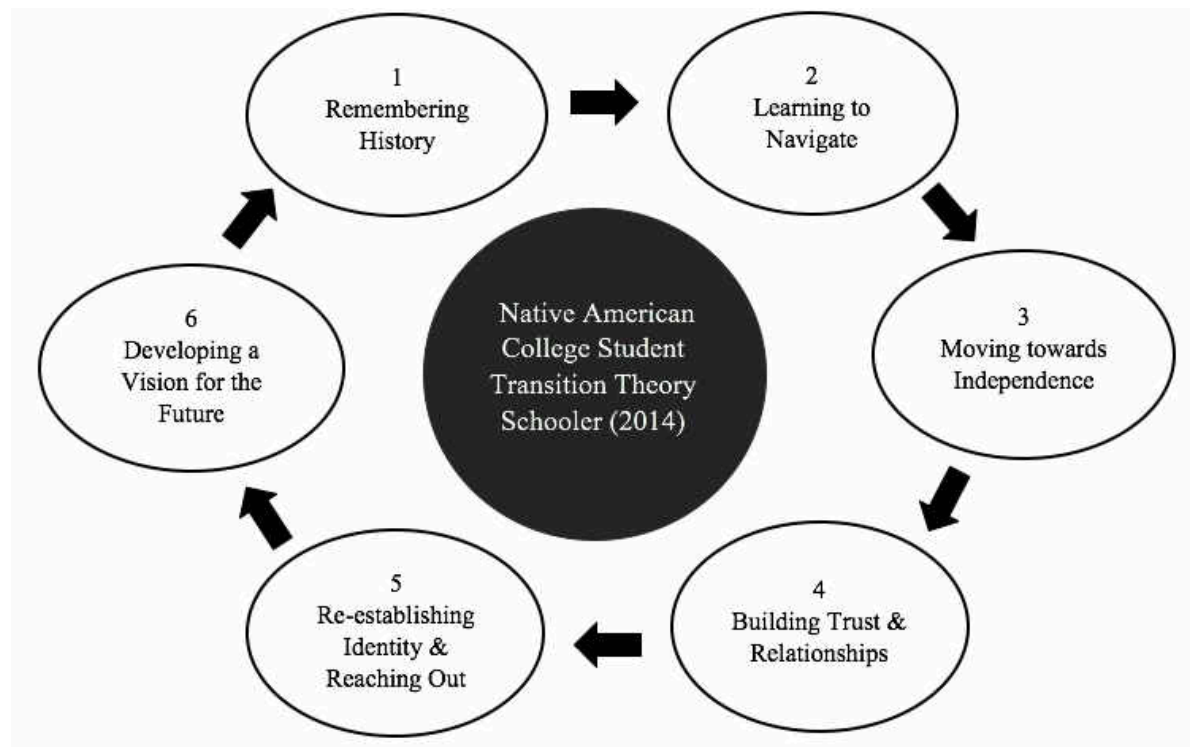


Figure 1. Native American College Student Transition Theory (Schooler, 2014)

In NACSTT’s first stage, it begins to consider the *specific and generational historical trauma* AI students endure that other students and underrepresented minorities have not. Since historical trauma is not static, it is an ongoing form of trauma often passed down from generation

to generation among AIs in the United States. American Indian students are confronted by continuous struggles and challenges that further traumatize and marginalize them during their transition and experiences in college (Schooler, 2014).

In Schooler's (2014) second stage, AI students must learn to *navigate their experience in college*. For most students explained by Chickering (1969), it is important for college students to find autonomy by growing toward interdependence away from their families and connection from their former communities. For AI students, this ideology and assumption is contradictory to AIs traditions and values of staying close to family and their relationships, community, and dependency through familial and cultural support. American Indian students are required to navigate through a very "independent culture, where importance is placed on the self, rather than the group as a whole" (Schooler, 2014, p. 3).

In stage three of Schooler's (2014) theory, *moving towards independence* is often a difficult stage for many AI students. As AI students come from vastly different family, economic, religious, educational, social, and cultural conditions, their transition into higher education is a much different journey of growth toward the independence often expected of college students. American Indian students often "experience cultural dissonance, where they do not necessarily align with what others perceive or expect" (Schooler, 2014, p. 3-4). Their surroundings, living conditions, financial burdens, academic struggles, and other challenges are typically much greater than other college students who do not come from similar backgrounds. They are often faced with the decision of staying true to their Indian identity and ways of being or in some ways emerging toward enculturation by adhering to mainstream culture's social expectations of college students (Schooler, 2014).

In stage four, *building trust and relationships*, AI students must find ways to reach out and create trusting relationships with their advisors, instructors, and peers to help them succeed. College administrators, instructors, advisors, and more experienced college students must find ways to reach out to AI students and support their unique needs. In the fifth stage, *re-establishing identity and reaching out*, AI students may feel an obligation toward their AI identity, family, and communities, by staying home, or leaving college. As AI students enter college with significant responsibilities toward family and community, a sense of obligation can become overwhelming for them and make attrition a more likely reality. In this stage, AI students who stay in college may feel as though they are “abandoning their culture” in order to make personal gain (Schooler, 2014, p. 4). According to Schooler (2014), it is important that during this stage, AI students re-establish their identity and reach out for support mechanisms, without completely abandoning their identities or responsibilities toward family and community.

The final stage, *developing a vision for the future*, can be difficult for AI students. Because AI students may have a dismal outlook for their future, decision making about careers and options may be more complex for them (Schooler, 2014). In this stage, most students are concerned with mainstream values such as independence, status, income, and prestige, whereas AI students may be more concerned with values such as giving back to their family and communities. Schooler (2014) explains that AI students are more likely to thrive in college, if they are supported in ways that allow them to incorporate their cultural values toward academic and career success.

Because Schooler (2014) was able to examine and account for AI students’ unique historical, cultural, and circular needs when transitioning to college, the theory lends explanatory

value when examining similar needs related to challenges of AI students who transition into medical school.

Challenges of Medical School

According to Ahmed et al. (2009, p. e2), “medical school is recognized as a stressful environment that often exerts a negative effect on the academic performance, physical health, and psychological well-being of the student”. They face a number of challenges such as difficult academic requirements, where their knowledge and study skills are tested daily. Numerous studies have shown that medical students are consistently exposed to multiple stressors that negatively impact their psycho-social and physical health. These results cause significant health problems including depression, anxiety, other mental health problems, and a decrease in life satisfaction (Dyrbye et al., 2006; Kjeldstadli et al., 2006; Tyssen, Rovik, & Vaglum, 2004).

When AI students have difficulty coping and succeeding, these complications influence their overall functioning (Ahmed et al., 2009; Baldassin, Alves, de Andrade, & Noueira-Martins, 2008). According to a recent study of depression in medical students (Baldassin et al., 2012), the level of difficulty in medical school course curriculum can increase the level of depressive symptoms leading to academic, clinical, and professional problems. This study also revealed that the most statistically significant areas of difficulty for medical students included academic studies, the lack of or balance of leisure activities and medical students’ relationships with other medical students, which created symptoms of depression and/or dissatisfaction. This finding may be due to the intensely competitive nature of medical school (Millan et al., 2005).

Madhyastha, Latha, and Kamath (2014) studied the rates of stress among third year medical students. They found that nearly all students in their study experienced varying forms of stress and that their stress was attributed to academic pressure and concerns over professional

identity as effective clinicians to other health care providers (p. 321). As the significant amount and difficulty of academic work becomes overwhelming for medical students, their ability to seek self-care and respond with appropriate coping mechanisms weakens (Rosenthal & Okie, 2005). In a study that examined 21 U.S. medical schools' fourth year clinical programs and the results of outgoing resident interns, Lyss-Lerman et al. (2009) found that first year physicians were ill-prepared, unorganized, lacked medical knowledge and the ability to self-reflect or improve (p. 832). In an earlier study of 481 medical students by Baldassin et al. (2008), results highlighted a higher prevalence of depressive symptoms occurred among females in the internship level who did not have a parent who practiced medicine. The study also indicated that 38.2% of the population were depressed, 24.9% were moderately depressed, and 11% were severely depressed. Ahmed et al. (2009) noted in their study that crying was the most common depressive symptom, and the fear of the worst happening was the most common anxiety manifestation with the inability to relax, nervousness, being afraid, as the next most common symptoms of anxiety.

The estimated occurrence of emotional disturbance found in different studies concerning stress and anxiety is higher among medical students than in the general population (Goebert et al., 2009). Unfortunately, medical students seldom seek professional help for their problems (Tyssen, Rovik, Vaglum, Gronvold, & Ekeberg, 2004; Tyssen, Vaglum, Gronvold, & Ekeberg, 2001; Hooper, Meakin, & Jones, 2005). If these difficulties are not met with immediate solutions, they are likely to continue a cycle of degradation, which in turn can often have a significant impact on their academic success and careers (Dyrbye et al., 2006).

Additional challenges for AI medical students which may lead or add to stress are lack of financial resources, heavy academic load, lack of social support, distance from family, racism,

and cultural isolation (Bassols et al., 2015; Hollow et al., 2004; Kotter et al., 2015; Sequist, 2007; Van Ryn et.al 2015; Walsh, 2015). Metz (2013) posited that underrepresented minority medical students face greater financial stress and economic pressures than non-minorities. For example, the median medical school education debt according to AAMC (2016) was \$189,165 in 2016. In a study conducted by Hollow et al. (2004), financial factors were among the cause of key barriers and challenges for AI medical students because the cost of school and living was far greater than their means. The study also found that AI medical students reported the need to be supported by close friends and families. Although the need for familial and friendship support is vital toward the psycho-social well-being of medical students, AI's in this study reported just as many barriers as there were support mechanisms from family and friends. This finding was due to the loss of family, the inability to cope, and included the lack of understanding by family and friends about the requirements, challenges, and culture of medical school (Hollow et al., 2004). American Indian medical students' strong link to family and their homes spark a strong need for social support and other mechanisms of support in order for them to succeed in medical school (Hollow et al., 2006).

In a study conducted by Kotter, Pohontsch, and Voltmer (2015), stressors were explored among medical students which may lead to understanding starting points of health-promoting interventions. Results from their qualitative study indicated that medical students' perceived stressors were caused by the difficult, substantial, and clinical relevancy of the curriculum. They also found that challenging examinations, inability to be absent from school, and new challenges (such as going from being part of a group of peers in pre-clinical stages of medical school to being alone during the clinical stage of medical school) proved to be stressful. Their final analysis of the data indicated that medical students' health became impaired when these stressors

were ignored. This study provided guidance for medical educators and administrators who need to take notice of the mental and physical health needs of their students in order for them to succeed. In a study by Baldassin et al. (2012), they examined rates of depression among medical students and found that they were contributed to by the high volume and difficulty of studies and lack of leisure activities. They suggest students find healthier self-coping mechanisms and that medical school administrators consider developing a more specific education curriculum and provide support through leisure activities to enhance the well-being of their students.

According to Van Ryn et al. (2015, p. 1748), little research has been conducted on racial bias, the effect of hidden racial climates, or racism in medical school education; medical schools are often left wondering what contribution to inequality in health care they are providing. Paul, Ewen, and Jones (2014) suggest that without cultural education and taking responsibility for the correspondence between formal, informal and hidden curricula in medical school, our institutions are inadequately responding to the needs of those in disparity, such as AI's. According to a study conducted by Dhaliwal, Crane, Valley and Lowenstein (2013), the climate at one medical school suggested that overall medical students believed that a medical school's climate, diversity, inclusion and respect are important factors in their education. However, the study also suggested the institution should embrace a wider definition of what diversity means, if it is going to meet the cultural needs and competency of its students.

In a study that examined racism in medical school, Beagan (2003) found that minority medical students often experience every day racism. Racism was both intentional and unintentional and subjected minority medical students to continuous forms of common and incidental types of disrespect, disregard, and marginality (p. 852-853). Beagan's (2003) study provided information about the subtle yet real forms of daily racism that exist in medical school

and how educators should take responsibility in addressing racism, power relations, hierarchy systems within curriculum, and lack of support for students who face racism (p. 853). While research has supported the need for culturally competent physicians to lessen the negative health impact on patients who are diverse, little research has examined the response by medical educators and institutions where we know racism and implicit bias pervades (Burgess, Van Ryn, Dovidio, & Saha, 2007; Chapman, Kaatz, & Carnes, 2013; Cooper, Beach, & Johnson, 2006; Crampton, Dowell, Parkin, & Thompsom, 2003; Matthew, 2015; Murray-Garcia, Harrell, Garcia, Gizzi, & Simms-Mackey, 2014).

A recent study by Leyerzapf and Abma (2017) examined how a medical school's attempt to include intercultural teachings and examples might affect the cultural minority students who engaged in them. Significant shortcomings were identified at this medical school, which aimed to educate and enlighten, but instead stimulated the continuance of stigmatization, marginalization, and polarized cultural minority students. In this study, the medical school chose to use teaching examples and activities which centered around stereotypes of each culture presented through patients. These teaching exercises further alienated cultural minorities and ignited feelings of disrespect and a lack of intercultural sensitivity, understanding, or support from their faculty and staff. Another study that aimed to identify recommendations for medical schools who incorporate spirituality and medicine together when working with patients, found that this type of curriculum might have a potential positive effect on medical students' attitudes regarding spirituality in patient care (Barnett & Fortin, 2006). However, the effect of spirituality education or response to the spirituality needs of AI medical students during medical school remains a gap in the literature.

Studies discussed have offered a discourse about the encounters of racism, implicit bias, lack of cultural support and understanding, and the misrepresentation of minority medical students' culture in teaching and practice. They have also distinguished the additional stress and challenges that minorities medical students may face that their peers do not. These forms of cultural isolation further permeate polarization in an educational arena that was created and continues to exist from a hegemonic state of hierarchical power differences. As AI medical students meet enormous and unique challenge in medical school, receiving an education in a white dominated and created Western medical curriculum may perhaps ignite or enhance feelings of forced enculturation. As AI's share a unique history using traditional medicine, it is important to understand how today's AI medical students must also find a balance between their beliefs in traditional ways of healing and the modern application of Western medicine.

Toward Western Medicine

From the beginning of colonization until the 1930's, American Indian (AI) traditional ways of medicine and healing were considered illegal by the federal government, because they believed the practices among Native people were witchcraft, heathenous, inferior, and therefore devalued (Couehan, 2000). According to Burnett (2010), the white man, missionary, and government official rejected AI healing ways by feminizing and illegitimatizing their practices, because they could not scientifically be explained or explored. By doing so, they overlooked the caregiving and holistic approaches that were therapeutic by their very nature. For example, in an interview with a Kainai elder named Rufus Goodstriker, Burnett (2010) describes how he spoke of significant differences between the white man's medicine and the medicine of his Native people. He highlighted that white medicine "split the body in three ways: body, mind, and spirit. In the Indian way, it is the opposite, spirit, mind, and body. Everything is connected" (p. 39).

Interestingly, although colonizers discounted most AI medicinal practices, they used AI knowledge and utilization of natural medicine and remedies as their own. According to Vogel (1970), one of the most powerful influences on Western medicine was through some of the working relationships with AIs during the period of colonization when white men gained much knowledge from the Native men and women who had spiritual connections with the earth and its medicinal plants, herbs, and minerals. Although colonization and the relocation of AI people was a federal strategy designed to civilize AI's by eradicating their culture, religion, and practices (to include traditional medicine) they stole what knowledge and natural means existed from AI healing practices to advance their own ways of healing (Coulehan, 2000). Furthermore, "The scarcity of trained physicians and pharmacists on the frontier caused settlers to depend on native remedies, and even at times, on the service of Indian medicine men. These circumstances, combined with a revulsion against some of the harsh drugs and objectionable practices, such as bleeding, of early physicians also gave rise to a numerous group of white lay healers who often claimed to have learned their healing art from the Indians, as in fact they sometimes had" (p. 263-264).

The white men who used their new knowledge and practice as proprietary forms of treatments and medicinal formulas gained from Native observation or forced practice. Through their virtue and governance, they promoted Western forms of medicine upon Native people (Burnett, 2010; Powers, 2003; Vogel, 1970). Beyond the imperialistic and patriarchal colonization of Western medicine forced upon AIs, the attempts toward erasure became prominent, because it sought to answer internal ailments and disease, which they believed traditional medicine could not. Consequently, Western medicine defined itself as the elite and

prominent form of medical treatment and healing in the United States over time and AI healing was considered irrelevant.

According to Struthers et al. (2004), it was not until 1978 when the Indian Religious Freedom Act was passed by the United States congress, that AIs could again openly practice their spiritual and healing traditions among their people or others (p. 143). With over 100 years of expurgation and erasure, the ability to traditionally heal was now legal, but was still considered non-Western, non-scientific, and non-useful among Western medicinal practitioners.

Cunningham and Andrews (1997) suggest, “Scientific medicine was a development of the native medicine of modern Western Europe, which was then made universal by exportation” (p. 12). Anderson (1998), describes Western medicine historical writings and accounts as “generally presented as one of the few indubitable benefits of European imperialism” (p. 523). Furthermore, “historians of colonial medicine are now more likely to discern a deeper collusion between medicine and empire: the political economists among them describe more plausibly a colonial production of disease, and the more literary of them analyze medicine and public health as technical discourses of colonialism. Accordingly, it seems now that to use Western methods to prevent or treat the diseases spread by colonialism was to colonize the body in a more basic way” (p. 523). Therefore, when discussing Western medicine’s account of colonization, we must consider that it does not begin to provide an overall view of medicine’s postcolonial contributions and cultural differences worldwide.

According to Rundle, Carvalho, and Robinson (2002), “In the United States, many providers are educated in Western traditional medicine, which promotes certain values about health and illness. Usually, biological or biomedical information is of primary concern, sometimes to the exclusion of all other aspects” (p. xxi). Leppa wrote a chapter in Luckmann

(2000) and described it as, “The Western healthcare system is a subculture of white Western culture. The white Western culture and its tradition promotes an almost exclusive belief in and reliance on the biomedical belief system” (p. 75). Members of this tradition value technology almost exclusively in the struggle to conquer disease” and “their goal is to rapidly resolve the client’s symptoms with biomedical interventions, and ultimately cure the pathology” (p. 75).

Notably, the ways of Western medicine are significantly positivistic in prioritization, beliefs, structure, evidence, and practices than Native traditional medicines that are more holistic in nature. In a current world where both collide, AI medical students will meet discerning challenges and must find a balance between Western medicine and AI traditional healing practices (Struthers, 2000; Struthers, 2003). Understanding that not all of the burden of responding to challenges falls upon AI medical students, medical educators and administrators must also consider their part in meeting the unique needs of these students.

Meeting the Unique Needs of American Indians in Medical School

The following items have been examined thus far: significant health disparities among American Indians (AI), the imperative need for AI physicians, the difficulties, barriers, and life altering stressors of medical school, and the historical relevance of how AI medical students must find ways to balance their traditional healing with Western medicine. For AI medical students the multifarious challenges of medical school are multiplied by the indoctrination toward medicinal practices and learning strategies. As AI medical students must find ways to cope with these life altering challenges and sacrifices, their focus on succeeding may interfere with their ability to formally cope, resulting in negative outcomes. To better understand the ways in which medical students cope and seek support, the literature is explored and examined.

Coping Mechanisms Among Medical Students

Medical education is considered extremely challenging and is associated with significantly high levels of stress, anxiety, burnout, and depression among medical students (Bassols et al., 2015; Hollow et al., 2004; Kotter et al., 2015; Sequist, 2007; Van Ryn et al., 2015; Walsh, 2015). Such stressors probe the examination of various ways in which medical students cope. According to Bassols et al. (2015), coping is a complex process that individuals use to confront, work through, deal with, handle, and respond to stress (p. 1). Stress according to Fares, Tabosh, Saadeddin, Mouhayyar, and Aridi (2016, p. 75): “is a psychological and physical reaction to the ever-increasing demands of life”. They posited that stress can cause life altering effects on medical students, such as mental and physical health, academic success, personal relationships, patient care, their overall well-being, and that physicians do not seek health care or aid for themselves, as they would expect their own patients (p. 75).

In a study where 232 first-year and sixth-year medical students’ prevalence of stress and coping had been observed, it was found that “variables that were significantly associated with stress were: year of the training (1st > 6th year), income (lower > higher income), satisfaction with the training (dissatisfied > satisfied) and the use of escape/avoidance coping strategy (positive association)” (Bassols et al., 2015, p. 1). Of particular interest in this study’s findings, extremely stressed medical students had the tendency to use more escape-avoidance tactics than their less-stressed peers (p. 4). Rosenthal and Okie (2005) propose the tendency to avoid coping with stress and responding to depression are purposeful tactics to circumvent appearing weak to peers, faculty, and future employers. Avoidance also evades severe academic or professional repercussions and diffuses any possible stigma associated with being discovered or treated.

The suicide rate among physicians continues to be reported higher than those of the general population and other academics. Thus, it is cause for concern that medical students must find healthy and positive ways to cope (Schernhammer & Colditz, 2004, p. 2295). The risk of death by suicide may begin presenting itself as early as medical school when heightened stress and burnout are likely (Schernhammer, 2005). In a multi-institutional U.S. medical school study, Dyrbye et al. (2008) found a high occurrence of suicidal ideation among medical students, with one of nine students who had thoughts of committing suicide during the year of the study. Their results indicated that there was an 11.2% higher rate of suicidal ideation among medical students than for similar aged individuals of the general population (Dyrbye et al., 2008, p. 339). As studies have shown, stressors and pressure of medical school compiled with personal life circumstances can create reduced satisfaction of their education and experience, which leads to burnout and affects their overall health (Bassols et al., 2015; Fares et al., 2016; Ishak et al., 2013; Madhyastha, Latha, & Kamath, 2014).

For minorities, stress does not necessarily present itself differently than from their peers; rather the reasons for stress, burnout, and coping mechanisms may vary (Dyrbye et al., 2007; Dyrbye et al., 2006). Dyrbye et al. (2006) examined burnout, depression, and the quality of life among minority and nonminority U.S. medical students at three Minnesota medical schools. Results from a survey of 1098 medical students revealed that both minority and non-minority students showed similar symptoms of depression and burnout, while minority students were more likely to have a decreased sense of accomplishment than their nonminority peers. In a similar study, Dyrbye et al. (2007) found that minorities had a lower risk of burnout than their peers, while their race was found to contribute to their stress levels and medical school experience more than their non-minority peers due to implicit bias and racism.

As stress makes cause for coping, studies show it proves difficult for medical students. Their coping mechanisms range from avoidance, substance abuse, and other negative responses, to problem solving, physical and extracurricular activities, social and peer support, professional help, mentoring relationships, and ability to self-reflect, and reinterpret their stress through emotions (Bassols et al., 2015; Dyrbye et al., 2008; Fares et al., 2016; Kotter et al., 2015; Madhyastha, Latha, & Kamath, 2014; Park & Adler, 2003). Fares et al. (2016) examined prevalence of stress and solutions to decrease stress and burnout in medical school. They found that methods to reduce stress included personal types of events and engagements, activities, positive reinterpretation and expression of their emotions, student-led mentorship programs, evaluation systems, and counseling and life coaching (p. 75). A study by Menezes, Burgess, Clarke, and Mellis (2016) examined the effect peer support and tutoring had on medical students' stress and anxiety. They found that levels of stress and anxiety decreased and the understanding of medical concepts and clinical skill competency increased, along with establishment of a peer community which supported and guided other peers.

Although these findings suggest some medical students use a variety of coping mechanisms, they show that medical students are faced with significant challenges throughout medical school, into residency, and beyond. As AI medical students are faced with similar challenges, they are presented with and experience unique difficulties other non-Native peers do not.

Related to the devastating historical trauma and oppression which continues to transfer intergenerationally among AI families and communities, they must find ways to cope in order to maintain well-being (Evans-Campbell, 2008; Walters, Simoni, & Evans-Campbell, 2002). As historical trauma underlies outcomes of impoverishment, unemployment, watered-down

education systems, substance abuse, significant health disparities, and college attrition (to name a few) its effect on AI medical students in a heightened climate of significant challenge and stress can be summed as a recipe for disaster. To date, there are limited studies which suggest the use of spirituality, cultural rituals, ceremonies, and other AI traditions be used as healthy forms of coping or means to buffer stress, depression, substance abuse, and other unhealthy outcomes (Gone, 2013; Walters, Simoni, & Evans-Campbell, 2002; Walters & Simoni, 2002). This being said, there continues to be a gap in the literature examining AI medical students' coping mechanisms and medical schools' response to their unique challenges and indigenous needs.

Mentoring Enactment Theory and its Purpose Among American Indian Medical Students

Mentoring can be an important means of career advancement. Following the igniting work of Kram (1985), Ragin (1990), and Scandura (1992), the development and success of mentoring relationships has been researched extensively in the workplace and academia (Sambunjak, Straus, & Marusic, 2010). As medical schools educate and train physicians, it can act as a climate which facilitates the development and sustainment of vital and sometimes lifelong mentoring relationships that help advance their career (Sambunjak et al., 2006). Because this study examined the mentoring experiences of American Indian (AI) medical students and recently graduated resident physicians during medical school, the emphasis of their mentoring relationships' initiation and sustainment were guided by Kalbfleisch' s Mentoring Enactment Theory (MET) (2002). To begin, mentoring must be defined.

Mentoring Defined

According to Kalbfleisch (2002), mentoring is a “personal relationship between a more sophisticated mentor and a less advanced protégé. The mentor has achieved personal or professional success and is willing and able to share covert and overt practices that have assisted

him or her in becoming successful” (p. 63). Kalbfleisch also describes mentoring as the protégé having a desire to learn the techniques and ways of doing from their mentor when becoming both personally and professionally effective and successful. At the very core of this relationship, communication is key to the development, and care and repair are required toward the success of its existence (2002). Ragins and Kram (2007) posit that although the definition of mentoring has advanced over the years, it is a developmental interpersonal relationship that is rooted in career development (p. 5). They also claim that mentoring relationships serve two functions. The first function is career development. In this aspect, mentors help explain, aid, guide, and show mentees how to develop and succeed in their career. The second function is psychosocial. The purpose of this function is to “build on trust, intimacy, an interpersonal bond in the relationship and include behaviors that enhance the protégés professional and personal growth, identity, self-worth, and self-efficacy” (p. 5). As research has shown, these functions of mentoring relationships can help predict life and career satisfaction in many career fields (Bozionelos et al., 2016; DeCastro, Griffith, & Ubel, 2014; Kalbfleisch, 2002; Mariani, 2012; Ragins & Kram, 2007; Shollen et al., 2014)

Mentoring relationships can begin and develop in a few ways. Kalbfleisch (2002) suggests mentoring can be initiated by the mentee or the protégé. It can also be formally structured by a third party who has had the protégé and/or the mentee agree to terms of a mentoring partnership and relationship. Kalbfleisch (2002) offers several propositions which help explain the initiation methods of entering into a mentoring relationship and how it is more likely to be maintained between the mentor and protégé.

The propositions from Kalbfleisch’s Mentoring Enactment Theory (MET) (2002) state:

- Proposition 1: Generally, requests to a more advanced other to be a mentor to the requestor are likely to be rejected in initial interactions between the advanced other and the requestor.
- Proposition 2: Generally, requests to a more advanced other to be a mentor to the requestor are more likely to be rejected than are requests for help on a specific task made by this same requestor.
- Proposition 3: Requests made to a more advanced other to be a mentor to the requestor will be more likely to be accepted when the advanced other previously has agreed with a third party to serve as a mentor in a relationship.
- Proposition 4: Offers made to a less advanced other to be a protégé are likely to be accepted.
- Proposition 5: Offers of help made to a less advanced other are likely to be accepted.
- Proposition 6: Protégés will be more likely than mentors to direct their conversational goals and communication strategies toward initiating, maintaining, and repairing their mentoring relationship.
- Proposition 7: The closer a mentor is linked to a protégé's career success, the greater the protégé's communicative attempts to initiate, maintain, and repair a mentoring relationship.
- Proposition 8: Female protégées will be more likely than male protégés to direct their conversational goals and communication strategies toward initiating, maintaining, and repairing their relationship with their mentor.

- Proposition 9: Mentors will be more likely to direct their conversational goals and communication strategies toward maintaining and repairing their relationship when invested in the mentoring relationship (66-68).

Kalbfleisch's (2002) propositions help us understand how mentoring relationships are more likely to initiate and develop, while explaining the roles both the mentor and protégé perform in sustaining and repairing their relationship. They also offer a fundamental basis for understanding how communication can be the catalyst toward differing relational outcomes as the form for maintenance. An area of particular interest for this study is that Kalbfleisch's MET (2002) is able to provide insight into the personal characteristics and needs that may attract the initiation and sustainment of a mentoring relationship between the mentor and mentee. In Figure 2, Kalbfleisch (2007) illustrates the personal filters in the mentor and mentee relationship.

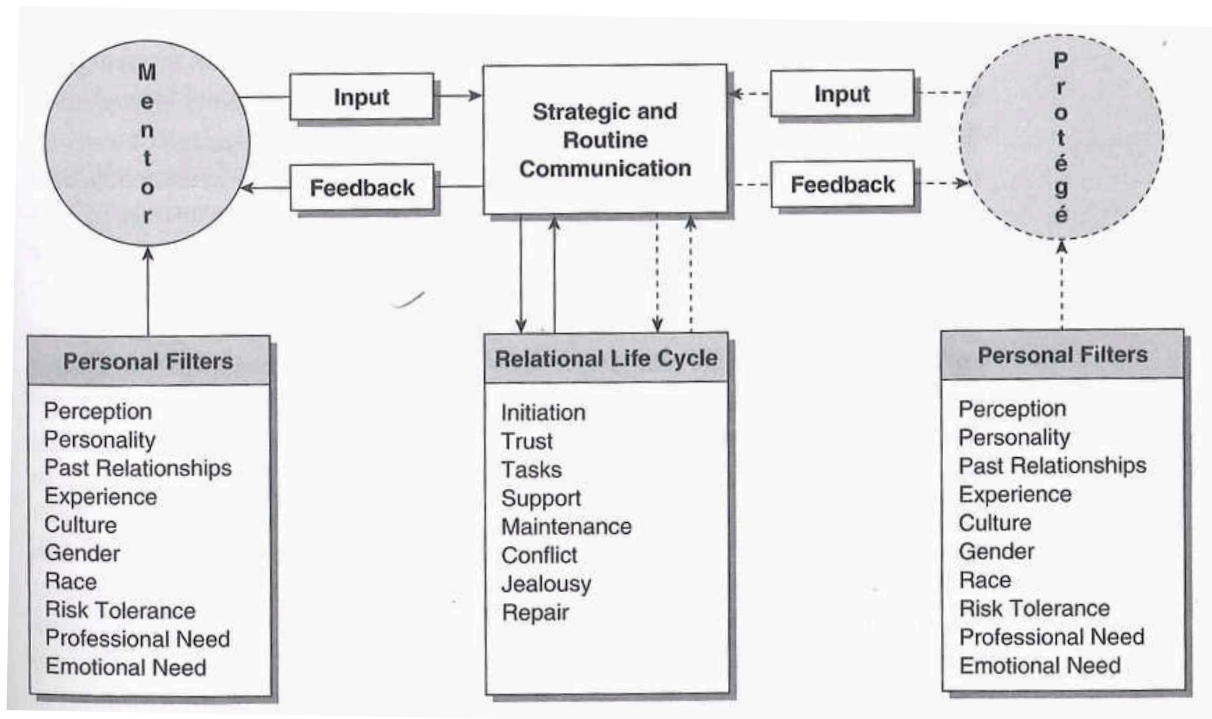


Figure 2. Mentoring Enactment Theory (Kalbfleisch, 2002)

Note that these filters are characteristics or features unique to each individual, yet similar in that they both have personalities, past relationships, perceptions, experiences, and needs. Their gender, culture, and race also play significant roles in their identity; their personal and professional needs are also considered. There is strategic and routine communication that helps sustain the relationship while supporting the mentees and their needs, while the relational life cycle requires initiation, the building of trust, the sustainment through relational maintenance via communication, the possibility of conflict and the stage of repair.

Mentoring stages and lengths differ for all relationships. Beginnings and endings have different timeframes. The investment of time and resources, and level of commitment related to the relationship also flux and are weighed in with each unique relationship. Maintenance and care for the relationship may also impact its longevity and success. Whether the relationship is casual, informal, formal, or professional, we know mentoring takes time, effort, and work (Kalbfleisch 2002).

Both mentors and protégés have much to gain from one another. Mentors help counsel, guide, and care for the training of their protégé. Protégés gain access to knowledge, networks, and experience they might not otherwise have access to without their mentors (Kalbfleisch 2002). By understanding these meanings, we can begin to conceptualize possibilities of mentoring relationships gained in medical school among American Indian medical students.

Mentoring in Medical School

Mentoring has been studied and shown to improve the developing and productivity of successful careers in business, law, and medicine (Jackson et al., 2003). In a recent report for the Department of Health in Ireland, authors Keane and Long (2015) gathered information to support a strategic review of medical training and how physicians' careers were being structured in their

post-graduate years through mentoring relationships. They defined mentoring as “a reciprocal relationship between an experience person (mentor) and a less experience person (mentee), which may or may not be formal and structured, but provides the mentee with guidance on personal and professional development, and encourages reflection on and learning from decision-making” (p. 7).

In medical school, a mentor may help the mentee develop knowledge about the expectations for coursework, exams, ethics, school or faculty standards, professionalism, and values of medicine which cannot be learned from a textbook or in the regular medical school curriculum (Stenfors-Hayes et al., 2010; Levine, Mechaber, Reddy, Cayea, & Harrison, 2013). Rose et al. (2005) described mentoring as a relationship that develops and guides students’ personal and professional development over the course of medical school and throughout their career as physicians. They posited that medical school faculty, peers, and other physicians often become mentors to students and are central to conveying explicit academic knowledge and implicit knowledge about the hidden curriculum embedded within medical school (p. 344).

Mentoring is a major component to the success of those entering medical school (Aagaard & Hauer, 2003). Mentoring is also viewed as a facilitator for medical career success and follows medical students into residency, career or specialty selection, and advancement in their career (Gray & Armstrong 2003; Sambunjak, et al., 2006). Mentorship is prevalent in medical school between faculty and students, student peers, residents and physicians who oversee their residency, and other practitioners (Dunn, Iglewicz & Moutier, 2008; Jackson et al. 2003; Kalén et al., 2010). Studies have shown that medical students who have an involved mentor are more likely to finish medical school (Oelschlager, Smith, Tamura, Carline & Dobie, 2011), are more likely to positively be impacted by mentors who shared same curriculum

experiences (McLean, 2004), and have greater career satisfaction, personal satisfaction, and success in medical school (Jackson et al. 2003; Sambunjak et al., 2006).

There are different types of mentoring relationships and programs that encompass mentoring during medical school. Many medical schools have their own formal and structured mentoring programs between students and faculty and/or between peers, yet other successful mentoring relationships are created by the mentee or the protégé informally. According to Bynum (2015), formal mentoring is a relationship in which an “established mentor-protégé relationship has been assigned,” whereas an informal mentoring relationship is one that forms naturally, without any pre-existing structure, agenda, or prompt (p. 70). Although formal mentoring programs in medical school are common and for the benefit of its students, they also face challenges (Frei et al., 2010). According to Fornari et al. (2014), mentoring programs may be problematic if mentors are not prepared to mentor a diverse populous of peers and the expectations of the mentor/mentee relationship are not clear. They also suggested that mentoring programs may have the tendency to overwhelm student or faculty mentors who already have challenging schedules and curricula to follow, and that they can be expensive. Fornari et al. (2014) further postulated that the success of medical school mentoring programs may very well require the consideration and adaptation to the “changing needs of the medical school community” (p. 2). In other words, it is important that medical schools evaluate their mentoring program outcomes in order to meet the ever-evolving needs of their students.

Mentoring also develops informally. In an examination of informal mentoring relationships, Bynum (2015) found that informal mentoring relationships were just as effective for personal and professional growth as formal relationships. She further suggested that peers, family members, and multiple mentors who collaborate and work together to share knowledge,

experience, advice, and support one another, are more likely to achieve success (p. 71). Rose et al. (2005) suggested that the most ideal form of informally mentoring medical students should emphasize the importance of being flexible and respecting the needs of the mentee, such as their learning style, culture, gender, and race (p. 344). As medical students advance into the later years of medical school, residency, or fellowship, their mentoring needs change. They proposed that when mentoring medical students in their advanced stages, they are likely to need guidance and support “through conceptual exchange and discussion of abstract ideas and theories. The focus turns to long-term planning and career development” (p. 346).

A study that examined formal and informal mentoring, behaviors associated with these relationships, satisfaction, and productivity for academic medicine faculty, found that both formal and informal mentors were important as predictors of satisfaction and productivity (Shollen et al., 2014). Their results further reveal that, regardless of differing effects on one’s career satisfaction and productivity, it is more important that essential forms of support and mentoring behaviors are offered, than being a certain type of mentor (p. 1267). Whether mentoring relationships are in formal structured settings or are informally created, the importance of these relationships are crucial for success among all medical students, including American Indians (AI). We may question then, how do AI medical students become involved in mentoring relationships? What are their options for mentors in structured medical school programs? What do their informal mentoring relationships look like?

It could be reasoned that with few AIs entering medical school, they will continue to be given mentors who are a selection of mainstream peers and faculty who are non-Native. As studies have shown that minorities who are mentored by other minorities are more likely to achieve relational success, the lack of AI peers, faculty, and physicians creates a significant

barrier to mentoring support (Jackson, Smith, & Hill, 2003; Phinney, Campos, Cidhinnia, Padilla Kallemeyn, & Kim, 2011; Shotton, Oosahwe & Cintron, 2007). According to Jackson, Smith, and Hill (2003), AI students who had successful informal mentors were more likely to continue and succeed in their studies. In a more recent study, it showed that using a more holistic approach toward serving AI students in higher education was vital in meeting their specific personal and cultural needs through mentoring and other services (Adelman, Taylor, & Nelson, 2013).

In the 1990's, Ragin examined the ways in which homogenous and diversified mentoring relationships impacted minorities in the workplace. According to Ragin (1997), diversified mentoring relationships exist between mentors and protégés “who differ on one or more group memberships associated with power in organizations” or “may also involve a minority mentor and a majority protégé” or vice versa (p. 489). Whereas, homogenous mentoring relationships were based on shared or similar group membership such as race, gender, culture, identity, and interpersonal comfort, as explanatory characteristics of the relationship. According to Sosik and Godshalk (2000), theories surrounding the work of homogeneity of the mentoring relationship draw upon an individual's need to similarly identify with others who they believe share “common self-identity” (p. 105). As there are few AI students in medical school, with little to no presence of others who are similar to them or understand their cultural background or needs, the likelihood of homogeneity in mentoring relationships are limited at best. When minorities including AI's enter into diversified mentoring relationships, they are more likely to do so based on the premise of reaching greater social capital and gaining access toward career goals and success that might not otherwise be available to them (Cox, 2017; Ragins, 1997). It can then be concluded that the few AI medical students who enter into medical school have fewer

opportunities to seek, be paired, or request to be paired, with homogenous AI peer, faculty, or physician mentors.

Mentoring for American Indians

Studies involving American Indian (AI) students in higher education have researched and demonstrated that the success of AI college students is a continuous challenge and struggle for many (Jackson, Smith & Hill, 2003; Lundberg, 2007). According to the U.S. Department of Education (2009), AI students have the lowest college enrollment and completion rates among minorities in the United States. Despite efforts made by medical schools and other institutions to increase the number of AIs entering medical schools, the proportion of AI medical students and doctors has yet to reach parity with other minorities or whites in medical school and in the physician workforce (Hollow et al., 2004).

Because mentoring is such an essential piece to success in medicine, many medical schools have created formal peer or faculty mentorship programs to help facilitate the learning and journey of not only incoming medical students, but throughout medical school (Buddeberg-Fischer & Herta, 2006; Frei et al., 2010). The availability of a mentorship program plays an extremely important role for AI students who may have specific needs other mainstream medical students do not have. These needs are representative of their cultural and historical background, isolation from family and tribal community, a lack of financial or tutorial resources, and other stressors related to their underrepresentation in medical school. According to Sequist (2007), although many minority medical students have common needs, a “one size fits all” approach to the mentoring relationship will not meet the unique needs of AI medical students.

According to Klasky (2013), many AI students feel misplaced and lost within the intense system of Western educational standards which promotes obedience rather than shared

responsibility, individualism versus collectivism, and judgment rather than supportive criticism and reassurance. Western medicine paired with a Western educational system only intensifies these phenomena. AI students often feel alone, isolated, misunderstood, misrepresented, and without the ability to use voice in a system which has consistently promoted and supported dominance and competition. Instead, their experiences, culture, and beliefs are often unheard because they feel their voice does not matter, which in turn, can cause more stress (Klasky, 2013). Also, students who do not have adequate support systems and mentoring in medical school are more likely to develop mental health problems such as anxiety and depression (Tyssen et al., 2001).

Due to the intensity of medical school curriculum, many medical schools have initiated their own formally assigned mentoring programs to help lessen the confusion and stress incoming medical students feel their first year which have proven successful (Oelschlager et al., 2011). Still, other informal mentoring relationships exist from daily interactions with peers or faculty (Yamada et al., 2014). Skaniakos, Penttinen, and Lairio (2014) described peer mentoring as one of the most important relationships in the first-year of medical school. This meaningful and powerful dyadic relationship is meant to bolster the first-year student's academic, social, emotional, and overall experience.

According to Jackson et al. (2003), finding a mentor who works well with the mentee can be quite difficult. Finding relational harmony and ability to get along and yet meet the needs of the mentee are all vital pieces at work. At the very core of a mentoring relationship are two people who seek assistance and to guide. Whether assigned or informally made, mentoring relationships' relational maintenance and success is critical to the success of the relationship. Those who do not have the chemistry aspect of a mentoring relationship are more likely to be in

non-communicative and inadequate pairings which are a disservice to already stressed medical students. These students are prone to more stress, anxiety, and depressive symptoms who are more likely to develop mental health problems during medical school and beyond (Tyssen et al., 2001). Studies have shown medical residents are more likely to find mentors when they are in programs which assign mentors (Ramanan et al., 2002), but other studies have suggested finding a mentor by choice makes for a more meaningful and successful relationship (Mainiero, 2007; Holm, 2010; Yamada et al., 2014).

Mentoring is shown to decrease attrition in medical school, influence personal and professional development, support academic understanding and development, and lend toward productivity in career choice and research (Oelschlager et al., 2011). Mentoring is not only best practice among the general pool of medical students in medical school, but more significantly for AI students who come with existing historical trauma, areas of poverty and health disparities, unique cultural backgrounds, rituals, and ways in spirituality that affect the way they view and respond to the world around them, and lack of resources well beyond those of their peers. Considering that there are 147 accredited medical schools in the U.S, and only 15 of them have graduated over 40 AI physicians from 1980 to 2012 (AAMC, 2015; AAMC, 2017), it is easy to discern not only that AI physicians are needed, but also that mentoring relationships are necessary to foster and help them succeed.

Conclusion

A critical review of the literature was conducted to better understand the need for American Indian physicians, their difficult pathway to medical school, challenges in medical school, coping mechanisms, and mentoring relationships in medical school. The theoretical frameworks of Kalbfleisch's Mentoring Enactment Theory (2002) and Schooler's (2014) Native

American College Student Transition Theory, were further discussed in this chapter and used as guides in this study. It is my hope that this study will add depth and fill gaps in the literature as they pertain to the lack of research among AI medical students' challenges, coping strategies, needs, and mentoring relationships to help them succeed in medical school. As medical school permeates high levels of stress, medical administrators must work toward finding ways to lessen the hardship and strain that stressors place on AI medical students' well-being with consideration of their unique needs and toward their ability to perform and succeed.

CHAPTER III
METHODS AND PROCEDURES

Introduction

The purpose of this study was to explore and better understand the mentoring experiences among current American Indian (AI) medical students and resident physicians from a Northern Midwest Medical School (NMMS) by inquiring: *What are the mentoring experiences of American Indian medical students?*

This chapter contains a description of the following: methodology used to conduct qualitative inquiry through a phenomenographic approach; description of the setting; negotiation of entry; participant selection and descriptions; provisions used to collect and analyze data; and methods to establish validity and trustworthiness.

Study Design

This study was structured and conducted using a qualitative, phenomenographic research design to explore and reveal the fundamental understandings of American Indian (AI) medical students' and resident physicians' lived experiences of their mentoring relationships during medical school. Developed by Ference Marton and his colleagues in the Department of Education at the University of Gothenburg, Sweden in the late 1970's, phenomenography, a qualitative method of inquiry, aims to reveal, describe, analyze, and understand the differing ways in which people experience phenomena. Phenomenography also focuses on the interrelationship between an individual's experience and the objective world it is experienced in

(Marton, 1981; Marton 1986). According to Marton (1981), these distinct and meaningful understandings are second-order perspectives in that they describe the ways in which individuals understand or perceive their lived experience or phenomena. For example, in this study, phenomenography was used to unveil and describe the diverse ways in which AI medical students and resident physicians understand their mentoring experiences in a medical education setting. Because this methodology allows for differing interpretations of mentoring experiences in medical school, phenomenography advances our ways of understanding the dynamic experiences of many as a comprehensive presentation of the phenomenon (Assarroudi & Heydari, 2016). Furthermore, the use of phenomenography encourages a more culturally sensitive and appropriate way to represent the individual voice among a group of medical students and resident physicians who are often characterized, stereotyped, and marginalized as being culturally and behaviorally identical to the same race (Lee, McCauley, & Jussim, 2013; Mihesuah, 2013; Fleming, 2006).

Understanding that there is limited literature which examines the AI medical student's journey in medical school (Rodriguez, Campbell, & Adelson, 2015), it is important to examine and unveil the differing, yet comprehensive experiences of their mentoring relationships, which may foster and attribute to their success. These findings can then act as a catalyst toward further probing into the understandings and mechanisms, which explain the ontology and epistemology of their lived experience and offer a significant response to gaps in the literature (Creswell, 2012).

Description of Setting

The setting for this study was in a Northern Midwest Medical School (NMMS). According to the NMMS's institutional research office (2016), the enrollment of students in the

fall of 2016 was 14,648 with 291 of those being medical students. At the start of each medical school year, 78 new incoming first-year medical students make up its first-year class, and generally, six to eight of those 78 incoming first-year medical students are American Indian (AI). The city in which the NMMS is located has approximately 70,000 people in residence when college is in session (fall and spring semesters) and approximately 55,000 when college is not in session (summer semester).

The medical school offers graduate and professional education in family medicine, physician assistance, sports medicine, occupational therapy, physical therapy, public health, medical lab science, biomedical sciences, and 10 clinical sciences. The university within which the medical school is housed offers undergraduate, masters, and doctoral level programs in over 225 fields of study and includes a growing number of online curriculum and distance learning options.

According to the university's office of institutional research (2016), American Indian students in all programs make up fewer than 2% of the total student population (approximately 10% of the medical student population in its medical school). Although the percentage of AI medical students is higher than that of AI students in the general student body, the medical school has one of the nation's longest standing federally supported AI health care programs that is meant to help matriculate, support, graduate, and meet the growing needs of AI physicians and health disparities in Indian Country and the United States. As such, they have a higher number of applicants and hold seven seats for admission to qualifying federally enrolled AI medical students to the medical school. To date, the AI health care support program at the NMMS has helped support over 220 AI graduated medical physicians since the inception of its program in

1973. Related to the higher enrollment numbers of AI medical students at the NMMS, use of this particular university increased the number of potential interviewees for this study.

Negotiation of Entry

As a program coordinator and advisor of the American Indian (AI) health care support program at the Northern Midwest Medical School (NMMS), I have had daily access to observe, participate, communicate, advise, recruit, and assist in the interviewing and admission of several cohorts of AI first-year medical students over a four-year period of time. As part of my position with the medical school, it was within my scope of duties to conduct daily observations, advise, and assist AI medical students in study rooms, computer labs, and in independent or group settings. Because of my daily connection and advisory relationships with several cohorts of AI medical students, I have developed relationships and gained the personal trust of both current and former AI medical students who have expressed a distinct willingness to take part in this study.

Prior to beginning this study, I requested the written permission of the medical school's Dean of Admissions before proposing this study to my committee, to the Institution Review Board (IRB), and before fully launching the study's interviews. Although I agreed to share this study's outcomes and discussion with the medical school and its administration for furthering their progress toward meeting the support and mentoring needs of AI medical students, I was clear when informing them that I would not share the identity of or any potentially identifiable information regarding my participants.

Participant Selection

The 19 participants for this study were currently attending or had recently graduated as physicians from this Northern Midwest Medical School (NMMS). Participants were selected based on the following criteria:

- 1) Must have identified as American Indian
- 2) Must have been currently enrolled as a first through fourth year medical student or had recently graduated from a Northern Midwest Medical School and currently a physician in residency

Description of Participants

The participants in this study consisted of 19 American Indian (AI) individuals, 8 males and 11 females, with 15 participants in years 1-4 of medical school, and four participants in residency who have all attended or recently graduated from the same Northern Midwest Medical School (NMMS). Participants were enrolled or descendants of 14 federally recognized tribal affiliations in the United States and were from 10 states representing the Midwest, West, and Southern regions (U.S. Census Bureau, 2010). Of the 19 AI participants, eight were born or raised on tribal reservations or land, two grew up within a few miles of a reservation, and nine were born or raised in urban areas. All 19 participants had earned and received Bachelor of art or science degree in 11 different fields. Two participants earned and received Masters degrees in science or public health. Degrees earned prior to entering medical school were earned from 14 institutions of higher education across nine states.

Protection of Participants' Anonymity

Related to the sensitive information gathered in this study by participants who represent a marginalized group in a significantly intense medical educational setting, measures were taken to

ensure the confidentiality of participants' identity and responses. Procedures to protect participant's identity and confidentiality were as follows:

1. The use of pseudonyms replaced individual participant names on transcripts, memos, this dissertation, and for any future writing this study may further develop.
2. If a participant used the known name of a peer, faculty, or staff member or any other identifying information that may reveal their identity, the text in transcripts were hidden with black marker.
3. Recordings of the interview, memos and notes written from each interview, transcripts, and coded data are and will continue to be locked in designated secure locations within my home office space.
4. Institutional Review Board paperwork and signed consent forms are securely locked in a separate area of my home office from the study's data and results.
5. Chapter IV of this dissertation is written to reflect the thematic outcomes of this study without compromising the identity of participants.

Data Collection

Each participant was interviewed once for a period of one hour to one hour and a half in a private room located at the Northern Midwest Medical School or via cellular phone for those who were in clinical rotations or residency and could not meet face to face. Two microphones connected to recording devices were used to record each interview and were saved onto a hard drive and locked in my home office. The interview consisted of several semi-structured questions which pertained to the participants' educational background, tribal affiliation, their pathway to medical school, challenges and coping mechanisms, and information regarding their initiation and sustainment of mentoring relationships during medical school (Appendix A).

Prior to each participant interview, I, as the Primary Investigator, read the Institutional Review Board (IRB) approved consent form (Appendix B), stressed that participation in this study was strictly voluntary and confidential, and that the interview would be recorded for accuracy. Upon verification of participant's volunteerism and understanding of the consent form and study, each participant read and signed the consent form and was given a copy.

Data Analysis

At the conclusion of 19 interviews, I sent the audio recordings to an online transcription company, Rev.com, who upon payment, completed and emailed me 19 individual transcriptions which totaled 329 pages of interview text data. I saved the transcriptions onto my personal hard drive, printed them for coding purposes, and secured them in my home office for safe keeping when they were not being analyzed.

As the study design of phenomenography required data analysis similar to a grounded theory approach, the interview data was initially analyzed with In Vivo Coding, which emphasizes open and natural coding techniques to reflect the authenticity of participants' voices (Saldaña, 2016). In this particular study, where culture is an imbedded factor, In Vivo Coding becomes relevant to use as it captures the essence of what is significant and real from participants (Saldaña, 2016). The next phase of coding required further analysis of open In Vivo codes into initial categories. Upon a third review, second cycle axial coding extended data analysis by narrowing categories and developing subcategories. According to Saldaña (2016) second cycle coding is completed as a method to reorganize and reanalyze the broken data from initial coding, so that the more dominant codes are revealed succinctly (p. 234). The main component of axial coding is that the categories revealed are the axis of thematic outcomes. Hence, axial coding interconnects and relates the categories that are defined by their codes (p.

244). Upon completion of secondary axial coding, thematic analysis was completed and the study's singular assertion was developed. By using a grounded theory approach to data analysis, a more exhaustive and comprehensive outcome was achieved (Saldaña, 2016).

Validity and Trustworthiness

Because the steps of thematic coding are vital to the overall interpretations of the data, so are the questions asked of the participants, their answers, and my notes taken during the interview process. My field notes, writing, and interpretations are part of my understanding of how mentoring relationships are experienced among American Indian (AI) medical students. The way that I describe my interpretations in words and context, reveals what Stake (2010) describes, as *verstehen*. *Verstehen*, a German word for personal understanding, is my experiential understanding of what action, context, or phenomena is taking place through the voice of my participants and how I interpret them (Stake, 2010, p. 48). According to Creswell and Miller (2000), my descriptions must be thick in that they are extensive in detail, and do not just report facts. By providing vivid detail, it allows a reader to interpret my writing, as if they could experience or envision the experience of my time with AI medical students through descriptive details; therefore, establishing a form of credibility through my writing.

Upon completion of coding for thematic meanings and interpretations of the data and my thick and rich descriptions of my interpretations, I requested an outside reviewer (who had not been previously associated with my study) to read and review the text, coding, categories, subcategories, thematic analysis and final assertion that was derived from all 19 transcripts. Peer review is one way to help reduce the risks associated with researcher bias and reactivity (Maxwell, 2013). According to Maxwell (2013), "Two important threats to the validity of qualitative conclusions are the selection of data that fit the researcher's existing theory, goals, or

preconceptions, and the selection of data that “stand out” to the researcher” (p. 124). He further posited that although methods of validity do not guarantee it to be true, they are nonetheless vital toward “ruling out validity threats and increasing the credibility of your conclusions” (Maxwell, 2013, p. 125).

Upon completion of the outside reviewer’s time with the data set and analysis, we worked together for a length of time to develop aligned final thematic analysis, which was then presented to another outside reviewer. During this process, themes were narrowed to reflect the three presented in this study’s findings, along with the final assertion. Applying the considerations of two outside reviewers led to inter-coder agreement and strengthened the final interpretations of this study. According to Lincoln and Guba (1985) and Merriam (2009), giving my coded themes and interpretations to peers or colleagues who are familiar with the phenomena being researched, is crucial to providing feedback which may confirm or contradict my findings. This process works best if it used over time throughout the study and if the peers are individuals who are “external to the study” (Creswell & Miller, 2000, p. 129).

To strengthen the validity and trustworthiness of this work further, I sought feedback from several participants during post-interview conversations. Lincoln and Guba (1985), state that member checking is “the most crucial technique for establishing credibility” (p. 314), while Creswell and Miller (2000) note that collaboration with my participants “add further credibility to their narrative accounts” (p. 128). According to Merriam (2009), member checking, also known as respondent validation, allowed me, as the researcher, to ask participants for feedback based on their interview responses and my interpretations of their experiences. Validation offered credibility and authentication to come from my participants, who were able to respond whether my written interpretations were true, or needed fine-tuning (Creswell, 2007; Creswell,

2012; Merriam, 2009). Furthermore, by collaborating with my participants during the research process, they made significant impacts upon my interpretations, and made suggestions about data collection, analysis, and my accounts of their lived experiences (Creswell & Miller, 2000). Thus, trustworthiness and validity were enhanced with the assistance, review, analysis, interpretations, and voice of my participants.

Finally, I claim my own researcher reflexivity in my observations and work. As a former program coordinator and advisor of AI medical students, I worked closely with students on a daily or weekly basis over the span of their time in medical school and beyond. Considering the close proximity that I had with these students, as well as my advisement duties, and friendly relationships with many of them, I became interpersonally woven into a small facet of their medical school journey and lives. The knowledge I had of their personal and academic experiences were, in part, the reasons I began this research. Thus, my bias toward their experiences, truths, opinions or interpretations of their truths existed before and during this study. Thus, it was vital toward the trustworthiness and validity of the study and its findings, that my use of outsider reviewers, member-checking, and research reflexivity were used.

Researcher reflexivity communicates to others my personal views, beliefs, opinions, biases, assumptions, and experiences, as they pertain to my interpretations of the data (Denzin, 1997; Lincoln & Guba, 2000; Merriam, 2009; Maxwell, 2013). Reflexivity depicts my role as a human relaying human experience through a transparent standpoint, which is malleable, tentative, and at times inconclusive, and may result in further inquiries of research (Creswell, 2012). This transparency allowed me as the researcher to explain and contribute my own experiences and beliefs, as they pertained to my interpretations of the data and how it was

collected. Researcher reflexivity is then “conducted in full awareness of the myriad limitations (and advantages) associated with humans studying other human lives” (O’Reilly, 2012, p. 32).

According to Lichterman (2017), “reflexivity communicates to readers our recognition that knowledge claims are conditioned and partial” (p. 2). In other words, the practice of researcher reflexivity validates the trustworthiness of my observations through my own voice, through my writing, and interpretations. By continually writing my own views and interpretations through the steps of data analysis and my findings, I account for my own limitations, as I am not outside of what I am observing, experiencing, and reviewing, but instead, immersed and a part of them.

As shown here, the use of a multiple-layer strategy to test the validity and trustworthiness of my findings is meant to seek any existing or potential threat that may challenge them (Maxwell, 2013). Although qualitative validity does not require a specific set of strategies to fit every study, it is up to myself, as the researcher, to use both my lens and paradigm assumptions, to critically meet the demand of validity and trustworthiness, my research requires (Creswell & Miller, 2000).

CHAPTER IV

PRESENTATION OF THE DATA IN RELATION TO THE LITERATURE

Thematic Analysis

The purpose of this study was to examine the mentoring experiences of American Indian (AI) medical students and resident physicians during their time in medical school, with a focus on the way mentoring relationships are initiated and sustained. Thus far, the following parts of the study have been described: an introduction to the research question and the study's significance in Chapter I, a structured review of the literature to critically inform about the various aspects and factors of this study in Chapter II, and the methods used to conduct interviews, transcribe, and analyze the data in Chapter III. In Chapter IV, a description of the thematic results as they relate to the literature will be presented, using examples of participant narratives.

A total of 19 qualitative interviews were conducted to examine the mentoring experiences of AI medical students and resident physicians during their education and career path in medical school. Recorded interviews were transcribed by Rev.com, reviewed for accuracy, and data analysis was completed. Phenomenography requires a grounded theory approach to data analysis through first, second, and final coding cycles, and it offered an extensive and comprehensive process for revealing thematic findings (Saldaña, 2016). During the first cycle, coding 329 pages of transcription provided a significant account of individual narrative and experience, which led to initial unveiling of 208 codes and 10 categories. Using second cycle axial coding methods to

review first cycle codes and categories, a thorough reduction process revealed 75 codes, 3 categories, and 3 themes. During the final analysis of the codes, categories, and themes, a comprehensive assertion was developed. These findings are described in Table I.

Table 1. Codes, Categories, Themes, and Assertion

Codes	Categories & Subcategories	Themes	Assertion
Pre-Med/MCAT Undergraduate education Science readiness Financial hardship Unfamiliarity w/ MS process Lack of support (social, familial, higher ed.) Volume of material Learning style Studying strategies Learning disabilities Time management Expectations (MS, family, self) Displacement Isolation Stress Anxiety Depression Imbalance (personal/educational) Strain on family/friends/social Racism Cultural abandonment Self-abandonment Abandonment (family, friends, reservation) Death in family Western medicine Medical school and medicine hierarchy Inability or willingness to cope Academics Y1 & Y2 (blocks 1-8) Academics Y3 & Y4 (rotations) Residency/future	<ol style="list-style-type: none"> 1. Preparation for medical school 2. Displacement and isolation 3. Family and social abandonment 4. Racism and lack of cultural understanding 5. Financial hardship 6. Medical school Y1 and Y2 7. Medical school Y3 and Y4 	<p><u><i>1. Medical School Challenges</i></u> Significant challenges among AI medical students contribute to extreme anxiety, stress, and the need for unique support mechanisms such as mentoring relationships and AI culturally supported programming.</p>	<p>Due to the significant challenges and unique support needs of American Indian medical school students, their likelihood of success is profoundly reliant upon the initiation and sustainment of successful informal mentoring relationships with mentors who are AI and/or who have similar interests and experiences, and commit to relational maintenance through communication over time.</p>

Codes	Categories & Subcategories	Themes	Assertion
Self-care Lack of/negative self-care Spirituality Cultural Traditions Rituals Cultural programmatic support Family support Social support MS peers Mentors Physical health treatment Personal Adjustments to MS Academic Adjustments to MS Abandonment (self, culture, family, etc.)	1. Self-care a. cultural b. relational support c. adjustments 2. Lack of self-care	<u>2. Coping Mechanisms</u> AI medical students use a variety of healthy/positive and unhealthy/negative coping mechanisms in response to immense challenges in Medical School.	
Informal/formal Initiation Sustainment/relational maintenance Setting (natural/cultural/social) Homogeneous Peers Diversified Professionals Race/Ethnicity Culture Preference Types Characteristics Invested/committed Similarity Proximity Communication Personal Academic Social Capital Comfortable Trustworthy Genuine Substantially Supportive Necessary Personally/Educationally/Care Beneficial Attributes MS Success Attributes Career Success Altruistic Role Models Validation	1. Mentor definitions 2. Types of mentors 3. Mentor characteristics 4. Informal mentoring a. initiation b. sustainment c. needs based 5. Formal mentoring a. initiation b. sustainment c. failed sustainment 6. Significance of mentoring	<u>3. Successful Mentoring</u> AI medical students are more likely to initiate and sustain successful mentoring relationships when the initiation is informal, in a natural or culturally based setting, with someone who is AI and/or has similar interests/experiences, and commits to relational maintenance through communication over time.	

Theme One: Medical School Challenges

American Indian (AI) medical students in this study encountered many challenges when preparing, applying, enrolling, and navigating through medical school. Although many medical students face similar difficulties, the participants' challenges in this study were unique and complex, because of various factors, including low-income families, impoverished areas, lack of advisory support or access to resources, watered-down educational systems, lack of social capital, discrimination, isolation, displacement from their family, homes, people, and cultural ways of being, and a history of trauma and marginalization. As these challenges among AI medical students and resident physicians are described here through individual participant narrative, theme one was revealed and is related back to the literature.

Category One: Preparation for Medical School

Data within this category provided insight into the difficult pathways AI medical students face when preparing to apply and enroll in medical school.

Angel describes feeling unprepared with little support, limited resources, and knowledge of the process to prepare for medical school admission.

I really had no one who went through the process so, it's a process. I didn't know about the pre-med requirements and that you didn't have to be a biology major. Study for the MCAT and also how much money it would cost to apply to schools. Supplemental applications and different types of programs that were offered at each medical school. I think because I probably didn't have anybody.

Baron faced challenges preparing and studying for the MCAT exam and lacked support.

I'd say the MCAT was probably the hardest. It was probably the biggest challenge. Studying for a standardized exam, and I think, probably just not having a whole lot of direction. I mean, I didn't. I think I just kind of felt lost a lot of times, because I didn't have someone to go to for a word of advice.

Eleanor struggled with having limited personal support and financial means.

I think for me, probably not having the strongest support, family-wise? Like going in and just the move and financially and stuff. Like, it's a huge commitment, it's expensive. And I underestimated how much support you need during med school.

Although Flynn had similar experiences and difficulty with preparing and paying for the MCAT exam, most of his challenges were centered around the inability to connect with physicians as many other non-AI medical students do.

Probably MCAT preparation. You can get really good courses but it's always a lot of money. Probably getting more input from actual physicians who are already practicing and them telling about their lives and about their story and about what they did and what it's really like. I got the podiatrist, but there's not any doctors per se in the family or that I had growing up or anything. I think that really puts you at a ... I don't know if it's a disadvantage, but ... There's a lot of kids whose families are all physicians, so they just know about a lot of stuff that kids that go into it without having that background don't really know about or a lot of things are surprises.

Georgia's challenges varied in that she diligently worked on her academics and studying preparation, yet had difficulty scoring high on the MCAT exam, and lacked patient-centered experience required for her application to medical school. She also faced financial hardships.

I think I was always too focused on the books, in that I really didn't make time for getting patient interactions. Also, paying for the MCAT exam. That was a challenge, finding money to pay for it. The second was just preparing, preparing so much, and actually figuring out where my weakness is. The entire thing is a multiple choice test, and I'm terrible with multiple choice. I think definitely, finding help, finding resources, and then taking practice exams. I didn't get the MCAT score that I wanted.

Koby, a first-generation college student, struggled with standardized testing, coming from a low-income family, and feeling a sense of isolation and loneliness, as his family was unable to support him and understand what he was trying to accomplish when preparing for medical school.

The MCAT. Like standardized testing. Even like ACT's and stuff, like SAT stuff, I struggled with, but I can sit in a class and get a good grade. It's also difficult to, I guess coming from a low income family you have to like work. You have to provide for yourself on top of getting good grades and getting extracurricular activities. That was

another challenge as well, to stay on top of all that and still function normally and get things done. During Educational Talent Search they offered a scholarship (program). I applied to their scholarship (program) and I got it. It was hard. I couldn't go home. When I went home I couldn't tell my family about what I was doing. They just knew I was in school, but you couldn't really connect with them. I couldn't really share with them what it meant to be in school. You kind of just stay quiet about that, or I did.

Phoenix faced several challenges as he prepared for medical school. Between a difficult start in college courses, a low GPA, starting a family, retaking the MCAT, and finding inner-strength to commit to his goals; his pathway was challenging.

My first challenge was starting my undergraduate degree. When I came in for that early enrollment. I realized that I was a top percentage of my school on the reservation but I was by far lower with my standardized exams than anybody else in that room. Second challenge was I had two kids. Kids back to back, which provided new challenges financially, trying to be a new parent while I was still a kid myself, and then trying to balance school. At that point, my grades started to slip. I started to cram for exams. My grades eventually went from A's to B's to C's. For the MCAT exam, it was difficult. I did face some challenges. I took the MCAT exam three times.

Sage had similar experiences with challenges when preparing for medical school, yet he faced significant and traumatic circumstances during his preparation that still linger 10 years later in residency.

There are challenges that everyone faces when you're preparing for medical school. It's a very competitive situation, so taking the required courses, and getting good grades in them was a challenge, and everybody deals with that. That can be very stressful. The thing that probably was hardest for me was being away from home, especially after a car accident that killed my parent and injured my family pretty significantly. Not being able to be there to help take care of them. Knowing about the hardships that my family was facing, not being able to be there in addition to dealing with my own emotions regarding the loss of my parent, that was pretty challenging. I'm still feeling the residual effects of it today. I don't know if I had time to grieve or not. I remember a couple instances where it was pretty challenging for me to be in class with what had just happened to me. I basically shut down.

I was also really overwhelmed. You're going into a pool of, how many of us were there, 60-some people that I had never met before, who were all trying to prove themselves, and then from there, a group of seven or eight of us there put in a small group, and expected to function, and learn together, and help each other out. Before, in undergrad, in regards to the stresses of being a native student, and the academic environment that we were in, I

always had people I could relate to. We could go, and we could talk about things that were bothering us if something happened, but all of a sudden, nobody ... I didn't have anyone I could relate to anymore.

Discussion of Category One: Preparation for Medical School

The experiences of AI students preparing for medical school provide insights into the many challenges that they face. Several participants had difficulty navigating the process to prepare and apply for medical school. These challenges included lacking familial or advisory support of how to navigate the process leading to medical school admission, lack of financial resources, difficulty in undergraduate education and low grade point averages, lack of access to or relationships with physicians, loss of family, studying for and taking the MCAT examination, and difficulty achieving a high enough score on the MCAT exam.

According to Sequist (2007) and Metz (2013), these challenges are common among AI individuals striving to enroll in medical school. They also posit that these challenges and difficulties are unique to AI medical students, because they are more likely to come from impoverished and historically traumatized backgrounds (e.g., watered down education systems, little means of support to achieve their goals). Other researchers suggest that, although educational and supportive pipeline programs meant to help support AI's interested in health careers exist, there are few of them and they cannot meet the needs of all AI's who seek medical careers (Graumbach & Mendoza, 2008; Hollow et al., 2004). Furthermore, pre-med challenges are only the beginning for AI medical students transitioning into medical school (Hollow et al., 2006).

Category Two: Displacement and Isolation

Nearly half of the participants interviewed were born, raised, and/or lived near a reservation and 15 out of 19 participants were residents of states outside of the state where they

attended the Northern Midwest Medical School. Thus, most participants in this study were far from home, family, friends, and with limited time and resources to return.

Baron was far from home, family, and his cultural upbringing. He struggled with isolation, loneliness, unfamiliarity of his surroundings, extreme weather changes and not sharing similar cultural interests as those in the Northern Midwest.

I mean, I just moved there. I didn't know anyone. I didn't have any family. I kind of felt a little anxious, because I'm pretty anxious as it is, you know? I think the biggest challenge is just being away from home, and not having a good, close emotional support system. I think that was the biggest issue. It was, probably, because there were plenty of times where I was frustrated with not passing my Block Exam. You know, it was my first winter in a Northern Midwest state, it was pretty ... Yeah. I kind of felt down, as it was, just because of the weather. I wasn't used to the weather. Yeah, it was stressful overall. I mean, it was a very stressful experience, not having the emotional support. Then, just being stressed out, and being away from home. Being in the Northern Midwest state winter.

I think the biggest accommodation for Native students is that we're not from here. You know, we don't relate with the general class. A lot of times, you feel, especially if you come from a warm place and being in the winter times, it's like it's just kind of cold, and you don't want to go outside. I don't watch hockey; I don't do curling. I don't do any outside activities when it gets below zero, which, I don't know ... I think it's just a different environment.

I'm not painting a picture for the whole, everyone in my class, but a lot of the ... It seems like a lot of the culture in this state is: A lot of it is round alcohol. You know, drinking? That's kind of how you socialize with people. I never felt comfortable going out. People put it out on Facebook, with their Facebook page, like, "Oh, everyone's going to go downtown!" You know? They're going to meet up downtown, and drink. I never ... I don't take up that. I mean, I feel like I isolate myself because I don't go out and drink with them. Because where I come from, I have a big issue of alcoholism in my family. I feel like I've isolated myself because of that.

Charlie's challenge was leaving his home state for a new one he had never been to and being far from his family and fiancé.

I would say probably the biggest challenge that I faced was going to a Northern Midwest state, I didn't know much about it in general. When I was accepted, I had about two weeks to get from my home state in the south, moved and moved in, and to a new house in the new state where I didn't know anybody, and that was pretty big, pretty challenging for me.

Duke struggled with being what he called an “outsider”. He was unsure of the people and culture of another state so far away from home and was appreciative that a formal AI support program was in place at the medical school to help him feel a sense of comfort and adjustment.

Then it was a bit hard to be an outsider coming from a Southwest state because I didn't know anyone at all. I didn't know the culture up here and a lot of the people in my class had already know each other, either from one of two Universities in proximity within this state and then kind of being part of the AI support program at the medical school helped a little bit, just because we had met each other during the interview process, but it was just a very, kind of surreal thing I guess. It was like, wow, I'm med school.

Georgia took a leap of faith, leaving her family and reservation behind.

I think, personally, I was taking the hugest step of my life. My undergrad days, I was only three hours away. Family was just a stone's throw, and so coming up here ... Trying really hard not to cry ... Coming up here, I'm just ... We're isolated, my fiancé and I. We can't just take a little drive and go home. It took us three days to get up here, of driving.

Harper had difficulty being displaced far from home and not having the ability to support her family back on her reservation in the way she wanted or needed to. She felt as though she was not there for her family, which caused her significant stress in addition to other stressors in medical school.

I don't think there's nobody that really understands me because I come from a small reservation. It's just different. It's different than coming from the city or anything. I came from a small town. I would say that was really challenging is just always trying to fit in. I feel like I never fit in ever anywhere. I'm always constantly worrying about home. I have a lot of family issues. That's always anything sometimes with my class work or studying or anything like that. I'm always constantly worrying about what I'm doing now and then what might people are doing at home, my family.

Koby drove for three days before he arrived at the city and state where the medical school was located. He had never driven that great of a distance alone, and he was now far from family and everything he knew.

Just being overwhelmed. I drove here from the Southwest, so I had just gotten here and then I wasn't moved in to my apartment because they wouldn't give me my key till the day of because that was August 1st. I stayed in a motel that night and then just like

stressing out. Then they wouldn't give me a key so I got a motel room, and then I came here the next morning. Just I guess meeting the classmates and seeing everybody, meeting everybody, hearing about their backgrounds, what did they study in undergrad. A lot of people are definitely, they're from Northern Midwest, so having to explain, "How did you end up here from the south?" Or, "Why would you come here?" I always had to find something new, just like, "Oh well." Then again, definitely nervous, because this is a different culture out here.

Louise struggled with the feeling of displacement and racial tension. She was also used to warm, sunny weather and was in a new environment which did not lend itself to warm weather.

Northern Midwest state was not what I was expecting at all. I talked to a lot of people. I have some friends who were in medical school, had family living here, and I guess my biggest concern was some people expressed that there was racial tension. And I have seen that, and that's been a little difficult. Being far away from home is ... I like to think of myself as adaptable, but it's hard. It's just a different place, and you just have to kind of approach it as being a different place.

I guess the most challenging is the lack of sunlight. As a Western state resident, that's winter and I don't get along for that reason only. I can handle if it's cold, but I get much more tired when it's not sunny for days on end. So, I've gotten a sunlamp. It seems to help.

Noah made many sacrifices to be admitted into medical school. Doing so caused him to leave behind a well-built career, family, friends, as well as to displace himself, his wife, and her career.

He also describes medical school as one of the most isolating experiences in his life.

There's a lot that happened. The whole process, I left the multiple jobs I had had. I mean, I'd spent those many years building up to stay and work in that community for the rest of my life. There was a lot of politicking and jobs and positioning myself. I had worked up the ranks. Career wise, it was leaving a lot behind. Family, I left all my family behind. I got married that summer. That involves my wife leaving her career and her job to come up here without a job. Then yeah, leaving all my friends, we didn't know anybody up here either.

Yeah, it was hard. I think it was very hard. Probably one of the hardest things I had to do. That being said, in retrospect I think that like a lot of us do, you almost subconsciously sabotage where you are to make it easier to leave. I'm sure I did some of that.

I think med school is the most isolating experience I've ever had. It doesn't shock me at all that med students have high suicide rates and depression and all of the above. It makes a lot of sense.

Discussion of Category Two: Displacement and Isolation

Participants in this study stated they had feelings of displacement, isolation, loneliness, sadness, and depression due to separation from their homes, family, friends, careers, state of residency, environment, and culture. Their transition to medical school in a Northern Midwest state was difficult, as they lacked the emotional support needed to adjust. According to several researchers, the stress of coming into medical school with a lack of social support, distance from family, and cultural isolation are some of the most difficult challenges AI medical students face (Bassols et al., 2015; Hollow et al., 2004; Kotter et al., 2015; Ryn et al., 2015; Sequist, 2007; Walsh, 2015).

Hollow et al. (2004) suggested that AI medical students report the need for support by family, friends, and people who are familiar to them and their cultural needs. As Schooler (2014) examined the transitional needs of AI students matriculating into higher education, her explanatory framework allows us to examine the ways in which AI medical students face challenges transitioning into medical school. Using Schooler's (2014) framework, it is understood that AI medical students experience continuance of trauma when entering medical school as they leave their family, homes, and lives behind, and must learn to navigate their new environment in higher education by seeking new opportunities and relationships.

Category Three: Family and Social Abandonment

All of the participants in this study disclosed forms of challenge, difficulty, and stress with family or social time management, distance, or a sense of abandonment from family, friends, locations, careers, their culture, and themselves. These issues evolved and intersected with other challenges as well.

Angel felt that she had to abandon the time she used to spend communicating with family and friends in order to succeed in medical school. This process was difficult, as she was close to her family.

Talking on the phone with friends and family because I know when I talk on the phone with them it's probably for hours. It's not just an hour. It's probably five hours or six. I had to cut off of that and then also probably just hanging out.

Baron felt as though he had abandoned his family. He missed them deeply and they were far away and out of reach.

I think, probably, number one was just being away from family. That was the biggest thing. I mean, I was always jealous, kind of envious, of my classmates who grew up in this state because they would go home on the weekend. They would see their parents, or see their siblings, so it seemed like they had that extra family support that I didn't have. You know I couldn't go home for the weekend, right? I had to stay there, and study.

Being away from home, that's really draining, really exhausting, and really traumatic in that it's not something I want anyone to go through.

Duke found that he pulled away from family and friends and communicated less with them in order to succeed in medical school.

I think unfortunately, not talking as much as I would have liked to friends and family was just because of how busy I am and how tired I get. I wasn't able to maybe talk to my family as much as I used to or talk to friends as much as I used to. So there has been I guess, when I do talk to them, it's more med school related and it's more stress relief about med school rather than being able to just talk to family about whatever it is. That's changed a lot, which is kind of unfortunate.

Harper's challenge was being significantly far from her family and her reservation. She was unable to partake in the daily communication and care she had been able to in the past, and she battled guilt over the inability to respond with immediacy from such a distance and with the significant responsibility of medical school.

It's more of worrying about them. Like my sister, she's currently addicted to drugs. She has two children. I only have four other sisters and we're fighting about who should take the child because she's addicted to drugs and stuff. A lot of other people don't have to deal with that. But on my reservation, that happens all the time. Like people always get

sick or get addicted to drugs and everything like that. I'm contemplating or battling if I should adopt son, my Lakota way, we call him son because that's your sisters kid. Stuff like that, family stuff.

Ivy lives at home with her family, yet does not see them or visit with them. She is so busy with her studying and coursework that she does not have time for the people closest to her.

What I thought, when I thought I didn't have any free time during undergrad, and now it's like I kind of know what it's like. If I want to go out with my fiancé on Friday, or on a Thursday, I know that I'm going to have to do a little bit more on Monday through Thursday so I can take that Friday night off. It's all a lot of adjustments with time. I don't get to see my family as much as I did before, so ... Obviously, I get to see them a lot more than some other students in my class who don't have family in (the city), but even with them in (the city) I can go ... It's easy to go a couple of days where I get home at ten o'clock at night, they're already sleeping and then I'm gone by seven.

Phoenix had several challenges during medical school; one of the main difficulties was his family of 9 years breaking apart, as well as failing out of his first year of medical school. Once he was re-admitted, Phoenix felt that he had little familial support, and he abandoned personal needs in order to meet the needs of committing to and succeeding in medical school so that he could ultimately support his family.

The biggest adjustments would be, I would say first, coming from a family where there's no physicians at all and nobody understanding the time commitment associated with studying for an exam in medical school or studying for your step one exam, these standardized exams. None of my family even realized what I was going through. My family often would say, "You're studying too much." From a family standpoint of people who are close to you, it was difficult to talk with somebody about medicine.

A lot of times, I would have to explain myself of why I was taking time away from my kids and why I was being selfish and why I had to do all these things in order to go through medical school. Then, in my mind, I would tell myself, "This is only for a short period of time. Even though four years sounds like a lot, it's a short period of time." I think that with having kids, through that whole process, you might be taking time away from your kids, but at the same time you're teaching them a work ethic of what you're going through to attain your dreams and goals. I had to constantly remind myself of that. They didn't get as much time as they needed with me, but there was something they were still learning that I think is just as important. That would be probably one of the biggest barriers of coming from a Native family where everything is so close knitted and having to take away from either holidays or birthdays and not be able to be available during those times.

Then, I had to make adjustments in my life. This all goes back to time. It's really a time factor, and being able to focus just on yourself and what you need to do in order to do things. For myself, I knew what I had to do whenever I didn't have people around. It was just people not understanding, my family not understanding that, and trying to let them know that this is just what I needed to do.

Sage did not have family, friends, or professional support, as his family and native community were far away in another state. He had lost a parent during his pathway and preparation to medical school and never personally sought treatment to deal with his loss. He also felt immense guilt being far from his family with no ability to support them during medical school. In this sense, he was very much alone and isolated. He struggled through a failing marriage during medical school and distanced himself by abandoning any thought of trying to seek help, because no one understood what he was going through. He also felt immense pressure to succeed from his family and native community.

In regards to my family, nobody could relate to what I was going through. I didn't really see the point. As far as friends were concerned, some of the same applies. I have a couple friends who graduated from medical school ahead of me, but I just didn't reach out to them. I think I was in just such a mode of suppressing my emotions that I just didn't want to reach out to anybody.

Yup, and as far as personal stuff goes, I was ... Specific to me at the time, I was dealing with a marriage that was falling apart, doing my best to keep it together, and sacrificing a lot, a lot of time, a lot of effort, to do that. Keeping my mind on my studies, and putting forth the time to it was very difficult, because sometimes I just needed me time.

This is one of the generalizations that kind of tends to be true, is that within a native community, there is a very strong sense of community. You're not just your parents' children, your grandparents' children, your uncle and aunts' children. You're the children of the community, and so when I left to go to college and said that I wanted to be a doctor, a lot of people were very proud of that, and I had always performed well in school. There was a lot of expectation. I felt like I had a lot of people who were expecting quite a bit from me. Therefore, if I failed, I had a lot of people who I felt like I would've let down.

Discussion of Category Three: Family and Social Abandonment

As participants felt immense pressure to succeed in medical school, they devoted much of their time to studying and felt forced to abandon time and/or communication with family, friends, and other loved ones, in order to succeed. They felt guilty for ignoring time and responsibilities of caring for family who were oftentimes significant distances away from them. According to Schooler (2014), AI students come from a vastly different family and cultural structure than their non-Native peers; much of their daily life is centered around both their family and culture. When transitioning into higher education, and in this case medical school, they are faced with difficult decisions about committing to their Native identity of family and culture responsibilities, or merging toward mainstream culture's social and educational expectations of focusing on personal success.

In a study by Hollow et al. (2004), it was found that although AI medical students report the need for family and social supports, they encounter significant challenges and barriers in receiving them. These challenges include the loss of family, distance, ability to cope, time commitments toward studies, and the lack of understanding from family and friends about what medical school requires of them. Schooler (2014) theorized that many AI students find autonomy and move towards independence away from their family, and they begin to build trust in new relationships that will help them propel toward success. During this stage, they often feel a sense of abandonment toward their culture and self, and they eventually re-establish their identity in ways that help them succeed. Hollow et al. (2006) posited that AI medical students' strong link to family and culture, alongside their experiences with cultural isolation, are reasons for health-promoting interventions that medical school administrators should consider.

Category Four: Racism and Lack of Cultural Understanding

Participants felt racial tension and difficulty adapting to the culture, views, and treatment by those living in the Northern Midwest state where the medical school is located. They also experienced lack of cultural understanding from peers and faculty, as well as forms of implicit and direct racism and discrimination.

Baron felt the state in which the medical school resided was not a welcoming place to live.

This state just doesn't really feel like the most welcoming place for Native Americans. Plus, you know there's always reports of cultural insensitivity towards Native Americans. I think a lot of time, that gets ... I mean, I've been there. It's not that bad, but a lot of times, it gets blown out of proportion in the media. A lot of times, you know someone who is considering medical school, who hears of these things, they're barriers. Then, yeah. Having to get accepted to this school, and then get there. I think, it doesn't feel like the most welcoming place sometimes.

Duke had difficulty being in the presence of cadavers in anatomy lab. As his cultural background does not allow him to view, be near, or speak of the deceased, he had significant difficulty partaking in the anatomy portion of the curriculum. Once the medical school had a Native healer perform a blessing in the lab and school, he felt more comfortable to continue working with the deceased.

Then specifically in block one, anatomy was really hard for me just because as Navajos we're not allowed to view or even see dead people. So, having to go into a room with 20 or so cadavers was really hard initially and the school actually helped me out with that, but I think that was one of the hardest things to do and to get used to.

I didn't have a ceremony. We didn't have anyone to officiate that unfortunately back home, but I did just have the approval of my mom, my dad, and some of the elders in my family just said that it was going to be okay. "It's fine. Of course, past Navajo physicians have done this and have to do it and just know that you're doing it for a reason. You're not going in there just to view them out of curiosity. You're actually learning from them and you're using them as a tool."

When they (medical school) had someone come in from a local tribe and blessed the room, blessed the new med school, and blessed us who were in the room at the time, which was good.

Georgia dealt with emotional anxiety while she was in the presence of and working with the deceased in the cadaver lab. She mentally, emotionally, and physically had to work through her anxiety. Half way through her year in medical school, she went back to her home reservation and had a way ceremony so that she could continue working with the deceased.

If a person is culturally in tuned, and they're able to find somebody else that has that quality, like going into the cadaver lab, some people don't even think anything of it. They're just like, "Yes, that is a passed-away person. Yes, their heart's not beating. We can cut into them." In my eyes, as far as traditionally, this is a sacred vessel. I'm not supposed to be here. I'm not even supposed to be touching this, let alone be in the same room or in the same presence of this passed-away person. On that level, you can find somebody else that also struggled, and you can find that commonality and have them talk, and have them go through that, and sort of them mentoring you, like, "Yes, it's going to be really, really difficult."

My personal experience is that I didn't really cry at first, but it wasn't until two weeks later, after the third time meeting my ... My silent teacher is what I called them ... That time interacting with them, I just started bawling. I was like, "Oh my goodness, I can't." I did this ... I'm not proud, but I'm also proud at the same time. I'm so conflicted, and on that level, yes, I think it's not an extra requirement, but something else to consider.

I call them my silent teachers. I'm like, I don't want to know their name, nor do I want to give them a name, but they are there to teach me the things that I need to know out of the book. I can actually stand there and actually touch it and look at it, and be like, "This is a nerve! I wouldn't have known that, not unless they told me.

I had a ceremony done, and they did tell me, yes, something came back with me, and, yes, they were attached to me, and they were giving you a hard time, so I take extra precautions and extra steps, as far as protecting myself and my peers, because I do pray for them.

Louise had difficult being far from home, adapting to a new and different place, and dealing with racial tension.

This state was not what I was expecting at all. I talked to a lot of people. I have some friends who were in medical school, had family living here, and I guess my biggest concern was some people expressed that there was racial tension. And I have seen that, and that's been a little difficult. Being far away from home is ... I like to think of myself as adaptable, but it's hard. It's just a different place, and you just have to kind of approach it as being a different place.

Monroe did not feel comfortable amongst others who were non-Native. She struggled developing relationships with her peers and faculty, and she preferred being with other Native students who she felt understood her better. She also felt that the patient curriculum was discriminatory and racist, as it stereotyped Native patients and population to her peers.

I find it easier to talk to people who are Native. So, if they're not Native, I really struggle talking to them. Or even developing relationships with them. It's easier for me to ... even if you're Native, and you don't grow up on the reservation, it's easier for me to talk to you as opposed to ... I have struggled with even being here or with our classmates now. Like none of them are ... with the exception of those that are in-med, none of them know what it's like to grow up on the reservation or anything, or grow up being Native.

Especially in this state, I think it can be harsh. It especially didn't help with the ... I'm pretty quiet and reserved and I really won't speak my opinion very much in class, but I do get annoyed when people are talking about the pipeline that affects Natives. When they're sitting there okay, well we can have all our own opinions. And I don't really care if they build it or not, but I do get offended when people sit there in class and like start believing everything they read in the media and stuff. So, it makes it hard for me to want to talk them after; it makes me not want to talk to them. And even like last year, I think this university does a very poor job at cultural diversity, and even in our classes, we had two cases with our patient-center learning that were Native. The first case, patient had TB, drank, smoked, couldn't get more stereotypical than that case that we had. And then I forgot what other ... I want to say like hepatitis or something ... yeah, it was hepatitis, and the patient that they brought in was a Native patient. And I was like, "Can you bring a Native patient that has cancer or something that's not associated with drinking and alcohol use and stuff?"

So, I don't know if they probably don't think about it; like it probably doesn't cross their mind as being racist, and to our classmates, it probably doesn't either. But when I'm like, "We get two patients, and they're both stereotypical Native. Well your kind of teaching them that that's what Natives are."

Noah felt out of place at times, because his peers had misconceptions about the AI support program (e.g., AI medical students were taking away medical student seats in their class and receiving a free ride to medical school). He was frustrated with their beliefs and with the way the medical school and AI support program did not better educate and inform medical students about the program as discriminatory beliefs.

No. The only thing that has made me felt out of place is misconceptions of what the AI support program is. I think that there are misconceptions that as an AI medical student (supported by the program), you're getting a full ride, that all your tuition is paid for and all your books and everything, housing, room and board is paid for, and that you're basically taking a spot away from another applicant, and both of those are not true.

When asked, “Has that caused any stress or added stress onto what you were already dealing with while you were in medical school?” Noah’s response was:

Sure, yeah. Of course. Because it further separates you from everybody. Because people resent that. People resent if you're getting free tuition. Yeah. The camaraderie of med school is that you're all in the same boat. If there's a conception that you're playing under different rules, then you could lose that camaraderie if you're different, yeah.

Three weeks ago, I was at a sports tournament with a peer. He brought up the AI support program to me and our seats. It’s definitely still out there. He did say that he thinks that the AI support program is not accomplishing what it was meant to accomplish. I kind of just dropped it because I didn't want to engage. I think that it needs to do a better, not self-promoting, but educating everybody on what they do and how they fit, because not doing so I think is detrimental to the students that are in the program.

Sage stated that he was confronted with racial comments, tension, and misconceptions in the presence of peers and others, because he did not have darker skin or look Native. He felt that because his skin tone was lighter, others felt more comfortable discussing sensitive topics. He also dealt with racist commentary from peers and misconceptions about the seats AI medical students took within the medical school class each year. Much like Noah, Sage was frustrated that these misconceptions and assumptions were prevalent, yet he felt that it was useless to engage or respond.

Still, but it was a little worse back then, in regards to the school nickname and logo debate, especially being a lighter skinned person. I don't necessarily look Native American, and so I tend to be in the presence of conversations and discussions among non-natives that some of my friends or family members wouldn't be, just because people don't see me and automatically think that they need to be discreet about what they're saying.

In undergrad, there was always the knowledge of how people felt about the native support program in regards to the spots that are available for native students in each medical class, and people had misconceptions about them, but then all of a sudden, you're

in one of those spots, and it's a completely different point of view. I feel like you're always on a difference.

Some of the misconceptions that I've heard voiced by other students, that those spots are taken away from the overall medical school class, versus the way it's actually set up, is where they're added on to that. Our requirements for admission are different, that the tests we take are different, that we get preferential treatment, stuff like that. All of those which are false, but when they're ... It's like trying to prove an urban legend untrue, and so all of a sudden, you're in one of those, and you feel like everybody's looking at you like you shouldn't be here, like you don't deserve to be here. Yeah, or they have friends who didn't get into medical school here that they feel like should be here instead of you.

Mostly in the first and second, but yeah. I had classmates approach me about that stuff. Even in undergrad, I had a classmate in one of my courses who had applied to medical school the year before I did, or two years before I did, because she got in the year before I did, but the first time she applied, she didn't get in. She came to class one day and was pretty upset, was going off about how it was unfair that she didn't get in when these Indians were getting in and taking spots away from the overall class size. Yeah, it did happen to me directly a couple of times.

Especially after the first two blocks, because we lost a couple of my native classmates after the first two blocks, so at that point, I've never talked to anybody about it, but it felt like the people who judged us negatively took some validation in that.

Discussion of Category Four: Racism and Lack of Cultural Understanding

Participants in this study experienced different forms of racism and discrimination. Often, Native culture makes it difficult to be in the presence of the deceased, and some Native students felt forced to participate in cadaver labs amongst faculty and peers who may not have understood the torment that they were experiencing. Although they continued, they dealt with significant personal, spiritual, emotional, mental, and physical difficulties being in the presence of the deceased. Participants also experienced racial tension through misconceptions and microaggressions about their presence amongst their peers. Peers believed they were getting a free education at medical school, and that they were admitted based on their race. Furthermore, faculty invited AI patients to the medical school who were diagnosed with what participants in

this study called *stereotypical* health disparities among AI's. By doing so, participants felt that faculty further marginalized them from their peers by depicting a generalized and racist view of AI patients and AI people.

Alvord (2014) suggested medical educators and administrators consider the cultural and historical underpinnings of AI tribal affiliations and their beliefs in the use of cadavers for teaching purposes; universities must find ways to accommodate the needs of AI medical students. This consideration could be in the form of blessing and ceremonies in the lab or medical school or allowing the student to go home and have a ceremony conducted before working in the lab. She also posited that AI medical students should consider which medical schools are more willing to accommodate them in the cadaver lab and to prepare for ceremonies that are required of them to participate. Paul et al. (2014) suggested that without cultural education and supporting the diversity that exists among students, faculty, and patients, medical school administrators are taking responsibility for the continuance of a culturally incompetent health care workforce. I would argue that they are also perpetuating the implicit bias and ongoing racial tension between diverse medical school peers in training and their faculty. Establishing an intercultural and cross-racial dialogue among faculty and medical students will not only help physicians become more culturally competent when treating patients, it will also help them understand and respond to diverse peers during medical school (Murray-Garcia et al., 2014).

Racism does exist in medical school; its forms are implicit, hidden, purposeful, and direct (Beagan, 2003). According to Leyerzapf and Abma (2017), even when medical schools attempt to include the teachings of intercultural exchanges among physicians and diverse patients, they fall short when using generalized and stereotypical health disparities. As climates in medical school permeate high levels of stress, the addition of misconceptions, implicit bias,

misunderstanding of culture, and racism only further demoralize and marginalize AI medical students. The participant information provided regarding their experiences with racism shows that, although Western medicine education has made advancements, it still perpetuates a largely hegemonic environment.

Category Five: Financial Hardship

Participants in this study had financial difficulties before and during medical school. Some had difficulty paying for their MCAT, block, and board examinations. Others were stressed over how to pay for resident interview flights or flying home to see family who were thousands of miles away. Participants also had difficulty managing how to pay for family needs with little or no means. Because medical students are not allowed to work during their first year of medical school at this Northern Midwest Medical School, and many students come from low-income families, financial problems are often a major stressor in their lives.

Baron tried to find ways to save money.

I would try to reach out to someone who had that similar experience. Then, just little things too. You know, getting a ride to the airport. Or, if I needed a place to stay for a few nights, I would ask around. I would ask them first. Especially with traveling, now, I always try to cut costs here and there, and get help with catching a ride somewhere, or finding a place to stay.

Duke arrived at medical school and experienced financial difficulties that he was not prepared for.

I need to get my life together and then need to get ready for school and then there was a lot of financial stuff that I wasn't prepared for that was really hard and then, it was just, it was a lot all at once that I thought I was prepared for, but I ended up not being as prepared.

Eleanor's financial difficulties included paying for her step exams, her flights to interviews for residency, and the other incurred costs associated with medical school.

Focusing on board exams, like the step exams. And then studying for them along with your clinicals. So, step two, that's a two-part test, and you take that the end of your third and within your fourth year. And then, there's step three. And I have to take that towards the end of my intern year, so I have to take that in a few months here. Like, the steps never going away. They're always lingering over your head. And once we pass one, oh, there's one more to do! And they're expensive, oh my gosh. Well I know step two is at least \$2,000, and that's not even like, flying there and stuff. Step three is a little bit cheaper, and that was just for one part of the step two exam. Step three is like \$800? Almost 900.

That money, like- year four, it's tight on money, because with all this going on, you're paying to travel to go to all of your interviews, too. So, I ended up going to I think like ten or eleven interviews. So, it's a lot. It's expensive. Yeah, it was really- especially towards the end though of year four? Like, your money situation is really slim, and you don't have anything coming in until that first check from financial aid. So, unless you have another type of support system, or family or something, you don't have a lot. Like I know a lot of my classmates, after graduating from med school and getting their apartments and stuff like that, that was like, first month's rent and deposits are all put on credit cards. Because they were maxed out on all of their funds.

Georgia was far away from her family. A drive to her home state and family takes approximately 27 hours. Medical school and her cost of living were expensive; thus, she could not afford plane tickets to go visit family during breaks.

It's about a ... I want to say six-hour airplane ride to get back into the region that we both live in, so it's not something that's just, that we can go on a whim, and, plus, it's expensive.

Koby grew up in a low-income family. Prior to enrolling in medical school, he had to work and go to school to provide for himself. During medical school, medical students are not allowed to work, yet he still had to find ways to survive financially.

It's also difficult to, I guess coming from a low-income family you have to like work. You have to provide for yourself on top of getting good grades and getting extracurricular activities. That was another challenge as well, to stay on top of all that and still function normally and get things done.

Phoenix financially struggled when he was dismissed from medical school after his first attempt (first year). His family broke apart, he did not have a job or source of income, and he struggled.

He eventually found a job and worked his way back into medical school, but not without financial difficulty.

Then, on top of all that, of the medical school, the breakup, then there was a point where it was more of a depression thing. Then, a financial thing, because I was no longer in school. I had no money coming in, so I was forced to have a job. With all of that, it was just a lot on my plate at that time. In the time, I'm supposed to put a portfolio together why I should be able to appeal and get back into medical school. There was a series of things I had to do.

Discussion of Category Five: Financial Hardship

Participants in this study faced financial hardships before, during, and after medical school. As many came from low-income families and were not able to work during their first year of medical school, as the medical school does not allow for students to work, meeting their personal and family financial needs became problematic. Metz (2013) suggests that underrepresented minorities face greater financial stress and challenges than non-minorities. As the cost of medical school continues to rise, so do the financial struggles of AI medical students whose costs far outweigh their means (Hollow et al., 2004; Hollow et al., 2006).

Category Six: Medical School Y1 and Y2

Participants were asked about challenges that they had experienced during blocks 1-4 and 5-8. These block systems of academic course work and patient-centered learning are conducted over the first two years of medical students' education at the Northern Midwest Medical School. Medical students are placed in courses and work on patient studies and care over 8 week segmented periods and are then tested with a Multiple Choice Question (MCQ) exam, a case study exam, and a face-to-face patient-centered room exam.

Baron experienced significant stress with the heavy load of coursework, studying, and preparation for examinations. He failed blocks and remediated one, and had to retake an entire block in the summer between his first and second year of medical school.

I wasn't used to that; the pace of medical school, you know? It's just so much information, so little time to digest it. It took me ... I think it was Block 3. That was the first time I finally ... I mean: That was my first successful block, where I passed all my Block Exams on the first attempt. Because prior to that, I failed Block 1, and had to remediate Block 1 for the summer. Then, for Block 2, I initially failed Block 2. I was about to get dismissed, but luckily, I appealed one of my exams. Then, I got some points back on my exam, and I was able to do special studies again, and remediate Block 2 during special studies week. I got through that. Then, Block 3 and Block 4, I passed with no problems. I mean, it was stressful, but I still passed the Block Exams the week of the test. I didn't have to do any remediation. Then, after Block 4, I have to do the summer remediation. That was pretty stressful. I had to stay an extra month after everyone finished, and do some summer activities.

Charlie experienced stress due the amount and speed in which medical school curriculum material was given. He struggled with determining what material he needed to learn for block exams and also board exams.

The biggest challenge is definitely the speed at which you're expected to learn the material. And the overall volume of the material you're given. And just trying to juggle what you need to know for the test, and what you need to know for the real-world experiences that you need to put in the back of your head for a couple years. It's really hard to sort out what you need to know at that time and what you need to know for your board exam. It would take forever to try and figure out how to pick the right materials out of the lectures that were important at that time, what's going to be important on the exam.

Eleanor struggled with biochemistry and the volume of information required of her to learn. It was overwhelming for her to determine what she needed to learn, and at one point decided she just could not learn everything asked of her.

I think biochemistry was a huge challenge for me. And then just adjusting to the volume of information. You know how they always say it's like trying to drink from a fire hose. Everyone was warning me about the volume, but you never- you can't even imagine it until it happens. It's just overwhelming, and you have to- eventually you get to the point where you realize you're not going to be able to know everything, and you can't possibly get through everything that you need to get through. You have to let some things go.

Flynn struggled with prioritizing what to study and learn.

The first couple of blocks it felt like you were really trying to learn how you ... trying to sort through the information and prioritize your studying. At the very beginning there was that, where I was spending way too much time on some things and not getting the bigger

picture on other things. That was kind of a challenge starting off with. That got way better as the blocks went on.

Georgia experienced difficulty learning how to study. Because she had been away from undergraduate school for a while, it took her time to get into a studying pattern that worked for her.

Studying, getting back into it. I graduated undergrad in May of 2015, and when we started it was a year and a couple of months later, so I had time to relax and move back home to help my nephew. Yeah. My youngest nephew. I was sort of a soccer mom, and so I helped him in whatever he needed; and then, my grandparents on the reservation, I got to, not necessarily take care of my grandpa, because he has pulmonary fibrosis, and so a lot of the times he ... He's not supposed to overexert himself, but he's been doing a lot of things on his own for so long that it's really hard to tell him, "No, you can't bring in the wood anymore." He really can't.

I'll go and help them, and trying to take care of my grandpa, whatever I can, and really getting back to my roots, and learning how to weave, so I was out of study mode for so long, and coming back here, having to hit the ground running ... Everybody, it seems like everybody just graduated or come from some consistent studying, and I was like, "Okay, got to go back into things," dragging my feet a bit, and seeing all these intense people I'm like, "I got to get back in shape." I think that was my biggest challenge, is actually getting back to learning how to effectively study, myself.

Harper failed her first block, experienced depression and guilt, and was devastated by her failure. Although she found inner-strength and persisted, she continues to work through her stress as she is reminded that if she were to fail one more block, she would be dismissed from medical school.

I didn't pass block one so I was really, really devastated. I just thought, "Oh, my life's over. I can't do ... I came this far, how am I going to fail. I just felt like I let all my mentors down." I was just like going through a really, like depression for a while there. But I was like, "Nope, I'm going to come out of this and I'm going to do well, and I passed block two because I figured it out. It was like, "Yeah, you cannot chicken me this time. Now I know what to do now.

Now, I'm just ... I constantly have the stress though because now I have to pass or if I don't pass, I'd get kicked out. I have this constant stress that I need to do well. I thrive on it, I think, because I'm like, "You're not going to kick me out. I'm going to keep working. I came too far. I came way far and cannot be kicked out."

Ivy struggled with the significant amount of material required of her to learn in medical school. She tried to manage it, yet had difficulty finding a study strategy that worked for her. She also failed her first two blocks, but was able to successfully remediate them both.

It's just been ... It is so different from undergrad. It's the amount of material that we learn, it's like holy cow, how can I manage this? A lot of the struggles have been surrounding figuring out how to manage it. Figuring out which studying strategy is going to be the best for me. I'm not one of those people who in my class were like, they can see it one time and then they've got it. I have to work hard to get it in my brain and study a lot. Just figuring out how I want to manage the amount of material we get and get it well enough so I can keep it, I guess. Also, I have remediated the first two blocks. I passed both times, but the first two blocks I've remediated within the next week. Yeah it's been stressful. Everything's been stressful with it.

Jolie struggled with multiple choice question (MCQ) exams, which prompts her stress level to skyrocket when preparing for MCQ. She also had difficulty deciding what to study for, as there is a high volume of material to cover for the exams. She describes the amount of material as significantly overwhelming.

Specifically, those darn multiple-choice tests. I think in general the hard thing for me for first year is everybody says the hardest part about medical school is like you're trying to drink from a fire hydrant. There's so much material. You're not going to know everything and so I think I tried quite often, I lost the forest for the trees. I could know random details from everything, but it's really hard to put that all together. I mean, first year is very heavy for anatomy and histology which is a lot of like, "Okay, what is this muscle? Where does it attach? What's its innervation?" You either know it or you don't. It's not conceptually like, okay, it's a muscle. You know what it's supposed to do. It was hard for me. I knew I wasn't going to know everything, but it was hard I guess picking out what's most important to know.

Koby had difficulty knowing what to study for, failed his first block MCQ, and struggled adjusting to medical school curriculum. Between his distance from home, the difficulty of MCQ examination, and working in the cadaver lab, he had significant challenges and stress.

I think definitely academic, the first block I had to retake the multiple choice exam. Just that was really challenge, I guess a dread, because I did my best to study and I was still kind of figuring out how they're going to test us and what do they expect of us. Just finding that kind of mode to adjust. Then the long drive coming here, doing the white coat ceremony, like okay I'm going to do my best. Then you get that score that you didn't

do well, or you didn't pass, so it was like, "Oh my gosh." I think that's just the whole, they said that's normal I guess. Students are going to have to adjust, they're going to have to figure out what works best for them.

By now I think I found, I've improved. Then just even the cadaver lab, that's definitely a challenge. I did the cadaver lab in undergrad and that was a challenge, but I'm glad I did it in undergrad and kind of got over that anxiety. I didn't actually like tough anything in undergrad, but now we've got to dig in and everything.

Louise had difficulty changing the way she studied. She has had to retest in block examinations and struggled knowing what to study with the large amount of material.

Just changing around my study plan. It's a process. It's not perfect. I have had to retest, but I'm getting better at knowing what is expected. And that's kind of the biggest challenge for me, at least, what kind of knowledge do I need to know and how am I going to get that in my brain. I think that was the biggest challenge.

Monroe had significant challenges finding a study method that worked for her. As a mother, she also had difficulty balancing between the amount of studying, caring for her child, and sleeping.

Medical school was also overwhelming for her as she spent a couple of years away from the basic sciences before enrolling in medical school; thus, she had to relearn some sciences in order to process larger medical concepts.

Probably just trying to learn. I still, to this day, have not found what kind study method works for me. I'm still changing it all the time. I definitely didn't have it blocks one through four, and then I had an infant at home, so that was minimal sleep. I was breastfeeding, with school and the class not being breastfeeding friendly.

Med school... they go over everything that you learn. But they go into so much detail about everything, and then they're like, "You don't need to know these details." But you have to know the details; like they say you have to understand big-picture, but you have to know all the little things that make it up.

So I think had I started right after undergrad, it would've been a lot better, because everything would've been fresh in my head. I like I felt like I had to re-learn it because it'd been so long already since I had those classes.

Noah failed a mid-block and final block exam during his first year of medical school. One of his greatest struggles was the competitive nature of medical school. He experienced competitive behaviors from his peers who used mind or power games as ways to decide what was valuable to study for examinations. He found those strategies confusing; eventually he ignored them and found his own way to study and succeed.

Block one or on the mid-block of block one, they give you a test. I didn't make the cut. Then I had to go to this special seminar after school to make sure I wouldn't fail the block. That sucked. I had to swallow that pill, but it worked out fine.

Block two, I missed the cut off by half a percentage. Which again, is another gut check. It was fine, I did my thing and got past it. Luckily those were above any threshold, so it never showed up that I had any academic issues in my transcript, thank goodness. That was certainly humbling. I think the hardest thing at first and second year is the mind game of being around your classmates and listening to their opinions and what they've studied and how they've studied and what they thought was important. It scrambles you right away. It's a total mind game the first and second year. It's very, very hard to not have that get to you and think that you don't know, you just think you're doing it all wrong. To ignore that and to do your thing is very tough.

Orva also struggled with finding effective study techniques as the volume of information and material was overwhelming.

Academically I still feel like I'm still just trying to figure out what the best way to study for me and I feel like I'm still adjusting, honestly to this day. I think a lot of us have finished undergraduate school probably because we are probably maybe the top I don't know 20, 10 percent of each of our classes. I never really had to try hard in undergraduate and that's very different from here. It's really hard for me to just straight memorize something, I have to understand it and unfortunately with med school it's straight memorization and the amount of information coming at me or any of us, for me it was really hard to handle.

Ruby's challenges stemmed from the difficulty and rigor of the basic sciences during her first year of medical school. She was also perplexed about how to effectively study. The ways in which she studied in undergraduate school were no longer working because of the significant volume of material in medical school.

It was a challenge studying, because I was not a very good studier so I had to figure out the best way for me to study. Especially with methods that you used to study in undergrad, some of them just didn't work because of the sheer amount of material that you had to deal with. Kind of reforming study habits and relearning how to study, that was the biggest challenge. In blocks one through four, the material was also more challenging for me because it was a lot of basic science tech stuff and not so much the clinically related, and I can't really pinpoint why but I had a lot harder time with that type of material.

Sage described years one and two of medical school to be academically difficult. The volume of material, limited time to memorize or conceptually understand material, and continuous testing proved challenging for him.

As far as academic challenges are concerned, the first two years of medical school sucks. You are force fed information for eight weeks with no repetition, and you're expected to master material as soon as you receive it, and then at the end of those eight weeks, you're put through three days of non-stop testing over that material. How many circles of hell are there in Dante's book? Nine? Thirteen? This was 8 circles. Yeah, it was terrible.

Discussion of Category Six: Medical school Y1 and Y2

All of the participants in this study experienced significant stress over the volume of material that they were required to learn. They also had difficulty finding effective study methods that worked for them and deciding which information was most important to learn for examinations. For participants who had taken time between their undergraduate degrees and medical school, they experienced stress over relearning basic science concepts. Several participants failed examinations and had to remediate or retake an entire block and examinations. Finally, a few participants described the competitive nature of medical school to be challenging and difficult to digest.

Baldassin et al. (2014) suggested that the volume and difficulty of medical school curriculum (paired with the lack of leisure and personal time) contributes to high rates of depression and stress among medical students. They posited that medical schools should consider a more specific medical curriculum rather than overloading students with information

that they are unlikely to retain or utilize. They also suggested medical administrators provide different types of leisure activities to lessen the burden of stress and depression on students, and that medical students need to find healthy self-coping mechanisms for their own well-being. Kotter, Pohontsch, and Voltmer (2015) found that difficult course loads of medical curriculum coupled with challenging examinations, and the inability to take a break from school contributed to stress and health problems among medical students. Thus, medical schools need to carefully consider the potentially damaging effects of the high-volume curriculum, in order to maintain the health and well-being of their students.

Medical students must navigate the challenges of heavy course loads, learning new study methods, difficult examinations, and the competitive nature of medical school, in order to succeed. Although other non-Native peers go through these same academic challenges, they may not be as significant or impaired as AI medical students who have often come from lower quality education systems (Grumbach & Mendoza, 2008).

Category Seven: Medical School Y3 and Y4

Participants were asked about challenges they experienced during years 3 and 4 of medical school. During these years, medical students are placed in rural and clinical settings to conduct rotations in surgery, pediatrics, obstetrics, and other areas of focus. During these rotations, students are still required to take exams at the end of each rotation and simultaneously study for board exams (a.k.a. shelf exams).

Charlie had difficulty knowing what to study for the shelf exam, going from clerkship to clerkship, changing intensity, and using a variety of resources to study.

I would say one of the biggest challenges that I have is figuring out what information you need to know for the Shelf Exam. It's very difficult going from clerkship to clerkship, to study, change intensity, and in testing style. You can use some resources for one thing

and other resources for another shelf. A lot of your year so far is ending up answer questions at any given time.

So there's also the proponent of very poor sleep every night, and kind of reading through your shelf material or reviewing pages you had that day if saw at the clinic but you didn't feel very comfortable being able to diagnose or you're able to diagnose it but you didn't know what antibiotic to use for it. Or that would have made it a lot easier if you would have done this specific test that the preceptor did and why, I didn't think about it, here's why. Just trying to get that information. And then if you're presented with that same problem at that time, you should be able to diagnose it by this time and if I'm able to diagnose it, then I should be able to treat it and you know, what medication can we start them on, what tests do we start next?

Eleanor found it difficult to study for both the clinical exams and shelf examinations at the same time. She had little time to study, because her clinical rotation took the majority of her time.

Focusing on board exams, like the step exams. And then studying for them along with your clinicals. And the shelf exams. I know we didn't have a lot of time during the first two years of study, but during years three specifically, you have to work studying for your shelf exams while you're working in the clinic full-time. And then not only that, but preparing for your boards at the same time.

So step two, that's a two-part test, and you take that the end of your third and within your fourth year. And then, there's step three. And I have to take that towards the end of my intern year, so I have to take that in a few months here. Like, the steps never going away. They're always lingering over your head. And once we pass one, oh, there's one more to do!

Flynn felt his later years in medical school were more enjoyable, as he spent them in clinic settings with physicians and patients; he enjoyed that hands-on aspect of medical school. His challenge during this time was being isolated without AI peer and programmatic support. Flynn and other AI medical students in his class were required to move for clinical rotations; thus, he missed the proximity and support that he had with his AI peers.

So they're way better in a lot of ways, just because you're in the hospital clinic learning from physicians first hand and studying for more practical types of exams, not basic sciences. I've really loved that. You get separated from a lot of your classmates. That's kind of an interesting dynamic. We would always get together in the AI support program and everything, but down here I don't think there's anyone in this clinical setting or city besides me, at least in fourth year. That sense of community kind of left in third and fourth year because everyone's on their own separate rotations.

Noah enjoyed his third and fourth years in medical school immensely. He was able to apply what he had learned, and he enjoyed working with physicians and patients. He felt that his learning amplified significantly during these later years.

Yeah, it feels totally separate. Year three, and I enjoyed years three and four a lot more. Year three you're out of the classroom, you're in the hospital. You're one on one with a physician, interacting with nursing staff and other support staff. That was an easy transition. It felt like a job. I had worked for so many years, it was way better. Much more socializing every day and it's nice being in that mentor role and you're applying concepts that you've learned with patients. Your learning goes up exponentially. You don't feel like you're just spinning your wheels like first and second year.

Phoenix appreciated the more structured nature of his first and second years in medical school. With a less structured setup in years three and four, he struggled to work in a hospital setting full-time and simultaneously study for clinical and board examinations.

Years one and two actually seemed to be easier for me when compared to years three and four of medical school, because years one and two was really structured. You have to be here at a certain time. You have to do this. You have to get this done. I had my schedule down to a tee and I knew what I needed to do. Years three and four put something new on it, as you actually have to be at the hospital working with somebody either 40 hours a week or more. Then, when it came time for exams, you had to add your studying onto your normal time that you're working. At the beginning it was difficult because I didn't realize every day that I'm working I'm actually learning. It's just like studying all day long.

Ruby attributed her challenges in years 3 and 4 to the structure of clinical rotations. Working in new settings (with new people and curricula) every two months became difficult for her, as she is more reserved and it takes her longer to feel comfortable in new relationships. She also felt that her quiet disposition often made her appear to be a weak student.

My biggest challenges then were mostly based on my personality, because a lot of the typical third and fourth year is structured as doing a month or two months doing one thing, then you switch and do something else, and then you switch and do something else. That means working with a different set of people every two to four to eight weeks, and that is not something that I usually do very well at because I am a little more reserved when I first meet people. It takes me a little while to get comfortable.

When you're in the studying of the third-year med school, you kind of come across as a poor student because I don't speak up very much and I'm quite quiet and mostly because of that was also why I did the rural program third year so that I was in one place for half of the year, and I worked with the same people. For most of the time I made it so that it wasn't an issue, but the first half of third year was especially hard because I was in a new town and very new people and it just took a little while to get used to everything.

Discussion of Category Seven: Medical School Y3 and Y4

Participants in this study who were currently in or completed their third or fourth years of medical school still faced challenges, yet the intensity and volume of those challenges was less in comparison to their first two years in medical school. For some students, the challenges that occurred in years 3 and 4 were related to the changing clinical rotation locations, meeting new people, less structure, and studying for both clinical and board examinations. Most participants enjoyed the hands-on element of applying what they had learned in years 1 and 2 and applying the information with patients and other health care providers. One participant felt being far from his AI peers was difficult at times, and another participant felt that her quiet disposition led physicians to believe that her residency skills were inadequate.

According to Madhyastha, Latha, and Kamath (2014), third-year medical students' stress is attributed to academic pressure to succeed and concerns over professional identity as effective clinicians (p. 321). In a study of 21 U.S. medical schools' fourth year programs, Lyss-Lerman et al. (2009) found that resident interns coming out of their fourth year were often ill-prepared, lacked organizational and self-reflection skills, and had a lack of medical knowledge (p. 823). As third and fourth-year medical students progress in clinical settings, they are required to learn and apply more knowledge. Participants in this study revealed that, although the third and fourth years of medical school allow for more application and growth in hands-on learning, they are still filled with the challenges of learning vast amounts of information, studying for clinical and board examinations, and showing their knowledge confidently to their supervising physicians.

Theme Two: Coping Mechanisms

Medical school is generally a climate of great pressure and stress. Medical students are faced with a significant volume of material and examinations; they have little time to spend with family or leisure, and they must find ways to cope and manage their stress in order to stay healthy and productive. Participants in this study shared a variety of challenges that ignited stress in their daily lives during medical school. They also voiced different coping mechanisms that they used to manage their stress. The following narratives portray the development of theme two, coping mechanisms; this qualitative data is related back to the literature.

Category One: Self-Care

The ways in which participants coped with their multitude of challenges in medical school centered around cultural methods for self-care, seeking support from peers, mentors, and others, and by making adjustments. The following subcategories of cultural self-care, relational support, and adjustments were revealed through the analysis of individual narratives.

Cultural. The following excerpts illustrate how AI medical students' culture and spirituality were vital to their stress reduction and coping during medical school. Duke's Native background and culture did not allow him to be present, touch, or speak of the deceased. In order for him to do so, he needed a way ceremony conducted by a medicine man or woman from his community. Duke was not able to have a way ceremony; however, the elders in his family helped him through this difficult time in medical school when he was required to work in the cadaver lab. The medical school also brought in a healer to conduct a blessing in the cadaver lab where prayer and blessings transpired. Although the healer came from different Native culture and conducted prayers that were not similar to Duke's, he felt the blessing helped him and others.

I didn't have a ceremony. We didn't have anyone to officiate that unfortunately back home, but I did just have the approval of my mom, my dad, and some of the elders in my family just said that it was going to be okay. "It's fine. Of course, past native physicians have done this and have to do it and just know that you're doing it for a reason. You're not going in there just to view them out of curiosity. You're actually learning from them and you're using them as a tool."

And then during my second year is actually when they had someone come in from a local tribe and blessed the room, blessed the new med school, and blessed us who were in the room at the time, which was good. Yeah, definitely it helped. Even though it wasn't our prayers in my traditional way, but it was just helpful to have someone else who was native in there who was a medicine man, kind of go through and pray for all of us, just because as I said, native people, it just helped.

Georgia was from a similar Native culture and background to Duke's. She too, cannot touch, speak, or be in the presence of the deceased. She dealt with significant stress, cried, and had difficulty working in the cadaver lab around peers and faculty. She relied on her parents, family, and a way ceremony back home during a holiday break, to help her through a most difficult time and so that she could continue to be in the presence of the deceased. She called the deceased her "silent teachers" and knew she was learning from them in order to proceed in medical school and help her medical patients in the future.

My personal experience is that I didn't really cry at first, but it wasn't until two weeks later, after the third time meeting my ... My silent teacher is what I called them ... That time interacting with them, I just started bawling. I was like, "Oh my goodness, I can't." I did this ... I'm not proud, but I'm also proud at the same time. I'm so conflicted, and on that level, yes, I think it's not an extra requirement, but something else to consider.

I call them my silent teachers. I'm like, I don't want to know their name, nor do I want to give them a name, but they are there to teach me the things that I need to know out of the book. I can actually stand there and actually touch it and look at it, and be like, "This is a nerve!" I wouldn't have known that, not unless they told me.

My dad used to be an EMT. He remembered on one of the calls, he came across a person that had passed, and he told me, "It was hypothermia, she was passed out, she was drunk, and unfortunately we got there too late." However, his stethoscope was placed on her, and he hasn't used since. It was blessed, and he did give it to me, and let me know that, yes, this is going to be a powerful tool.

Yes, it's going to touch live and dead bodies, and you have to understand that. It was really tough, and whenever I have a bad day, or a really, really cool day, as far as anatomy lab, I tell my dad, I'm like, "Oh my goodness: we did this in the lab." He's like, "Really? Really? That was amazing, but you know you're going to have to get a ceremony done." I'm like, "Yes, I know." I definitely know that.

I had a ceremony done, and they did tell me, yes, something came back with me, and, yes, they were attached to me, and they were giving you a hard time, so I take extra precautions and extra steps, as far as protecting myself and my peers, because I do pray for them.

Koby also came from a similar Native background as his peers, in that he is not supposed to be in the presence of the deceased, speak of them, or touch them. He too had significant stress and was relieved when a cultural blessing was done by a Native healer in the cadaver lab.

What was really nice was that the medical school got to do a blessing. They brought in a spiritual healer from the nearby Reservation, and that definitely helps with easing that anxiety and just knowing that the prayer that they did. Just we're there for good intentions, for the spirits. Those were people once, so that's kind of like, we have this taboo I guess, of I guess being haunted. That's kind of what we believe in so that's something I dealt with initially. After that prayer I was like, okay, well you know I did my prayer in here, they blessed the cadaver lab. They blessed us.

Orva's culture and spirituality were part of her daily ritual in order to feel balanced and grounded. She burned cedar, prayed, and offered thanks; viewing it as a form of meditation that centered her and allowed her to think about her day clearly.

It wasn't a big shock but I think having my own time in the morning, my own ... I'm talking about like spirituality, so I really relied heavily on my cultural ways. I really tried to get up every morning and burn cedar and really pray and be thankful for everything I had and I really tried to start every day that way because it grounds me, it kind of reminds me of what's really important of the day and it really allows me to think about my day. It could be kind of meditation too, just sitting there and praying. So relying on my own faith was probably the biggest thing.

Relational support. Participants relied on AI and non-Native peers, study groups, faculty, AI support program, church, and friends and family as ways to cope through relational support.

Angel's classmates helped her cope as she felt comfort knowing they were going through the same hardships as she was. She also relied upon study groups and professors to help her through the academic rigor and challenges of medical school curriculum.

I know with a couple of my classmates we, I guess I kind of felt comfort with some of them because we were at the same level like most of us didn't have. Then I guess just the study groups and then also meeting with professors to like go over material and how to study and what was important.

Baron coped by working closely with other AI medical students and those in the class above him as they had already gone through what he was currently going through. He went to them for guidance but they also offered emotional support and friendship.

I think I just kind of relied on a lot of my peers. I was pretty close with the AI medical student class above me. Every time I would see them, they would always offer, they would always want to know how I was doing, what I was going through, and what material was being covered during the Block. Then, I would always give them an update. They would always offer me some tips, or some advice, on what to expect. You know, they were just very understanding of what I was going through, I think.

They pulled me through those trenches. They really ... I knew when they asked, they weren't just trying to, you know, make small talk. I just felt like they were really interested in how I was doing.

Duke relied on peers, peers in classes above him, peers in other medical schools, physicians, family, and mentors. They all played integral roles in helping him cope and deal with the daily stressors and challenges of medical school.

Talking to my classmates has been very helpful, talking to older students here and even my friends who are in med school in different places, just how they went through it. What I should concentrate on and getting some advice in terms of a study plan. I've talked to physicians who of course have been through this. They may have been through a different process just because of how stuff has changed throughout the curriculum at every med school, but I did have a couple of physicians that I did talk to over email and I have an assigned mentor through the Association of American Indian Physicians that was set up and I did talk to him about it. Then, just talking to everybody. Talking to family, talking to physicians, talking to other med students just about what do I need to do?

Eleanor coped by going to the AI support program and talking to the advisors within the program. She also worked closely with two AI peers who supported her throughout medical school.

I would go up to the AI support program and talk to you and the other advisor all the time, and then two of my close peers were always there for me. We kind of had our own little group, and one of them and I studied together primarily the most, and the other would always chime in with stuff, so. It was really important to have those guys around me, a lot.

Flynn coped through his religious faith by attending church where he met many friends. He also became good friends with his peers in medical school.

We had a church here too that we went to that we made a lot of friends through. But then a lot of classmates became really good friends, and had study groups with, and we would do fun things together. That kind of fell into place. It wasn't that difficult.

Harper turned to AI medical student peers to help guide her and cope through the academic rigor and stress she was going through during block examinations and studies.

There was a girl that mentioned that she failed the block one and so I knew like, "Okay, she failed, and she's still here, I could do that too. I didn't really talk to her one on one. I'm just an introvert so I don't really socialize a lot. When I do, I try to make it productive like I talked to the second-year AI med students just to see what might be coming. I just ask their advice a lot. They're very helpful but yeah, I had to figure out that I'm on my own. It's still challenging to you because I still have to do well and I only have four weeks to study.

Koby coped with academic stress by meeting with faculty. Although he considered it intimidating, he found that once he spoke with professors, he was able to garner information he was seeking in ways he could better understand.

Meeting with professors. That is definitely intimidating. I didn't do much of that in undergrad, as I should have. Here I know like, even though we get the lecture, then it's just different with one on one, when you meet with a lecturer. Just doing that, being able to meet with them and having them explain things that you don't understand. They can explain it so much easier. They explain it, I don't know why, but it's different when they explain it to you one on one than when you're in lecture trying to sit there and learn it. I think doing that more really helped me. Just taking that initiative.

Noah stay in contact with family and friends but felt that sometimes this coping strategy was detrimental as it reinforced his inability to spend more time with them. His spouse and classmates were forms of comfort, but found that peers were just as busy in medical school and it was difficult relying on anyone who was just as stressed.

Tried to stay connected with friends and family. That is almost a double-edged sword because then you're just reinforcing what you're missing in a sense, what you left. Try to just take a long view of it, not get so caught up. My wife was a big support. Just tried to keep building friendships, relationships with my classmates, which have been some great ones, but that takes time, and everybody's scrambling too. You can't, you're one foot in, one foot out with that.

Adjustments. When participants were asked what type of adjustment they made to help cope with the difficulties they were having in medical school, their responses varied with adjustments in time management, sleep, time with family and friends, and finding ways to succeed.

Angel lacked sleep and had to find ways to adjust her sleeping patterns in order to meet the demands of studying voluminous material.

The biggest one was probably sleep. Sleep and probably, cause I'm probably like used to like seven hours of sleep and that was, I know that was affect because I'd probably find myself going to sleep at one and then having to wake up like at six or five just to like kind of study the material.

Baron missed spending time with family; it was difficult to adjust to the great distance between them. He was envious of peers who grew up in the same state where the medical school was located, as they could go home and visit family often.

I think, probably, number one was just being away from family. That was the biggest thing. I mean, I was always jealous, kind of envious, of my classmates who grew up in the Midwestern state because they would go home on the weekend. They would see their parents, or see their siblings, so it seemed like they had that extra family support that I didn't have. You know I couldn't go home for the weekend, right? I had to stay there, and study.

Eleanor's adjustments were focused on becoming more efficient through time management. As studying and preparation took up the bulk of her time, she had to find a schedule that worked for her.

A schedule, I think. I had to be a lot more rigorous in my schedule. And being more time-efficient, because I'm a person where I can spend like, hours going through a few things. Where with the mountain of material that we had, I didn't have that luxury. I had to keep it moving. And I finally- like, my study partner and I had a deep discussion about this and how we had to- because we were both kind of the same way, like before we knew that we just spent like two hours going through one little thing. And you can't do that, you have to keep on going. So that was kind of one of my biggest struggle, was just my time management.

Flynn also had issues when adjusting to the amount of time it took to study as it was significant and took time from his family.

Time management was probably the most, because I was studying more than I'd ever studied before. Time away from my wife and then being out here in a new state, not near any family or anything, was a big adjustment too.

Georgia's adjustments were based around finding effective study strategies for medical school. She found that studying with a group was difficult and that studying on her own had positive outcomes. She also realized that she could not learn all of the material, and she focused on the amount of information that she was able to retain.

I don't do group studying anymore. I'm back to doing things on my own, how it should have been from block one. I think the good thing that came out of that is that I really shouldn't get bogged down on a certain lecture for too long, or else I get bored, or else I get frustrated. I'll start crying. I learned to, "Okay, just get to the lecture, because next week you'll look at it again. Get through it, move on."

Harper utilized an academic success program at the medical school to help her adjust and support her academic success. She also shifted her approach to medical school, taking more initiative, studying more, using an organized schedule, and maintaining a positive outlook.

Here, at the school, they have that Academic Success Program so that really helped me but I had to figure out on my own. You're the one who has to learn to material and figure out what's going on. I buckled down even more and figured I out myself. It was hard, it was really hard.

I just study way more, way more than I've studied ever in my life. I get up at 5:00. I study from ... I study before class and I review my class. I review the lectures after I was in class. Then I do problems. I figured out that these books have really good problems that I didn't know that I should be doing. I just thought I could study from the lecturers and that would be all right, but you have to do problems, and so I start doing more problems now.

I just figured out how it was, how the flow of things were. I didn't really know the flow. That's just how I am though. I think that's how most native people are too. We just have to figure out how things are run and then once we figured it out, then we do good. But if we don't know something, we've not going to do well right away. I don't know how to explaining it but that happens a lot with native people.

Jolie had difficulty adjusting to the amount of material, how to study, and how to learn the material. She tried different study methods, guides, and re-watching lectures to help her succeed.

It's also hard figuring out how you learn best because the faculty keep telling you, "Well, everybody's different, you just have to find how you study best" and honestly I think it took me the entire first year to figure out what was best for me because so many people are very specific about how they study and they're crazy about it and so you might try their method and it's not working and so you try to switch gears halfway through the block and it's not going to work.

I would make study guides and that's basically what I do now, but I think that reviewing of them was something that I neglected because you're like, oh, well ... I'll remember this. Sure, I'll remember this, and then there's no way you're going to remember that. Plus, the seven other lectures you had that week unless you keep going over them and over them and then picking out what's the most important thing from them. Finally, the conclusion that I came to was that re-watching the lectures definitely helped because then, I mean, I'm the kind of person that, if I'm watching something, especially if it's 50 minutes to an hour, you have a tendency to zone out so it's helpful if you can watch it again and watch it faster too, so that way you pick up on those little tidbits.

Louise adjusted by reaching out to her learning specialist when she needed help and used what she called a "toolbox" of ways to meet her educational goals.

I'm still in contact with the learning specialist, and he's helped me out with a few specific situations. I have a toolbox now to analyze my performance, why I answer certain things,

which is pretty important. I always spend at least an hour looking over any test, and then from there can analyze like was this a knowledge problem, was this me understanding a question, misreading a question, was it that I had narrowed it down to two and chose the wrong answer. So, I have a toolbox, which I think for me is very important to say, "Okay, this is where I'm at, where do I want to be, and then what are the tools I need to get there." Before, I had that experience like, "Well I'm here, how do I get here?"

Noah had difficulty finding ways to adjust to the amount of material and knowledge he needed to acquire in order to feel secure, comfortable, and confident as a clinician.

I think it's a very humbling process. I can certainly, all my training and academics before med school, you get all but get on top of all the material and know it. Med school is just not that way. I can fully understand why physicians act so insecure is because in learning medicine, for every one thing you do learn, you're made aware of four other things you didn't know. It just inherently breeds this feeling of insecurity. You don't know everything and you should know more. You're always striving towards an unattainable goal of getting on top of the knowledge. Trying to be comfortable with that and yourself, that's an adjustment.

Orva had to adapt to being in an educational environment surrounded by intelligent and competitive peers. She also had difficulty with the heavy course workload and is still currently struggling to adjust and cope.

I would say one of the hardest things about coming to medical school is probably some of the stress and anxiety associated with the workload and it's not just that, it's you're in a room with how many other people and you've kind of always been the smart one, well you're no longer the smart one.

I actually still am struggling, I'm still trying to figure out I think what best works for me and I shouldn't be saying that in my second year but I still ... Like I've passed some blocks, not passed others and so I'm still constantly tweaking it because I'm not quite fine-tuned it yet.

Quinn had difficulty adjusting to the voluminous material and finding a study schedule that worked for him. He adjusted by working harder and taking his time and commitment to medical school more seriously.

For me just getting back into the studying mode because I had been out for a while, then went to that job where I could go home at five and be done. Not have to read anything, to have to prepare anything for the next day. Just getting back into that groove. There's so much more to learn, so many more details. I just had to take it more seriously and work harder on it.

Sage's challenge in time management and studying skills had always been an issue for him prior to medical school; but his issues continued on into medical school and residency. He never really found ways to adjust.

The way that you're given information in medical school, you have to study, and you have to study a lot in order to stay on top of things. That's how it felt, so my study skills weren't that great. They still aren't. My time management skills weren't that great before. They still aren't, because I never needed those. That was the largest adjustment by far, was to try and learn how to study, not just ... From there, oh, I need to learn how to study effectively. Now I need how to do this in an efficient manner. Okay. I'll get right on that.

Discussion of Category One: Self-Care

Participants in this study used varying coping mechanisms to deal with the stress and anxiety surrounding medical school. The three subcategories of self-care coping mechanisms included cultural ways of coping, relationships with others, and adjustments. A number of participants in this study spoke about the cultural ways of coping and healing that they used to combat stress and anxiety. American Indian culture generally prohibits individuals from being present, speaking about, or touching the deceased; therefore, the cadaver lab in medical school was highly stressful for Native students. One student cried and dealt with anxiety and sadness, two others went home to their reservations to have way ceremonies conducted, while others felt more comfortable once the medical school brought in an AI healer to conduct a blessing in the cadaver lab and medical school. They also turned to their family and elders of their AI community to support them and provide guidance as they continued to work with the deceased as part of their medical curriculum.

As some studies provide cultural coping methods and theoretical frameworks that focus on AI spirituality, ritual, tradition, beliefs, and other cultural actions as means to buffer or prevent unhealthy outcomes associated with stress such as depression, substance abuse, and health disparities (Gone, 2013; Walters, Simoni, & Evans-Campbell, 2002; Walters & Simoni, 2002), a gap in the literature exists which examines the cultural ways of coping among AI medical students. Also, because medical educators often lack the cultural competency to provide cultural support and understanding in medical school, or in this study cadaver labs and the use of stereotypical AI health disparities as patient examples, it perpetuates the continuation of oppression and trauma among AI students. Although the particular medical school in this study responded to the needs of AI medical students by having the cadaver lab blessed, it was done after students had already been working in the lab, which in turn, had already caused significant stress and anxiety among AI students.

A second coping method often used by participants in this study was relying upon their relationships' guidance, understanding, and support from peers, faculty, physicians or other health care providers, family, social groups, and mentors. As many of the mentors described in this study were the same individuals AI medical students depended upon for coping, the mentor played a significant role in their ability to manage stress and anxiety. Rose et al. (2005) suggest that informal mentoring relationships between faculty and medical students must take into consideration the varying learning styles, genders, races, and cultural backgrounds of students, if they are going to succeed. Fares et al. (2016) suggest that coping strategies among medical students should focus on personal engagement, life and career counseling, extracurricular activities, mentorship and support programs driven by senior students, and the autonomy to self-reflect and express their emotions (p. 78). Because stress is most often triggered by difficult and

mounting medical curriculum, some studies suggest the use of peer or faculty mentoring, tutoring, and other forms of help to improve student understanding of concepts, clinical skills, establishing a sense of community, and guidance from small group formats (Menezes, Burgess, Clarke, & Mellis, 2016; Rose et al., 2005; Taylor et al., 2013).

It is important to note that relational coping strategies surfaced as a subcategory to the coping mechanisms theme in this study. The excerpts of narrative and consistent mention of those who are later described as mentors in this chapter, highlight the prevalence and use of mentors and supportive relationships that were initiated or maintained in order to sustain healthy coping mechanisms and success in medical school.

Category Two: Lack of Self-Care

Participants in this study had varying forms of self-care, but there were some who lacked or avoided self-care as well. The following passages of narrative formed the category *lack of self-care*.

Baron turned to peers for coping, but he lacked the initiative to seek professional help for his stress and loneliness that he was able to recognize during the interview. The traumatic events during medical school had placed extreme stress and challenge upon him. He also found the social culture of his classmates and the town in which the medical school resided, to be a climate centered on alcohol consumption. As he had alcoholism in his family, he did not want to be part of this type of socialization, which only further isolated him from peers and support groups.

Reminiscing about how traumatic my first two years were. Well, still, to this day. I mean, just knowing that. Yeah, it's really stressful. Yeah, it's really hard, and I know that. I mean, I'm getting pretty emotional right now, thinking about those lonely ... Feeling the loneliness, and studying all by myself. Being away from home, that's really draining, really exhausting, and really traumatic in that it's not something I want anyone to go through. I mean, I can't help that, but just knowing that if I went through that, that someone else is probably going through that. I will want to make myself available to anyone who feels that isolation, or not at home. You know, just that trauma, I guess. I

don't know; I just want to make myself available to those who have had that experience.

Well, for me, I'll just talk about myself. I'm not painting a picture for the whole, everyone in my class, but a lot of the ... It seems like a lot of the culture in this state is: A lot of it is around alcohol. You know, drinking? That's kind of how you socialize with people. I never felt comfortable going out. People put it out on Facebook, with their Facebook page, like, "Oh, everyone's going to go downtown!" You know? They're going to meet up downtown, and drink. I never ... I don't take up that.

Noah recognized that he did not have healthy coping mechanisms. Although he made some adjustments spending time with family and peers for support and guidance, he abused alcohol as a coping mechanism. During his substance abuse, he developed a negative physical health condition. Although he sought medical treatment for the physical condition, he did not seek professional help for personal stress management.

Probably not the best. Yeah, I don't even know. Then I had certainly unhealthy coping, I drank a lot. Drank myself into a problem that affected my health during med school. For the health diagnosis, I did (seek help). Nothing beyond that. That's where I was like, man, this is not, now it's starting to get too much. It's not like, it's all how I grew up in a time of binge drinking. That I guess became a habit out of undergrad. Everything, all my experience has been that way. Med school is the same way with the block system. Nearly the entire class does the exact same thing.

Sage recognized that he did not cope with his stress over the difficulty of balancing medical school, but he also revealed that he did not believe anyone had time to seek professional help or treatment because medical school was so demanding.

I don't know. Looking back on it, I don't think I coped very well. I didn't partake in self-destructive behavior, but I think I didn't cope. I had a couple dogs, and spending time with them, and taking them to the dog park and stuff was a stress relief, but at the same time, the fact that you have things to do is always on your mind. Yeah, I think I just suppressed a lot.

Also, who the hell has the time to deal with stuff, especially when the requirements are maybe a little bit more taxing on me than some of my classmates, the ones who master the information, it came more easily to. For me it didn't, and so therefore, I wasn't able to lead as balanced of a life as I would've liked to. That would've been healthier for me to do, so yeah. Who the hell has the time to go talk to people about your problems?

Maybe once, but I think I just got so overwhelmed with what I was needing to do that, what I needed help with, I didn't feel like anyone could help me. Struggling to swallow all of the information that you receive in medical school, it's hard to ask somebody for help.

Discussion of Category Two: Lack of Self-Care

Three participants in this study revealed they lacked or avoided self-care. They recognized their inability or lack of responding to their stress, anxiety, and at times, depression. They isolated themselves, avoided sharing their emotions or communicating with others about their stress and depression, or abused alcohol as forms of unhealthy coping, and failed to seek professional help. Due to the high demand of time on their faculty and peers, they avoided expressing a need for support or help from others. They viewed telling others about their stress, anxiety or depression as bothersome. Baron avoided spending time with other peers outside of school because they were focused on consuming alcohol as a way of socializing. Noah's substance abuse with alcohol drove him into health problems. Although Sage had lost his family members in undergraduate school, ten years later he still had not coped or dealt with his loss. He felt there wasn't time to grieve and cope because preparing and going to medical school required too much time and focus.

Although only three participants revealed avoidance coping strategies as ways to cope with the extreme stress and challenge of medical school, others hinted toward avoidance coping strategies throughout this study. Subtle forms such as privately dealing with anguish, academic stress, avoiding communicating or seeing family, abandonment, and adjusting to the tedious requirements of medical school, were often done alone. This is supported by the study conducted by Bassols et al. (2015) which found that extremely stressed medical students were more likely to use escape or avoidance coping strategies to avoid coping with stress than others whose stress levels weren't as high. Rosenthal and Okie (2005) suggested that the tendency of avoidance

coping tactics or seeking professional help are likely based upon the negative social stigma related to being discovered by administration and peers. They also posited, that seeking professional help may make medical students appear weak or incompetent as health care providers. In a study by Madhyastha, Latha, and Kamath (2014), they examined 94 third year medical students who experienced stress, with almost half experiencing moderately high levels of stress. Students in this study used different coping mechanisms related to emotion-based strategies which included seeking moral support, sympathy, and understanding, problem-focused strategies, instrumental support strategies that included seeking advice and guidance, and also escape-avoidance tactics.

As AI medical students are confronted with significant and unique challenges in medical school, the ways in which they cope becomes relevant to their success. When students avoid healthy coping strategies, studies have shown that unhealthy outcomes will likely persist well into medical school, residency, and their professional career (Bassols et al., 2015; Park & Adler, 2003). Although there is limited literature which focuses on specific coping strategies of medical students, there is a significant gap in the literature which examines the coping strategies of AI medical students.

Theme Three: Successful Mentoring

Participants in this study were asked about their mentoring relationships and experiences during medical school. Since most of the participants relied upon mentors for academic and personal coping methods, it was important to inquire about their lived experiences, opinions, and beliefs about their mentoring relationships. Several categories emerged from narrative responses by participants to create theme three, *successful mentoring*.

Category One: Mentor Definitions

To begin, participants were asked to define a mentor. The following passages describe how participants identify mentors.

- | | |
|---------|--|
| Angel | Somebody who just guides you along the way and gives advice whenever you need it. |
| Baron | Someone who has more experience. Maybe, older; a person who shares experience, or similar experiences, and can offer advice, or offer support. Or, just offer a listening ear to hear about your experience, and understand your experiences. |
| Charlie | Someone who takes it upon themselves to make sure that someone who is not supported is able to give them knowledge and support, and that person may also help a person below them, give them information they need to know so that they can succeed through whatever they're going through. |
| Duke | Someone who is there to listen and to give advice. I don't think they have to necessarily be within your field of study or even have gone through a similar program. Just someone who's there to give you their experiences and how they dealt with stress. How they dealt with their program or how they dealt with their job. Of course, they'll relate it in some fashion. Just someone who's able to do that. |
| Eleanor | Someone who is somewhat familiar with your situation or has gone through it themselves, and just can provide support and guidance in any way that they can. |
| Flynn | Somebody who has gone before you and whatever you're doing. He's in a place where they can kind of guide you and help you understand what you want or what you need in your life. They're also somebody that teaches. |
| Georgia | Somebody that encourages you. They lead you into the right direction. You know how little kids, they walk and you're just like, there's that parent hand that they don't see that's kind of like, "I'm just going to push a little bit so that you can walk this way and not fall off the cliff." I think that's what a mentor is: that they foresee the troubles that you're going to have, and they're like, "Hey, why don't you do this," or, "Maybe you should try this. Maybe not do this. That's not really worth it." |
| Harper | Somebody who goes above and beyond for you. It's not just academic, it's somebody who connects you to other people who you will never think that you will be connected to. They help you with your life problems. |

- Ivy Someone who provides social and emotional support. Not necessarily because they have been in the same situation, but just because they can touch on similar topics, I guess.
- Jolie Someone who is readily available to answer any specific questions or just provide advice mainly because they've been in similar situations as you have.
- Koby Someone who has experienced what you're going through. Someone who is wise. Someone who is already in your field, or kind of I guess knows, like I said, what your experiences are. Someone who can guide you in the right direction.
- Louise Someone who has a certain skill set or ability, and they make that ability or their expertise and advice accessible to the mentee in whatever form. That relationship can take many different forms, but I think it's allowing one person to grow from the other's experience, whatever that experience is.
- Monroe Someone that you look up to. Doesn't ... it could be for multiple different things; just someone that you look up to and that can give you good advice.
- Noah Someone who helps you be a better you. Whatever that means, if that means professionally, it means personally, emotionally. Whatever they and you I guess subconsciously agree on, that's what a mentor is
- Orva Someone who ... Well what has been important for me is really just touching base with me, of course offering that guidance, whether it's academically but I think for me what worked was really just simple question "how are you doing?".
- Phoenix Somebody who is a person who is able to give you advice, is able to guide you and has your best interest in mind and is able to give you recommendations and is also somebody who has the ability to tell you that they can no longer be your mentor or they're not in the right place to be your mentor if you ask them to be.
- Quinn Someone who has experience or has been through the thing that you're going through, and can offer advice, guidance, and encouragement along the way.
- Ruby Somebody who's more experienced than you in some way that is either there for you or helps you get through whatever you're going through at the moment or you have talked to in the past.

Sage Someone who you can look to for support, especially when you two have faced similar challenges. Mentor is someone you look up to and admire, and like to ... What's the word I'm looking for. You would like to take on some of their positive attributes. Emulate.

Discussion of Category One: Mentor Definitions

Participants defined mentors as individuals who were more experienced, experts, sometimes older, who faced similar challenges, were wise, and understood what the mentee was going through. They also described mentors as people who offered advice, guidance, a listening ear, encouragement, information, and support in times of stress. Mentors were perceived as individuals who took time from their schedule to assist and help mentees face challenge. They were role models. As participants defined what a mentor meant to them, their descriptions closely reflected the descriptions of mentoring by Ragins and Kram (2007) and Kalbfleisch (2002). These definitions are important, as they act as a significant guide in the development of the theme for *successful mentoring*.

Category Two: Types of Mentors

The following narrative selections describe participants' types of mentors during medical school.

Angel Medical students (some AI) who are in their third and fourth years who've kind of given advice and how to study and then what to expect for each block.

Baron When I was a first-year, I'd say my mentors were upperclassmen. They were the second-year AI med students. I didn't really have much contact with the third-years, but there was a fourth-year I got a lot of help from.

Also, there was one person in particular who was an internal medicine physician here in my fourth-year rotation, who I gave me a lot of advice and mentorship as a third-year and fourth-year. I think, as I got closer to completing medical school, I think I was starting to develop more connections with physicians at the hospital. I mean, each rotation was

different. I mean, I had different physicians for each rotation. I think each rotation offered a new mentor, because they were preparing me for the shelf exam. The attending physicians were my mentors at that point, for each rotation.

- Charlie I had quite a few mentors. A couple were physicians that I worked for. Also, I feel like a lot of older students at medical school like an AI 4th year peer. And then there's other students, really through the AI support program where I talked to a lot of the older students.
- Duke I kind of get different feedback from different people for when I need it. Of course, a lot with med school stuff, I do have physicians that I talk to. So, I just have friends back home who are older than me or who are physicians already. I also think my mom was another person that I look to a lot.
- Eleanor Mine was definitely a female AI physician who was also faculty and an administrator at the medical school.
- Flynn The first couple of years I felt like one of the medical school professors was a great mentor. He was always willing to talk and had us over to his house and was really helpful during those first couple of blocks especially. A couple years later, a physician at my clinical rotation site. She was a great mentor. She was an internal medicine doctor.
- Georgia My primary physician and two (AI) medical students. Both of them are in their second year.
- Harper I have four or five, six mentors actually. I've had my high school mentor, a professor, another through NIH, advisors at the AI support program and some peer friends through AI support program.
- Ivy I guess, of course, my family, but ... For someone who has been in this situation, I have my older sister-in-law, who went to medical school. She's doing her residency right now.
- Jolie I would say I have a girl that I went to high school with. She's in her third year of residency in a nearby state and I do talk to her a few times and also I would say my PI from a summer research experience.
- Koby She is a dentist in IHS. Also, an AI physician I've reached out to and upperclassmen AI medical students.
- Louise He's a family friend who was an internal medicine doctor.
- Monroe A pediatrician with IHS, two clinical research scientists, and upperclassmen AI medical students.

- Noah The one who sticks out the most is an anesthesiologist that I've been working with. First and second year there's a professor. Then within AI support program, it was nice having a place to stop by and say hi and just have a, I don't know, a connection to med school that wasn't someone that you'd have to ask a medical question to or someone studying. Just have like a family member it felt like in the med school.
- Quinn My anatomy lab professor. There's one surgeon that I work with who is really good at answering questions, life and career questions, and just a really good teacher. Then there's one other family medicine doctor I worked with in third year med school rotations who was very good at answering the same type of questions about his job, his career, and about his experiences when they were in my shoes.
- Ruby They were three physicians at the third-year rural rotation site. First and second year there were a number of us at the AI support program that would study in the same area. I really liked having them around because if you did have any questions you could always bounce ideas off each other.
- Sage Yeah, so one of my classmates, the other remaining AI medical student who was from a reservation, we formed a common bond because of the similar challenges that we were facing. One of the faculty members who I had known even from undergrad, she was a source of support that I didn't seek out probably as much as I should have, but I did seek out from time to time and go talk to her.

Discussion of Category Two: Types of Mentors

Participants in this study described a wide variety of mentors they turned to for academic and clinical advice, guidance, emotional support, and help. Many stated that their mentors were medical school upperclassmen peers, faculty, administrators, advisors, physicians they met during clinical rotations, family members, friends in the health care field, and AI medical student peers. Others described mentors who were research scientists, professors, teachers, advisors, or physicians they had known prior to medical school.

Research has shown that faculty, peers, and physicians, often become mentors to students and are key in facilitating their development and success academically and professionally (Aagaard & Hauer, 2003; Gray & Armstrong 2003; Dunn et al., 2008; Jackson et al. 2003; Kalén

et al., 2010; Sambunjak, et al., 2006). Studies have also shown that medical students who have involved mentors are more likely to be positively impacted by mentors who have shared similar curriculum, more likely to academically achieve and complete medical school, and have greater life and career satisfaction (Jackson et al. 2003; McLean, 2004; Oelschlager et al., 2011; Sambunjak et al., 2006).

As the participants in this study each had one or more mentors and different types of mentors, they illustrated their need for personal, academic, and professional support in order to cope and succeed. Although mentors were not described as informal or formal amidst these excerpts of narrative, almost all of the mentor types were informal. These findings are discussed later in this chapter.

Category Three: Mentor Characteristics

The following responses were used to describe their mentors' characteristics. These explanations delineate between the qualities and characteristics of mentors and previous narrative used to define mentors.

Angel	Friendly, reliable, wise cause they've already taken their step exams and so, they kind of give us like what they did and then what they probably would have improved on.
Baron	Respect, or mutual understanding, of what we were going through.
Charlie	Characteristic in anyone who's taken a case to mentor me is they probably struggled through it. So, they are looking back at their mistakes and they want you to know "This is where I had problems, so don't do what I did." Or "This is what worked for me." Willingness to help, maybe. More like they get pleasure from helping others. Feel compassion maybe? That would be a good one. Maybe altruism would be a good term to use. They're sacrificing their time to study to help something when they're getting nothing in return. So, altruism would be a good term.
Georgia	Insightful, understanding, compassionate, and very altruistic, in a way.

Harper	They're very generous with their time. They're really willing to help me. They're just genuine people. They want us to do well. They'll do anything for us. They'll look for any programs.
Ivy	Knowledgeable. Strong. Lot of Meyer Type A. I feel like that's what, especially for people who have gone through this, you kind of have to have a little bit of that Type A personality.
Koby	I would say caring, I guess, because they wouldn't care if they weren't going to help you. Definitely trustworthy, because you have to trust their information that they give you. I guess wise would be another good one, and experienced. A leader.
Louise	I think he's a very thoughtful person and understanding. I think if you're going to be a mentor, that's pretty key because you're dealing with a person who doesn't have the same understanding as you do. He's also extremely intelligent, but I think that's him as an individual. But he has the ability to change his dialogue, depending on the patient, which I think is really a true indicator of intelligence. It's not so much what you know, but your ability to convey the information. He has a sense of humor, which I think is a physician is pretty important, a sense of humor that is relatable and not isolating.
Monroe	They're caring, compassionate. They're really intelligent. They're motivated.
Orva	He's a great listener, taking time to like I said "how are you doing?" You know, "what can I do to help?" And really just in some aspects if I think about it the academic aspect "what are you doing to prepare?", "what is your plan?".
Quinn	They're both very smart. They both have lots of experience. One of my biggest struggles right now at the moment is deciding what to go into, and they both can identify with that. They just kind of were able to push me to be better in a way that other doctors weren't able to. I don't really know how to describe it.

Discussion of Category Three: Mentor Characteristics

Participants in this study described characteristics and qualities of their mentors. Their responses demonstrate a very interpersonal, friendly, and admirable view of the individuals who support them as mentors. As Ragins and Kram (2007) describe the two functions of mentoring relationships as career development and psychosocial behaviors, mentors in this study provided

both of these functions for their mentees. When participants were asked to describe their mentors' qualities and characteristics that made them good mentors, participants responded with academic and career development functions of intelligence, knowledge, wisdom, motivation, strength, and leadership. They also described the psychosocial functions their mentors provided through compassion, listening, humor, understanding, friendliness, reliability, genuineness, insightfulness, and altruism.

Kalbfleisch (2007) illustrates the personal characteristics and qualities she refers to as *filters*. These *filters* act as interpersonal and unique features both the mentor and mentee bring to the relationship. She posits that a mentor and mentees gender, race, culture, perceptions, experiences, interest, and needs all play significant roles to their identity and how they interact with one another in the relationship. Kalbfleisch (2007) further suggests that mentoring relationships are interpersonally unique and their nature is similar to that of love, friendship, and other familiar type relationships. This definition makes mentoring relationships similar to other relationships in that they are dyadic, based on trust, shared tasks, guidance, and engagement in relational maintenance and repair (p. 500). These characteristics are an important piece of this study as they begin to develop the understanding of participants' experiences with mentors in medical school. As they have defined mentors, described various types of mentors, and explained what mentor characteristics their mentors possessed, participants' mentoring relationships were further examined about their initiation and sustainment in both informal and formal relationships.

Category Four: Informal Mentoring

Initiation. Participants were asked about how their informal mentoring relationships were initiated. Participants answers ranged from having met them through family, health care systems, medical school, clinical rotations, other academic based programs, the American Indian

(AI) support program in medical school, social events, and in other natural settings. It was found that proximity, convenience, similar interests and backgrounds, and mentor willingness and support all played vital roles in the initiation of these relationships.

Duke So I always try to associate myself or ask advice from people who in my definition have been very successful in their field. I sought them out in that fashion and then just get their advice and in terms of, I guess what I did, you're a great physician or you got this award or you got this scholarship, I want to be like you, so how do I do what you did, in order to be as successful as you?

Eleanor I don't know if it was just me wandering around upstairs and I just popped in her office to say hi? I really don't remember our first initial encounter. But, I'm sure it was something that was nothing formal. So yeah, and it kind of just grew from there and I'd ask her for advice all the time and, yeah. It was just super natural. It was just effortless, I had no qualms or anything calling her up or texting her. Like I never felt like there was some type of hierarchy that I had to go through or she was like untouchable. She always just felt like family to me, from like day one.

I just connected to her from like day one. To me, she just reminded me of my aunt. She just looks like one of my aunts that I have, and probably with her being Native too, and her being a woman, being a physician, she's gone exactly what I'm going through. She has faced many of my challenges, not only being a woman but of an individual minority, and knowing just what it feels like trying to go through this system that is mainly populated by the majority. And men, white men.

Flynn The first couple of years it felt like my professor was a great mentor. He was always willing to talk and had us over to his house and was really helpful during those first couple of blocks especially. And then it was down here in the city of my rotation. She was a great mentor. She was the internal medicine doctor/director. But, she was a really good mentor too and just talking to us about all sorts of things. Not just medicine, but life in general. She'd have us over to her house for dinner. That was really awesome.

Georgia The AI support program in medical school put together a little dinner during interviews, back when I was applying, and so that, to meet people, that are from the same area as me, and that also struggled, that struggle with the same things that I do.

Koby Definitely, the AI support program (at medical school). I've been through a lot of mentor type programs, and having specifically a Native American Center that would provide support. Just someone to just go and talk to who was also a Native American. Again, you can just go in and share things, what you're struggling with or just what's on your mind. Having that American Indian Student Support Services, and then having that here at the med school, I know that would be helpful for me because it was helpful for me in undergrad as well.

Monroe But, I felt like I already had mine (mentors). I had already been talking to two AI upperclassmen medical students since I applied (to medical school) because I was in another program (at same institution), and they were AI medical students. So, I would just pop in and ask them, because they studied. I would just stop in and ask them questions, so I felt like I already had who my mentors were going to be for medical school, so I probably didn't need to meet more people.

Sustainment. Participants were asked about how often they spoke or met with their mentors. They also were asked to reflect upon the different communication mediums they used to sustain their relationships, what challenges or conflicts they had with their mentors, and what types of relational maintenance was used toward managing success.

Charlie Sure. I haven't really talked to my 4th year mentor about 3rd year at all. So, that's definitely a location thing. I feel like we were at the school the first year and were always at school so, just not being at the same location has really kind of caused that to be a barrier for mentorship. And, so goes for the two doctors that I worked for. So, with all three of these people, the internet, and cell phones, and text messages, made this all quick. So, if I do have a question I know that I could ask, depending on what it is any of these people would help as far as needing help.

Duke Well, this year it's been more time in between when I talk to them, but usually I talk to everyone at least twice a month, so I'll email them. I'll text them. Of course, my mom I'll talk to pretty much at least three times a week and then med students that I talk to and get advice from is typically almost every day just because we're together almost all day, every day. Physicians, like I said, maybe twice a month, just either through social media like Facebook or emails. I get advice from different people probably multiple times throughout the month.

I think sometimes with the physicians I talk to are a bit older, so there's a generation gap in terms of what they were learning and what they were going through and how to handle stuff now. Just, I'm part of a generation

were instant gratification is a thing, where you can seek something out and it's there right away on the internet or on a computer or you can talk to somebody and they immediately text back. Then the challenges, I guess, those who communicate through email or through Facebook, sometimes I'll want to know something really fast, and then they may take a few days to email me back. I think, I'm like okay. I already figured out what I needed to do. I don't need your advice anymore, but I mean, that's I guess the generation gap with that.

Eleanor

I probably talked to her while I was there on campus, at least like once a week or a few times every two weeks or so. Like we would touch base, if not by text or phone call, I would just pop in her office. She always made time for me. Like even if she was in a meeting or something, she would be like, "Okay. I'll be done in a little bit, let's touch base really quick afterwards," you know.

We were able to just click right away, and there was just kind of a sense of commonality in some ways, even though we were different, but ... She knew where I was coming from, she knew my background and struggles that I had faced and will have to face in the future. She just knew, I don't know. I don't know how to explain it. Just a sense of understanding.

Flynn

It depends on which one. Probably my father-in-law. We're always talking a lot, but that's because he's family too. Within the students, I probably have a pretty open channel as well. The AI medical students ahead of me and those other surgery students. It's kind of whenever I need help or I go to them.

Harper

I would say, the AI support program advisor, I see him every day, because we see each other in their space. I'm always in their office in that little study area. That's just our little safe zone. I really love it there. We have our own little "cave", I like to call it. I love it there. It's a perfect place to study. I always see her there.

Ivy

It's hard just to find time to talk to them. They're busy, obviously, so when you text them it's like okay, I want to ... I'm studying right now, but obviously, they might not be studying. They may be doing something else. I might not hear back for a couple of hours, or for my sister-in-law (physician), she works twenty-four hour shifts sometimes so it's like, I'll be like, "Hey what did you do for this?" I don't hear back until the next day.

Jolie

I would say it was probably a couple times a block and like I said it was usually more towards the end of the block. Yeah, like ... specific

discussion about, "Oh, what do you need help on?" This, that. I think the biggest thing is readily available. It's always frustrating if you ask for help or an answer for something and they don't seem to have time for you, but I would say everybody that I've named as a mentor in one way or another that's probably the biggest thing is being readily available

Koby It's usually through email. At least every two months I try to. I know a lot of them are busy. I know I always update them at the end of each block, and just send them an email saying, "Hey I passed." Or, "I didn't pass." That was only block one where I didn't pass that, but for the second block I emailed them like, "Hey, I passed. Everything is going okay. I found my niche here and I'm adjusting." Just little things like that. They'll send something like, "Keep going." Even now and then there will be something that comes up, like a conference or a scholarship and they'll send me an email saying, "Do this." Things like that.

Noah I don't know, once a week. Yeah, mostly email. I think it makes a big difference. I think we're similar in a lot of ways and we enjoy similar things. It's never a shortage of stuff to talk about.

Ruby The student mentor I thought was maybe a little less important because there's not a whole lot of mixing between the classes. You still do connect with a number of them, and you find yourself seeing some of them more than others, and so you kind of just develop your own friendships that way, and able to ask questions and stuff. I felt like I didn't really need my assigned student mentor because I had other people that I could talk to. Especially through the AI support program because I also just ended up seeing them more often. But the faculty I thought was a little bit different because you don't ... I don't know, it's just a different environment. It would have been nice to have that connection already done for me for the faculty mentor.

Needs based. Participants were asked to reflect upon the type of mentoring they were receiving from their mentors during medical school. Participants responded that mentors provided necessary personal, academic, clinical, professional, cultural, spiritual, mental, emotional, and other forms of support to respond to challenges and stressors they were experiencing during medical school

- Angel Well I know he's (informal mentor) from the same tribe as me so, it's like I guess like we kind of can relate to like certain things and then I know that. I think, this male mentor he was always like, any questions like he would always, like if he was busy he would say, "I'm busy now, but I'll be able to contact you like probably in two days or something."
- I know that she (assigned mentor) was like more studious and part of like the studious crowd. But like when I would like contact her she'd be just like, "I'm busy right now, I can't help you."
- Baron Since he's a physician already, he knows the clinical. He does the clinical side of medicine way more than I do. I only know what they teach us in the book. You know he sees patients every day, and so he knows what symptoms they have, what the work-up for the ... Yeah, the work-up. You know there's a work-up for every medical problem. Or, there's a work-up for every diagnosis. He would offer me the clinical side of my education.
- I was having a lot of difficulty with Step 2; the Step 2 board exam. My biggest issue was that I wasn't passing my practice test, and I would talk to AI resident physician. I would tell him about my score. I'd be like, "Hey, you know I'm not doing so well. I'm not passing my test." He would let me know that I should consider changing my test date, or postpone my test date. I would trust his judgment, and I would do that. I think I postponed my Step 2 twice. I postponed it twice just based on his judgment. I would call him a lot during that time; study.
- Charlie I guess another thing, not necessarily just mentorship but giving you a sense of "If you have any questions about anything, let me know." It gives you kind of a sense of community as well. I know there were a lot of people that were really willing to help because I had moved from out of state and don't know anybody. And a lot of people who are ... you know they went to high school together, they went to college together, now they're in medical school together, and so they're kind of buddied up with each other and it's hard to break in to a group like that. I'm not saying they're cliqued off, but they've known each other forever.
- Duke Just essentially what do I need to concentrate on? To you what's important in terms of when I do go to lecture or watch a lecture, what am I going to get out of it? There are have been a couple of faculty members here at the medical school that I do talk to more outside of wanting to know what they're trying to teach us in lecture and just kind of get an idea of future goals that I want to have in terms of teaching and research and wanting to do that.

I'll message them on Facebook or I'll text them or email them and just ask if what I'm doing right now is okay, if what I'm doing right now is going to be good in terms of leading up to my ultimate goal. Then just talking generally about stress and stuff and how they coped and they dealt with going through med school. Then even talking to classmates about what we're going through and how they're coping and just getting information from everybody.

I also think my mom was another person that I look to a lot. She has no clue what I'm going through in terms of, so she doesn't know anything about medicine and med school and even science in general, but she gives that mom advice which has really helped me a lot

Eleanor

She helped me a lot. Like, there are many phone calls I just was in tears, just crying to her about how everything- how stressed out I was, and I don't know if I'm going to be able to do this, and ... Yeah, there were many moments when I'm just on the phone and she's just telling me, "It's going to be okay, we're going to get through this," and yeah.

Kind of just guiding me through my interviews and stuff like that, and giving me tips on writing down the pros and cons after each interview and how to rank them.

Flynn

A lot of the upperclassmen AI medical students were really helpful in telling us about what it was like and some tips and what to study and those types of things. Pretty much anybody you asked that was above you in the AI support program was kind of like that. Really good mentors.

Academically they've helped a lot. Like I was saying, the students especially were great mentors and talking to us about our board exams and really helpful for me. Then some of the older mentors that were already physicians really kind of brought things into perspective, more like in your personal life. How do you handle being a doctor and what to expect? I think it was the whole gambit of academic, social, personal life.

It's a lot more specific things than in your first and second year, whereas we would have conversations about what we were studying first and second year, but it's all basic sciences kind of thing, not really the next step into clinicals or anything. Third and fourth year you probably rely on those mentors a little bit more to get you feeling more comfortable with what's ahead and what's going on.

Georgia

I think the best thing is the cultural. Culture is a big thing, and the one mentor that I have, he also values the culture, and the language, and

respects it, and so do I; whereas, my (assigned) mentor is not traditional, and then my cheerleader (AI upperclassmen medical student), she values her relationships outside of school, like her husband. She's like, "You have to find time." She's like, "It's so important. Some people forget, and it's really bad." She's like, "It's irresponsible for you to forget about those people. Do not forget about them." I'm like, "Yes, thank you. Okay, all right. I will."

Harper I'm just talking to them about how do you survive, how you get to do this. Just study tips, how they're feeling emotionally, what do they do with their down time, how do they make time for themselves? What do you guys do? How do you have a family?

Ivy Just guidance with ... Especially the second-years, because they have recently just done everything that I'm currently doing. As for my sister-in-law, she can more so see the light at the end of the tunnel because she's doing her residency, so she can give me that sort of guidance

Koby It is academics, and once our relationship is better established then I can ask more things, like I don't know. I know back when I was getting my first apartment I was like, "What do you do when you get an apartment?" Even though it's not academic related, or, "How do you go about getting a car?" Things like that.

Louise We've sat down on many different occasions, said, "Okay, what are my goals? How am I going to attain them?" It's mainly having someone to talk to about the process, since none of my family members are in that field and don't really understand how it works. Also, if there's a certain topic, like I think he specializes in diabetes, if it surrounds that and I have a question, I can ask him. I might be working in his practice this summer. So, it's information, just catching up as an individual, as well as him helping me explore different opportunities.

Monroe I think we (AI's) need more support. Or we need some kind of structure. Like back home, everybody is there for you, but here, there's not so much people. Back home, everybody is Native, and you can talk to everybody there, and then when you come to this college, there's not so much Native people.

Ruby You really kind of learn that different specialties attract different types of people as well, so people in family medicine I feel like too were just very similar, they had similar personalities to me as well. So, I thought that they were better to connect with. And also, because I thought that the ultimate goal of medical school is to get you to residency, so I wanted mentors that have the same goal as I did which to get into a family medicine residency.

Discussion of Category Four: Informal Mentoring

Participants in this study responded to questions about the initiation and sustainment of their mentoring relationships. It was found that 17 out of 19 participants formed informal mentoring relationships during medical school. Both mentors and mentees initiated conversations to form informal mentoring relationships. Factors that indicated the likelihood of mentoring initiation were proximity, convenience, comfortability, academic and career advancement opportunities, similar background, Native culture, experiences, and interests. Informal mentorship was also initiated in medical school, clinical rotation, social events, and in other natural settings. It was also discovered that besides the subcategories of initiation and sustainment in informal relationships, there were plentiful narratives that supported the third subcategory of informal mentoring relationships being *needs based*. Thus, initiation, sustainment, and needs based subcategories of the informal mentoring category are further discussed here as they relate to the literature.

As Kalbfleisch (2002) described, mentoring relationships can be initiated by either the mentor or protégé. Her Mentoring Enactment Theory (MET) provides guidance in how mentoring relationships are often initiated and sustained. Proposition 4 of Kalbfleisch's MET, posits that "offers made to a less advanced other to be a protégé are likely to be accepted" and proposition 5 suggests that "offers of help made to a less advanced other are likely to be accepted" (p. 66). For Flynn, his professor and later a physician in his clinical rotation invited him and his family for friendly dinners and engaged in academic, career, and personal conversations through mentorship. For others, conversations built in faculty offices, medical school hallways and study spaces, social events, or the AI support program, highlighted that proximity, convenience, and comfort level were important factors when initiating mentoring relationships. Although not all of the participants in this study described a specific or formal request made by their mentors to

become their protégés, it was rather presumed through natural, consistent, and interpretive communicative interactions over time.

Participants in this study described sustainment efforts through various communication interactions, mediums, and intervals. Several described communicating with their mentors daily, weekly, bi-monthly, monthly, or every few months. Mentees communicated with their mentors face-to-face, via cell phone, text, email, and social media. The challenges of sustainment were indicated by distance from mentors and the likelihood of similar hectic schedules experienced by both the mentor and the mentee. As most of the informal mentors in this study were medical student peers, faculty, researchers, or physicians, their ability to respond quickly to requests made by the mentee were diminished.

According to Kalbfleisch (2002), there are strategic and routine communication efforts that are made between the mentor and mentee in order to sustain and maintain the relationship. She posited that the stages of initiation and sustainment can differ from relationship to relationship, but the investment, time, and commitment made by both the mentor and mentee impact the longevity and success of the connection. As Kalbfleisch's MET (2007) is able to provide communicative strategies to facilitate the initiation, sustainment, and repair of what she refers to as "high-quality" mentoring relationships, her theory is able to deliver explanatory communicative rationales regarding the valuable mentoring relationships of AI medical students (p. 499).

For example, in this study, participants spoke of the challenges when reaching out to their mentors via phone, email, or on social media. Although several spoke of today's technology advances, its ease, convenience, and often immediate response time, there were indications of frustration when awaiting prolonged responses to questions from their mentors. As mentors lead

busy professional and personal lives, and were sometimes at a distance, the communicative mediums of cell phone, text, email, and social media became invaluable methods of sustainment for many participants, even amidst challenges. Regardless of these barriers, mentees sought communicative ways to seek the answers and support they needed, in order to cope, adjust, and succeed. Kalbfleisch's MET (2002) explains that during the sustainment phase of mentorship, both the mentor and mentee must commit to communicating directly with one another through various means, in order to maintain and repair the relationship. This means that the investment of time and energy must occur through routine communication efforts like they would in other interpersonal relationships.

As participants in this study led challenging lives during medical school, their need for support surfaced throughout the interviews. These forms of support were more commonly grounded in informal mentoring relationships that were initiated by both the mentors and mentees. It was also found that participants were more likely to maintain and repair the relationships through committed communicative efforts. Kalbfleisch's MET proposition six states that "protégés will be more likely than mentors to direct their conversational goals and communication strategies toward initiating, maintain, and repairing their mentoring relationships" (2002, p. 67). As demonstrated in participant responses, AI medical students in this study directed their questions, requests for information or support, and other communications as forms of initiation, sustainment, and repair more often than their mentors.

Participants in this study also demonstrated significant needs to cope or adjust to the demanding challenges they were facing. These needs were based on personal, academic, clinical, professional, cultural, spiritual, mental, emotional, and other challenges and stressors they were experiencing during medical school. As informal mentoring relationships were initiated, they

were sought in response to the need to respond to significant pressures and find ways to navigate their academic and personal journeys. Whether Harper or Ivy were asking for study tips, Koby was seeking answers about living situations, or Ruby was seeking insight into family medicine practice, participants in this study were led toward their informal mentors by their own needs to survive and succeed.

According to several authors (Levine et al., 2013; Rose et al., 2005; Shollen et al., 2014; Stenfors-Hayes et al., 2010) mentorship in medical school helps the mentee develop academically, professionally, and personally, and guides them toward greater life and career satisfaction. Mentors provide guidance on coursework, examinations, ethics, standards, professionalism, and the hidden curriculum of medical school. Thus, the seeking of informal mentors are common strategies that can benefit the mentee in tremendous ways (Bynum, 2015).

Thus far, the *successful mentoring* theme has been explained and related back to the literature through the category of *informal mentoring* and its subcategories of *initiation*, *sustainment*, and *needs based*. As 17 of the 19 participants in this study chose to initiate or partake in informal mentoring relationships that were successful, it is important to discuss why the initiation and sustainment with assigned mentors failed. Also, the two participants in this study who reported positively assigned formal mentoring relationships, will be discussed.

Category Five: Formal Mentoring

Participants in this study were all assigned formal 2nd year medical student mentors during the beginning of their first year in medical school. As stated earlier, 17 of the 19 participants in this study found successful informal mentoring relationships, but the initiation or sustainment efforts in their assigned formal mentor relationships failed. Only 2 of the 19 AI medical students in this study found that the formally assigned mentor worked for them. Reasons

formally assigned mentors succeeded were because the assigned mentors were also AI and mentees felt they needed help regardless of whether the mentor was assigned or not.

Initiation. Participants were asked about how the initiation or attempt to initiate a relationship by the assigned mentor occurred. The following are responses regarding the failure to initiate or sustain a mentoring relationship formally assigned by the Northern Midwest Medical School.

- Charlie I never talked to them. I forgot all about that. They had a soda and ice cream meet up thing and then we exchanged numbers and I never saw the guy again.
- Eleanor I think my first year, I had a second-year. That was assigned as my mentor, but like, I think we only met one time and ... I don't know, I didn't really care for it too much. So. I was like, "Uhh, no, this is not going to work for me."
- Flynn The second year was assigned to a first year and met once. My mentor was nice but we never really talked any more after that (social event).
- Ivy Yeah, we get assigned second-year mentors. Then they set up an ice-cream social for us to meet them, but I ... That was the only time I ever met with them.
- Louise Oh, that. I never got to meet her (at ice cream social). For some reason, we couldn't find each other, and I think she had to go to a meeting. I don't know. I tried to meet up with her and it just fell through.
- Monroe Yeah, they had some kind of ... they had some kind of ice cream social, I think it's like block one or something, and they randomly pair you with a second ... they randomly pair the first years with a second year. And then you get to ask them questions and what not. I didn't like it.
- Orva Yeah, so every year there's always a mentor that's assigned and I met with mine for all of 10, 15 minutes. He was a very nice gentleman it's just that he never reached out to me beyond that ten minutes so I didn't.
- Ruby I remember having ... yes, they did assign a student and then they also assigned a physician as well. No. I remember we kind of had one big meet and greet type of thing with this student mentor and I remember my

mentor was a guy who was, I think, two classes ahead ... no it was just one class ahead. I think probably we just didn't relate very well to each other.

Sustainment. Only 2 of the 19 participants in this study had successful initiation and sustainment of assigned mentors. It is important to note, that the factors underlying success centered on the fact that the assigned mentors were also AI, in close proximity as 2nd year medical students, and were helpful with responding to the mentees requests for help.

Harper Yeah. I know she's (assigned AI mentor) really busy but she always makes time to help me in stuff, she's really nice. She's older too so she's more mature and she has a different perspective on life than I do, because I'm really young, I don't really see life the way that she does so sometimes I ask her stuff just about her life and things. I don't know if I'm supposed to feel stressed and all that stuff. She's really helpful.

Yeah, she's always there. She says, "If you need anything, contact me." I haven't had any issues like that yet to contact her. We haven't really connected that much to where I'm like telling her my life stuff like I would my other mentors. I feel like it builds over time.

Koby I think because I know I needed it. I know it would be helpful for me. I took advantage of the opportunity. I see them at least once a day. Well we don't necessarily talk about school all the time, but yeah. If I have a question, they're the person I would go to. We're both Native American. Just again, having that similar cultural background. He also grew up on the Reservation.

I think because we're on like social media, so we connect more on a personal level. Whereas the professionals, like the physicians and advisors, we're not on Facebook or anything on social media. Just going on their profile and seeing what they're about, and then you can kind of understand them more at a personal level. Whereas with a professional you're not going to talk about where you ate or what you're doing this weekend, things like that. You keep it professional. It's easier to open up I guess, when you're on that personal level.

Failed sustainment. Participants' responses to why their assigned mentorship failed to sustain and succeed, were as follows.

Angel I'm not sure cause I know that when I was a first year we were given, there's a mentorship program. I know I have a second year (assigned) mentor, but I know she was really smart and kind of, I don't know, stingy about not giving information. That's why I didn't always go with her, but I don't know.

Charlie I really don't know the guy who was assigned to me. I think that there needs to be a similar kind of struggle between the people who are mentoring and people being mentored. And I don't know of any way that could occur if it's not organic. Because I don't feel like that's the only thing that needs encouraging. You got to have similar interests with the person, you got to have ... who knows why people pick. It would seem very forced when people are assigned.

Baron Yeah. I think he was responsive. I think we just didn't have a lot in common, you know, personally. I think he was a white guy from another Midwestern state, and I'm a Navajo guy from a Southern state. I think we just didn't have a lot to relate to. I guess we just didn't relate to one another.

I think the difference is just being able to relate to one another. I think a lot of it comes with our upbringing. My upbringing was a household where my parents spoke Navajo, you know? He's kind of a ... I don't know. I would consider myself a poor person, like coming from a poor background. I think it comes across in the way I talk, and the way I dress. I don't know. Then, with my assigned mentor, I can tell he's a rich, upper class person. I think I feel like he comes from a pretty wealthy family. You know, he's a white guy. We just don't, you know? We just come from different upbringings. I think that came across in the way I carry myself, and the way he carries himself.

A lot of it, too, was like: My assigned mentor, he never had problems with failing his block exams. Unfortunately, the people that do have experience with failing block exams were other AI students. It's like, "Yeah, I'm going to talk to the AI students who have that same problem."

Duke I believe in block two is when they did have a, so I would have been a first year, they assigned me a second-year mentor who was going to talk to me about school and all that. I unfortunately didn't connect with him very well. Of all the advice he was giving me, I had already asked others or I'd already been given it by my friends or my mentors prior to med school, so it just didn't work out very well and we came from very different places. He's from this state. I wasn't so it was just, it wasn't a good match for something and that's why sometimes I don't really like being given a mentor because then I'm like, well, who are you? How can you help me? I don't know you. It was a bit, unfortunately it was awkward and the first and last I had talked to him was the day that we had scheduled to meet.

I haven't contacted him. I just thought that the relationship there wasn't going to be established. There wasn't anything that he was going to benefit from having me there and then there wasn't anything benefiting me from having him there. So, it just dissolved really quickly, which is unfortunate because I think he wanted to mentor and I was just not in the place to. You can't give me anything I didn't already know and I don't want to waste my time and I don't want to waste your time by that.

I don't know. I think we just came from very different places and then understanding the process of going through med school and approaching everything was just very different for us. He seemed very passive and just very different from me and different of how I'd been mentored in the past. It's just, it wasn't very direct. It was kind of very informal and just, I didn't like the idea of being assigned somebody, so I guess it's that.

Eleanor

I just wasn't feeling it at all. We didn't click at all. We were just two different individuals. He was like, a really privileged white male, came from a home of surgeons. Like, nothing like me at all. He had no idea what I was going through or what my life was like, and could never identify to me at all. So, yeah. That was not ever going to happen.

Flynn

I think it was probably because I was intimidated as a first-year student. There were more comfortable people to go ask questions or find things out about, like the AI medical students.

Ivy

I will see her sometimes in the hall and we'll say hi, but we don't ever really talk. Even that day was kind of like, "How are you?" "How are you?" Then we were ... I think we had maybe talked ten minutes and then we were done. I guess we never really ... We talked that time and it's like, she's like, "Do you have any questions? I can answer some questions," and then from there we didn't really ... She's busy, and I'm busy, and I talk to who I know. I don't want to pester her either because I know she's busy. We haven't really ever been ... Not that we need ... We could probably set up things ourselves to meet, but it's not like we've ever really had another event. That first ice-cream social where we had to meet, then that was kind of it, so ...

Monroe

My mentor was really nice, and she wanted to help. But I don't know if this was ... she wasn't Native or anything, so I didn't really feel like I related to her at all.

I don't like assigning mentors to people; I think especially if a person's going to use their mentor, they should get ... I don't know. You need to

know them personally before you can determine if they're a mentor or not. And I have no problem being a mentor for any of the undergrads here if they needed it, but I just think you need to know them before. I don't like the fact that you're just assigned them and hope that it goes well.

Louise I tried reaching out and it just never worked out. We both had busy schedules that were not in sync, and I think part of that is that she wasn't here every day of the week.

Quinn I think a good part of it is just that I probably wasn't as motivated to seek out advice because like I said before I just kind of figured it out on my own. It's probably my own doing. Then on their part too, they didn't really seek me out. I don't think either of us felt like upset that the other person didn't seek them out, it just that person gave me all their contact information, said if you have any questions or need anything let me know. I just never did because I didn't feel the need to.

Ruby It was great for that time because we met them the first week or two of medical school and it was really nice to be able to ask questions and kind of ask what we need to do, what should we be doing. So that was very nice, but I felt like I had enough help then from other people that I didn't have to ... I didn't really go back to them because there were other people that I felt like I connected with better that I could ask questions to.

With the faculty mentor, it was up to us to kind of arrange everything and initiate everything. I never did, and I think most of that was because I was paired with somebody that I had never met, I had no idea who they were, so I just kind of stuck with people that I knew when I had questions.

Discussion of Category Five: Formal Mentoring

Participants in this study were asked about the initiation and sustainment efforts of their assigned formal mentors. The assigned mentor was assigned by the medical school or by senior medical students. They were either requested to meet their assigned mentee at an ice cream social event sponsored by the medical school or found out who their mentor was via email from the 2nd year medical students. Among the 17 AI medical students who did not have a successful formal mentor, all 17 described instances where either they did not remember being assigned a mentor, they did not meet them at the social event, or they met them for a few minutes and ended

their dialogue. For several, this social encounter was the last time they spoke with their assigned mentor. Either the mentor did not reach out to the mentee after their initial meeting, or the mentee decided to not reach out to the assigned mentor.

Listed below are explanations for why assigned formal mentorships failed.

- the mentee never met the assigned mentor
- the mentor and mentee met briefly at an ice cream social
- being assigned a mentor was unnatural and not “organic”
- the mentor was not matched well with the mentee on many levels
- the mentor and mentee had nothing in common
- the mentor was white Caucasian
- the mentor came from privilege and the mentee did not
- the mentor came from a family of doctors and the mentee did not
- the mentor and mentee were from different locations
- the mentor was too busy
- the mentor never reached out or communicated with the mentee
- the mentor withheld helpful information and did not want to help the mentee
- the mentee had already found other informal mentors
- the mentor was not American Indian

Two of the 19 participants in this study continue to communicate and meet with their assigned formal mentor. The reasons their assigned mentorship worked for them are listed below.

- the mentor was a 2nd year American Indian medical student
- the mentor was older or more experienced

- the mentor was in close proximity to them in the AI support program within the medical school
- the mentor responded to their requests for help
- the mentor and mentee were more similarly matched

Several studies have provided meaningful insight into the value and significance of mentoring's relational achievement on improving the career and life satisfaction of American Indians (Jackson, Smith, & Hill, 2003; Phinney et al., 2011; Shotton et al., 2007). Jackson, Smith, and Hill (2003) found that AI students who had successful informal mentors were more likely to continue and succeed in their studies than those who did not have mentors. In a more recent study examining the success of AI students in higher education, Adelman, Taylor, and Nelson (2013) found that mentoring relationships and services which used a holistic approach to serving AI students was valuable in meeting their unique personal, cultural, and educational needs.

As described in the narratives of AI medical students, the need for mentoring exists, but if their need is to be met, they require that more similarly matched mentors be assigned. According to the work of Ragin (1997) there is a difference in the components which describe homogeneous and diversified mentoring relationships. Ragin suggests that diversified mentoring relationships exist between mentors and protégés “who differ on one or more group memberships associated with power in organizations” or “may also involve a minority mentor and a majority protégé” or vice versa (p. 489). Whereas, homogenous mentoring relationships were based on shared or similar group membership such as race, gender, culture, identity, and interpersonal comfort, as explanatory characteristics of the relationship.

According to this study's findings, participants were more likely to seek, initiate and sustain successful homogenous peer, friend, or familial mentoring relationships. Whereas, participants' diversified mentorships were more likely to be sought, initiated, and successfully sustained with professionals such as faculty, researchers, and physicians. Sosik and Godshalk (2002) suggest that theories concerning homogeneous mentoring relationships are centered on the premise that individuals need to similarly identify with others who they believe share "common self-identity" (p. 105). Cox (2017) posited that when minorities enter into diversified mentoring relationships, they do so to gain social capital and access toward gaining opportunities and information that may advance their career goals. These diversified relationships exist on the premise that non-minorities, typically Caucasians, are more likely to have the knowledge, expertise, status, access, and ability toward sharing their social capital than minorities (Cox, 2017). In consideration of these findings, AI medical students seek homogenous mentors for career functions during medical school, but describe their essential need for psychosocial functions as primary to their relational success. Participants' diversified mentors offer psychosocial functions, but are relied upon more for career functions and ways to gain social capital, in order to succeed.

As this study's findings have illustrated thus far, the mentoring experiences and relationships of AI medical students play a pivotal role in their ability to cope, adjust, and succeed in medical school. Thus far, participants have defined mentors, described types of mentors, their characteristics, and shared valuable information regarding the initiation and sustainment of informal and formal mentoring relationships. The success of these relationships is further described here in the final category under the theme of *successful mentoring*, called *significance of mentoring in medical school*.

Category Six: Significance of Mentoring in Medical School

The following participant narratives describe how mentees perceive the significance of mentoring in medical school.

- Angel I think it's really important just because you kind of have somebody there to always give you information and then advice. Like whenever you have a problem that you can always go to that person because they've been through it before. I think that it's really important for that person to have gone through it instead of just somebody who hasn't been through it before because I know it's really stressful and its time consuming.
- Baron It just feels like med school can be ... You know it's very isolating. It's kind of lonely, and just to know someone who has been through it and who you can talk to about it ... I mean, I think they're mentors. At the same time, they're friends too. I think that's just good to have: A friend that's gone through that.
- Charlie Wow, I would say very important. Without any ability to figure out what I needed to focus on. So, I feel like it was ... I might not have succeeded without them. I may have also felt like that if I had one failure that I couldn't keep going and couldn't go on with my career path, so I couldn't see myself probably, that's scary... But I could see if didn't see someone who'd gone through these same struggles or struggles that are common in this kind of situation, someone's stressed, such high flow that you'd give up easier.
- Duke They've been very important. So, I did mention talking about the hard part of starting anatomy, so being around cadavers. The physician I went to directly was actually an alumnus from this med school. So, I sought her out specifically just because it was specific and a specific need I needed and she just talked me through it. She actually offered to send me stuff. She prayed for me and did all that stuff and I think that was very important, very good.
- Well, with a lot of stuff, I wouldn't have been able to get scholarships, get funding and support in terms of med school and the research that I was interested in. So, they were really instrumental in really getting me into those programs, getting me into scholarships and of course getting me into school. So not only were they mentors throughout my pre-med years and stuff, getting into school required a lot of letters and stuff, so they helped with that. Then of course in school, the faculty members that I did visit more often helped me with their subject matter and I was able to be a little bit more successful in terms of pathology and subject specific areas in our testing I did really well in just because of their specific area of expertise.

- Eleanor Just with not letting me give up and just continually pushing me. Because there were many times where I'm just like, "I can't do this. It's too much." Because it's just overwhelming in every single way possible. Mentally, physically, emotionally draining. And if you don't have a good support system during that time, it's easy just to fall by the wayside and want to not do it and just give up. So, she was always like my voice of reason, and kind of pushing me through and reminding me of why I'm doing what I'm doing.
- Flynn I think mentoring is important because you don't really know ... because there are a lot of challenges that develop that you weren't expecting. There's just so many questions that come up during medical school. If you don't have anybody to go to, then that can be pretty discouraging. I think it's really important in that respect.
- I think it's important that nobody really slips through the cracks. I think that sometimes happens, and that can be discouraging and even harder on a new medical student who needs a mentor, who needs somebody who they believe is really willing to help and isn't bothering them with questions or their time or anything.
- Ivy It is a journey. It's like a emotional, difficult journey that ...(begins to cry) It's not just like, here's a two year program, you're going to be done and that's it. It's a lifetime thing, which is why I got into it, but it's also part of the daunting part of it. It is important to have someone that you can confide in and help get support who has been there, or not necessarily been there but has been in a certain similar situation.
- Difficult. It's not really anything like anyone has ever really experienced. Sometimes I tell people it's a different type of torture. In a good ... I mean, it's good too, obviously. but then it's also been really difficult in other ways. Just the adjustment of a new type of lifestyle.
- Koby I think because it's a whole different experience that a lot of people don't have. I think that's why at this level I'm trying to seek new mentors. A lot of my mentors, they don't really understand what it means to be in medical school because this is such a specialized level of education. There's not a lot of people I guess that really go through this track, so I need a new type of person who's gone through this and who can understand and guide me in this kind of specialized track.
- Louise I think he's been vital. He's an unbiased party I can speak with and not worry about any consequence. I can just ask him questions that are

hypothetical. Having people here is important, but having people removed is also important, that kind of understand what's going on. I wouldn't say he's directly related to my success, but he's been an indirect support.

I think for me, having someone believe in my abilities is important because it's very easy to get bogged down and get the negative "I can't-s." So, having someone you know who's aware that you have capabilities, not boosting your ego unduly, but be a reality check, like "You have abilities, you can do this." I think it's very easy to become isolated, either academically or socially, in medical school. I think it's good to have someone who's been through it and who's experienced these things that's nearby and you can talk to.

Noah

I mean, med school, it's a wild ride. It's a roller coaster. There's so many nuances and little quirks. Not only the weight of the academic knowledge is equally as heavy as the weight of the nonacademic knowledge you need. I don't know how you could get that nonacademic knowledge from anyone else other than mentors, whether they're, no matter the title. If they're somebody at the med school, if they're a physician at the hospital, if they're upperclassman, whatever it is. You just need that whole network of people to ask questions and to help you and remind you and all that.

I remember early on in my third year being on surgery and my first day, it was a whirlwind. It's hard. It's one of the hardest rotations and everything else. There was an upperclassman who just swept me up without even me asking. He's like, "All right. I know you got a patient coming up in a little bit. I looked and they've got Addison's. I printed this off." I was blown away how much they did and how selflessly they did it. I've had multiple interactions with upperclassman that have done that for lower-class for me. I always am like, "Thank you. I hope I can pay you back someday." They're always like, "Just pay it forward. We had the same thing for us. Just do it for the lowerclassmen."

Orva

Medical school is difficult to say the least, with the chronic stress that we endure I think having somebody there who can relate to you. Nobody knows what medical school is like unless you've actually been through it and so being able to express some of my stress and frustration and anxiety with the chronic stress that we endure, is really helpful because I know somebody who's been through it and knows it.

Ruby

I think there's a lot of stuff that you don't know in medical school, and there's a lot of stuff that you don't know that you don't know. It's really great to have people there to help you understand the big picture, because

especially in medical school you're really focused on whatever block you're doing, and whatever thing you're trying to learn, or whatever rotation you're on. So, it's really helpful to be able to back up and look at the big picture because sometimes you lose that perspective in medical school.

Discussion of Category Six: Significance of Mentoring in Medical School

Participants in this study described the importance of mentorship during medical school. Several described how difficult, challenging, stressful, and isolating medical school can be, and that without a mentor it would be difficult if not impossible to succeed. Others described mentors as individuals who helped them through academic, professional, and personal challenge. Without mentors, AI medical students' journeys would be much more difficult, stressful, and isolating. Many participants attribute much of their success to the support and guidance their mentors offered them in times of need.

According to the U.S. Department of Education (2009), AI students have the lowest college enrollment and completion rates among minorities in the United States. Despite efforts made by pipeline programs and medical schools to increase the number of underrepresented AI medical students, they still have yet to reach parity with other whites and minorities in medical school or likewise in our nation's physician workforce (AAMC, 2013; AAMC, 2017; Hollow et al., 2004). Dyrbye et al. (2010) found that age, parental status, race, and debt were associated with future serious thoughts of dropping out" in medical school (p. 96). As such, AI medical students would be among those who are more likely to consider dropping out of medical school.

Studies have provided significant support showing that mentoring in medical school is essential to the academic and career success of medical students and faculty (Buddeberg-Fischer & Herta, 2006; Bynum, 2015; Fornari et al., 2014; Frei et al., 2010). Other studies have distinguished that medical school is considered one of the most challenging disciplines in higher

education and is associated with high levels of stress, anxiety, burnout, and depression among medical students (Bassols et al., 2015; Hollow et al., 2004; Kotter et al., 2015; Ryn et al., 2015; Sequist, 2007; Walsh, 2015). According to Oelschlager et al. (2011) the intensity of medical school curriculum calls for mentoring programs to help lessen the burden and stress on incoming medical students during their first year and also decreases attrition. Fares et al. (2016) found that methods to reduce medical students' stress included social events, activities, positive reinterpretation and expression of their emotions, student-led mentorship programs, evaluation systems, and counseling and life coaching (p. 75).

As medical schools make efforts to create formal mentoring programs or provide opportunities for informal mentoring relationships to develop and flourish, they must consider the unique challenges and needs of AI medical students (Hollow et al., 2004; Sequist, 2007).

Summary

In Chapter IV, the three themes were discussed that emerged from this study's qualitative data (19 participant interviews). Theme one, *medical school challenges*' categories included: preparation for medical school, displacement and isolation, family and social abandonment, racism and cultural isolation, financial hardship, medical school years 1 and 2, and medical school years 3 and 4. Theme two, *coping mechanisms*, included self-care as a category with cultural, relational support, and adjustments, as subcategories. The second category under *copied mechanisms*, was lack of self-care. The third theme, *successful mentoring*, categories included: mentor defined, types of mentors, mentor characteristics, informal mentoring with subcategories of initiation, sustainment, and needs based, formal mentoring with subcategories of initiation, sustainment, and failed sustainment, and the final category, was significance of mentoring in medical school.

Although studies have examined the challenges, stressors, burnout, coping, and mentoring of medical students, there are significant gaps in the literature pertaining to unique challenges, coping mechanisms, and mentoring relationships among American Indian (AI) medical students during medical school (Hollow et al., 2006; Hollow et al., 2004; Sequist, 2007).

Theme one, *medical school challenges*, participants in this study met unique and significant challenges as they prepared to enroll into medical school. As many came from low-income families, impoverished areas, watered-down education systems, and did not have adequate support from family or individuals who could help them navigate their path to medical school, their journey was daunting at best. Participants also were faced with financial hardship trying to pay for the MCAT exam, other required preparation materials, programs, and applications for medical school. Participants had difficulty scoring high on the MCAT exam and felt ill-prepared when taking standardized multiple choice question examinations.

AI medical students in this study were often displaced from their homes, family, reservations, and culture when enrolling in the Northern Midwest Medical School. As 15 out of 19 participants in this study were from out of state, their feelings of displacement and isolation were significant in leading toward their feelings of stress and loneliness. Due to the mounting and challenging requirements of medical school and being at a distance, participants in this study felt as though they either had to abandon and avoid time with family and friends to complete their tasks, or it happened naturally.

Participants described dealing with acts of racism and implicit bias from peers, faculty, and the community that they lived in during medical school. Due to cultural beliefs, several had difficulty being involved in the anatomy cadaver lab during medical school. Their stress and response to being in these situations had significant impact on their ability to be present in the

lab, learn, and function. For others, the implicit or explicit bias of peers who thought AI medical students were taking away medical seats in their class from others, fostered feelings of resentment and frustration. Another student felt that by inviting AI patients who had significant health disparities, health issues ignited by alcohol, or other stereotyped diseases, that faculty were perpetuating racist tendencies among peers. Whether words or actions were overt or not, the participants in this study dealt with racism, lack of cultural awareness, understanding, or sensitivity, and cultural isolation.

Another challenge that AI medical students in this study faced were financial hardships throughout medical school. Many students had families to support while attending school, were taking out loans, and still had to find ways to pay for bills, moves to clinical rotation sites, interview flights, shelf exams, and driving or flying home to visit family. In years 1 and 2 of medical school, participants faced significant challenge and hardship when faced with the academic rigor and volume of material that was required of them to learn. Of the challenges described in this study, participants appeared to have the most difficulty in this area. Academic challenges included difficulty learning or understanding scientific concepts, volume of material, pace of teaching and learning, difficulty taking multiple choice examinations, trying to learn new study methods, lack of sleep, and in general, finding ways to function and cope. In years 3 and 4 of medical school, students were no longer in the classroom or in block periods, but were in rural or other clinical rotation settings. Their challenges in these year were far less than in years 1 and 2 of medical school. Instead, students worked full-time hours in clinical settings while studying for both clinical rotation and shelf exams. They also faced difficulty when moving to a new city and setting for every clinical rotation. Part of this difficulty was learning to adjust to a new home, setting, community, focusing on new fields of medicine, and health care providers.

Although there is limited literature on the preparation for medical school, displacement, financial hardship, and academic rigor among AI medical students, no studies were found that examined challenges of racism and cultural isolation (Hollow et al., 2006; Hollow et al., 2004; Sequist, 2007).

Theme two, *coping mechanisms*, emerged as participants in this study revealed ways in which they coped in order to meet the demand of medical school requirements. Participants responded to their stress, anxiety, and depression through either self-care or lack of self-care. For those participants who found ways to self-care, they most often coped through cultural ways, relational support, or by adjusting. Several participants spoke about turning to their cultural ways of responding to their stress from working with the deceased in cadaver lab or dealing with the mounting stress of being away from their family, homes, and culture. Some contacted their parents or elders in their family or community for guidance, others went home and had way ceremonies conducted on them so they could return and work in the cadaver lab, while others prayed, burned cedar, and partook in daily spiritual rituals. Another way participants in this study responded to stress, was through relational support from peers, friends, family, and their mentors. Mentor types varied from peers, faculty, researchers, physicians, to friends, family, and advisors. Participants also found ways to adjust to the academic rigor, lack of sleep, and other outcomes of their stress. They did so by trying or learning new ways to study, creating study schedules that worked for them and their families, examining the way in which they took examinations and viewed medical school, and not being afraid to ask for help from support programs or others. These alterations were vital to their well-being and overall adjustment in medical school.

Although most of the participants in this study spoke of varying ways they self-cared, there were some participants who lacked self-care. These participants were able to recognize that

they were not or had not coped well during medical school. They spoke about ignoring their stress and need to cope because medical school didn't really give them time to respond to their own needs. One participant abused alcohol to the point that he became ill. Although he sought medical treatment for the illness that his alcohol consumption had prompted, he did not seek professional help for what he was going through emotionally. Two other participants kept their stress, anxiety, and frustrations to themselves. Although one requested professional help at the end of the interview, the other continues to cope on his own. Studies show that medical students who avoid seeking professional mental or behavior health treatment do so because they fear retribution from medical school administrators, fear appearing incompetent to peers and physicians, and do not want to be labeled (Rosenthal & Okie, 2005; Wimsatt, Schwenk, & Sen, 2015).

The third theme, *successful mentoring*, had six categories. First, participants defined what they believed a mentor to be. They described mentors to be individuals who had expertise, experience, and wisdom in areas that they too were learning and that mentors provided advice, guidance, and support in varying capacities that contributed to a mentee's success. Participants described several types of mentors which included: AI and other medical student peers, faculty, physicians, researchers, other health care providers, friends, and family. The mentor characteristics described were varied but centered on career development functions or psychosocial functions. One of the main categories of this theme was the development of informal mentoring relationships. Of the participants in this study, 17 out of 19 had developed informal mentoring relationships during medical school. These relationships' initiation centered on proximity, convenience, similarity of background, race, culture, experiences, personalities, and comfort levels. Informal relationships were sustained through consistent communicative

relational maintenance efforts by both the mentor and mentee. The communicative mediums used to sustain their relationships were face-to-face interactions, cell phone, text, email, and social media.

As the Northern Midwest Medical School (NMMS) provided a formal mentoring program between 2nd year and 1st year medical students, all of the participants in this study had been formally assigned a mentor during their first year of medical school. Of the 19 participants in this study, only two participants developed formal relationships with their assigned mentor. For the two participants who continue to develop their formal mentoring relationships, they have succeeded thus far because their assigned mentor was also an American Indian, came from similar background, culture, and experiences, and were in close proximity to them at the AI support program. In one case, the participant described that he had already met his assigned mentor and started a relationship before he had been assigned to him and had met him in a natural social setting provided by the AI support program within the medical school.

For the 17 participants in this study whose assigned mentor relationships did not develop or failed to begin, their explanations provide valuable insight into challenging considerations surrounding formal mentoring programs. Participants expressed that assigned mentors: were not well matched with them, had nothing in common with the mentee, were Caucasian, privileged, came from families of doctors and wealth, withheld information, were not helpful or were too busy, non-communicative, only met briefly once or not at all, not American Indian, and participants felt that being their assigned mentors was unnatural and not “organic”.

Chapter V includes a summary of the study and the methodology used (phenomenography). It also includes this study’s conclusions, recommendations, implications for practice, and suggestions for future research.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the mentoring experiences of American Indian (AI) medical students and resident physicians during medical school. The research question that guided this qualitative study was: What are the mentoring experiences of American Indian medical students? Chapter I included the study's background, problem, significance, purpose, design, theoretical framework, key terms, delimitations, researcher interest and bias. Chapter II contained the critical analysis and synopsis of the fundamental literature related to this study and provided discussion toward understanding this study's research question and the context in which it was presented. In Chapter III, this study's methodology was explained, with an emphasis on participant selection, interview protocol, transcription, data analysis, validity, and trustworthiness. In Chapter IV, the study's findings were presented and discussed with respect to the literature in Chapter II. Chapter V includes a summary of this study, along with an overview of methodology, assertion, limitations, conclusions, and recommendations.

Overview of Methodology

This study used phenomenography as the qualitative methodology to examine data collected from 19 American Indian (AI) medical students' and resident physicians' interviews. Of the 19 AI participants interviewed, 8 were male, 11 were female, 15 of them were in years 1-4 of medical school, and 4 were resident physicians. All 19 AI participants were enrolled in or had graduated from the same Northern Midwest Medical School (NMMS) and were enrolled or

descendants of 14 federally recognized tribes in the United States. Interviews were all conducted within one month in the winter of 2017 via face-to-face or phone and were recorded by the researcher and later transcribed by Rev.com. Upon outside review, inter-coder agreement, member checking, and researcher reflexivity, data was analyzed through In Vivo Coding qualitative software, categorization, second cycle axial coding, and final thematic analysis toward the study's singular assertion. As thematic outcomes supported by participant narrative were discussed in Chapter IV and were related to the literature in Chapter II, Table 1 depicted the final analysis of this study's findings. Therefore, the following assertion is described at length.

Assertion

After analysis of the data from this study, one assertion emerged: "Due to the significant challenges and unique support needs of American Indian (AI) medical school students, their likelihood of success is profoundly reliant upon the initiation and sustainment of successful informal mentoring relationships with mentors who are AI and/or who have similar interests and experiences, and commit to relational maintenance through communication over time." This assertion illuminates the fact that AI medical students who come from unique indigenous cultural backgrounds and a long history of trauma are directly impacted by these factors, making their journey in medical school and their ability to cope and seek support through mentoring relationships equally unique. As they work to find mentors to support their personal, academic, and career journey, they also seek peers who are more like them and who share similar histories and experiences. Throughout this study, this process manifested as seeking peer mentors who were also AI and initiating the relationship in natural, cultural, and social settings supported by the AI support program within the medical school and sustaining them through continuous communicative efforts, in close proximity, and having care for the relationship.

For the mentors of AI medical students who were non-Native, they were more likely to be peers, faculty, physicians, scientific researchers, and other professionals whose guidance, expertise, and social capital opened opportunities and advanced their academic and career goals. Thus, it can be concluded that AI medical students are more likely to personally, culturally, and academically thrive with informal mentors who are similar to them and who professionally are diversified. For formally assigned mentorship to work in medical school between peers, findings from this study suggest that those who are tasked with matching mentors to mentees, consider concentrating their efforts on improving the ways in which they match AI students with mentors who are homogenous than those who are diversified.

Limitations

The purpose of this study was to examine the mentoring experiences of American Indian (AI) medical students and resident physicians from a Northern Midwest Medical School (NMMS). Using phenomenography as a qualitative method, 19 interviews were conducted with first through fourth year AI medical students and first and second year resident physicians. Upon completion of interviews, 329 pages were transcribed, analyzed, and coded through first, second, and final cycle analysis for thematic outcomes. Of the 19 participants in this study 8 were male, 11 were female, 4 were residents of the state in which took study place, while 15 were from 9 other states. All 19 participants self-identified as AI's and were either enrolled or descendants from 14 federally recognized tribes. Although 19 interviews among a marginalized group of AI medical students and resident physicians constitutes a quality sample size, these participants were either enrolled or had graduated from the same medical school. Therefore, the findings from this study may add significant understanding and fill gaps in the literature about the mentoring experiences of AI's during medical school; yet the findings do not speak on behalf of

the general populous of AI medical students and resident physicians from other medical schools and institutions across the nation.

Conclusions

Findings from this study suggest that American Indian (AI) medical students are more likely to initiate and sustain mentoring relationships during medical school when they are informal, in natural settings, and with mentors who have similar backgrounds, interests, and goals (Kalbfleisch, 2007). They also suggest that the ways in which AI medical students initiate and sustain mentoring relationships is reliant upon communication, proximity, setting, mentor characteristics, and their relationship maintenance (Kableisch, 2002).

Although the participants in this study were assigned a formal mentor during their first year in medical school, only two participants' mentoring relationships succeeded. Their success was reliant upon the fact that their mentors were both AI, were in close proximity to them, had similar backgrounds and interests, and wanted to help them (Kalbfleisch, 2002; Oelschlager et al., 2011). For the 17 other participants whose assigned formal mentorships failed, they sought refuge in the initiation and sustainment of informal mentors who were either AI or other peers, faculty, physicians, friends or colleagues in health care fields, and family members whom they felt comfortable approaching and had similar backgrounds, interests, and goals (Kalbfleisch, 2007; Skaniakos et al., 2014; Yamada et al., 2014).

As mentoring in medical school is shown to increase a physician's life and career satisfaction (DeCastro et al., 2014; Dunn et al., 2008; Gray & Armstrong 2003; Jackson et al. 2003; Kalén et al., 2010; Mainiero, 2007; Sambunjak et al., 2006; Sambunjak et al., 2010), as well as support students with medical school's rigorous academic load, hidden curriculum, and other challenges (Levine et al., 2013; Menezes et al., 2016; Oelschlager et al., 2011; Stenfors-

Hayes et al., 2010; Taylor et al., 2013; Tekian et al., 2001), it is vital to the well-being and success of AI medical students who will encounter unique challenges that their non-Native peers will not (Hollow et al., 2006; Hollow et al., 2004; Klasky, 2013; Sequist, 2007). Likewise, medical educators and administrators must take note of the unique culturally and socially imbedded challenges AI medical students face beyond existing medical stressors such as racism, implicit bias, cultural isolation, distance from family, spiritual and traditional taboos, financial hardship, and continuous trauma and marginalization (Hollow et al., 2006; Hollow et al., 2004; Sequist, 2007). Higher education must consider the elements of AI medical students difficult journey to medical school, their transition during matriculation, and their likelihood to learn, develop, and succeed in a highly strenuous learning environment (Klasky, 2013; Schooler, 2014).

Recommendations

Implications for Practice

The findings from this study provide significant implications for American Indian (AI) medical student support and success in medical school through mentoring. To begin, it is important to respond to the findings in this study, which explored the unique challenges and reasons why AI medical students turned to mentors for coping and guidance.

As American Indian medical students in this study faced significant challenges with the rigor and mounting academic requirements, examinations, time away from family, financial hardship, working with cadavers, racism, implicit bias, and assumptions that they were taking medical seats away from other medical students based on their race alone, these findings suggest several implications for practice. First, the students' experiences draw attention to what medical educators and administrators might be doing to better educate the entire class of medical students

about the myths of AI medical students taking seats from other students. They might do so formally during orientation, in shared communication literature about the school and its diversity plan, its supportive programming for AIs or other minorities, and by responding to those who demean AI students for being present and enrolled in medical school based on their race. Secondly, they must take a closer look at what they are teaching, how they are teaching it, and with whom they choose to teach it. One AI medical student felt the faculty chose AI patients who had negative stereotypical health disparities to learn from, which she felt perpetuated the negative stereotypes of AI's. Other AI medical students experienced significant stress, anxiety, sadness, and fear when working with cadavers in the lab and lacked immediate cultural understanding or support from their faculty or peers. As these findings show, AI medical students are less likely to speak up to administrators, faculty, or peers when they face unique challenges such as racism, implicit bias, or cultural isolation.

Medical administrators and educators might commit to and educate each incoming class of medical students more about the AI's or other minorities for which they will likely serve as patients one day and who are part of the medical class. Literature has shown (Isaac et al., 2014; Paul et al., 2014) that much can be learned from minority medical students who may play integral in medical school and when they begin working with patients. If physicians cannot learn from one another as early as medical school about their race, ethnicity, culture, backgrounds, and experiences, they are likely to have difficulty understanding how to competently reach those same goals with their patients (Paul et al., 2014).

Medical schools might take a lesson from this study as well. As American Indian medical students provided their experiences of stress working in the cadaver lab, one medical school invited a Native healer to conduct a blessing in the lab for the AI medical students and anyone

else who wanted to be part of the cultural blessing. This is one way medical administrators and educators might help support the difficulty AI medical students, and others, face who have been unable to speak about, be present, or touch the deceased according to their cultural and traditional beliefs (Alvord, 2013). Other ways medical schools and educators might respond to this challenge is by educating and better informing themselves about the AI cultural implications of working with cadavers and its impact on AI medical students who are required to as part of their academic curriculum.

As the mounting stress of these factors weighed heavily on AI medical students, their claims to healthy and unhealthy coping mechanisms provided insight into how mentoring relationships significantly impacted their lives and helped them respond to their challenges. Although studies provide reasons why mentoring in medical school provides academic, life, and career satisfaction (Jackson et al. 2003; McLean, 2004; Oelschlager et al., 2011; Sambunjak et al., 2006), they lacked examination of the significant worth mentoring offers AI medical students, in particular, whose challenges, stressors, and needs are culturally and historically unique (Hollow et al., 2006; Hollow et al., 2004; Sequist, 2007). As such, the results of this study provide information which urges those who are tasked with matching mentors and mentees, to improve their methods of matching mentors for AI mentees in formal mentoring programs. Results also suggest that AI medical students are more likely to initiate and sustain successful mentoring relationships at social and cultural events, in natural or cultural settings, and with continuous communicative efforts (Kalbfleisch, 2007). Furthermore, medical schools must consider these factors when seeking ways to support the success of AI medical students. They may also benefit from finding constructive ways to support the nurturance and relational maintenance of informal, formal, or existing mentoring relationships that support AI medical

students throughout medical school (Kalbfleisch, 2002; Kalbfleisch 2007). This support may appear in the form of space, proximity to mentors, cultural and social events, mentoring workshops or seminars, and checking in with mentors and mentees to seek if they need support or help during their relational journey.

Therefore, the guiding theoretical frameworks for this study were particularly relevant to its findings and implications for practice. As previously noted, Kalbfleisch's Mentoring Enactment Theory (MET) (2002) lends to the understanding of how mentors and protégés are more likely to initiate, sustain, maintain, and repair their relationship. Her MET provides explanatory power to support the work of medical educators, administrators, and students who must consider the ways in which formal or informal mentoring programs and relationships function, fail, or succeed. By doing so, the use of her communicative strategies to facilitate the initiation, sustainment, and repair of what she refers to as "high-quality" mentoring relationships, will deliver explanatory, communicative rationales which may impact the likelihood of successful mentoring relationships among AI medical students (p. 499).

As AI medical students transition into the highly stressful and anxiety-filled environment of medical school, Schooler's Native American College Student Transition Theory (NACSTT) (2014) lends informative and practical ideology which might serve medical educators and administrators well in responding to the unique needs of AI medical students. Schooler (2014) suggests that although student development theories help explain students' transition into higher education, they are generalized and negate the developmental needs of American Indian students. Her NACSTT (2014) posited that AI students who transition into higher education systems must be viewed and responded to through considerations of development and growth that includes their traumatic history, their culture, as well as their circular needs which are interwoven. As

such, her stages of: (1) remembering history; (2) learning to navigate; (3) moving towards independence; (4) building trust and relationships; (5) re-establishing identity and reaching out; and 6) developing a vision for the future, are ways in which medical educators and administrators could view and respond to the unique needs of AI medical students as they transition and train in medical school.

The final segment of participant interviews sought the opinions of AI medical students' and their views about how medical schools might better serve their mentoring needs during medical school. Participants offered numerous practical suggestions whose implications might also change the way medical administrators, educators, or students view formal mentoring programs and the ways in which relationships are initiated and sustained. Suggestions included a better matching system based on race, culture, backgrounds, interests, and experiences. They also suggested that the medical school host more social and integrated events that are specifically meant to foster relationships, both within and outside of the medical school.

A few participants felt there should be consideration to group matching and allowing students to seek their own mentor within cohorts or require mentors and mentees to take a survey and match based off backgrounds and requests. Some participants felt it was important to educate mentors how to be good mentors by teaching them ways to maintain the relationship and communicate with their mentees because their assigned mentors fell short of communicating and developing the relationship. They felt communicating often in the beginning, to foster the relationship, and meeting during pivotal and challenging times during block examinations in medical school was highly warranted for mentoring to be meaningful. Other participants felt it would be valuable to pair 1st and 4th year medical students together, because 4th year students have more time to devote to the relational maintenance of the relationship than 2nd years. A few

4th years and resident physicians felt that pairing mentees with faculty members and physicians would better assist them toward success early on in their medical career.

As many participants in this study initiated and sustained informal mentoring relationships with other AI medical students, they felt proximity, space to study and meet, and a cultural home-base within the medical school were vital toward their ability to initiate and sustain meaningful and successful mentoring relationships. Finally, as a few medical students noted, medical school can be the most isolating, challenging, anxiety driven, and depressing environment to be part of; they felt medical schools should treat their own students much more like a community and take care of their own. This suggestion means offering space, events, support, physical, mental, and behavioral health, and other wellness options and services for all students.

Future Research

This study examined American Indian (AI) medical student and resident physician mentoring experiences during medical school. Upon the collection of data and analyzation of its findings, it is obvious that there is much research to be done in the areas of mentoring, coping, and support of AI medical students before, during, and after medical school. Several questions should be further addressed by future research. This includes the following.

- What are the coping mechanisms of AI medical students?
- How do medical schools structure informal and formal mentoring programs for minority students to include AI's?
- How does AI identity and connectedness with their culture effect their challenges and coping in medical school?
- Do AI medical students have a preference of informal or formal mentoring relationships?

- What cultural support aspects do homogenous mentors supply the AI medical student mentee?
- What social capital is gained by AI medical students who seek diversified mentors?
- How have mentoring relationships affected AI's in their resident years and beyond?
- How does work with cadavers or certain medical procedures affect AI medical students and how do educators respond?
- At what pivotal moments during and after medical school are mentors needed by AI medical students and physicians?
- How do medical schools teach cultural competency and is it effective?

Knowing that both homogenous and diversified informal and formal mentors provide support and guide AI medical students toward success, it can be gleaned that future research would provide frameworks and ideologies useful for medical schools and students to consider. Thus, I propose a follow-up study with the same 19 participants in this study during the next few years when they are all in or past residency, to examine the status of their mentoring relationships and how they have impacted their career going forward. Additionally, a similar qualitative study examining the mentoring experiences of other AI medical students at other medical schools in our nation, may provide a broader scope of the effect of mentoring in medical school on AI's.

Closing Statement

As a researcher, educator, advisor, and ally of American Indian students in higher education, it was invaluable to study the mentoring experiences of AI medical students whose lives have been impacted by the unique and significant challenges they face before, during, and after medical school. It is my hope that this research begins a wider dialogue whose scope

reaches beyond governments, medical educators, administrators, and students, and begins to develop practical evidence-based ideologies that will support the well-being and success of AI medical students now and in the future.

APPENDICES

APPENDIX A

Interview Questions

PI:

Interviewee Pseudonym:

Date:

Time:

Consent Form Read & Signed:

Introduction

1. Tell me about where were you born and raised?
2. What is your tribal affiliation? Enrolled or Descendent?
3. Tell me about your educational background leading you to medical school from when you were young to now?
4. What challenges and successes did you experience during your educational path?
5. What degrees did you graduate with prior to entering medical school?
6. What are the reasons you decided to become a medical physician?
7. What challenges did you face preparing to go to medical school?
8. How did you prepare for the MCAT exam, your AMCAS application, and the application process to medical school?
9. What experiences were valuable in helping you decide to go to medical school?
10. What was it that drew you to go to this particular medical school?
11. Between the time you were accepted to medical school and came to medical school, what did you do to prepare yourself for your first-year of medical education?
12. Can you tell me about your physical move to medical school and campus? Any challenges?
13. What can you tell me about your first week of orientation in medical school?
14. What peer friendships or relationships formed around this time?
15. How did those initial peer relationships have an impact on your start in medical school?
16. What were the challenges you faced during Block 1?
17. How did you combat or face those challenges?
18. At any point prior to you coming to medical school or during your Blocks 1-4 did you encounter experiences where peers helped or mentored you? If so, who and how? If not, how were you able to cope on your own?
19. Does the medical school offer any formal mentoring program? If so, please explain and how it has impacted your first-year of medical school?

20. During your first-year of medical school did you receive help, advice, or any type of academic or non-academic support or mentoring from peer/s? If so, who and how?
21. What was the most significant adjustment you had to make in your first-year?
22. How would you define a peer mentor in medical school?
23. What do you think is more meaningful in a medical school peer mentor, one who is going through your first-year with you? Or a peer mentor who is a year ahead of you and has experienced their first-year already?
24. Were there challenges to any peer mentoring relationships? If so, how did you and your mentor meet those challenges?
25. Are you a mentor for other incoming first-year AI medical students or other medical students? If so, tell me about your relationship, how was it initiated, and tell me about your role as a mentor?
26. If you could advise or mentor an incoming first-year AI medical student, what are some things you would advise them of?
27. Any additional follow up questions
28. Any questions or information the participant may want to offer at this time.
29. Close interview by thanking participant and stating a follow-up interview or contact to verify information may be possible.

APPENDIX B
Informed Consent



January 23, 2017

Principal Investigator:	Naomi Bender
Project Title:	Mentoring Experiences in Medical Education: A Phenomenographic Study among American Indian and Alaska Native Medical Students and Those in Residency
IRB Project Number:	IRB-201701-172
Project Review Level:	Expedited 7
Date of IRB Approval:	01/20/2017
Expiration Date of This Approval:	01/19/2018
Consent Form Approval Date:	01/20/2017

The application form and all included documentation for the above-referenced project have been reviewed and approved via the procedures of the [redacted] Institutional Review Board.

Attached is your original consent form that has been stamped with the [redacted] IRB approval and expiration dates. Please maintain this original on file. **You must use this original, stamped consent form to make copies for participant enrollment. No other consent form should be used.** It must be signed by each participant prior to initiation of any research procedures. In addition, each participant must be given a copy of the consent form.

Prior to implementation, submit any changes to or departures from the protocol or consent form to the IRB for approval. No changes to approved research may take place without prior IRB approval.

You have approval for this project through the above-listed expiration date. When this research is completed, please submit a termination form to the IRB. If the research will last longer than one year, an annual review and progress report must be submitted to the IRB prior to the submission deadline to ensure adequate time for IRB review.

The forms to assist you in filing your project termination, annual review and progress report, adverse event/unanticipated problem, protocol change, etc. may be accessed on the IRB website:



Sincerely,



The [redacted] an equal opportunity / affirmative action institution.

[REDACTED]

Institutional Review Board Informed Consent Statement

Title of Project: *Mentoring Experiences in Medical Education: A Phenomenographic study among American Indian and Alaska Native Medical Students and those in Residency*

Principal Investigator: *Naomi M. Bender, M.A.* [REDACTED]

Advisor: *Dr. Myrna Olson, Ed.D.*, [REDACTED]

Statement of Research:

A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

Purpose of Study:

The purpose of this research study is to examine mentoring experiences among 10-20 American Indian and Alaska Native medical students or those who have graduated and are currently in residency. You are being asked to participate in this study because you self-identify as American Indian or Alaska Native and are currently enrolled as a medical student or have graduated from the [REDACTED] as a physician in residency.

Procedure of Study:

Your participation is voluntary and may discontinue at any time. Your decision whether or not to participate in this study will not affect your current or future relations with the [REDACTED]. If you decide to participate in this study, you will be asked to respond to several questions during an interview with the Primary Investigator (PI), Naomi M. Bender. It is expected that it will take approximately one hour of your time to complete the interview, but may require a follow-up interview in the event more information is needed. The interview may take place face to face at a location within the medical school or somewhere you as the participant may feel more comfortable, via phone, Skype, or through other means of technology. The interview will be audio recorded for the purpose of gathering and coding thematic outcomes of this study. Audio recordings and documented transcription from the interview will be locked and secured in separate files by the PI for three years and destroyed thereafter.

Risks and Benefits of Participation in Study:

The risks from participating in this study are the possibility of you feeling uncomfortable or distraught from experiences you may have had that surface during the course of the interview. Should this occur, the PI will remind you that you can take a break from or discontinue the interview at any time. The PI may also suggest treatment or other services meant to respond to your needs of well-being. Overall, the risks in participating in this research are equal to those

Approval Date: JAN 20 2017

Expiration Date: JAN 19 2018

[REDACTED] IRB

experienced in everyday life. Benefits include the possibility of personal reflection on your adjustment process to medical school and the challenges you may have faced. You are also contributing to important research designed to better understand the mentoring experiences of AI/AN medical students. This information could assist medical schools and administrators in better understanding the mentoring needs of AI/AN medical students, fill gaps in the literature about AI/AN medical students which are often overlooked, and inform and assist future AI/AN medical students who may be considering a career in medicine about best mentoring practices in medical school.

Statement of Confidentiality:

The interview you will be asked to participate in will be audio recorded and secured in files only the PI has access to and password protected for a period of three years and deleted thereafter. You will be given a pseudonym for the purpose of confidentiality on all documents pertaining to this study and your name will not appear or be part of any documentation during the course of the study, interview, transcription, analysis, dissertation, or in any future publication of this study's results.

Opportunity to Ask Questions:

Naomi M. Bender is the Principal Investigator in this study. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research, please contact the faculty member supervising this project, Dr. Myrna Olson at [REDACTED]

If you have questions regarding your rights as a research subject, you may contact The [REDACTED] Institutional Review Board at [REDACTED]. You may also call this number with problems, complaints, or concerns about the research. Please call this number if you cannot reach research staff, or you wish to talk with someone who is an informed individual who is independent of this study.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Subjects Name: _____

Signature of Subject

Date

I have discussed the above points with the subject or, where appropriate, with the subject's legally authorized representative.

Signature of Person Who Obtained Consent

Date

Approval Date: JAN 20 2017

Expiration Date: JAN 19 2018

[REDACTED] IRB

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