The Latino/a Health Professions Pipeline: An Overview

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The 2010 Census summary data and demographic projections for the country accentuate the astronomical growth of the Latino/a population. Mirroring these demographic trends, there is a critical shortage of Latino/as in the healthcare industry which negatively impacts the ability of the field to provide quality and culturally congruent healthcare to the largest racial/ethnic group in the country. According to Komaromy et al. (1996) it is imperative to have a diverse healthcare workforce because patients tend to gravitate to healthcare providers from their own race. Diversity in healthcare is necessary not only to reflect the demographics of the country but also because diverse perspectives are necessary for the advancement, increased access to and equity in healthcare (Mitchell & Lassiter, 2006).

The Need for a Diverse Healthcare Workforce

Latino/as make up only 5.9% of the entire healthcare workforce even though they make up 15.4% of the U.S. population ("2009 Profiles of Latino Health: The Top Twelve Questions About Latinos and Health Care," 2009). Saha and Shipman (2006); Shaw (2010); Vogt and Taningco (2008); and Vogt (2009) are among those who argue that increased diversity in healthcare can increase access to healthcare for underserved populations. Mitchell and Lassiter (2006) also recognize that underrepresented students who complete health professions degrees are more likely to practice because they want to give back to their communities by increasing health services for members of their own ethnic group. Gilliss et al. (2010) and Komaromy et al. (1996) highlight that there is evidence that a great number of minority physicians serve a disproportionately high number of minority patients. According to their survey of physicians in California, Komaromy et al. found that Latino/a physicians were caring for three times as many Latino/a patients than their non-Latino/a counterparts. It is also worth noting that patients who were treated by physicians from their own ethnic group expressed higher satisfaction rates in

primary care and mental health settings thereby proving proof of the benefits of patient/clinician concordance.

According to Cooper (2012), although minorities make up one third of the U.S. population they encompass more than half of the "50 million people who are uninsured" (p. 8). Regardless of insurance status, minorities receive lower quality healthcare and also have a harder time obtaining the healthcare they need. One way to increase the outcomes of any patient is to have them be active participants in their healthcare. For minorities around the country this includes having healthcare workers who speak their language "literally and figuratively" (Cooper, 2012, p. 8). Cooper cites improved patient-provider communication as the biggest factor to improving healthcare outcomes for minorities. Likewise, Garro (2005) suggests that it is counterproductive to have clinicians focus so much on cultural and linguistic barriers in their clinical care/advocacy as they foreshadow and stall their efforts to address inequities in the healthcare system. This is not to imply that clinicians should not focus their efforts on learning a patients' language or about their culture, rather, Garro implies that when clinicians have to worry about translations and making sure the patient understands the interaction and procedures happening in the clinic they miss out on opportunities to improve healthcare outcomes.

Shim (2010) emphasizes the need for clinicians to build their patients' cultural health capital. Cultural health capital encompasses a variety of benefits from knowing what preventative health measures can be followed in order to avoid illnesses; to how to read and interpret medical research and apply it to our lives; and knowing what questions to ask of their healthcare providers among other things. Cultural health capital could be more easily facilitated and built up for patients if cultural and communication barriers were not a concern. Cultural health capital requires empowering clinician to patient communication, making patients active

members of the healthcare team, rather than inactive recipients of services. Increased diversity in the healthcare workforce will foster a greater flow of healthcare information and will build cultural health capital for many more people in our country.

Vogt and Taningco (2008) emphasize that the inadequate care which Spanish-speaking and Latino/a patients receive is due to lack of cultural congruence along with the healthcare systems' failure to ensure that Latino/as received adequate healthcare. Santiago-Irizarry's study of concordant care in a mental health clinic noted that cultural congruence rendered increased health benefits as well as advocacy for Latino/a patients. Her findings echo already mentioned benefits of concordance and highlight an increase in resource development as clinicians sought to improve outcomes for "their people [through the] long-standing tradition of ethnic activism and self-help"(1996, p. 5). Shaw's (2010) study of a New England community health clinic notes the linguistic benefits of diverse healthcare providers as they offer "emotional comfort and concrete logical support" for patients of similar backgrounds. Similarly, the 2006 review by the U.S. Department of Health and Human Services Administration Bureau of Health Professions suggests linguistic and ethnic concordance might increase clinician-patient interactions and improve healthcare outcomes.

Improved health outcomes and patient interactions warrant the necessity for diversity in healthcare and the vast shortage of healthcare workers demands it. Given that Latino/as are the fastest growing population in the U.S., it is apt that we should capitalize on that growth to build up our emaciated healthcare workforce.

Factors Affecting Latino/a Health Professions Degree Completion

The K-12 Pipeline

Higher education remains uninviting for Latino/as; the educational system is losing them fast. Nora (2003) followed a cohort of Latino/a students from Pre-K to two-year and four-year institution graduations and found of 2,856 students who started in Pre-K only 121 graduated with an associate's degree and 45 with a bachelor's degree, 4.2% and 1.6% respectively.

According to Tyler and Lofstrom (2009), about one million students drop out of high school every year. Latino/as form part of the population which is most at risk of dropping out. Factors that work against Latino/a student success are: school environment, lack of support in the schools, familial demands and value of education, lack of English proficiency, and legal status. Shortcomings in these areas contribute to low high school completion rates.

Gail Thompson's 2008 study identified factors which contribute to what teachers might perceive as student apathy and lead to student attrition. The teacher-student relationship is crucial to a student's persistence. If the student feels valued, respected, and connected to their teachers they will be more likely to enjoy going to school. Thompson's study revealed that of the Latino/a student population surveyed, only 57% felt that their teachers cared about them compared to 70% of the White students.

Another issue that affects college access is the student's perception of their teacher's expectations of their academic success. According to Thompson (2008, p. 51) "a culture of high expectations for students, teachers, staff, administrators, and parents is a hallmark of high-achieving schools". Thompson goes on to say that low expectations tend to be prominent especially in low-socioeconomic and high-minority populated schools. Furthermore, Thompson found that even in schools with high expectations, Latino/as and Blacks were subjected to low expectations. The low expectations transfer into erroneous or incomplete college and academic advising from counselors. In the teaching sphere, low expectations are expressed through the

improper and incomplete preparation for high school examinations such as ACT and SAT. The unfortunate fact is students perceive these low expectations and this awareness as yet another nudge pushing students out of the educational system. This affects the health professions pipeline immensely because, as Murray-Garcia and Garcia (2002) acknowledge, students will opt out of health professions educational opportunities in avoidance of perpetuating the struggle against a system which devalues diversity and foregoes *some* students' best interest.

Multiple health professions researchers (Grumbach & Mendoza, 2008; Komaromy et al., 1996; Murray-Garcia & Garcia, 2002) acknowledge the dramatic effects of the barriers already mentioned on Latino/a students' successful progression through the health professions pipeline. Murray-Garcia and Garcia (2002) studied the effects of educational tracking at the K-12 level which disproportionally affects students of color from all socio economic strata around the country. This tracking, which begins early in the students' educational trajectory, can effectively lower students' self-esteem and efficacy and also make them believe there is no place for them in college preparatory opportunities such as gifted and talented or health professions preparatory education (Murray-Garcia & Garcia, 2002). Unfortunately, this is not a new problem; rather it is the 21st century version of educational segregation seen during the previous century.

Theobald and Donato's (1992) exploration of rural education during the Dust Bowl depicts the hardships Mexicans, specifically, endured. Until the 1930s, Mexican education consisted of assimilating children into American culture rather than making them literate and competent. Many of the children were segregated into schools where they would be taught at a level "fit for them". IQ testing and eugenics were used in an effort to lawfully separate children by keeping students of the same intellectual capacity together. Stoskopf (1999) recounts that "the great majority of Mexican-American school children in the [San Jose school system] were to

assume lower academic tracks because [aptitude] tests revealed their inferior intellectual quality".

Mexican children were often segregated due to their lack of English fluency therefore their education continued to be focused on assimilation into American culture. Historian Gilbert Gonzalez highlights educational access of Mexicans during this time:

> "The educational experience of migratory [Mexican] children represented the social aspect of the economic system, which established the migrant family as the foundation for its productivity…These conditions condemned generations of Mexican children to poor nutrition, poor health, poor housing, and virtually no education. The educational pattern of migrant children was characterized by exclusion, segregation, irregular (or seasonal) attendance, and very early dropout rates" (Theobald & Donato, 1992, p. 32).

As Murray-Garcia and Garcia (2002) acknowledge, tracking continues to prevail in our educational system and negatively affect the educational outcomes of Latino/a and other minority students everywhere. Garza and Moghadam (2008); Grumbach and Mendoza (2008) are among those who acknowledge that Latino/as' continued struggle for equitable access to health professions education has been hindered by decades of continued denial of access to quality educational preparation. Therefore, these researchers/clinicians encourage health professions school faculty, administration, and staff to become actively involved in there are public school systems to influence and increase equitable access opportunities for all students. Moreover, their involvement is crucial as they can speak about how increased access and improved educational outcomes will decrease the health professions worker shortage and improve public health outcomes across the country.

Pre-Health Professions Coursework

Health professions preparatory coursework is considered an important barrier to Latino/a student success in the health professions pipeline. Alexander et al. (2009) acknowledge that

when minority students struggle in health professions gateway courses they may shift away from health professions degrees. In their study, Alexander et al. found African American and Latino/a students were significantly less likely to earn a grade of A or B in health professions gateway courses than their White counterparts. Moreover, health professions preparatory course averages for African American and Latino/a students were lower than those of White students. African American students had a 1.70 average and Latino/a students had a 1.94 average while White students had a 2.57 average. Even with these course averages, Alexander et al. found that Black, Latino/a, and Filipino students were more likely to persist and complete at least 4 gateway courses while this was not the case for White students.

Although persistence in gateway course completion is important, low grades in health professions preparatory courses are problematic as entrance to health professions programs is based in part on a students' grade point average specifically in these courses. Moreover, when admissions committees see that students have struggled in these courses they are less likely to admit those students predicting that they might also experience academic hardship in the science courses at the health professions school level. Given the low number of seats available in health professions degree programs and the financial and programmatic consequences of having students drop out, admissions committees tend to favor admitting students who have done well in all their previous academic coursework.

Barr, Gonzalez, and Wanat (2008) conducted a study to determine what factors increased or decreased underrepresented students' intention to major in a health professions degree. Coursework once again rose to the top as of one the main factors affecting persistence. Chemistry proved to be specifically difficult and acted as the "weed out" course at the campus where the study took place. Students who had positive experiences in their health professions

preparatory courses kept their interest in their health professions career plans. Students who had bad experiences in the same courses tended to lose interest in health professions careers. Of the students whose interest in the health professions had decreased, 75% noted they lost their interest due to their experiences in health professions preparatory courses. This was true mainly for women and underrepresented minority students in the sample (Barr et al., 2008).

Zayas and McGuigan (2006) interviewed high school students to determine what factors encouraged and discouraged them from choosing to become health professionals. They found students also mentioned that chemistry would be a "weed out" course in college. The perceived difficulty of the health professions preparatory courses proved to be the most important reason why students would not consider becoming a health professional.

Social Support System

Almost every study reviewed for this report highlighted the desperate need for better social, academic, and professional support which Latino/as require to succeed in the health professions pipeline. Latino/as who do achieve enrollment into health professions programs tend to persist due to a variety of networks which provide support (Pyskoty, Richman, & Flaherty, 1990). Therefore it is imperative to determine whose support is required and what it does for the Latino/a student interested in pursuing a health profession.

Family members.

Zayas and McGuigan (2006) found family members can strongly influence a student's desire to become a health professional. Family members who are health professionals are a fountain of invaluable information for the student. Through that family member, the student gets a clear picture of the day to day professional and personal demands and how to best cope with them. They get to see how much time the health professional has to spend at work, the quality of

that time, and how time spent at work effects the health professional. Additionally, students get to see the type of lifestyle afforded to the health professional as it relates to quality of life. Moreover, since the family member has been through health professions education, they can help dispel misconceptions about the health professions academic and professional career. They can also become sources of support for the student. It is for this reason that Zayas and McGuigan (2006); and Cooney, Kosoko-Lasaki, Slattery, and Wilson (2006) recommend health professions outreach efforts include family programming as their influence in the students' choosing of and persistence in the health professions is highly important.

When only 5.9% of Latino/as are health professionals, it is highly likely that few Latino/a children will have a health professional parent at home. It is therefore imperative that outreach programs include familial components so that the entire family can learn what is necessary for a student to successfully complete a health professions degree.

On campus.

Research byAlexander, Garcia, Gonzalez, Grimes, and O'Brien (2007); Barr et al. (2008); Cooney et al. (2006); Zayas and McGuigan (2006) states that support provided at the school level is imperative for the success and persistence of Latino/as in the health professions. Alexander et al. (2007) specifically address the need for students to have academic support throughout the completion of health professions preparatory coursework. They stress that the support should be ongoing while students take the courses and not focus on specific courses, rather, it should be holistic. Alexander et al. noted that Latino/as persisted in the health professions preparatory courses even when they did not achieve optimal grades. They also noted there were possible environmental and academic support issues affecting student's persistence in health professions career goals. They recommended an examination of social factors at the

college level as these may have more detrimental effects on a students' persistence to a health professions career than earning Cs on a few courses

Barr et al. (2008) also highlighted the need to improve support efforts at the academic level. In their study students explicitly stated that better academic advising and improved support from their faculty would greatly improve their health professions academic experiences. Moreover, peer-to-peer support is another area in which students wish to see more effort as they highly value and benefit from their peers advice and experiences in health professions preparatory courses.

Murray-Garcia and Garcia (2002) recognize the American school system is permeated by individualistic values which do not necessarily align with Latino/a cultural values of cooperation and *comunidad*. They acknowledge it can be difficult for students who value *comunidad* to excel in an educational system that discourages "cooperative approaches to achieve the same goal" (p. 726). This alone should provide great impetus for the educational system to devise and provide a variety of student support sources as they positively impact successful completion of academic degrees.

Clinicians as role models.

Gonzalez, Barr, and Wanat (2010) found students who had role models in their health profession of choice had an easier time overcoming difficulties to achieve their health professions career goals. One Latina student in their study seemed to be doing well in health profession preparatory coursework and was not letting pressure overcome her. The researchers assert the student was coping, in part, because of her access to a physician mentor who helped prepare her for the profession via discussions and readings. Conversely, Gonzalez et al. found another student reported being a pre-med major was hard and lonely work. She was not

connected to mentors reinforcing her decision to be a pre-med major. She felt helpless. She reminded herself that she chose her major due to the joy she felt as a volunteer during her high school years. She held on to that joy to persist in her pre-medical education.

Although students may not always have access to clinician mentors, it is important to consider other ways they can be supported to succeed in their health professions career goals. Even less informal contact with a students' own dentist, pharmacist, physician assistant, or family physician helps expose students to the health professions and dispel misconceptions about health professions educational preparation (Zayas & McGuigan, 2006). Students should make connections with people who will help advance and compliment their health professions education. Having these connections may make the daunting task of becoming a clinician more attainable and manageable.

Cost of Health Professions Education

The costs of health professions education often impede Latino/a student enrollment into health professions education. Grumbach and Mendoza (2008) found that between 1990-2005 few health professions programs experienced increases in their Latino/a graduates. The health professions programs which grew were, as noted by Grumbach and Mendoza, less expensive degrees which "do not require doctoral education for licensing" (p. 415).

Parents interviewed by Zayas and McGuigan (2006) expressed costs were the only reason their children would not pursue health careers as the educational cost is prohibitive. The unfortunate truth is that health professions education, like all of higher education, in unviable for many people around the U.S. Roman (2004) notes most students graduate from medical school with an average of $109,000 of debt. This number can be monumental especially to Latino/a families whose median household income is estimated at $38,667 (DeNavas-Walt, Proctor, &

Smith, 2011). Thus, it is common for people to opt out of these careers due to the extreme educational costs.

Affirmative Action Admissions Policies

"Prior to 1968, only about 2.5% of American physicians were African American [most of them trained at Historically Black Colleges and Universities] and less than 0.2% of medical students were Mexican American, Puerto Rican, or American Indian/Alaska Native" (Carlisle, Gardner, & Liu, 1998, p. 1314). Although the landmark Supreme Court case *Brown v. Board of Education* (1954) officially deemed "separate but equal" educational facilities unlawful, it was through Title VI of the Civil Rights Act of 1964 that public institutions of higher education were officially desegregated by offering educational opportunities to all students (Cohen, 1998; Harper, Patton, & Wooden, 2009; Moreno, 2003). Simpson and Aronoff (1988) describe the 1970s as a time of important growth in the number of Latino/a and African-American physicians. The increase was due to the growing minority applicant pool, wider availability of financial assistance, increase in medical school seats, and the implementation of programs focused on minority physician recruitment. The continued growth of the minority physician population seemed to be unstoppable in the post-affirmative action era. Therefore, in 1985 the Bureau of Health Professions estimated that by 2000 there would be a 156% increase in the number of African American physicians and a 71% increase in the number of Latino/a physicians (Simpson & Aronoff, 1988). Even though the necessary growth to stay on track had not materialized, there was an impressive increase in the number of minority physicians. Future projections still seemed promising.

During the years of anticipated growth, courts ranging from the district, state, circuit, to the Supreme heard and decided cases which affected affirmative action admissions policies in

public colleges and universities around the country. *Regents of the University of California v. Bakke* (1978) *and DeFunis v. Odegaard* (1973) challenged the manner in which higher education institutions admit students, particularly students of color, who were to benefit from affirmative action (Moreno, 2003). These cases, brought on by White students, accused public higher education institutions of law and medicine of having admissions processes which unfairly benefited minority applicants. Although *DeFunis* did not conclude with a significant ruling, it is important because it was the first case challenging affirmative action heard by the Supreme Court. As Henkin (1975) stated " [DeFunis] may have achieved a measure of legal immortality… as DeFunis is now shorthand in the American legal language for the difficult social-constitutional issues raised by "benign discrimination" in favor of members of minority groups" (p. 483). The challenge to affirmative action admissions policies in higher education began with the *DeFunis* case.

In contrast to the *DeFunis* case, the *Bakke* case rendered a ruling which deemed affirmative action unconstitutional (Elliott & Ewoh, 2005; Moreno, 2003). The *Bakke* case is especially important because it provided the first Supreme Court ruling vis-à-vis affirmative action. Through *Bakke* the Supreme Court established that the Equal Protection Clause of the Fourteenth Amendment could be used to scrutinize race based admissions processes at public colleges and universities (Moreno, 2003). Finally, through this case, the University of California's Medical School became the prime example of "what not to do" in affirmative action admissions policies.

In the 1990s, legal cases focused on affirmative action continued to transform admissions policies of public institutions. The most prominent case was *Hopwood v. The State of Texas* (1996) in which the Fifth Circuit Court of Appeals ruled in favor of Cheryl J. Hopwood and

declared that no public higher education institution in Texas, Louisiana, and Mississippi could consider race/ethnicity for admissions purposes (Moreno, 2003). Later, the Supreme Court ruled it was illegal to consider race for university and college admissions purposes (Chapa , 2005). Therefore, colleges and universities had to reengineer admissions policies to follow the mandate set forth by the 1964 Civil Rights Act and the Supreme Court's decision on *Hopwood*. The Fifth Circuit Court of Appeals' negation of the use of race in admissions policies affected states highly populated by minorities.

Public colleges and universities in Texas, Louisiana, and Mississippi were not the only ones which had to do away with race based admissions. In July of 1995 the Regents of the University of California voted to end all affirmative action policies on their campuses (Moreno, 2003). Then, in 1996 and 1998 in California and Washington State respectively, initiatives were adopted banning the use of race by government entities including public colleges and universities (Elliott & Ewoh, 2005). These events, along with the *Hopwood* ruling, drastically altered race based admissions procedures in highly minority populated states around the country.

As the 2000s have progressed, litigation on affirmative action in higher education has continued. In *Smith v. University of Washington Law School* (2000) the Ninth Circuit Court of Appeals ruled in favor of the law school declaring that its race based admissions standards were constitutionally sound (Elliott & Ewoh, 2005; Moreno, 2003). Unlike the *Hopwood* ruling, the *Smith* ruling supported diversity as a "compelling interest" by citing Justice Powell's stance in the *Bakke* case (Moreno, 2003).

More recently in *Gratz v. Bollinger*, Jennifer Gratz and Patrick Hamacher sued the University of Michigan because they were denied admission to the university's College of Literature, Science and the Arts. Gratz and Hamacher opposed the institutions' admissions point

system which awarded extra points to minority and athlete applicants. In *Gratz*, the U.S. District Court ruled in favor of the University stating its admissions standards were constitutional and "met the standards set by the Supreme Court in *Bakke*" (Moreno, 2003, p. 19). In this same case though, the Supreme Court "ruled against using a rigid point system that granted minority students a fixed, arbitrary benefit in admissions decisions" (Fischer & Massey, 2007, p. 533). *Gratz* established that race could be considered for admissions purposes but giving points based on an applicant's race was improper.

In *Grutter v. Bollinger* Barbara Grutter claimed she "lost a spot [at the University of Michigan law school] to a less qualified minority applicant" (Moreno, 2003, p. 19). In this case, the U.S. District court ruled against the use of race in admissions decisions and ordered the law school to stop the use of race in the admissions criteria. The Sixth Circuit Court of Appeals reversed the U.S. District Court's decision by citing diversity as a compelling interest "in achieving a diverse student body", like in *Bakke* (Moreno, 2003, p. 19). The Supreme Court later affirmed the use of race as a factor in admissions decisions (although with many stipulations) thereby supporting affirmative action in the college admissions process (Chapa, 2005; Elliott & Ewoh, 2005; Fischer & Massey, 2007).

As the use or race for admissions purposes has fluctuated, so too have the numbers of minority students who attended and graduated from schools of health professions. Grumbach and Mendoza (2008) report that from 1995 to 2000 enrollment of health professions minority students decreased drastically especially at medical schools in Texas and California. They attribute these massive reductions of minority enrollees to the legal cases challenging affirmative action admissions policies, noting most of the cases involved medical or law schools. As cases have been heard in the courts, multiple constituencies including higher education institutions,

professional and educational organizations, as well as consumer advocacy groups, have submitted documentation in support of the use of race in admissions processes. They understand the great need to have a diverse and growing healthcare workforce. Some institutions have tried to device lawful admissions processes which still render diverse applicant and enrollee pools but not enough of them have succeeded (Grumbach & Mendoza, 2008).

Programs That Work

Although it seems that there are more problems than solutions, there are programs in our country which are growing and nurturing Latino health professionals.

The Urban Health Program

The Urban Health Program (UHP) at University of Illinois at Chicago began in 1968 to address minority health care disparities by recruiting, mentoring, and graduating students of color. The program expanded after the 1978 Illinois Legislature decided it would be important in increasing the number of Black health professionals in the area. UHP exposes minority students as young as 5 to the health professions. Researchers, students, and health professionals participate in activities with students in the Chicago School District as well as other private and public schools in the metro area. The activities include working on research and school projects related to the health field. College students receive financial support, mentoring, as well as internships and research opportunities. As of 2008 UHP graduated 70 percent of the Black and Hispanic physicians serving the Chicago metropolitan area. About 60 percent of the "Black, Hispanic, and American Indian doctors, nurses, dentists, and other health care providers in Illinois" participated in the UHP program (Forest, 2008, p. 34).

Program participants tend to be minorities who hail from communities in which there are a multitude of health care disparities. While students are not required to practice in underserved

areas upon graduation from their health professions programs, many tend to practice in these areas because of their personal experiences in health care (Forest, 2008).

The Premedical Honors College

In 1994 the Premedical Honors College (PHC) was created jointly by Baylor College of Medicine (BCM) and the University of Texas-Pan American (UT-PA) in an effort to strengthen the health professions pipeline in South Texas. South Texas struggles to attract healthcare workers and has been designated medically underserved. The clinician shortage is, caused in part, because few South Texas students attend and graduate from medical school (Thomson et al., 2003).

The program seeks applicants in their senior year of high school who are academically competitive. Students are evaluated on their maturity level, "life experiences, interpersonal communication, and motivation to pursue a medical career" (Thomson et al., 2003, p. 455). Once accepted into PHC, students are also accepted into UT-PA, and conditionally accepted into BMC. Students in PHC must major in biology or chemistry, and they must select the subject they did not choose to major in as their minor (Thomson et al., 2003).

Through PHC students benefit from faculty and clinician mentoring, tutoring, summer activities, research, shadowing opportunities, and financial assistance. Financial assistance covers all UT-PA tuition and additional expenses as well as expenses incurred through summer internships and research activities. Students who successfully matriculate through UT-PA and who meet the BCM admissions requirements also receive full scholarships to cover their medical school expenses (Thomson et al., 2003).

This program has successfully increased the number of South Texas medical school enrollees. In 1996 23 South Texas students applied to medical school and only 4 enrolled. In

contrast, in 2002 60 PHC graduates enrolled into medical school, 96.7% of which were Mexican-Americans. This number is especially impressive when one considers that of the 386 students who enrolled in medical schools nationally, 17 were PHC graduates (Thomson et al., 2003).

PHC's success has been so lauded that the Texas State Legislature decided to institute a similar program statewide. The Texas State Legislature allocated $4 million dollars to initiate the Joint Admission Medical Program (JAMP) which is almost identical to the PHC program. Additionally, there are seven times more pre-med students at UT-PA than before PHC's inception. UT-PA is now considered one of the top 5 producers of Mexican-American medical school enrollees. PHC is also credited for increasing the number of science and health care workers in South Texas as PHC students who have not pursued medical school have gone into other health professions or the teaching profession (Thomson et al., 2003).

The Sophie Davis Model

The Sophie Davis BS/MD program is a partnership between the City University of New York at The City College and several area medical schools, it began in 1973. The program recruits academically successful high school students who, upon enrollment, begin their journey to medical school. Like the PHC program, the Sophie Davis model incorporates a smooth path to medical school which includes a prescribed curriculum set to prepare students to practice medicine. The BS/MD curriculum is completed in five years. The first two years encompass the Bachelor of Science curriculum while subsequent years focus specifically on preparing students for milestones such as the United States Medical Licensing Exams and clinical rotations. Unlike other programs, this program does not require the Medical College Aptitude Test or focus on the typical pre-medical preparatory courses. Rather, the students "learn for the purpose of increasing their fund of knowledge to support their becoming effective physicians" (Roman, 2004, p. 1178).

Like other programs already mentioned, this program has a strong emphasis on academic, social, and personal support to foster student persistence. Through the Sophie Davis program students quickly begin to see themselves as physicians, and as Gonzalez et al. (2010) have emphasized, this visualization is key to the students' pre-health profession success.

Roman (2004) reports this program has contributed greatly to the increasing numbers of physicians in the New York state and New York metropolitan area. Moreover, the program has graduated important numbers of minority, first generation, and low-income students all while costing less than what undergraduate and medical school cost combined. Roman (2004) recognizes there are many challenges to increasing the number of medical school enrollees including inequitable K-12 education and finances. He believes academically adept students can reach the health professionals goals through programs, like Sophie Davis, which set the path to success regardless of other obstacles (Roman, 2004).

Conclusion

Literature in the fields of allied and public health, anthropology, health professions education, and higher education state that more needs to be done to increase the diversity of the healthcare workforce. Improving educational outcomes for Latino/a students will render multiple benefits for underserved and underrepresented populations. Furthermore, the nation will benefit from improved economic and public health outcomes thereby making investments of time, education, and money worthwhile. Thus, it is imperative that we continue to study barriers keeping Latinos from graduating as health professionals so we can demolish them. We must be intentional in our efforts to formulate and emulate programs which support Latino/as through health professions education. It is a matter of public health and national stability. Our country needs it.

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