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By

John E. Smith, Jr.

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BLACK MEN IN MEDICINE MATTER: A COMPARATIVE ANALYSIS
OF FACTORS INFLUENCING BLACK MENS' MOTIVATION TO
APPLY TO MEDICAL SCHOOL

A Doctoral Thesis Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

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Dedication Page

To Ericka, my amazing wife, whose sacrificial care for me and our children made it possible for me to complete this work.

To my two sons, John Eddie Smith, III and Emory Jrue Smith who are indeed a treasure from the Lord. I pray this work motivates you to do well and become strong leaders in this community and world. Let God Guide You.

To my nurturing mother, Helen, who never stopped praying for me and anointing me with God's blessings. You are the reason I am who I am today.

To my father, John Eddie Smith, Sr., whose love wasn't displayed often, but was felt in numerous other ways. Thank you for raising me to be a young man who could believe beyond my circumstances and attain whatever greatness that I desired, through hard work and dedication.

To my grandparents, aunts, uncles, friends and loved ones that have gone on before me. Thank you for being my guardian angels in Heaven throughout life.

To all, more especially the young Black males, who look onward and upward at life. I hope this work shares a message of sacrifice, resilience and persistence, so you too may be able to experience the absolute best that life has to offer you.

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To my former teachers and professors, words cannot express my level of thankfulness for the seed you all sowed in me... your labor is not in vain!

To my Douglass Elementary, Ryan Middle School, Jack Yates High School, Texas Southern University, Houston Community College and University of Houston Family: I love my roots and will never forget where I came from - This Is For Third Ward!

There are a plethora of people I want to thank; some are still here, numerous are no longer with us, but more specifically I want to thank everyone who prayed for me.

If you truly know me, then you know my story. Life for me has not been a crystal stair, but I have endured it and I give all the glory and praise to God.

It's been a long time coming and I embrace reaching this plateau with the utmost humility and honor. But there is still so much more work to do. I must continue to do my part. This Is Just The Tip Of The Iceberg...

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Abstract

Background: The Association of American Medical Colleges reports that fewer Black men are applying and entering medical school now than there were forty years ago in 1978. It also projected that there will be a shortage of 46,000 to 90,000 physicians by 2025. The scarcity of Black physicians can make access to healthcare more challenging for low-income minorities and create a significant barrier in health-related issues among the Black population. **Purpose:** The purpose of this study was to explore the strength of motivational factors that lead Black men to pursue a career in medicine by applying to medical school and compare them with the perceptions of other medical school students. The following research question was used in this study - What are the perceptions of Black male medical students versus the perceptions of other ethnicities and genders regarding their motivation to apply for medical school? **Methods:** Administrators from 112 medical schools throughout the United States were contacted to solicit their support in inviting students in their medical schools to participate in the study. Fifteen medical schools agreed to share the survey with their medical school students; this resulted in a total of 122 participants. An online survey, the Strength of Motivation for Medical Students (SMMS) questionnaire was used to measure three motivational factors – the willingness to sacrifice, readiness to start, and persistence. Five questions on demographic information and an open-ended question that focused on other factors that may have contributed to their decision to pursue medical school were added to the questionnaire to provide additional information. **Results:** Based on the analysis of the self-reported survey, Black Male medical students were significantly different from three other groups - White Male, Hispanic Female, and Asian Female. The MANOVA analysis showed that the Black Male students were more motivated than the White Male students

in terms of “Willingness to Sacrifice” and “Readiness to Start.” Additionally, the Black Male students displayed more “Willingness to Sacrifice” than Hispanic Female students. Results also indicated that Black Male students demonstrated significantly more “Persistence” than Asian Female students. Based on varied replies, the responses to the open-ended question were separated into five categories of other influencing factors: 1) Family Support/Personal Health, 2) Lack Of/Need for More Doctors, 3) Job Security/Financial Stability, 4) Love of Medicine/Improving Community and 5) Mentors/Inspired by Someone in Medicine. The emerging theme from these responses suggests that Black Males are being influenced in numerous ways by different individuals. **Conclusion:** A collective effort from various organizations will be needed to increase the Black Male applicant pool for medical school. By implementing more initiatives for special programs and institutional partnerships, medical schools and other leaders in the healthcare industry can ultimately give more Black Males an opportunity to become physicians by applying to medical school.

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Chapter 1

Introduction

Over the past 37 years, medical schools have had more diverse applicants, except for one demographic: black men (see Figure 1). In 1978, 1,410 black males applied to medical school and 542 matriculated, but by 2015, that number dropped to 1,337 applicants and 515 matriculating students respectively (see Figure 2), according to a report by the Association of American Medical Colleges (AAMC, 2015).

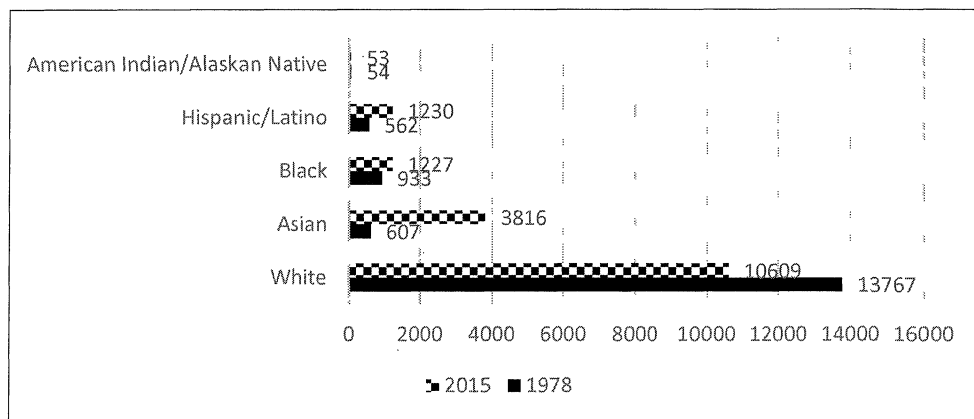


Figure 1. U.S. Medical School Matriculants by Race and Ethnicity 1978 vs. 2015 (All Genders). Source: AAMC Data Warehouse: Applicant and Matriculant File 2015.

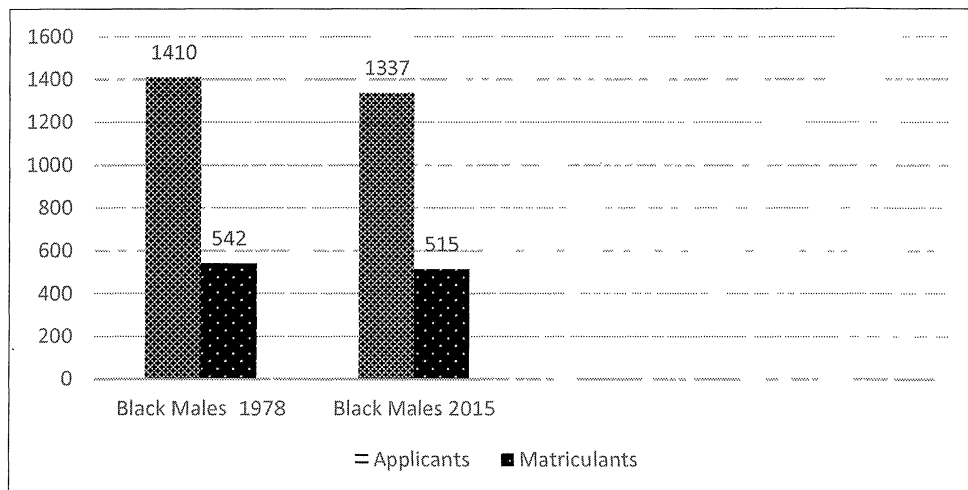


Figure 2. U.S. Medical School Black Male Applicants and Matriculants 1978 vs. 2015. Source: AAMC Data Warehouse: Applicant and Matriculant File 2015.

In today's diverse society there is a need to not just display diversity to meet the status quo, but to practice it daily as well in our organizations. Diversity is needed because it shows a true reflection of our nation's versatile demographic and the society we live in on a daily basis. However, diversity is not evident in a number of healthcare related educational programs and facilities, specifically in medical school. In particular, Black men are vastly underrepresented in medicine and as medical school students. The U.S. Census Bureau (2010) reported that 10% of United States men 30 and older are Black; however, less than 3% of practicing doctors are black men, according to American Medical Association data (O'Reilly, 2013).

Black men who are a product of this culturally diverse era have discovered that one of the most daunting challenges of today is how they are marginalized in their respective fields. A study conducted by the National Bureau of Economic Research in 2003 found that "job applicants with White-sounding names are 50 percent more likely to get called for an interview than applicants with Black sounding names" (Bertrand & Mullainathan, 2004, p.1). This type of racial bias creates a void and lack of diversity in our society, which brings about tremendous scrutiny in the Black community and the entire country alike. With this thought in mind, a lack of diversity in the health care system can slowly become more of a deterrent to meet the needs of a diverse population. "Not having physicians with whom patients can connect can have a dramatic effect on their health," said Dr. Wayne A.I. Frederick, physician and President of Howard University (Johns, 2015, p. 2). One of the key cultural factors of Blacks not being as willing to go see a physician or seek medical attention is because of the lack of availability to be cared for by healthcare professionals with the same ethnicity and

gender. “Previous work has also shown that racially/ethnically concordant relationships are valued in the health care market...” (Brown et al. 2007, pg. 2). Additionally, Randy Jones, PhD, RN, an associate professor of nursing at the University of Virginia and a Robert Wood Johnson Foundation (RWJF) Nurse Faculty Scholar, echoed the sentiment when he stated, “Male patients may feel more comfortable discussing certain conditions, especially those related to sexual and reproductive health, with other men than with women” (Robert Wood Johnson Foundation, 2011, p. 6). There is a need for aspiring Black men in medical schools throughout the world. Increasing globalization, immigration, and minority population growth, are required to enrich the diversity within the healthcare profession to better meet the needs of our changing society (Barbee & Gibson, 2001). This can only come to fruition with additional healthcare professionals educated and trained to meet the needs of the communities and the people that live in them.

"We know from the research that minority medical students face disproportional feelings of isolation and a lack of empowerment," says Monica Vela, associate dean for multicultural affairs at the University of Chicago's Pritzker School of Medicine (Smith-Barrow, 2013). To prevent a loss of Black men in medicine, an expansion of diversity within the medical school student body is a desirable goal. The objective is to benefit both the practice discipline and the patients served (Bednarz, Schim, & Doorenbos, 2010). By refocusing and redirecting principles of persistence, sacrifice, and love for all mankind into our young Black males, the trials that has taken over this particular race and gender and caused this disparity in developing them as professionals and experts in this highly recognizable and their desired fields in medicine can be reversed.

Statement of the Problem

There is a strong need for Black males to be represented in healthcare careers, especially in medicine as physicians. The Association of American Medical Colleges (AAMC) reported that there are less Black men applying and entering medical school in 2015 than there were in 1978 and that recent workforce projections estimate a shortage of over 100,000 physicians by 2030 (AAMC, 2018). These staggering numbers create concern for the black community. The shortage of Black physicians can make access to healthcare even more challenging for low-income minorities, since many black medical school students make a commitment to serve these neighborhoods; 55% say they plan to do so (O'Reilly, 2013).

Purpose of the Study

The purpose of this study was to discover the intrinsic and extrinsic motivational factors that lead Black men to pursue healthcare careers in medicine and attend medical school. In addition, this study offers possible methods and ideas to improve the ratio of Black men who are applying to go to medical school and who may become productive professionals in medicine as physicians.

Research Questions

The following research questions were used in this study:

1. What are the perceptions of Black male medical students versus the perceptions of other ethnicities and genders regarding their motivation to apply for medical school?
2. How much are Black males willing to sacrifice to go to medical school versus other ethnicities and genders?

3. How readily prepared do Black males feel when starting medical school versus other ethnicities and genders?

4. How persistent do Black males feel they are completing medical school and becoming physicians versus other ethnicities and genders?

The results of this study may offer some insightful information that can be used to better prepare Black males to pursue careers as doctors.

Context for the Study

The data for this study is comprised of data retrieved through an online survey and an open-ended question to gather perceptions from current Black men and other demographic groups who are currently medical school students.

Significance of the Problem

The issue at hand cannot be taken lightly. This dilemma is a vital part of our country's health and wellness, especially to the Black community. The fathers, brothers, sons and other Black male relatives are becoming less visible in all types of healthcare careers. Although there are medical professionals that are currently working in healthcare, the likelihood of Black men to continue to be physicians is dwindling daily. Since its inception in 1942, the Liaison Committee on Medical Education (LCME) is recognized by the U.S. Department of Education and World Federation for Medical Education (WFME) as the reliable authority for the accreditation of medical education programs leading to the MD degree (LCME, 2016). As highlighted earlier in Figure 2, the number of Black men applying, persisting and completing medical school has dwindled from 1,410 applicants and 542 matriculants in 1978 to 1,337 applicants to 515 matriculants in nearly four decades. Considering that there were 122 medical schools in

the United States since 1978 or earlier (LCME, 2016) and there were 145 in 2015 (LCME, 2016) one would assume that the number of applicants and matriculants would increase instead of decrease (see Figure 3).

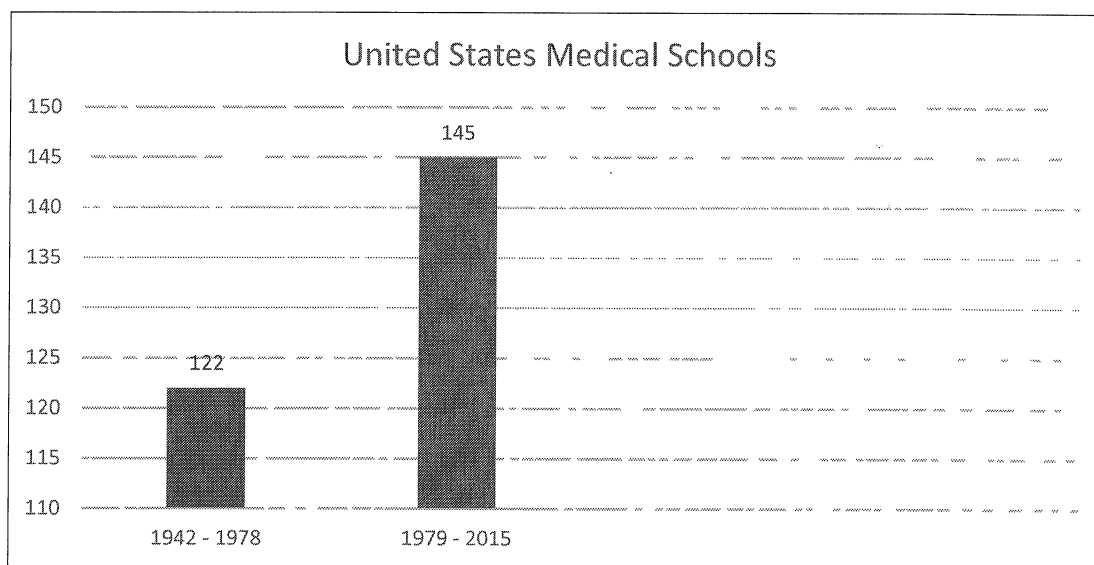


Figure 3. U. S. Medicals Schools 1942-1978 vs. 1979-2015. Source: Liaison Committee on Medical Education (LCME) 2016.

The importance of this issue has several factors that make this problem a topic of concern. If there is a lack of physicians to meet the needs of the Black population, then it will become a serious issue in the Black community. With the need for more physicians rapidly increasing, it will leave a void in healthcare if additional doctors are not trained and prepared to meet those needs. In addition, patients, families, and communities have specific gender expectations with regard to caregivers. For example, in some cultures, men prefer male caregivers whereas women prefer female caregivers (Bednarz, Schim, & Doorenbos, 2010). Furthermore, it is highly likely that a major need for Blacks to find appropriate and proper medical attention outside of their normal comfort zone will pose a problem, perhaps causing them to choose to not be seen by a doctor or not seeking any medical attention at all.

In 2013, infants born to Black mothers experienced the highest rates of infant mortality (11.11 infant deaths per 1,000 births) which is twice that of whites (NCHS, 2016). The U.S. Centers for Disease Control and Prevention (CDC) reported that Black men are seven times more likely than white men to receive a diagnosis of H.I.V. and more than twice as likely to die of prostate cancer (CDC, 2014). The U.S. Department of Health and Human Services (HHS) Office of Minority Health states that Black people experience much higher rates of hypertension, diabetes and stroke (HHS, 2016). In 2012, Black women had nearly double the obesity rate of white women and were 40 percent more likely to die from breast cancer (HHS, 2016).

Finding a legitimate and justifiable solution will assist in ensuring the health needs of the Black community are met by physicians who can serve their needs best in terms of their culture and comfort zone. This level of care for patients will improve the consistency that is needed to sustain the Black community while their medical needs are being addressed. Moreover, having a Black doctor may lead them to become returning patients and continue the established level of rapport required for the Black physicians to become a mainstay in the community. Also, making these relationships and building these alliances will bring more opportunities for Blacks to become prominent and productive professionals in healthcare.

Educational Value of the Study

The educational value of this study contributes another layer of research to this topic that is minimally mentioned in current healthcare related research matters. Although there is not an abundance of research on this topic, there is a great deal of information that supports and describes specific reasons why Black men are not venturing into

medical careers. By discovering what is holding back Black males from pursuing careers in medicine, researchers and stakeholders can implement changes to increase applications to medical school and the overall achievement of Black men in medicine. This research could serve as support for the educational value of future studies and more research specifically relating to Black men pursuing careers in medicine as physicians and other various healthcare careers.

Definitions

Black/Black Men –An individual of the sex that is normally capable of producing small, usually motile gametes and also a part of the ethnic group of Americans with total or partial ancestry from any of the black racial groups of Africa.

Medical School – An institution accredited by the Liaison Committee for Medical Education (LCME) as a Medical School where students are completing a terminal degree to become Doctor of Medicine (DM) or Medical Doctor (MD) in the United States and Puerto Rico. This **does not** include medical-related doctoral degrees or programs, such as Doctor of Osteopathic Medicine (D.O.), Doctor of Dental Surgery (D.D.S.), Doctor of Pharmacy (Pharm.D.), Doctor of Chiropractic (D.C.), Doctor of Physical Therapy (D.P.T.), and Doctor of Occupational Therapy (O.D.T.).

Limitations of the Study

This study was limited to medical school students in the United States and not all healthcare disciplines. Additional limitations include the sample size of the participants since there were only 122 participants in 15 medical schools. Lastly, this information is self-reported by the participants, so there is some possibility for bias.

Summary

This research study may provide hope for the future of the Black community through increased opportunities and greater access to healthcare for all genders and ages. Furthermore, it highlights many of the needs of the Black community as it relates to offering very sound and sufficient options to improving the success of Black men who are interested in pursuing a career in the healthcare field of their choice. The results of this research may produce insights on a growing problem in our nation and result in needed strategies to engage in dialogue and to improve processes for Black men to achieve greatness as they pursue careers in medicine.

The research questions chosen for this exploration focused on various concepts, processes and ideals that other professionals have practiced, used and implemented based on recurring experiences and factors that indicate that these approaches are appropriate and necessary in being a success in the field of medicine. In addition, the results of this investigation offers the perceptions that Black male medical students have regarding motivators and inhibitors of coping with these types of situations and challenges as they complete medical school.

Chapter 2

Review of the Literature

The purpose of this review of the literature is to examine and explore concepts and ideas regarding the significance of having more Black men who pursue careers in medicine. Recognizing that the current issue is a lack of Black males in medicine, the purpose of this research was to find methods to improve this growing problem. This review will highlight factors in which the possibilities of Black men being motivated to go to medical school can be improved, reasons why they are not pursuing this career, and what pursuing a career in medicine is more likely to achieve for the betterment of Black men and the communities they serve. Information regarding these concepts, principles and other ideals to improve this staggering ratio of Black men in medicine would bode well and be very beneficial to Black communities and its leaders. This research literature will examine several different things, such as why there are not more Black physicians, the lack of cultural diversity in medical school and what is required to strengthen Black males in STEM related professions. Additionally, this literature review will also highlight the importance of Black males finishing high school, college and pursuing a higher degree, instead of opting out of doing so. Finally, this literature review may encourage Black males to prepare mentally, emotionally and socially for the challenges that await them in completing the process of becoming a physician. Collectively, this literature will shed more insight on why Black men are not applying, entering and completing medical degree programs and what can be done to better prepare these individuals to achieve academic success once they start making strides towards completing the necessary requirements to complete the healthcare career of choice.

Why Aren't There More Black Physicians?

Blacks currently make up nearly 13% of the U.S. population but constitute only 4.4% of all U.S. physicians and surgeons (see Figures 4 and 5), and are therefore considered an underrepresented minority (URM) in medicine (Rao & Flores, 2007).

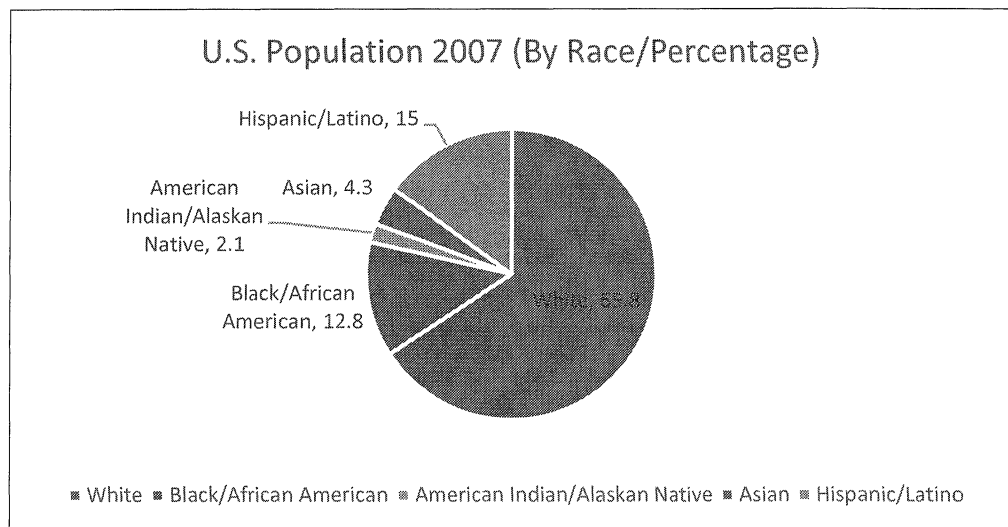


Figure 4. U.S. Population 2007 (By Race/Percentage). Source: AAMC Facts and Figures 2010.

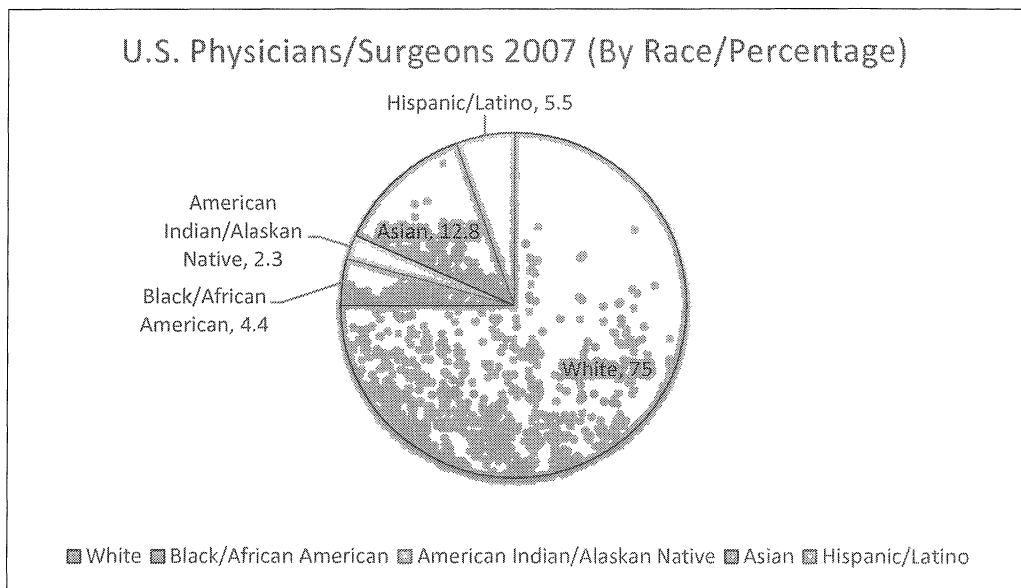


Figure 5. U.S. Physicians/Surgeons 2007 (By Race/Percentage). Source: AAMC Facts and Figures 2010.

For this reason, there is a lack of Black men attending medical school and becoming medical doctors. As the older, more seasoned physicians that are currently in private practice begin to retire and stop offering their medical expertise to their patients, there are not enough Black men currently being educated to become physicians to replace them in the workforce. Rao and Flores (2007) stated, “It has been estimated that an appropriate and proportionate ratio of Black physicians to the overall population would be 218 per 100,000, whereas the ratio presently stands at 73 per 100,000” (pg.1). This conflicting ratio clearly shows that there is indeed a great disparity in the availability of Black physicians to serve the needs of the population. According to those numbers, there needs to be at least an additional 150 physicians per 100,000 people to even meet the current standards. Rao and Flores (2007) noted several barriers that made it even more difficult for Blacks to become physicians. Some of these barriers include: financial challenges and limited exposure to and lack of knowledge about medicine

Financial challenges. The cost of attending medical school is high. U.S. News and World Report shared that even amongst the most economical medical schools with the lowest in-state tuition and fees, the average cost for students was over \$19,500 per year (Haynie, 2014). Rao and Flores (2007) conducted focus groups during their research and shared this statement from a focus group participant as it relates to how Blacks cope with the issue of finances and attending medical school:

Finances play a big role in a lot of black people going to college. If your family don 't have that kind of money and you're not getting the best grades, or you're not going to a real good school so you can't get no scholarships and stuff you not going to college, cause how you gonna pay for it? As long as you in debt, your

family can't help you and then you trying to pay this debt off for the rest of your life. (p. 5)

Limited exposure to and lack of knowledge about medicine. Being in a Black community where there are not a lot of medical professionals creates a significant hurdle for exposure to opportunities in this career field. Lack of exposure may prevent Blacks from learning more about the functionality and importance of the role of a physician. Not many Black youth have a relationship with or know Black physicians on a personal basis. A Black physician who possesses the skills, knowledge and abilities to enhance the life of those younger generations coming after them to pursue a career in medicine makes the lack of a physician even more problematic for them to gain passion to attain this honorable designation if they have not been in contact or communication with them on a consistent basis. By not having a voice to motivate them to continue to pursue this goal can also have an adverse impact on the desire of Blacks to want to go into various fields of medicine.

Cultural Diversity in Medical School

Having a diverse physician workforce is a critical component in making health care available to those who need it most (AMSA, 2016). In addition to the challenges Black men face while attempting to pursue careers in healthcare, there are issues as they relate to cultural diversity in medical school. The lack of diversity of medical students, coupled with ineffective cultural competency education, continues to produce training and treatment environments that are biased, intolerant and contributory to health disparities (AMSA, 2016). Expansion of diversity within the medical school student body, and thereby in the medical profession, is acknowledged as a desirable goal that

promises to benefit both the practice discipline and the people physicians serve. Medical schools across the country are working to recruit students and faculty of color to ensure that health care professionals better reflect the patients they serve (King, 2014).

This issue has caused perils and pitfalls in the realm of medical education. Perils in the field of medicine highlight the hardships that medical school educators must deal with when nurturing a diverse population of students. Under-represented minority (URM) faculty account for only about 4% of U.S. medical school faculty members, and approximately 20% of URM faculty are located at six schools - Howard University, Meharry Medical College, Morehouse School of Medicine, and the three Puerto Rican medical schools (AMSA, 2016). Due to varied values and beliefs this has placed a stagnation on the growth and development of certain genders and ethnicities to become successful in the field of medicine. The American Dental Education Association (ADEA) Associate Executive Director and Director for the Center for Equity and Diversity Dr. Jeanne Sinkford stated, “Diversity does matter and is evolving. It is a passion and commitment and involves revising your thinking and the energy you have to put into the various initiatives” (ADEA, 2010, p. 1).

Pitfalls in medicine highlight and focus on attempts to increase minority representation in medical school. There are goals to create equal access to education, and to improve health care in medically underserved areas (AMSA, 2016). The American Medical School Association is making a conscious effort to combat this issue by focusing on three key variables that will help eradicate the issue:

- Advocating for increased representation of underrepresented minorities in medicine to increase applicants and acceptances,

- Educating medical students, health professionals, and the public about the relationship between diversity and disparities, and
- Advocating for cultural competency curricula in medical education.

Medical schools and teaching hospitals have moved away from the antiquated “diversity versus excellence model” – the product of ensuring compliance with civil rights legislation and affirmative action – and now should employ “strategies to better capture, leverage, and respond to the rich diversity of human talents and aptitudes,” according to Mark A. Nivet, Ed.D., chief diversity officer for the Association of American Medical Colleges’ Diversity Policy and Programs (King, 2014, p. 2). In doing this, institutions and teaching facilities are taking a leading role in making more awareness to this issue and to be impactful in helping reduce racial disparities in health care and medical schools across the world.

Building STEM Branches to Grow

Not only do medical schools have issues related to preparing Black men to pursue careers in healthcare, but the prior research has proven that this dilemma is usually conceived even earlier in the lives of Black men. Previous scholarly studies (Brown, 2015) have cited the level of exposure these young men receive in their foundational years of education in areas that are more likely to prepare them for careers in the healthcare arena. Science, Technology, Engineering and Mathematics courses, also known as STEM, have become common terminology in the terms of public education across the board nationwide. Blacks remain underrepresented among STEM bachelor’s degree recipients when compared to their enrollment in bachelor’s degree programs overall (NSF, 2010). For example, Blacks represented approximately 15% of all

undergraduates enrolled in four-year institutions, 10% of all bachelor's degree recipients in 2008, and accounted for 11% of all STEM bachelor's degrees conferred in that same year (NCES, 2011). With this thought in mind, the discussion of strengthening this exposure will serve as an avenue to catapult the likelihood of Black men to become more visible in the fields based on those four areas and reverse the current adverse impact it is having on this population.

Despite the STEM fields being primarily dominated by men in general, there is still one ethnicity of men who are falling behind in these opportunities – Blacks. Black men are one of the only minority groups not making progress in STEM (Bidwell, 2015). "This particular issue is one of the nation's grand challenges," said Gary May, Dean of Georgia Institute of Technology's College of Engineering. "We have many examples of various programmatic interventions to ensure success. We have 1,000 points of light, but we don't have a constellation. All we really need is something that connects ... these thousand points of light to lead us to the proper solution" (Bidwell, 2015, pg. 1).

Black men are underrepresented in the workforce. According to data from the National Science Foundation despite an increase in numbers between 2003 and 2013, the absolute numbers barely budged between that decade – inching up from just 631 of 13,921 doctorate recipients to 798 of 16,542 doctorate recipients – and the representation has stayed essentially flat, between 4.5 percent and 4.8 percent of all science and engineering doctorates recipients. The U.S. News and World Report article titled *Black Men: The Other STEM Minority* stated, "Many of the roadblocks that prevent young, Black men from pursuing careers in STEM fields sound familiar: a lack of resources, role models and 'relatability'" (Bidwell, 2015, pg. 1). In 2010, Black male adolescents had

high aspirations and positive experiences (e.g., Reigle-Crumb, Moore, Ramos-Wada, 2011), suggesting that more work needs to be done to better characterize Black male STEM experiences, achievement, pathways and the relationship between the factors aforementioned (Lundy-Wagner, 2013). These roadblocks are the primary reason that something needs to be done to eradicate this issue and ensure that more Black men are equipped with the necessary tools and capabilities at the onset of medical school to achieve success in this highly-skilled profession. John Silvanus Wilson, president of Morehouse College stated, “The potential pool of STEM Black males has shrunk already, so it’s earlier in the pipeline when we’re going to have to find the solutions to this. They get off to a bad start. You’ve got brokenness at the start – broken families, broken values, broken potential. And they go to broken schools, most of them. It’s no surprise you get a broken hope, broken ambition and broken outcomes” (Brown, 2015, pg. 2).

Finish High School, Finish College, Pursue a Higher Degree

The Schott Foundation for Public Education (2010) released a report that revealed that over half (53%) of Black male students did not graduate from high school in 2008 with the same students with whom they began their high school tenure. With this high school dropout rate, it makes it even more difficult to entice Black men to pursue a career in a healthcare field. Despite it being a common topic in the Black community and other ethnic group based settings, the issue has been given limited attention on the global platform by medical service and accreditation agencies. Helping Black males to first complete high school does not cause a domino effect and dampen their future aspirations and goals. Although pursuing a healthcare career may require more focus and discipline than other careers, it is still attainable and should be encouraged. Because there are so

many Black men dropping out of high school, it is even more difficult for them to even submit an application for college or take the necessary steps to be placed in a pool for admission consideration when they have only met the minimum requirements to complete high school or a similar credential. With this thought in mind, it is imperative that focus is placed on getting them over the first hurdle, gaining a high school diploma.

The next challenge for Black males is to go to college and to finish in an adequate timeframe. Over a 30-year period (1976-2006), Black male students' enrollments at institutions of higher education remained between 4.3 and 4.5 percent (U.S. Department of Education, 2010). Sadly, less than one-third earn bachelor's degrees within six years, which is the lowest college completion rate among both genders and all racial groups in U.S. higher education (Harper, 2012). Subsequently, Black men's degree completion within all levels of postsecondary education remains alarmingly below the average and decreases for graduate education. Graduate Record Examination (GRE) scores present a challenge for graduate education. A Black male who applies to a graduate program is likely to be hindered by his low performance score on the GRE and lack of attempts taking it. A 2007 Educational Testing Service (ETS) report indicated that Black men account for less than two percent of all examinees, and their scores are considerably lower than those of their Caucasian counterparts (Harper & Porter, 2012). These data clearly convey the message that not only do less than half of Black males complete their high school diplomas in a timely fashion, but additionally that there is a smaller number of those properly equipped to pursue graduate-level education that will place them in a competitive pool for medical school consideration and admittance. There is a strong need for thorough, comprehensive initiatives to be implemented that will increase Black men's

presence in the educational pipeline.

Opting Out

In a 2011 interview with Inside Higher Ed's Student Affairs and Athletics Reporter Allie Grasgreen, Maya A. Beasley, assistant professor of sociology, a member of the advisory board of the Institute for African Studies at the University of Connecticut and author of the controversial book, *Opting Out: Losing the Potential of America's Young Black Elite* said, "Not everybody is going to make a great social worker.... Some are going to be fantastic brain surgeons, and we're really missing the potential of these students because they're not getting the information they need" (Grasgreen, 2011, p. 1). This statement supports the idea that Blacks who graduate from elite colleges are more inclined to settle for less prestigious – though by no means less important – jobs in fields perceived as directly addressing social and racial inequities, such as education, social work, and community and nonprofit organizations (Grasgreen, 2011). Beasley concluded that a persistent lack of Black employees within certain fields is the culprit of "significant economic and status disparities" between black and white populations in America (Grasgreen, 2011, p. 3). One example of this discrepancy is in physicians. Data from the 2000 Census highlights that a physician is ranked the 19th most common white collar occupation among Caucasians; however, it ranks 31st among Blacks. Beasley writes that Black students, "corresponded to what is effectively the status quo" (Grasgreen, 2011, p. 3), thus making them more likely to opt out of careers choices where there were less peers that had similar cultural and ethnical commonalities. That significant difference clearly shows that there is a wide margin between Blacks and their Caucasian counterparts, and even more so as it specifically relates to healthcare careers.

‘Man Up’ for the Challenge

There are several misconceptions as it relates to men in medicine. There are also some preconceived notions in the mindset of Black males that they would not fit in comfortably in healthcare professions, namely as a physician. Several journals and articles previously discussing this topic detect that, “Black men face more barriers to medical school, including funding and finding mentors” (Johns, 2015, p.2). With these overwhelming challenges, it is imperative that Black men address these issues in order to become a larger percentage of the health care workforce and accept the challenge to become more visible and viable in healthcare professions, especially as a physician.

One way to do so was strongly recommended by the AAMC after they completed a set of interviews with key people (leaders, researchers, physicians and medical school students) who have invested time and sincere interest in the fate of Black men in medicine. During these interviews these key people described the barriers some black men face when deciding to pursue medicine and discussed how they confronted -- and overcame -- structural and cultural obstacles to entering the medical field (Adams, 2015). From these results an analysis of statistics surrounding Black men and medical school was created. Those research findings yielded four pieces of advice to those Black men who truly want to become physicians (Adams, 2015):

- 1) *Build a support network.* This can be accomplished by establishing study groups, peer to peer relationships and mentors who are already working in the field and could eventually serve as employers upon completion of medical school. Black men should not be ashamed to seek assistance because it is usually encouraged to do so when trying to achieve a goal of this magnitude.

2) *Be resilient.* Despite already having naysayers and negativity surrounding you, Black men should continue to press towards the mark of the goal at hand. There may be some people second-guessing your ability to achieve this greatness. Just keep that thought in your mind and use it as fuel to forge full steam ahead, not allowing that minute distraction to deter you from a goal that is well within your grasp.

3) *Seek out as much information as possible.* "Everybody has a different path," Jonathan R. Batson, BS, said. "And, I think, we as young men of color ... think that if we don't fit in those specific markers that they tell us that we have to go through, then we lose our hope" (Adams, 2015, p. 1). This should not be the case. Black men need to stand up and demand to receive all the same rights, benefits and privileges that all others receive and embrace.

4) *Enroll in premedical programs.* There are a plethora of programs that provide additional resources that will enhance Black men's knowledge of how to prepare and better equip themselves to attain greatness. By being exposed to opportunities that strengthen awareness about the various subspecialties that can be pursued to attain success in medical school creates a stronger possibility for those choices to be made with more certainty, conviction and clarity.

By adhering to and applying these principle pieces of advice, it is more likely that Black men overcome any adversity placed in their path and complete the task at hand with a positive and successful outcome.

The Evolution of Motivational Theories

The Evolution of Motivation in theory has only been relevantly known since the early 1900's. It started with the work of Sigmund Freud and then B. J. Skinner, who

highlighted Operant Conditioning Theory. In 1938, Murray devised the Thematic Apperception Test or (TAT) to measure the variations in human motivation, which birthed the Need to Achieve Theory (Kusurkar, 2012). Clark Hull (Weiner, 1992), wrote about Drive Theory in 1943. In this theory, needs drive behavior in a way that results in satisfaction or fulfilment of these needs, maintaining a steady state in the body. One of the more notable systems of theory came from Abraham Maslow's Hierarchy of Needs Theory (Maslow, 1970). His theory was based on the relative importance of the different needs in a person's life. It said that basic human drive or motivation ultimately reflected a need for self-actualization. McClelland and Atkinson (Atkinson, 1966) offered their contributions as they adopted the TAT and developed a precise method for scoring the achievement motive. Atkinson's work is considered as an important milestone in research on motivation, and he proposed another dimension to motivation, "Motivation to Avoid Failure." This theory proposed that every individual has 'Motivation to succeed' and 'Motivation to avoid failure'. Martina Horner researched achievement motivation in women and proposed the Motive to Avoid Success Theory. This theory suggested that women show lower achievement motivation as compared to men because they had a greater 'Fear of Success' than men. Weiner (Weiner, 1992) focused his attribution theory on achievement. He identified ability, effort, task difficulty, and luck as the most important factors affecting attributions for achievement. Deci and Ryan (Ryan & Deci, 2000) worked to propose Self-Determination Theory (SDT). According to this theory, it is not only the level of motivation that is important, but also the nature or quality or type of motivation that determines behavior. Goal Theory was first put forth by Pintrich (Pintrich, 2000). It explained motivation of an individual on the basis of his goal

orientation. In achievement motivation the two types of goals are: Mastery goals and Performance goals.

The theory that was the guiding force in this research was Social Cognitive Theory. Social Cognitive Theory was originally Social Learning Theory. It was developed by Albert Bandura during his tenure at Stanford University from 1953 – 2010. As psychological research began to move towards studying cognitive processes, Bandura changed a portion of the name from Learning to Cognitive. According to the Social Cognitive Theory (SCT), people are neither driven by inner forces nor automatically shaped and controlled by the environment (Bandura, 1986). These people function as benefactors to their own motivation, behavior, and development within a network of reciprocally interacting influences. The concept of self-efficacy is central to this theory. Bandura feels that people need a sense of self-efficacy in order to struggle together with resilience and to meet the inevitable obstacles and inequities of life in order to succeed. This is a characteristic that certainly can be used for Black male medical school students as they sacrifice their social and personal lives along with their livelihood in order to achieve and capture the essence of their ambitions and dreams to become physicians.

Theoretical Framework

The framework of this research suggests that medical school students with the suitable Strength of Motivation will enhance the opportunity for others who are aspiring physicians to apply to medical school. This success will be impactful and also show them that they, too, can be physicians if the same devotion and discipline are applied. There are some other underlying factors that may influence this outcome and have an impact. Furthermore, these influences that could have an impression on these medical school

students can come from an array of personal, professional and public influences (see Figure 6). However, the ultimate goal is for them to be accepted into medical school.

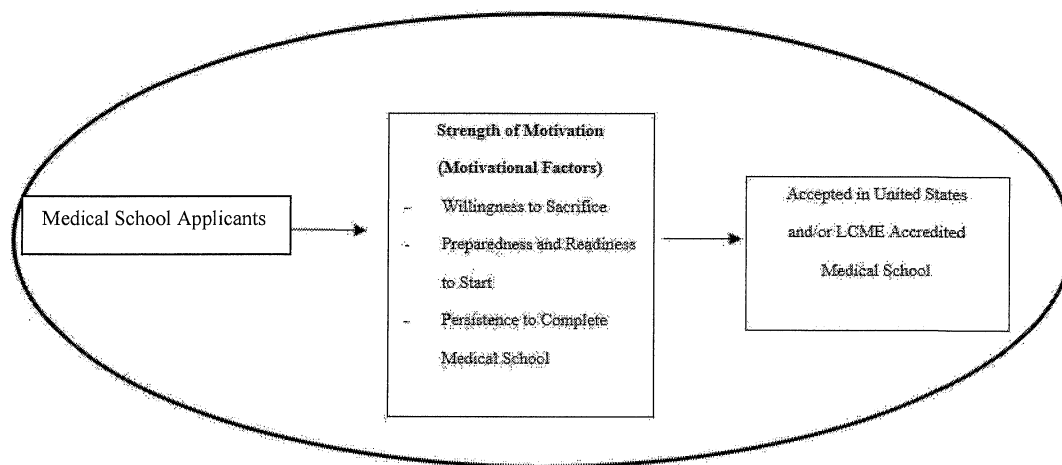


Figure 6. Theoretical framework of research study.

Summary

Based on factors shown, there is a need for Black men to be exposed to more tactics, strategies and conceptual knowledge in order to become more aware of their need in medicine. By offering more opportunities to take advantage of weekend workshops and seminars that focus on these fields of expertise, then activities of this magnitude will increase the possibilities of Black males becoming a student in that profession. These golden opportunities will also make them more readily prepared to pursue careers in those disciplines. In addition, community leaders, politicians and other influential individuals must seek out active professionals in the field that ‘look like them’ and can serve as advocates for the men we are trying to introduce to the field while helping them build self-esteem and confidence to overcome the obstacles that are placing a stronghold on them to strive and thrive in the process.

The key points highlighted in this chapter reminds us that the history of

motivational theories is young, from a theoretical standpoint, being only a century old. Motivation has evolved over time and it is evident in the various ways motivation is viewed currently. Furthermore, there are several reasons that Black males are not becoming physicians, notably due to the disproportion in the population of Black males in the U.S. versus the number of physicians and surgeons in U.S. Additionally, financial challenges and limited exposure to medicine also impact this desire to grow in the medical field. Despite our nation having an identity of cultural diversity, our medical schools have yet to fulfill this identity of diversity. Blacks are underrepresented in medical school classrooms as students and instructors which makes it more difficult for Blacks to become familiar with careers in medicine. STEM, although a growing terminology in the nation is still lacking Black males more than any other gender or ethnicity pursuing careers in that field. Black males possess the lowest graduation and retention rate versus all other ethnicities and genders. This is another hurdle that is combating Black males pursuing a degree in medicine. Instead of opting out on the challenges that are required to achieve this degree, Black males need to be more proactive, build a strong support system, and show resiliency to better equip themselves to become physicians.

Chapter 3

Methodology

The review of the literature produced some very intriguing themes that emphasized the importance of Black men becoming more visible in medicine. Additionally, it is just as important to further explore why this issue is so prevalent in our society. Through scholarly research, this study was practiced to offer alternatives to ultimately increase Black male medical school applicants. This chapter will provide the ideals and concepts that were put into action to further explore this ongoing issue.

This study was conducted in order to better understand the perceptions of Black male medical school students compared to the perceptions of other medical school students from different ethnicities and genders. This research is vital to the Black community and the health of our nation as a whole because the number of Black males going to medical school is becoming smaller each year. The research was done with the anticipation and goal to offer some insightful ways to make this growing problem be less of a burden on the community and the world. This study can provide a great deal of information for future research to improve this dilemma and similar issues as well.

Research Questions

The following research questions were intended to provide tentative answers to the issues presented throughout this paper:

1. What are the perceptions of Black male medical students versus the perceptions of other ethnicities and genders regarding their motivation to apply for medical school?
2. How much are Black males willing to sacrifice to go to medical school versus

other ethnicities and genders?

3. How readily prepared do Black males feel when starting medical school versus other ethnicities and genders?
4. How persistent do Black males feel they are completing medical school and becoming physicians versus other ethnicities and genders?

This study offered some insightful information that can be used to better prepare young Black males to pursue careers in medicine. Moreover, findings from this study may help identify the barriers to choosing a career in medicine as well as other factors that are beyond the control of the Black men who pursue the career paths to become a physician.

Variables

Based on Research Question 1, the following are the independent and dependent variables for this research.

- Independent – Ethnicities and gender
- Dependent – Motivation of why they chose to attend Medical School

Research Design

This study was conducted using a mixed method research design. The survey tool for the study was the Strength of Motivation for Medical School (SMMS) questionnaire. In addition to the SMMS questionnaire, this study also solicited demographics (gender, age, ethnicity/race, name of medical school) and one open-ended question that asked for suggestions of any other influences or factors that would have motivated the participant to apply to medical school.

Participants. The participants for this study were students currently enrolled in a medical school in the United States or its territories. These student participants came from both public and private medical schools. They were identified as medical school students by confirming that they were enrolled in an accredited medical school before taking the survey and also in the survey there was a question that asked what medical school in which the participants were currently enrolled. If they indicated that they were not enrolled in a medical school, their survey submissions were rejected.

Measures

The survey tool that was utilized is the Strength of Motivation for Medical School (SMMS) questionnaire. The SMMS questionnaire is a useful tool to carry out studies to uncover relationships between motivation, teaching–learning processes, and academic successes. This questionnaire was constructed by Nieuwhof, Ten Cate, Oosterveld, and Soethout, authors of *Measuring Strength of Motivation for Medical School* (2004). This survey is composed of 15 Likert scale items, with response options ranging from strongly agree to strongly disagree.

The SMMS questionnaire has three subscales that measure different components of the motivational strength for medical school. The first subscale – Willingness to sacrifice – measures the willingness of a Black male student to sacrifice for his medical study. This subscale is composed of five items; they are items 5, 7, 9, 10 and 12. An example of a statement asked in this subscale is - Even if I could hardly maintain my social life, I would still continue medical training.

The second subscale - Readiness to start – measures the readiness and will for Black men to enter medical study. Five items on the subscale are items 1, 3, 6, 11 and 16.

An idea of a statement asked in this subscale is - I would still choose medicine even if that would mean studying in a foreign country in a language that I have not yet mastered.

Lastly, the third subscale – Persistence – measures the persistence of Black men in medical study in spite of unfriendly circumstances during or after the study. Five items on this subscale are items 2, 4, 8, 13 and 14. A sample statement asked in this subscale is - I would not have chosen medicine if it would have caused me to accumulate substantial financial debts.

Validity and reliability. The SMMS questionnaire is a valid measurement of strength of motivation for students of all ethnicities and genders in medical school. Other previous studies that validated the tool are: *Validity evidence for the measurement of the strength of motivation for medical school* (Kusurkar, et.al., 2011), *Critical Synthesis Package: Strength of Motivation for Medical School—Revised (SMMS-R) Questionnaire* (Leibach & Stern, 2013), and *Motivation of medical students: Selection by motivation or motivation by selection* (Wouters, et.al., 2016).

Findings from previous research using the SMMS questionnaire revealed that reliability of the Willingness to Sacrifice and Readiness to Start are acceptable since they are 0.70 and 0.67 respectively (Nieuwhof et al., 2004). The reliability for Persistence subscale (0.55) was lower than expected, but the researchers felt that it is acceptable for comparing groups of students (Nieuwhof et al., 2004).

Ethical considerations. According to standard scholarly research regulations, ethical permission is mandatory for educational research. The work was carried out according to the Declaration of Helsinki, i.e. the participation was voluntary, informed consent was obtained from all the participants, confidentiality was guaranteed and the data was kept anonymous and in total solidarity. The participants were assured that non-participation would not cause them any harm or disadvantage and that they could withdraw from the study any time without giving any reason for doing so.

Data Collection Procedures

The invitation to participate in the study was sent out electronically to medical school students from the fifteen medical schools who agreed to share the survey with their students. These medical schools were selected based on the institution's willingness to allow their medical school students to participate in the questionnaire. The survey was created using Qualtrics (www.qualtrics.com). Completion of the surveys was checked periodically by the researcher. Once over 100 surveys were collected then the researcher halted further survey completion and submission.

Data Analysis Procedures

Upon completion of data collection, the data was tabulated and analyzed using SPSS. To answer research question 1, a one-way MANOVA was used to compare the motivational strength to go to medical school based on the gender and ethnicity of the respondents. This test is appropriate to test for the difference in means in two or more groups with several dependent variables (Field, 2018).

The data for the other research questions was analyzed by reviewing the results from the SMMS Questionnaire and comparing the responses to the relevant subscale.

Summary

The research for this study was done using a mixed method process. The SMMS questionnaire was used as the survey tool. A MANOVA was used to provide a quantitative data result. Qualitative data results came from the open-ended question in the survey that focused on other influential factors for going to medical school. The following chapter will discuss the findings generated from this study.

Chapter 4

Results

The purpose of this study was to discover if there were any differences in influencing factors that lead Black men to pursue healthcare careers in medicine and attend medical school versus other genders and ethnicities. Ultimately, the goal was to improve the ratio of Black men who are applying to go to medical school and who may become productive professionals in medicine as physicians. The present study was an attempt to see the strength of motivation of currently enrolled Black male medical school students versus other ethnicities and genders in medical school. The results obtained through this study are presented in this chapter. The first section of this chapter describes the basic information derived from analysis of each variable through descriptive statistics. This includes a summary of the results from the various influencing factors that the respondents shared in their open-ended question in the survey. The second section presents the results derived from cross analysis using MANOVA and other statistical methods.

Demographic Data

There were a total of 122 responses to the SMMS questionnaire. These responses by medical school students varied by several different demographics such as sex, ethnicity/race, and age.

Sex . There was a total of 51 male respondents and 71 female respondents, respectively, with one respondent not revealing his/her sex. The graph below shows these data.

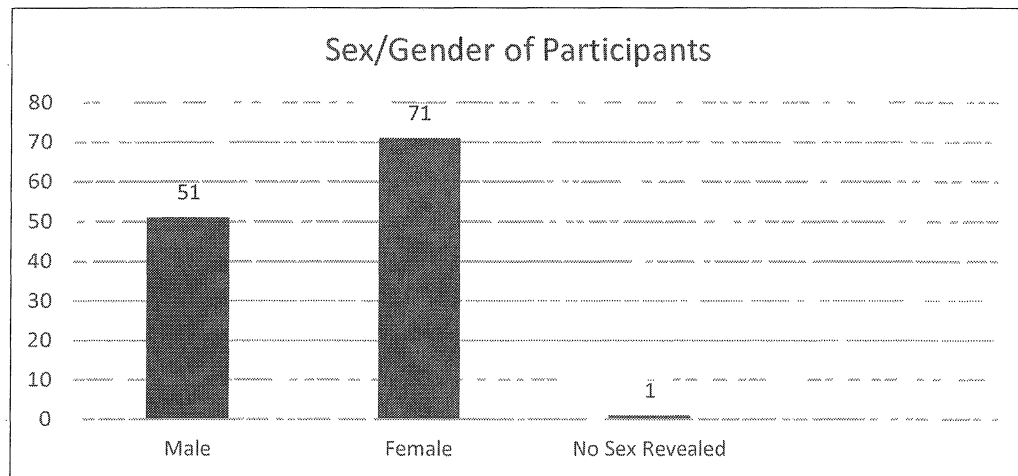


Figure 7. Sex/Gender of Participants.

Ethnicity/race . As it relates to ethnicity and race, there were a total of four different ethnicities for participants who completed the SMMS questionnaire. There were 41.5 % Black participants, 35.6 % White participants, 13.6 % Asian participants, 9.3 % Hispanic/Latino or Spanish participants. The total number of participants for each ethnicity/race is as follows: Asian (16), Black/Black (50), Hispanic/Latino or Spanish (11), White (42) and No Ethnicity/Race revealed (4). These data are shown in the following graph below.

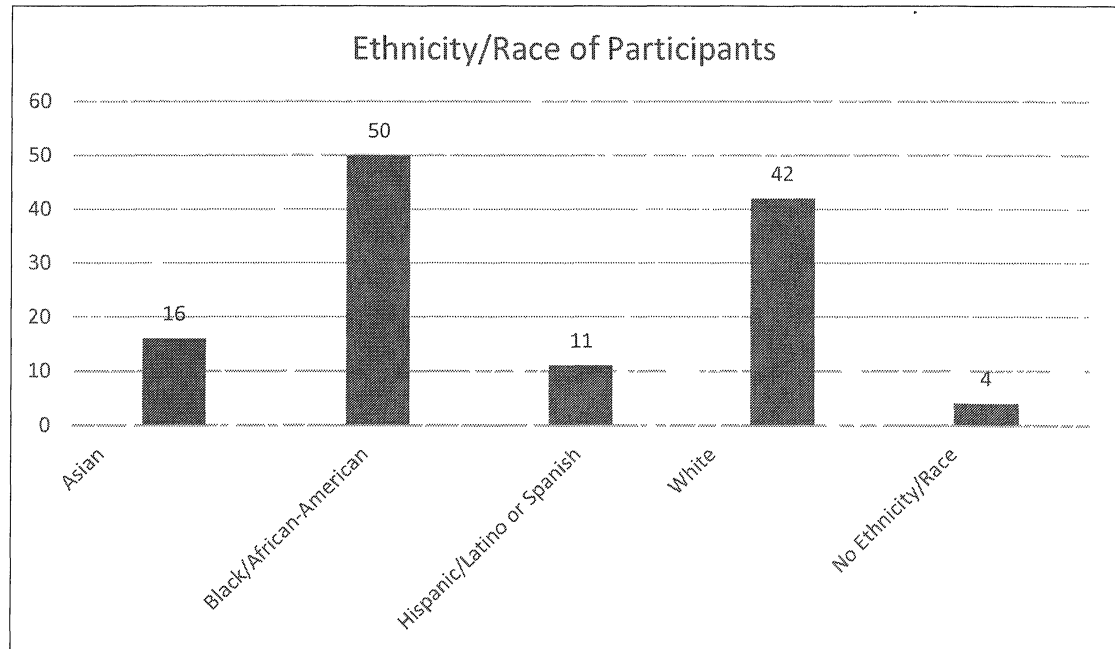


Figure 8. Ethnicity/race of research participants.

Age . Additionally, the ages of the respondents varied from 20 – 59 years old. 98 respondents (80.2%) were in the first age bracket (20-29), 22 respondents (18.2%) fell within the next age bracket (30-39). There was one respondent for each of the last two age brackets, and one respondent who chose not to share their age (.8%). These results are displayed in the graph as follows:

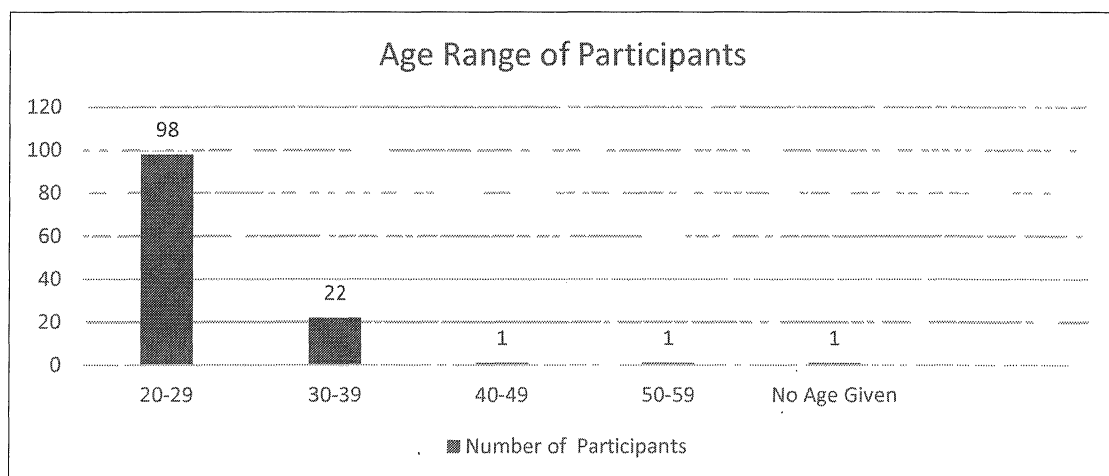


Figure 9. The age range of research participants.

Medical Schools. The medical schools participants' attended are as follows:

- The Warren Alpert Medical School of Brown University
- Columbia University College of Physicians and Surgeons
- Meharry Medical College
- John Hopkins School of Medicine
- Emory University School of Medicine
- Geisel School of Medicine at Dartmouth
- Wayne State University School of Medicine
- University of Tennessee College of Medicine
- State University of New York Upstate Medical University
- Michigan State University College of Human Medicine
- St. George's University
- Louisiana State University Health Science Center – New Orleans
- Ross University School of Medicine
- Vanderbilt University School of Medicine
- Tulane University

Findings for Research Question 1

A one-way multivariate analysis of variance (MANOVA) was run to evaluate the perceptions of Black men medical students versus other ethnicities and genders regarding their motivation to apply for medical school. Based on the respondents' ethnicity and

gender, there were eight groups that were compared: Black Male, Black Female, White Male, White Female, Hispanic Male, Hispanic Female, Asian Male, and Asian Female. There were three subscales that were assessed: Willingness to Sacrifice, Readiness to Start, and Persistence. Preliminary assumption analysis showed that there were a few univariate outliers, as assessed by boxplot (Figure 10). However, there was no multivariate outliers in the data, as assessed by Mahalanobis distance ($p < .001$). Since, these outliers were genuinely unusual data, and further analysis with and without the outliers showed no significant difference, they were all retained for further analysis.

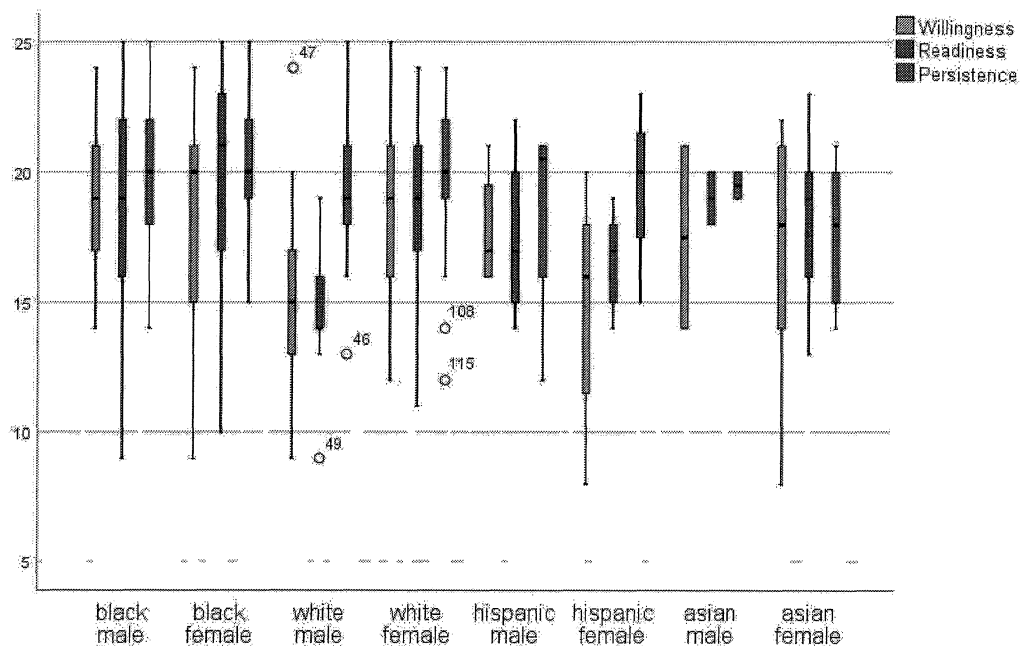


Figure 10. Boxplots for each of the SMMS subscales based on the respondent's ethnicity and gender.

Test of assumption of normality using Shapiro-Wilk test revealed that all of the dependent variables for each group of the independent variable was normally distributed ($p < .05$) (See Table 1). A Pearson's correlation matrix table was produced to detect

multi-collinearity among the dependent variables (Table 2). The strongest correlation was between Willingness to Sacrifice and Readiness to Start ($r = .538$, $p < .001$), while the weakest correlation was between Persistence and Readiness to Start ($r = .287$, $p = .002$); these correlations indicated that there was no multi-collinearity and that these dependent variables are suitable for MANOVA.

Scatterplot was used to test for the assumption of linearity. Figure 11 shows there is a relationship between each dependent variable in each ethnicity-gender category, as assessed by scatterplot.

Table 1

Shapiro-Wilk Test for Each Dependent Variable (N = 122)

	Ethnicity and Gender	Shapiro-Wilk		
		Statistic	df	Sig.
Willingness	Black male	.954	27	.266
	Black female	.909	21	.052
	White male	.968	13	.869
	White female	.966	26	.519
	Hispanic male	.848	4	.220
	Hispanic female	.929	7	.543
	Asian male			
	Asian female	.925	14	.262
Readiness	Black male	.967	27	.532
	Black female	.917	21	.075
	White male	.945	13	.520
	White female	.976	26	.792
	Hispanic male	.971	4	.850
	Hispanic female	.896	7	.308
	Asian male			
	Asian female	.962	14	.757
Persistence	Black male	.972	27	.643
	Black female	.963	21	.570
	White male	.966	13	.837

White female	.912	26	.029
Hispanic male	.708	4	.014
Hispanic female	.851	7	.126
Asian male			
Asian female	.916	14	.191

Table 2

Correlation Matrix Table of SMMS Subscales (N = 122)

		Willingness	Persistence	Readiness
Willingness	Pearson Correlation	1	.430**	.538**
	Sig. (2-tailed)		.000	.000
	N		120	119
Persistence	Pearson Correlation		1	.287**
	Sig. (2-tailed)			.002
	N			119
Readiness	Pearson Correlation			1
	Sig. (2-tailed)			
	N			

** . Correlation is significant at the 0.01 level (2-tailed).

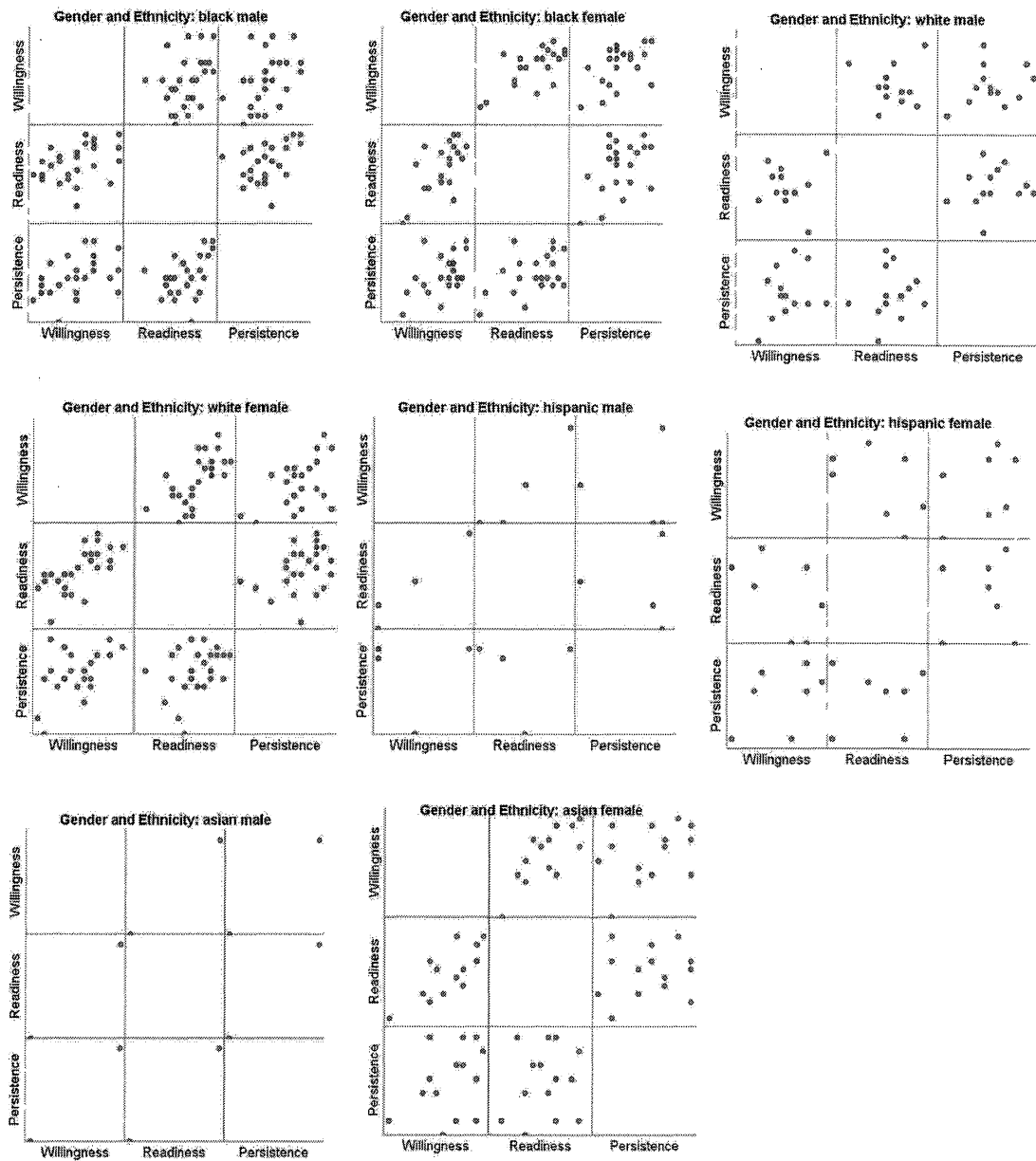


Figure 11. Scatterplots for each of the SMMS subscales based on the respondent's ethnicity and gender.

The last assumption tests were the tests for homogeneity of variance-covariances matrices and homogeneity of variances. Box's test result showed that there was homogeneity of variance-covariances matrices ($p = .269$). Levene's test also showed that there was homogeneity of variances for each dependent variable ($p > .05$).

For unequal group sizes that seem homogenous and the assumption of multivariate normality is tenable, Field (2018) suggests using Pillai's Trace for better accuracy. Pillai's Trace showed that there was a statistically significant difference between the eight ethnicity-gender on the combined dependent variables, $F(21, 318) = 1.619$, $p = .043$; partial $\eta^2 = .097$. Separate univariate tests on the dependent variables revealed a significant difference on Readiness to Start ($F(7, 106) = 2.724$, $p = .012$; partial $\eta^2 = .152$) (Table 3).

Table 3

Results of Tests of Between-Subjects Effects

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power
Willingness	197.794	7	28.256	2.014	.060	.117	.759
Readiness	232.944	7	33.278	2.724	.012	.152	.892
Persistence	79.612	7	11.373	1.376	.223	.083	.561

Note. Computed using alpha = .05. Hypothesis $df = 7$, and error $df = 106$.

The MANOVA was followed up with a simple contrast test and discriminant analysis. In the simple contrast test, Black Male (coded as 1) was used as the reference category. The contrast analysis showed that Black Male was significantly different from White Male in terms of Willingness to Sacrifice ($p = .006$, 95% CI [-6.046, -1.031]) and

Readiness to Start ($p = .001$, 95% CI [-6.348, -1.669]). The contrast also showed that Black Male was significantly different from Hispanic Female in terms of Willingness to Sacrifice ($p = .008$, 95% CI [-7.436, -1.136]). Lastly, the contrast showed that Black Male was significantly different from Asian Female in terms of Persistence ($p = .017$, 95% CI [-4.168, -.414]).

The findings from the contrast analysis were confirmed by discriminant analysis, which revealed three discriminant functions (Table 4). The first explained 60.3% of the variance, canonical $R^2 = .166$, whereas the second explained 26.1% of the variance, canonical $R^2 = .080$, and the third explained 13.6% of the variance, canonical $R^2 = .043$. In combination these discriminant functions significantly differentiate the ethnicity and gender groups, Wilk's Lambda = .734, Chi-square (21) = 33.301, $p = .043$; but removing the first function indicated that the second and third functions did not significantly differentiate the ethnicity and gender groups, Wilk's Lambda = .880, Chi-square (12) = 13.689, $p = .321$; removing the first and second functions did not significantly differentiate the ethnicity and gender groups as well, Wilk's Lambda = .957, Chi-square (5) = 4.749, $p = .447$ (Table 5).

Table 4

Canonical Discriminant Functions Analysis: Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	R^2
1	.200 ^a	60.3	60.3	.408	.166
2	.087 ^a	26.1	86.4	.282	.080
3	.045 ^a	13.6	100.0	.208	.043

Note. a = First 3 canonical discriminant functions were used in the analysis.

Table 5

Canonical Discriminant Functions Analysis: Wilk's Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.734	33.301	21	.043
2 through 3	.880	13.689	12	.321
3	.957	4.749	5	.447

The correlations between outcomes and the discriminant functions (Table 6) revealed that Willingness to Sacrifice loaded highly onto function 1 ($r = .728$) than function 2 ($r = .370$) or function 3 ($r = -.577$); Readiness to Start also loaded highly onto function 1 ($r = .932$) than function 2 ($r = .044$) or function 3 ($r = .360$); while Persistence loaded highly onto function 2 ($r = .966$) than function 1 ($r = .211$) or function 3 ($r = .148$). The discriminant function plot in Figure 12 showed that the first function discriminated the Black Male group from White Male and Hispanic Female groups, and the second function differentiated the Black Male group from the Asian Female group.

Table 6

Correlations between Outcomes and the Discriminant Functions

	Function		
	1	2	3
Willingness	.728*	.370	-.577
Readiness	.932*	.044	.360
Persistence	.211	.966*	.148

Note. * Largest absolute correlation between each variable and any discriminant function

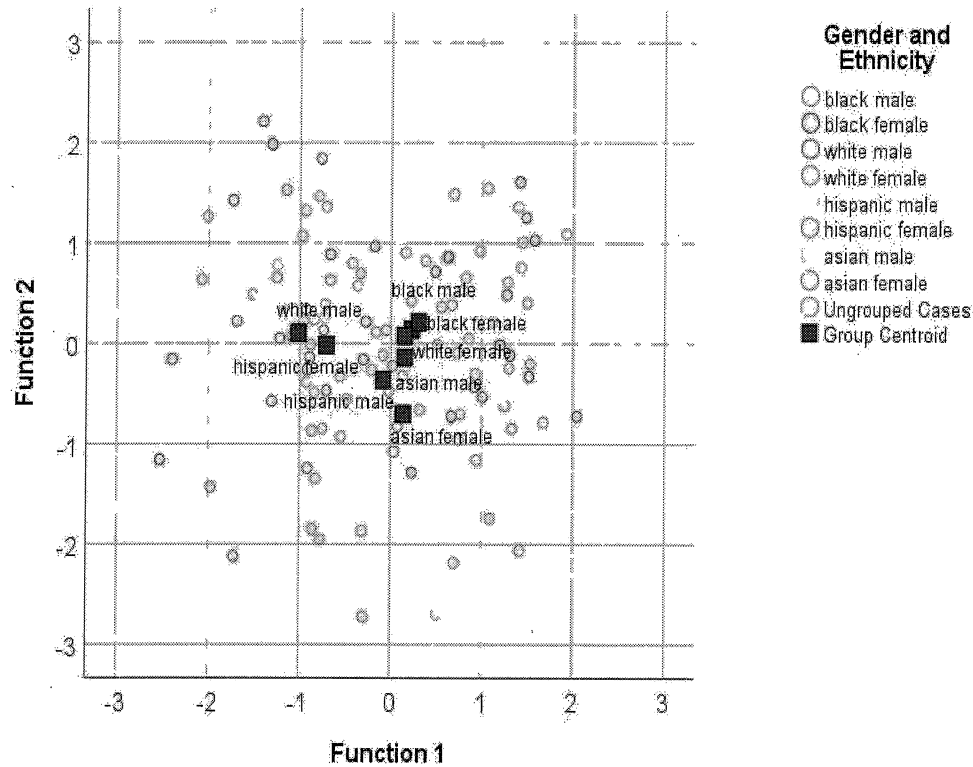


Figure 12. Combined groups plot.

Finding 1: Influencing Factors

As previously stated, the respondents to the survey were also given one open-ended question which asked them to offer their perceptions on other factors that influenced them to apply to medical school. These responses were grouped into five categories:

- Family support/personal health
- Lack of/need for more doctors
- Job security/financial stability
- Love of medicine/improving community
- Mentors/inspired by someone in medicine

These five categories summarized the numerous varied responses shared by the participants in the survey. Ninety-six of the 122 respondents participated in this portion of the survey. The information shared by the participants in this portion of the research is important in order to shed more light and awareness of how the various ethnicities and genders responded because it can offer additional justification on why they were motivated to go to medical school and if other factors may have impacted their decision-making. This portion of the research also allowed the researcher to discover and find evolving subjects based on the responses of the medical school student participants. These emerging themes will be highlighted in the following text, along with a table to support the researcher's findings.

Finding 2: Emerging Themes

The first category conveyed that there were more Black men (6) and White female medical students (6) than there were other races and genders who felt that family support and personal health was the primary reason they decided to go to medical school. One respondent stated that they chose to go to medical school because of "their own personal health and the history of health challenges in their family." Another respondent of the survey stated that "Encouragement and a strong support group from family and friends" was a key influencing factor for them to go to medical school. Asian female medical school students (5) was a close second. Only two Black female medical students expressed this same feeling, while one Hispanic male, one Hispanic female and one White males only listed this as an influence. Asian males had no response in this category listed as an influence. This suggests that Asian males may not feel that they have as much

family support or personal health issues that were motivating factors for them to go to medical school. The Asian female, Black male and White female medical school students may have stronger support systems from their families or have personal influence as it relates to being better educated about their own health or someone to whom they have a close relation. Because of the parental and family influences, one respondent felt that they can use medicine "...as a way to better health in coordination with other fields (i.e., education, media, etc.)."

Another emerging trend in the data suggested that several Black male medical school students felt that there is a lack and need for more doctors based on their racial demographic, in comparison to all their counterparts. One Black female, one White female, one Hispanic male and one Asian female had similar influences to pursue this career. There were no responses from Hispanic females, White males and Asian to this need. This suggests that there is a perception of lack or need for more doctors in some ethnicities and genders compared to others. One respondent from the survey stated "The lack of Blacks in medicine" as the influencing factor for them to go to medical school. Only Black males had more than one person who felt there was a need for more doctors based on their race and gender. Another respondent's response was "The dearth of black males and the realization I have the foundation, skills and support group to seek out further medical training...A question I often ask myself is how could I not." Black male medical school students indicated that there is not much representation of their race in the classrooms at these various medical schools. Additionally, for those ethnicities and genders who did not report a need for more representation suggests two things: 1) that

these students may not be aware of the need of doctors of their race or 2) they understand that their group currently has the most doctors practicing medicine and are most dominant in the field. This particular trend yielded the least amount of total respondents. This suggests that participants recognized the disparity. Without awareness of the problem, there can be no logical action plan in place to resolve it.

As it relates to job security and financial stability, the responses were fairly spread evenly with four responses from Black male medical school students, three White males, three White females, two Black female medical school students, two Hispanic female medical school students, and one Hispanic male and one Asian male, respectively. The only respondents not represented in this category are Asian females. This data suggests that although everyone understands the financial lucrativeness of the occupation, not everyone is in it for the money. A respondent of the survey felt that “money/financial prospects with the ability to be self-employed” was appealing enough to apply to go to medical school. With this trend having the second smallest amount of respondents, this suggests that the participants possess genuine kindness and generosity. Money is often the reason people pursue specific goals in life, and financial reasons are a legitimate reason to want to go to medical school. Another respondent’s comments to the question suggested that “estimated salary upon completion of training” was a part of his/her influence to go to medical school. “Income, prestige, altruism” was another response made from a survey respondent.

Remarkably, based on the responses given in the survey seven Black men, seven Black women and seven White women all mostly felt that their love for medicine and

improving their communities' health was the primary reason for pursuing a career in medicine. Four White males, four Asian female medical school students and two Hispanic males were the only other students who also provided data to this trend. This category also yielded the most responses, suggesting that these medical school students are passionate about their work and service to others by enhancing the quality of life for others. For this category Asian males and Hispanic females did not have any responses. One respondent stated that "Community need for physicians of diverse backgrounds, growing up in medically underserved area caused them to apply to go medical school." Another respondent simply wrote, "Desire to do good for the world" as their response to what influenced them to apply to medical school.

Lastly, mentors or being inspired by someone in medicine produced some very intriguing results. Six Black males responded that mentors were instrumental in their pursuit of a career in medicine, followed by Black females with five. White men and Asian females had three each, and White female medical school students added an additional two. No Asian males and Hispanic medical school students stated that they were influenced by mentors or seeing someone like them in white coats practicing medicine. One respondent noted that "Having a black female physician as a mentor early on" was influential on his/her desire to go into medicine, while another respondent mentioned that "mentoring from people that looked like me" was a catalyst in his/her decision to pursue medicine. This data suggests a need for more mentors particularly for several genders and ethnicities. A significant amount of those Black medical school students were influenced by mentors. Twenty-two percent of the Black medical school

students who completed the questionnaire had mentors or experienced being a part of some type of mentorship that encouraged them to go into the field of medicine. “Role models earlier in life – like high school” was another response received from the survey. Encouraging medical school students to establish stronger relationships with current doctors in order to communicate with and also serve as an apprentice under is much needed for future progress of Black males in the field of medicine.

Black male medical school students accumulated the highest number of respondents in all five categories. These results offer an indication that the Black male population is lacking the influencing factors that may have a significant impact on their progression to apply to go to medical school. Black male medical school students have a lot more to attain as a sense of achievement in contrast to their counterparts. They often work the hardest to achieve a goal and have the smallest result in reward. These data are a reflection of the obstacles that Black male medical school students have to overcome in contrast to their counterparts. Table 7 shows the responses by ethnicity and gender and suggests there is a need of Black male role models and mentors. It also suggests that there is a gap in mentorship in the Hispanic community for both genders and in the Asian community for male mentors. “Having black physician mentors and having family who have gone through the process to give guidance” was instrumental for one respondent to go into medicine.

Table 7

Five Influencing Factors of Medical School Students by Ethnicity/Gender

Influencing Factors	Family Support/Personal Health	Lack Of/Need For More Doctors	Job Security/Financial Stability	Love of Medicine/Improving Community	Mentors/Inspired By Someone In Medicine
Asian Male	0	0	1	0	0
Asian Female	5	1	0	4	3
Black Male	6	4	4	7	6
Black Female	2	1	2	7	5
Hispanic Male	1	1	1	2	0
Hispanic Female	1	0	2	0	0
White Male	1	0	3	4	3
White Female	6	1	3	7	2
Totals	22	8	16	31	19

Summary

Black male medical students are more motivated than at least one other ethnicity or gender in all three subscales – Willingness to Sacrifice, Readiness to Start and Persistence. Interestingly, Black males are more motivated than White males in two subscale areas – Willingness to Sacrifice and Readiness to Start. These quantitative results suggest that there is some inconsistency between Black male medical school students and their White counterparts as it relates to these two topics. Furthermore, Black male medical students are more motivated than Hispanic Females and Asian Females in

Willingness to Sacrifice and Persistence, respectively. These results suggests that Black males are not only more motivated than some males, but females as well.

Qualitative results suggests that there are at least five other influencing factors that motivated medical school students to apply to medical school. These five factors also were very impactful in these respondents' pursuit to achieve the goal of becoming a physician. These five factors were instrumental in this research because it offered another layer of data for the researcher while also empowering the respondents to share something more tangible from their own perspective.

Chapter 5

Conclusion and Recommendations

The purpose of this study was to compare the perceptions of influencing factors that motivated Black men to pursue a career in medicine and attend medical school versus the perceptions of other genders and ethnicities. The outcome of this study is to offer possible methods and ideas to improve the ratio of Black men who are applying to go to medical school and who may become productive professionals in medicine as physicians. The research conducted was done as a comparative analysis to better establish disparities between ethnicities and genders in medical education. It was also accomplished to acknowledge the need of Black males in medicine, since the numbers have been declining for four decades. This decline is important to the overall well-being of the communities we live in, more especially those Black communities and those with low socio-economic status who are already receiving minimal healthcare. These conditions persists throughout the United States and it is vital for the demographic of our country and the demographic of our physicians' pool to be properly proportioned. With this thought in mind, there are some plausible recommended solutions based on the motivational and influencing factors discovered to have more Black males apply to medical school.

Despite some demographics not having responses, ultimately, the role of a doctor is to ensure that their patients have the best options in place to combat whatever ailment or condition they are coping with. Not only that, but the researcher is happy to know that the main focus of medicine is to make life better for others. This should be something

that is echoed throughout the medical schools in the United States and beyond. If there is not any valued interest in the patient then the duty of the doctor is not being truly fulfilled; and in turn, they should not be satisfied with mediocrity because their oath requires them to adhere as such. “I want to improve public health”, stated by one of the survey respondents, is something that is evident in this researcher’s finding and is echoed by many of the respondents as well.

Many of these recommendations correlate with the quantitative and/or qualitative outcomes of this study. In the first figure, the three subscales measured during the quantitative analysis are displayed with how they directly can be impacted by the recommendations in this chapter (See Figure 13). Likewise, in Figure 14, the qualitative results are shown with recommendations.

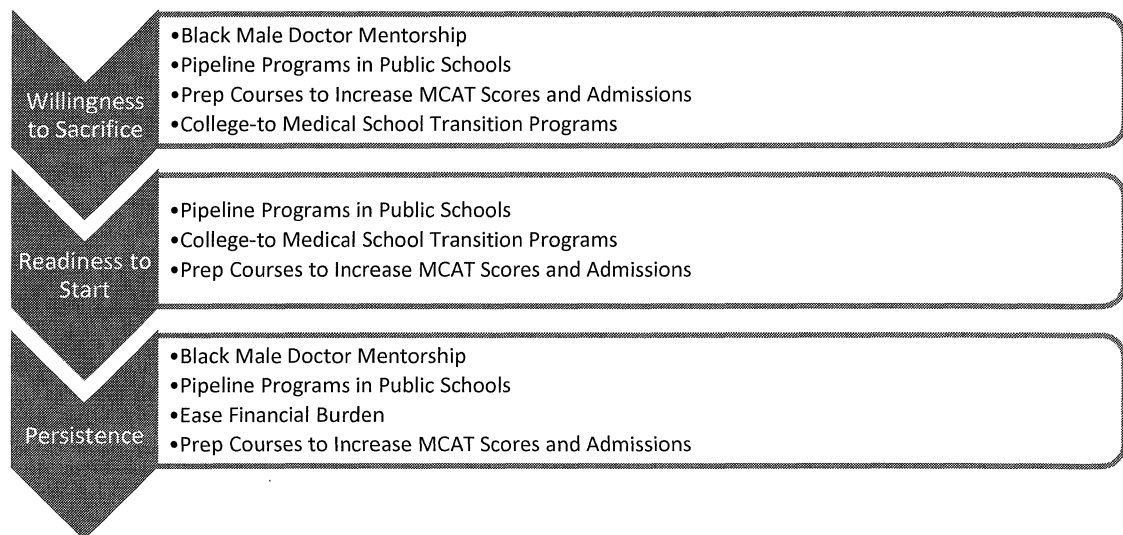


Figure 13. Quantitative Results Correlation with Recommendations.

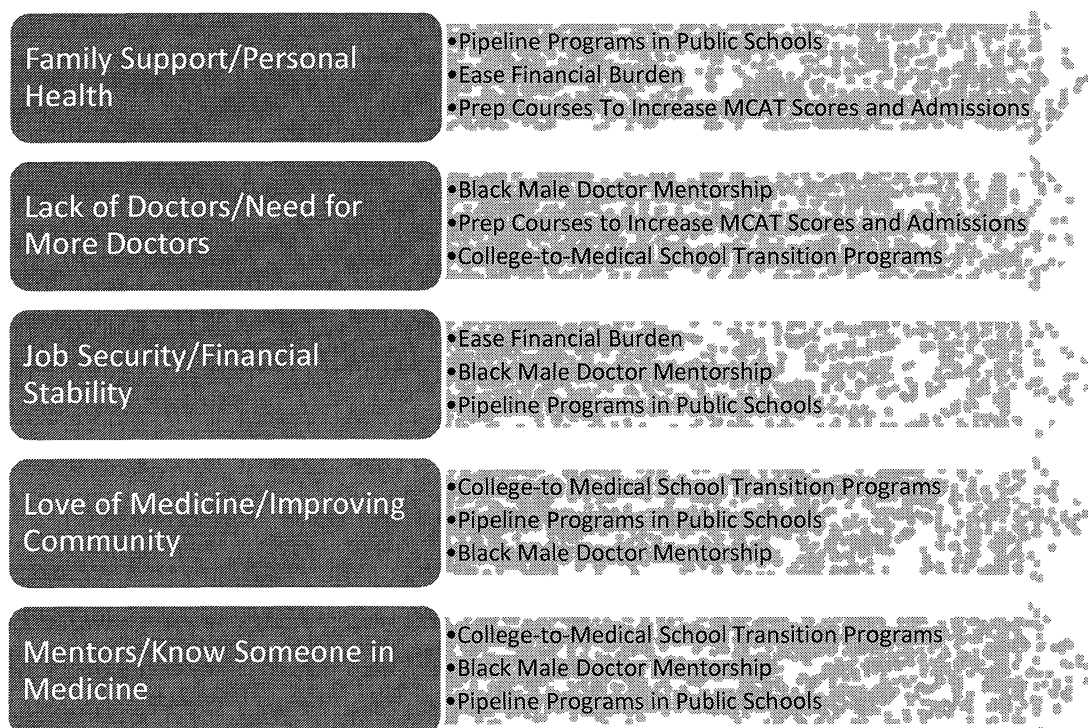


Figure 134. Qualitative Results Correlation with Recommendations.

This study was achieved based on the responses of 122 medical school students with different cultural backgrounds, genders and ethnicities from 15 medical schools. The SMMS Questionnaire, along with an open-ended question that highlighted other categories that contributed to their decision to pursue medicine and five questions on demographics served as the primary source for data retrieval. From these motivational factors, the researcher was able to conclude that Black male medical school students were more motivated than some of their counterparts, namely, White males in regards to “Willingness to Sacrifice” and “Readiness to Start”, Hispanic females in regards to “Willingness to Sacrifice”, and Asian females in regards to “Persistence”. Not only this, but results from other influencing factors indicated that there are several emerging themes that relates to

Black male medical school students that could also be impactful in their decision to apply to medical school.

Education, health/wellness and financial stability are three important dynamics in the households of most Black men (Hyman, 2006). Not only are they important, but achieving some, if not all of them, can often present challenges. One example of this type of challenge is when a person is having difficulty finding a physician of the same gender and ethnicity. Coincidentally, during a similar burdensome encounter the researcher was employed at a healthcare institution as a supervisor in the Health Call Center. One of the primary duties of the researcher was to ensure the accurate healthcare professional(s) throughout the facilities were properly contacted and paged in an adequate timeframe in the event of a critical incident and/or a routine inquiry. After finally securing a Black male physician to serve as his primary care physician, the researcher began to notice the heavy load of patients the physician had on his workload as they visited him periodically. The Black male physician continued to acquire patients, making it more and more difficult to see him on a consistent basis. Often times, the researcher would end up seeing the Nurse Practitioner to address his medical concerns due to the tediously tight schedule the physician had to keep as his need in order to service this influx of patients. The physician's daily, weekly and monthly schedules started to become overwhelming. This uncertainty and lengthy wait to acquire medical attention caused the researcher to seek other physicians with the same demographics to see if they were not as inundated with patients and if their load was not as heavy. To no avail, the researcher was unsuccessful in doing so. In fact, the researcher became even more frustrated because the other

physicians were already overwhelmed and not adding any additional patients to their current database of active participants. This lack of availability by Black physicians is what initially struck the researcher's mind and served as a motivating force to further research and gather as much data as he could to improve and find healthy alternatives and viable solutions to combat this conflicting issue.

In today's society, healthcare is a vital part of one's well-being and is an ongoing process in life's cycle. To ensure that the best level of comfort is available to the patient, it is highly likely that those who have a closer connection with their physicians and medical practitioners will be more actively involved in their own health and well-being. Although a subject matter of this capacity and complexity will always echo racial implications due to its sensitive nature, we must still create stronger pathways for our young Black males to thrive.

The researcher is aware that there are other obstacles that can deter Black men from going to medical school. These hindrances can be social, emotional and psychological. Invisibility syndrome is one and can best described as a sense of humanity not being able to be affirmed. What this means is that there is clearly an identity crisis in our medical schools, and it is causing an emotional response of racism and discrimination in our society on a different level. By not actually seeing others already in the field of expertise, Black males are tuning out and avoiding medical school. Dr. James L. Moore, Chief Diversity Officer at The Ohio State University described psychological barriers that can discourage Black men from pursuing medical and science careers. One barrier he noted was minority tax. This hurdle considers additional responsibilities placed

on minorities, and the expectation that these minorities represent their otherness across an institution, among others despite having these additional tasks to complete (National Academies of Sciences, Engineering and Medicine, 2018, pg. 39). This barrier expresses the notion that sometimes minorities may be given additional responsibilities while completing the medical school process. These responsibilities can be at home as a child caring for older parents or as a spouse/parent for their own children. Barriers can derive from tasks and projects at work or they can come for any other outlets that can be considered vital in one's daily routine and importance of life (i.e., church, social organizations).

As a result of these barriers and other notable external and internal factors, it is clear that the disparity of health in the Black community is more prevalent than in communities of other ethnic groups. The absence of Black physicians is a significant reason for this disproportion. In a recent study it was discovered that Black male patients were far more likely to allow certain health tests to be performed on them if they discuss it with a Black physician in contrast to discussing them with a White or Asian physician (Kolota, 2018). Without patients being able to discuss personal, private and sensitive issues with someone they can confide in and trust, it is difficult for health issues to decrease, especially in neighborhoods where low socio-economic status patients reside. While medical school acceptance rates fluctuate among select ethnicities, some applicants all have fairly similar acceptance rates (i.e., White [44%], Asian [42%], and Hispanic/Latino [42%]). Unfortunately, Black applicants have the lowest acceptance rate at 34% and are at the bottom of the list as it relates to applications for medical school

(AAMC, 2016).

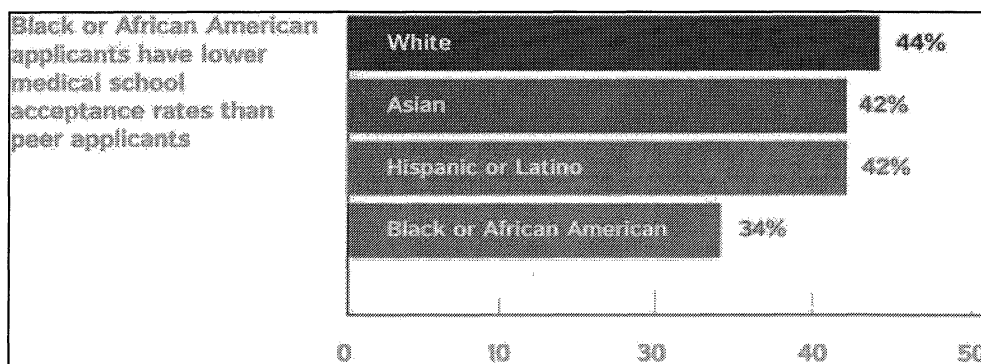


Figure 15. U.S. Medical School acceptance rates. Source: AAMC Data Warehouse: Applicant and Matriculant File 2016.

In addition, Black males are the lowest among all ethnicities and genders who apply to go to and complete medical school. On the other hand, there is growth among Black female graduates. Since the mid 1980's, female graduates have increased 53%, and male graduates have declined 39.4% among Black medical school students. As Figure 14 depicts, in 2015, the gender gap among Black graduates was at 30.6% and is steadily increasing (AAMC, 2016).

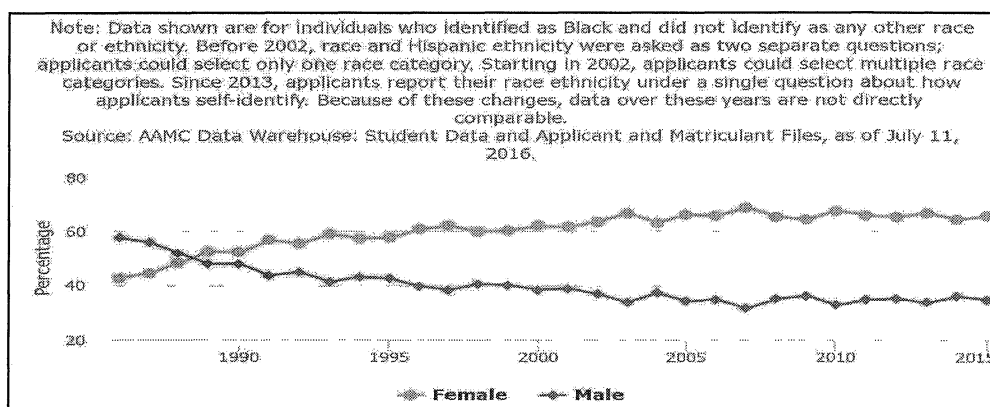


Figure 146. U.S. Medical School acceptance rates. Source: AAMC Data Warehouse: Applicant and Matriculant File 2016.

The researcher is also being considerate of the fact that in careers of this magnitude the return on investment is much higher than it is in other career paths. The researcher believes that Black males consider other careers because they can get into the workforce quicker perhaps due to greater responsibilities at home and their time to be a contributing adult is forthcoming upon completion of four years of college and in some cases, immediately following high school graduation. This issue must not be taken lightly and must be dealt with firsthand to provide hope for the community of people who are in need of this change. The researcher has considered several recommendations based on their research findings and discussions with numerous medical school administrators, instructors and other personnel. It is the desire of the researcher to help combat this issue and improve this growing concern since there is an obvious need for more Black male doctors. Dr. Moore also identified factors that influence the life and career development of Black men. Most of his findings were parallel to that of the researcher that suggests "... interests, preparation, experiences, connections, and opportunity were the primary factors of influence" (National Academies of Sciences, Engineering and Medicine, 2018, pg. 38). In terms of interests, the research suggests caution that although we know how to get students engaged in science, technology, engineering, and mathematics (STEM) related activities and functions, there is a lack of information on how to maintain the student's desire to stay actively involved in those disciplines. It is imperative that despite many debates focus on primary education, preparation is needed throughout the educational pipeline to strengthen their preparedness to pursue goals on this academic

level. It is also equally important for students to “have experiences that are indicative to the spaces in which they are expected to work” (National Academies of Sciences, Engineering and Medicine, 2018, pg. 38). This offers exposure to hands-on and real-life scenarios.

Mentors are ultimately the key to connections. Without mentors there is no connect or correlation with the career or the motivation to want to do something in the field is absent simply because they lacked that association. Lack of association equates to minimal motivation. Lastly, on the subject of opportunity, “the need to not only offer opportunities to Black male students, but also to get them to take opportunities when offered” (National Academies of Sciences, Engineering and Medicine, 2018, pg. 39) is vital in their success to become anything in the field of medicine. Not only do Black males’ interest needs to increase, but Black males also need to seize the moment when the opportunity knocks at the door. To accomplish a goal of this magnitude, it is going to take a collective effort from various realms of society. “Addressing the shortage of Black men in medicine will require partnerships with a broad range of stakeholders, generating specific action items and not just talk, and cultivating a culture of financial stability and sustainability for financing medical education” (National Academies of Sciences, Engineering and Medicine, 2018, pg. 24). By creating and implementing strategic programs in colleges across the country, imploring current Black male physicians to invest in our future who aspire to be like them and by offering educational opportunities in the public school process to strengthen the pipeline will increase Black male exposure to the field of medicine thus also motivating more to pursue a career of this caliber.

Pipeline Programs in Public Schools

Building pipeline programs globally for students as early as middle school will be instrumental in the overall outcome of improvements for Black males. Not only by creating these types of specialty schools, but also allowing students to come from various ethnic and demographic backgrounds will enhance the diversity in medical schools as well. One great example of a pipeline program of this magnitude is the Baylor College of Medicine at James D. Ryan Middle School (BCMR). This unique magnet school program was listed as one of the top three magnet schools in the United States in 2017 (Magnet Schools of America, 2017). This middle school not only offers Pre-Advanced Placement (Pre-AP) core courses but it also includes a rigorous curriculum that focuses on specific health science electives each year. During their sixth grade year, students are introduced to neuroscience as their first health science elective. In the seventh grade, students are enrolled in a scientific decision-making course as their health science elective. During their final year in middle school, eighth graders at the school learn foundations in biotechnology and bioengineering. In addition to these electives, students have extracurricular options such as robotics, coding and botany, making them well-rounded and well informed students in various disciplines of health science upon completion. The researcher has some very longtime friends who are parents of children who go to and/or attended this middle school and after sending out a Facebook request asking for their personal thoughts about the program and how it prepared their children for high school and beyond they were very pleased with their children's educational preparation thus far. One parent stated that "... it pushes your kids towards excellence. What some may have

misconstrued as “too much work” prepared the kids to excel, work hard and to put forth their best effort” (Smith, 2018). Other parents sentiments were similar, stating that the “curriculum was great” and that “the staff and administrators ensure that the students’ success is the main objective” (Smith, 2018). Not only are the parents pleased, but the parents suggest that the students are pleased as well. Another parent expressed his son’s desire to initially go to the military after high school, but now at the beginning of his seventh grade year at BCMR the student is focused on getting better grades to go to Michael E. DeBakey High School for Health Professions and ultimately go to medical school.

Nestled in the Texas Medical Center, and named in memory of the renowned cardiac surgeon, Dr. Michael E. DeBakey, this high school is a nationally ranked school in U.S. News and World Report (Best High Schools, 2018). The school also boasts a partnership with an undergraduate program at University of Houston designed specifically for this school’s graduates. This program is named the Houston Premedical Academy. An incentive of being accepted into this premedical academy is that students are also provisionally accepted into Baylor College of Medicine. With a college readiness score of 97.6/100 (Best High Schools, 2018) schools comparable to DeBakey High School for Health Professions or of this caliber throughout the United States would be an ideal way to improve Black males’ readiness to start medical school. This would also minimize this particular subscale mentioned earlier in the research that impacts the motivation for them to go to medical school as well.

The Department of Health Career Opportunity Programs at UConn Health

administers the Aetna Health Professions Partnership Initiative (HPPI) Scholars Doctors Pipeline, a continuous pipeline of programs for students in middle school through college, as well as their parents. The pipeline program seeks to develop the pool of underrepresented minority applicants to health professional schools, primarily at UConn. Overall, of 195 Black and Hispanic students who graduated from the UConn School of Medicine from 2003 to 2017, 80 participated in HPPI pipeline programs. (National Academy of Sciences, 2018, pg. 41)

The educational outreach K–12 pipeline program offered through Harvard Medical School includes in-school programming which focuses on developing curricula used in schools, teacher professional development, and working with the College Board to help teachers to teach advanced placement courses. The program also offers some out-of-school activities for middle and high school students, and college students both during the academic year and during summer breaks. (National Academies of Sciences, Engineering and Medicine, 2018, pg. 42)

Joan Y. Reede, MD, Dean for Diversity and Community Partnership at Harvard Medical School shares twelve key points to consider when implementing pipeline programs (National Academies of Sciences, Engineering and Medicine, 2018, pg. 41):

- Set an explicit goal or sets of goals.
- Set a realistic time frame.
- Put forward a rationale for the program, and align it with the organization's mission.
- Assess data and evaluate programs to build an evidence base of effective programs.
- Have a seamless articulation of programs.
- Create opportunities for multiple points of entry, exit, and re-entry.

- Be flexible and adjust to environmental and policy changes and to local needs.
- Engage communities.
- Cross boundaries and disciplines.
- Think in terms of multilevel and dynamic systems and connections across systems.
- Provide not just academic but also career development.
- Track, monitor, and evaluate for continuous improvement.

Other medical schools throughout various regions of the United States are making a conscious effort to improve this lack of Black men in medicine. More data needs to be collected to actually see the success of these pipeline programs, however, the researcher feels very positive that outcomes will be an asset to increasing the low number of Black males pursuing medical school. By implementing more middle school level pipeline programs it can help control the current issue of Black males' lack of "Readiness to Start". Programs of this nature are ideally created with the curriculum and concept that will offer insight and incentive to better equip those involved to attain their perceived goals. These types of pipeline programs, although many are fairly new will continue to become a mainstay while creating a stronger level of exposure for Black males. These efforts may result in an increased Black male applicant pool for medical schools. Regardless, this is not the only avenue that can be taken to improve this dilemma. Strong mentorship is also needed to develop these aspiring physicians and truly give them an idea of what is truly required for them to complete the task as hand.

Black Male Doctor Mentorship

Having a mentor or establishing a direct connection with someone in medicine is what some of the respondents stated was essential in their application for medical school.

In order to improve Black men's willingness to make sacrifices to go to medical school, these same young men need to hear firsthand from Black physicians. During these conversations the elder, seasoned physicians can be candid and caring in their approach about their experiences going through medical school. These important exchanges will be pivotal in the future of Black males in medicine, so it is extremely vital that these types of scenarios become reality and are constant in the communities where most Black male and other underserved populations reside. By having more Black male doctors serving as mentors it will also bring more of 'what it takes to become a doctor' out at the onset. This would be received greatly throughout our communities to improve the "Persistence" and "Willingness to Sacrifice" subscales for Black males discussed in the research. More Black physicians need to invest into their future apprentices. Black male medical school students need to know in advance the challenges and what had to be given up to reach this goal. This can easily be accomplished by having them be more involved in the medical schools. In knowing that the Black population is also underrepresented in the classroom as professors creates an imbalance. This imbalance is in essence a domino effect and creates a barrier for Black medical school students to feel optimistic about their academic success. The first way to combat this imbalance is by having more Black instructors and administrators in the medical schools and not just at HBCU medical schools. This will bring more awareness to Black medical school students and will give them something more tangible to work towards. These doctors must also be able to commit some time in their neighboring communities and schools – by attending career day programs, special boy's day programs and after-to-school programs so the younger

generation can see them and feel a sense of belonging. By becoming more actively involved with these students, doctors can build self-esteem and confidence in those young minds and gives them more hope because they can relate to someone who has endured it and achieved success in the process. In retrospect, if no one in the person's immediate family is a physician or anywhere else where they may frequent (i.e., church, community center, and within other organizations) then the reality for them to achieve this dream is not conceivable. That is another important reason why current Black physicians are extremely instrumental for the future health and wellness of their people. If they falter, then so will the health of their people. The current physicians must be willing to sacrifice, yet again, even in their waning years to ensure that the legacy of Black men in medicine is concrete and secure for the days and years ahead. Male students observe athletes, actors and other types of celebrities on a daily basis through watching television, surfing social media and numerous other platforms. Simply put, if these Black male students are not seeing these examples and if the current Black physicians are not working with them as mentors, then there is not much of an incentive for them to want to go into the field. This needs to change in order for more Black men to go to medical school.

College-To-Medical School Transition Programs

Improvements while students navigate the educational pipeline are needed at multiple transition stages – between middle school and high school, between high school and college and also from undergraduate studies to professional studies in medical school. Freeman Hrabowski, III, Ph.D., president of the University of Maryland,

Baltimore County (UMBC), stated that “Undergraduate students are “low hanging fruit” on whom pipeline interventions should focus in the near terms (next few years), because this pool of students could become competitive in health professions admission with relatively little support and additional preparation” (National Academies of Sciences, Engineering and Medicine, 2018, pg. 34). Particularly, through the Meyerhoff Scholars Program, UMBC has produced the highest number of Black M.D./Ph.D. recipients in the last 18 years. This program “provides financial support, mentoring and advising, and exposure to research to undergraduate students committed to increasing the representation of minorities in science and engineering and to obtaining Ph.D. degrees in math, science, and engineering.” (National Academies of Sciences, Engineering and Medicine, 2018, pg. 35).

The Vanderbilt University School of Medicine (VUSM) recently implemented a program that encompasses the ideal ingredients for a successful transition program. Even more importantly, the program is a partnership between three historically Black colleges and universities (HBCUs) — Morehouse College, Spelman College, and Fisk University. The intent of the program is to support underserved populations in medical education, while also providing a pathway for admission into VUSM. As an incentive of being a part of this elite group, students also participate in a summer program that includes coursework in the basic sciences, Medical College Admissions Test (MCAT) preparation, and research experiences. Students are provisionally admitted to VUSM, and those who maintain a grade point average and achieve MCAT scores that have been jointly agreed upon by the undergraduate schools and VUSM, matriculate into VUSM.

This idea has already been embraced by several institutions and it would be a great concept for other institutions to build on if they are attempting to gain some momentum in similar efforts as well. This recommendation will also be useful to improve the “Readiness to Start” and “Persistence” subscales for Black males in this research. “Persistence is the constant sustained effort. Resilience is bouncing back” (National Academies of Sciences, Engineering and Medicine, 2018, pg. 38). Therefore, a persistent medical student is always making a constructive effort to become better in his/her field of study or craft. A part of being persistent is displaying resiliency and being able to handle rejection, shortcomings and other distractions that may deter you from the goal. If other medical schools were to task themselves with the responsibility to build stronger transition programs with similar substance and opportunities as those that currently exist, then it would create even more chances for Black males to be engaged in the limitless possibilities they can achieve while doing so.

Preparatory Courses to Increase MCAT Scores and Admissions

There should be more preparatory courses and programs offered to better equip Black men who are interested in preparing to go to medical school. One good example of a program that offers a good success rate, improvement on critical thinking and high return on investment is MDI Prep. This program has partnered with The Princeton Review to offer extensive online preparation for the Medical College Admissions Test (MCAT) and several other medical exams, but it also gives students the opportunity to shadow a doctor in the process (MDI Prep Website, 2018). Another incentive of this program’s structure is that it not only offers materials and courses for test preparation, but

also offers test anxiety solutions. These program incentives could be extremely influential to Black males for all three subscales “Willingness to Sacrifice,” “Readiness to Start,” and “Persistence.” This program would be a vital source for medical school students to understand and grasp key concepts of what needs to be sacrificed when trying to become a doctor, how ready the students is to begin the journey to become a physician and lastly, the persistence required to complete medical school. These types of programs can be an asset to those aspiring minority medical school students who are unsure of their subspecialty and also offers a firsthand experience that can better assist them in their preparation for a career path in medicine. MDI Prep boasts a 98% student success rate, an average MCAT score of 505, and 98% critical thinking improvement along with having over 400 students that have entered medical, dental or pharmacy programs throughout the United States in only nearly a decade of existence (MDI Prep Website, 2018). This program is founded by a Black physician, Dr. Anthony Sutton, who discovered his passion for preparing others for medical school after completing medical school himself. He has galvanized and impacted many students from various walks of life to go to medical school and pursue their dreams. From his vision MDI Prep has become a global program that offers interactive classes while also expanding its services beyond the North American borders to countries such as India and South America.

Improving the Financial Burden

Although Black male medical school students are not the only people having to cope with fiscal responsibilities, it is still imperative to consider ways to improve the financial burden that is involved with going through and completing medical school.

Often Black households do not possess the internal assets to afford medical school. In knowing this at the onset, it does not seem to be a viable option for them to even pursue such a lucrative career. Medical schools vary in costs, however, they are still expensive and requires a great deal of resources. The AAMC reports that the average yearly costs of medical school, including tuition, fees and health insurance currently are \$36,755 and \$60,802 for public school resident and nonresident students, and \$59,076 and \$60,474 for private resident and nonresident students, respectively (AAMC, 2018). Most students who are in medical school are incurring debt and if they do not finish medical school, the debt usually becomes even more difficult to pay off due to high interest rates on loans. In most instances, medical school is even more expensive than other professional degrees. Being in debt can also pose other types of distractions and be a psychological barrier on the medical school students, making it harder to focus on their studies. An influx in student debt is essentially restructuring the medical profession in ways that are unfavorably impacting healthcare. Burdened with overwhelming student loans, many medical school graduates select higher-paying subspecialties, which takes talent away from less profitable fields as a physician (AMSA, 2016). Some of these lower paid physicians include primary care, pediatrics, and obstetrics and gynecology. Furthermore, the monetary obstacles discourage many capable high school and college students from considering a career in medicine completely due to the uncertainties about the expenditures connected with medical school (AMSA, 2016).

In recent days, some medical schools have made very great strides to ensure that medical school students do not have to bear the burden of having to worry about how

they, or their families would assist them in paying for medical school. In August 2018, the New York University School of Medicine announced that they have raised over \$450 million dollars to “pay the tuition of all its medical students, regardless of merit or financial need” (Adams, 2018, pg. 2). This is the first major American medical school to do so. This medical school is making great strides to make this level of medical education more attainable to an extensive range of applicants.

Another impressive initiative was highlighted at the new and upcoming medical school at the University of Houston, which will admit its first cohort of students in fall 2020. This medical school is much needed, especially in a state that ranks 47th out of 50 states in the number of primary care physician-to-population ratio (Contreras, 2018). Furthermore, the population of the greater Houston area has tripled since the last medical school was introduced nearly half a century ago in 1972. Chancellor of the University of Houston System, Dr. Renu Khator stated that “Training the next generation of physician leaders meets a clear and growing demand in Texas. We have an obligation to serve the city by responding to the economic, social and cultural issues affecting the quality of life in Houston” (UH - College of Medicine Website, 2018, paragraph 2). “Our mission is to train primary care physicians who will practice in underserved urban and rural communities in Houston and throughout Texas,” said Dr. Stephen Spann, founding dean of UH College Of Medicine (University of Houston, 2018, paragraph 1). To address the issue of financial burden on these new medical school students, an anonymous philanthropic gift of three million dollars will fund the tuition for the first 30 medical students in the inaugural class.

Both of these types of financial efforts will certainly expand a pipeline to recruit the best and brightest minds of students who want to become physicians. Not only will this give them hope to achieve this goal, but it will also allow them the liberty and financial freedom to do so without making any other compromises. This will be another key contribution to bridging the diversity gap in the underrepresented population of Black males who want to become physicians and the overall shortage of physicians, too, in the process.

Summary

The researcher is extremely passionate about being a change agent in the progress of Black men going into medicine. The researcher is also poised to share any additional ideas that may serve as a groundbreaking concepts to improve this underrepresented population in medicine and improve the application and matriculation of Black males who go to medical school. The researcher is very hopeful that this platform they are creating is one that will gain even more national notoriety as it becomes more evident in the days, weeks, months and years ahead. This platform would serve as the foundation to enhance and create other special programs and build more awareness of the lack of Black males in medicine. The researcher is currently researching ways to submit proposals to the United States Department of Health and Human Services, the United States Department of Education in addition to the AAMC and LCME to gain adequate funding to create programs and scholarships. This funding will be provided in conjunction with partnering medical schools throughout the United States to increase admissions for Blacks, more especially males. Projects, partnerships and programs, such as these are

something that is strongly urged by the researcher as his desire for this issue to be transformed comes more to fruition.

It is incumbent on the research community to find ways to bring this issue to the forefront even more in the midst of a very sensitive time amongst all Americans, especially the underprivileged and those who live in or below the standard socio-economic status. For these community of people the conversation of healthcare is usually at the top of the list of reformation and lack thereof which, coincidentally, also is staged at the apex of political agendas. The need for more Black males in medical school and becoming physicians is imminent and it is going to require a collective effort from all angles - leaders in medical schools, administrators in medical facilities, along with local, state and national political leaders and concerned citizens (like the researcher), to help build a stronger, more convincing case for more resources to be invested in this topic of research. If this does not happen, then an entire ethnicity and generation may have even more substantial circumstances as it relates to health that are more commonplace simply because the root of the problem was not addressed properly when it was initially discovered and all manageable alternatives that were suggested to reverse the dilemma were not acted on accordingly. Black men in medicine matter, and it is our nation's responsibility to ensure that it becomes less of an issue and an effective solution is implemented to change this growing dilemma.

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Appendix A

SMMS Questionnaire Use Request and Approval Email

From: Cate, T.J. ten <T.J.tenCate@umcutrecht.nl>

Sent: Thursday, November 17, 2016 2:15 PM

To: Smith, John E

Cc: smittyjune7@yahoo.com

Subject: Re: SMMS Use Request

Attachments: Thesis Rashmi Kusurkar 2012.pdf

Importance: High

Dear John,

You have my blessing! I hope you find the instrument useful for your studies. There is one caveat: the instrument was not designed and never used as a selection instrument, but has always been applied to students after admission to medical school, to avoid socially desirable answers.

I am also attaching the dissertation of one of my former doctoral students, which includes some studies using the SMMS.

If you want I can establish contact with her.

Best wishes,

Olle

Th.J. (Olle) ten Cate, PhD

Professor of medical education | Director of the Center for Research and Development of Education | University Medical Center Utrecht | Visit: Room HB 4.24, Universiteitsweg 98, 3584 CG Utrecht, The Netherlands | Postal address: P.O. Box # 85500, 3508 GA Utrecht, The Netherlands | Phone: ?88.75.57010, Fax: ?88.75.53409, Email:t.j.tencate@umcutrecht.nl. Adjunct Professor of Medicine, University of California San Francisco

From: "Smith, John E" <jesmith2@Central.UH.EDU>

Date: Thursday 17 November 2016 at 18:12

To: "Cate , T.J. ten" <t.j.tencate@umcutrecht.nl>

Cc: "smittyjune7@yahoo.com" <smittyjune7@yahoo.com>

Subject: SMMS Use Request

Good Morning Dr. Cate,

My name is John E. Smith, Jr. I am currently a doctoral student here at the University of Houston completing my Ed.D in Professional Leadership with an Emphasis in Health Science Education. My dissertation/doctoral thesis topic is on the motivational factors that impact student's decision to go to medical school. I am reaching out to you because I am very interested in using the SMMS as the instrument to conduct my research. I am willing to share my findings and any other information that may be beneficial to you upon completion. Please advise me of what steps I need to take to be granted permission to do so.

If you require any personal information from me, please let me know. I would really like to receive your blessing to use this survey as part of my doctoral research. If you need any additional information regarding my research and who will be completing survey, please let me know. Additionally, if there is any upcoming events (podcasts, conferences or seminars, etc.) in the US that may be beneficial to me in my quest for data, or any feedback or knowledge you can share to assist me in this endeavor it will be greatly appreciated as well. Thank you for considering this modest and urgent request.

Humbly,

John E. Smith, Jr., MS

Doctoral Student - Professional Leadership

Emphasis in Health Science Education

University of Houston - College of Education

De informatie opgenomen in dit bericht kan vertrouwelijk zijn en is uitsluitend bestemd voor de geadresseerde. Indien u dit bericht onterecht ontvangt, wordt u verzocht de inhoud niet te gebruiken en de afzender direct te informeren door het bericht te retourneren. Het Universitair Medisch Centrum Utrecht is een publiekrechtelijke rechtspersoon in de zin van de W.H.W. (Wet Hoger Onderwijs en Wetenschappelijk Onderzoek) en staat geregistreerd bij de Kamer van Koophandel voor Midden-Nederland onder nr. 30244197.

Denk s.v.p aan het milieu voor u deze e-mail afdrukt.

This message may contain confidential information and is intended exclusively for the addressee. If you receive this message unintentionally, please do not use the contents but notify the sender immediately by return e-mail. University Medical Center Utrecht is a legal person by public law and is registered at the Chamber of Commerce for Midden-Nederland under no. 30244197.

Please consider the environment before printing this e-mail.

Appendix B

SMMS Questionnaire

STRENGTH OF MOTIVATION FOR MEDICAL SCHOOL QUESTIONNAIRE

People have diverse reasons to study medicine. Please indicate how much the following statements reflect your personal situation by marking 1 to 5 (Strongly Agree to Strongly Disagree) with each statement below.

1. I would always regret my decision if I hadn't availed myself of the opportunity to study medicine.

Strongly Agree Agree Neutral Disagree Strongly Disagree

2. I would quit studying medicine if I were 95% certain that I could never become the specialist of my choice.

Strongly Agree Agree Neutral Disagree Strongly Disagree

3. I would still choose medicine even if that would mean studying in a foreign country in a language that I have not yet mastered.

Strongly Agree Agree Neutral Disagree Strongly Disagree

4. As soon as I would discover that it would take me ten years to qualify as a doctor, I would stop studying.

Strongly Agree Agree Neutral Disagree Strongly Disagree

5. Even if I could hardly maintain my social life, I would still continue medical training.

Strongly Agree Agree Neutral Disagree Strongly Disagree

6. I wouldn't consider any other profession than becoming a doctor.

Strongly Agree Agree Neutral Disagree Strongly Disagree

7. I would still choose medicine even if that meant I would never be able to go on holidays with my friends anymore.

Strongly Agree Agree Neutral Disagree Strongly Disagree

8. I would stop studying medicine if I started scoring low marks and failing tests often.

Strongly Agree Agree Neutral Disagree Strongly Disagree

9. If studying took me more than an average of 60 hours a week, I would seriously consider quitting.

Strongly Agree Agree Neutral Disagree Strongly Disagree

10. I intend to become a doctor even though that would mean taking CME courses two evenings a week throughout my professional career.

Strongly Agree Agree Neutral Disagree Strongly Disagree

11. It wouldn't really bother me too much if I could no longer study medicine.

Strongly Agree Agree Neutral Disagree Strongly Disagree

12. I would like to become a doctor, even if that would mean giving precedence to my work over my family.

Strongly Agree Agree Neutral Disagree Strongly Disagree

13. I would quit studying as soon as it became apparent that there were no jobs or resident positions after graduation.

Strongly Agree Agree Neutral Disagree Strongly Disagree

14. I would not have chosen medicine if it would have caused me to accumulate substantial financial debts.

Strongly Agree Agree Neutral Disagree Strongly Disagree

15. I would like to study medicine, even if I have to spend a lot of time on topics that later turn out to be a waste of time.

Strongly Agree Agree Neutral Disagree Strongly Disagree

16. I would be prepared to retake my final high school exams to get higher marks if this would be necessary to study medicine.

Strongly Agree Agree Neutral Disagree Strongly Disagree

17. What is your sex?

Male Female

18. Please Select Your Age Range.

20-29 30-39 40-49 50-59 60-69 70-79
80+

19. What is your ethnicity/race?

Hispanic/Latino or Spanish American Indian or Alaskan Native Asian
Native Hawaiian or Other Pacific Islander Black or African American White

20. What Medical School Are You Currently Attending?

21. Can you suggest any other influences or factors that would have motivated you to apply to medical school?

22. If you would like to be considered for the random drawing for the \$50 Visa Gift Cards, please submit your email address below.

Appendix C

Letter of IRB Approval for Initial Study

APPROVAL OF SUBMISSION

March 15, 2018

John Smith

jesmith4@uh.edu

Dear John Smith:

On March 12, 2018, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	BLACK MEN IN MEDICINE MATTER: AN EMPIRICAL STUDY ON FACTORS INFLUENCING AFRICAN-AMERICAN MENS' MOTIVATION TO APPLY TO MEDICAL SCHOOL
Investigator:	John Smith
IRB ID:	STUDY00000798
Funding/ Proposed Funding:	Name: Unfunded
Award ID:	
Award Title:	
IND, IDE, or HDE:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Waiver of Written Documentation of Consent , Category: Consent Form; • Smith Persons of Interest Email Letter.pdf, Category: Recruitment Materials; • Smith Strength of Motivation for Medical School (SMMS) Questionnaire.pdf, Category: Study tools (ex: surveys, interview/focus group questions, data collection forms, etc.); • Smith Social Media Community Post.pdf, Category: Recruitment Materials; • Research Instrument Use Request Approval, Category: Letters of Cooperation / Permission; • Template Cover Letter (Waiver of Documented Consent), Category: Consent Form; • John Smith, Category: IRB Protocol;

	• Smith Medical Student Email Letter.pdf, Category: Recruitment Materials;
Review Category:	Exempt
Committee Name:	Not Applicable
IRB Coordinator:	Sandra Arntz

The IRB approved the study from March 15, 2018 to March 14, 2023, inclusive.

To ensure continuous approval for studies with a review category of “Committee Review” in the above table, you must submit a continuing review with required explanations by the deadline for the February 2019 meeting. These deadlines may be found on the compliance website (<http://www.uh.edu/research/compliance/>). You can submit a continuing review by navigating to the active study and clicking “Create Modification/CR.”

For expedited and exempt studies, a continuing review should be submitted no later than 30 days prior to study closure.

If continuing review approval is not granted on or before March 14, 2023, approval of this study expires and all research (including but not limited to recruitment, consent, study procedures, and analysis of identifiable data) must stop. If the study expires and you believe the welfare of the subjects to be at risk if research procedures are discontinued, please contact the IRB office immediately.

Unless a waiver has been granted by the IRB, use the stamped consent form approved by the IRB to document consent. The approved version may be downloaded from the documents tab. Attached are stamped approved consent documents. Use copies of these documents to document consent.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Research Integrity and Oversight (RIO) Office
University of Houston, Division of Research
713 743 9204
cphs@central.uh.edu
<http://www.uh.edu/research/compliance/irb-cphs/>

Appendix D

Letter of IRB Approval with Modifications

APPROVAL OF SUBMISSION

June 28, 2018

John Smith

jesmith4@uh.edu

Dear John Smith:

On June 28, 2018, the IRB reviewed the following submission:

Type of Review:	Modification
Title of Study:	BLACK MEN IN MEDICINE MATTER: AN EMPIRICAL STUDY ON FACTORS INFLUENCING AFRICAN-AMERICAN MENS' MOTIVATION TO APPLY TO MEDICAL SCHOOL
Investigator:	John Smith
IRB ID:	MOD00001239
Funding/ Proposed Funding	Name: Unfunded
Award ID:	None
Award Title:	
IND, IDE, or HDE	None
Documents Reviewed:	• John Smith, Category: IRB Protocol;
Review Category:	Exempt
Committee Name:	Not Applicable
IRB Coordinator:	Sandra Arntz

The IRB approved the following revision on June 28, 2018; the approval end date for the research study remains March 14, 2023.

Summary of approved modification(s):

I would like to modify my research protocol and include medical students from other races and genders in the data analysis. An updated HRP-503 form is attached. The reason for this modification is due to lack of respondents from the initial target audience (African-American Male Medical Students).

In conducting this study, you are required to follow the requirements listed in the

Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Research Integrity and Oversight (RIO) Office
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