

Differences in Hispanic Access and Success Rates for Undergraduate Health-Related Studies in Texas Health-Related Institutions: A Multiyear, Statewide Investigation

This manuscript has been peer-reviewed, accepted, and endorsed by the National Council of Professors of Educational Administration (NCPEA) as a significant contribution to the scholarship and practice of school administration and K-12 education.



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In this investigation, we analyzed Hispanic student access and success in health-related degrees by examining enrollment and graduation rates over a period of 13 years. Archival data were obtained from the Texas Higher Education Coordinating Board consisting of the number of Hispanic students enrolled and number of degrees awarded in the health-related degrees at Texas health-related institutions for each year beginning with 2000 through 2012. Statistically significant increases were not present in the number or the percentages of Hispanic students enrolled in undergraduate degree programs or for the number or the percentages of undergraduate degrees awarded. The lack of statistically significant increases should serve as a call to examine the higher education system.

Introduction

The ability to obtain a quality higher education and healthcare remain priorities for Hispanics because increases in this group accounted for more than half of the total population growth between 2000 and 2010 in the United States (U.S. Census Bureau, Department of Commerce, Economics, and Statistics Administration, 2011). Yet, Hispanics continue to be underrepresented at all levels of higher education with only 12% of the total undergraduate and post baccalaureate student enrollment in 2008 being Hispanic (National Center for Education Statistics [NCES], 2010). Despite substantial gains in the percentage of American

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college students who are Hispanic, rising from just 3% in 1976 to 13% in 2010, the percentages have not increased at the same rate of population growth (NCES, 2012a). According to the Pew Hispanic Center (2009), 28% a bachelor's degree compared to only 13% of Hispanics of the same age. The population distribution of Hispanics is not equally dispersed throughout the country. According to The U.S. Census Bureau Department of Commerce, Economics, and Statistics Administration (2011) over one half of the Hispanic population resides in just three states: California (28%), Texas (18.7%), and Florida (8.4%).

Among positive higher education outcomes, college completion remains one of the biggest disparities between White and Hispanic students (Fry, 2011). This lack of completion has the potential for severe economic impact on both a state and national level. In a policy proposal for the group *Excelencia in Education*, Santiago (2011) warned of a looming crisis caused by the combination of a rapidly expanding population and a lower than average education attainment. In 2005, The National Center for Public Policy and Higher Education predicted a decline in the skill and income of U.S. residents in the next two decades because the least educated groups are becoming the fastest growing segment of the workforce (National Center for Public Policy and Higher Education, 2005). This decline translates into a loss of tax base and larger financial decreases (Kelly, 2005).

Additionally, Hispanics are under-represented in healthcare professions; a fact linked to health disparities in the minority populations (Cason et al., 2008; Grumbach & Mendoza, 2008; Smedley, Butler, & Bristow, 2004). In 2003, the Institute of Medicine and the Sullivan Commission on Diversity in Healthcare Workforce stressed that the failure to reverse the downward trend of minority representation in nursing, medicine, and dentistry could place the health of a one third of the nation's citizens at risk (The Sullivan Commission on Diversity in Healthcare Workforce, 2004; Smedley et al., 2004). Major areas to address for strategic policy revision included examining educational preparation in primary school, changing responses to affirmative action challenges, and revising admissions policies (Smedley et al., 2004; The Sullivan Commission on Diversity in Healthcare Workforce, 2004).

Connecting healthcare education trends to general state education and population trends allows for a more circumspect analysis of the magnitude of the issue. In 2005, Texas was declared a majority-minority state, meaning the non-White population had surpassed that of the White population. Hispanics comprise 38% of the population in the State of Texas, the second largest proportion of the national Hispanic population behind California (U.S. Census Bureau, U.S. Department of Commerce, Economics, and Statistics Administration, 2011). For the first time in modern history, Hispanic students comprised 50.2% of the public school total enrollment population during the 2010-2011 school year (Texas Education Agency [TEA], 2011). However, Texas mirrored the national trend of Hispanic underrepresentation of in higher education and healthcare professions in the late 1990s. In 2000, the state responded with an initiative adopted by the Texas Higher Education Coordinating Board (THECB) called the *Closing the Gaps Higher Education Plan* (Vega & Martinez, 2012). The original plan had the specific goal of increasing the number of Hispanic students completing undergraduate degrees from 18,000 in 2000 to 36,000 in 2010, followed by 50,000 by 2015 (THECB, 2010). In April 2010, the THECB announced a strongly reworded and accelerated revision to the plan when it became apparent the numbers were consistently below targets.

The implications of the disparity of Hispanic students in obtaining healthcare related degrees are far reaching. Specifically, The Sullivan Commission on Diversity in the Healthcare Workforce (2004) asserted that without major interventions, the continued

trajectory of declining representation in health professions where the minority participation is not reflective of the population will have a substantial impact on the economic and social well-being of the state and nation. According to the U.S. Department of Health and Human Services, Health Resources and Services Administration [HRSA] (2012), Texas currently has a general health professional shortfall in the areas of primary care, mental health, and dentistry. In addition, Texas is the state with the second largest Hispanic population and one of the fastest growing states in the nation; an economic and healthcare crisis looms in the absence of filling the healthcare shortage with the diversity representative of the population.

Created by the 1965 Texas Legislature, the THECB has worked to achieve academic excellence of Texas students. The philosophy of the coordinating board rests on the premise of access to and quality of education as inseparable foundations for meeting the goals of Closing the Gaps by 2015 plan (THECB, 2012a). Included in the THECB's mission is initiative development and implementation to increase significantly the number of Texans completing college. This goal reflects the impetus for alignment of the state's future workforce needs and higher education outcomes. The board also recognizes that although Texas educational outcomes have improved, the speed of achieving parity with a global economy is lacking (THECB, 2012a).

The purpose of this study was to examine Hispanic student access and success in health-related degrees by examining enrollment and graduation rates over a period of 13 years. Archival data were obtained from the THECB consisting of the number of Hispanic students enrolled and number of degrees awarded in the health-related degrees at Texas health-related institutions for each year beginning with 2000 through 2012. The health-related degrees for which data were available included certificate, undergraduate, masters, doctoral, medical, dental, and nursing.

In this investigation, Hispanic student enrollment numbers and percentages of student enrollment in health-related degrees at Texas health-related institutions were calculated for each year of data (i.e., fall 2000 through fall 2012). Research questions used to guide this study were (a) As a function of degree type, what is the difference in the number of and percent of Hispanic students enrolled in health-related undergraduate degrees at Texas health-related institutions between the fall of 2000 through the fall of 2012?; (b) As a function of degree type, what is the difference in the number of and the percent of health-related undergraduate degrees awarded to Hispanic students at health-related institutions between the fiscal year 2000 through the fiscal year 2012?; and (c) What trend is present in the percent of Hispanic students enrolled in and awarded health-related degrees at Texas public institutions between the fall of 2000 through the fall of 2012 academic years?

Methodology

Archival data from the Texas Higher Education Accountability System for Hispanic students in the state of Texas were obtained for this investigation. For the purposes of this study, participants included Hispanic students for which Texas public higher education institutional health-related degree enrollment data between the fall of 2000 and the fall of 2012 and completion data between the fiscal year 2000 and the fiscal year 2012 were available. Institutions reporting data include (a) The Texas A&M University Health Science Center and its component institutions, agencies, and programs; (b) The University of Texas Medical Branch at Galveston; (c) The University of Texas Southwestern Medical Center at Dallas; (d)

The University of Texas Medical School at San Antonio; (e) The University of Texas Dental Branch at Houston; (f) The University of Texas M. D. Anderson Cancer Center; (g) The University of Texas Graduate School of Biomedical Sciences at Houston; The University of Texas Dental School at San Antonio; The University of Texas Medical School at Houston; The University of Texas Health Science Center–South Texas and its component institutions; and The University of Texas School of Public Health at Houston (Texas Administrative Code, Title 19, Part 1, Chapter 5, Subchapter A, Rule §5.3, 2003).

The Accountability system is an interactive, online data collection tool designed to track performance on critical measures such as participation, excellence, success, and research. The system is modeled on *Closing the Gaps by 2015*, Texas' higher education plan that contains data scholars may use to generate queries, reports, and statistics regarding higher education (THECB, 2012b). Health occupational data in this study were available for the state's nine health-related institutions (Texas Higher Accountability System, n.d).

Data were collected using the interactive access feature of the Higher Education Accountability System. Specifically, the following variables from the Participation and Success categories were downloaded into an Excel spreadsheet for analysis: (a) Health-related Institutions, (b) Health-related Undergraduate Degrees, (c) Health-related Certificates, (d) Health-related Bachelor degrees. Further, degree data were delineated by Hispanic students for each of the fiscal years between 2000 and 2012. Following the download of data into an Excel file, the data were imported into the *Statistical Package for the Social Sciences (SPSS)* for analysis.

Prior to conducting inferential statistical procedures, the data for each research question for each year were examined using standardized skewness coefficients and kurtosis coefficients. Thirteen of the 16 standardized coefficients were within the range of normality, +/- 3 (Onwuegbuzie & Daniel, 2002). Therefore, parametric paired samples *t*-tests were the most appropriate statistical procedure for the normally distributed data.

Results

Hispanic Undergraduate Enrollment

From the fall of 2000 through the fall of 2012, 7,655 Hispanic students were enrolled in undergraduate health-related degrees at Texas health-related institutions. Throughout the 13-year period, the number of Hispanic students enrolled in undergraduate health-related degree programs increased. A slight decline, however, was observed in the fall of 2005 through the fall of 2008 with a recovery and upward trend beginning in the fall of 2009 continuing through the fall of 2012. A detailed listing of the number of Hispanic students enrolled by fall semester as well as the mean number of students by institution is presented in Table 1.

Table 1
Descriptive Statistics for the Number of Hispanic Students Enrolled in Health-Related Undergraduate Degrees at Texas Health-Related Institutions by Fall Semester

Fall Semester	Total Hispanic Enrollment	<i>Mdn</i>	<i>M</i>	<i>SD</i>
2000	514	30.00	64.25	98.65
2001	540	32.00	67.50	112.28
2002	595	37.50	74.38	117.57
2003	592	39.00	74.00	114.74
2004	535	36.50	66.88	97.25
2005	475	36.00	59.38	78.25
2006	461	37.50	57.63	73.85
2007	471	40.50	58.87	74.27
2008	541	48.00	67.63	87.18
2009	608	56.00	76.00	92.62
2010	698	67.50	87.25	95.51
2011	772	70.50	96.50	111.19
2012	853	50.00	106.62	127.86

Note. Eight health-related institutions provided data for each of these fall semesters.

The total undergraduate enrollment in health-related undergraduate degrees from the 2000 fall semester to the 2012 fall semester was 37,137, and Hispanic student enrollment for this period was 7,655. The number of students increased in both the total and the Hispanic student populations with slight decreases in the 2004 through 2007 fall semesters. In 2008, the overall student population increased more than the Hispanic student population, yet both groups experienced a continued upward trajectory.

With regard to the number of Hispanic students enrolled in undergraduate degree programs, a statistically significant difference was not present, $t(7) = -1.43$, $p = .196$. Although not statistically significant, the average number of Hispanic students enrolled in these undergraduate degree programs in Texas health-related institutions increased from the 2000-2001 to the 2011-2013 year. Descriptive statistics are presented in Table 2.

Table 2
Descriptive Statistics for the Average Number of Hispanic Students Enrolled in Undergraduate Degree Programs at Texas Health-Related Institutions for the Fall Semester 2000 and the Fall Semester 2012

Fall Semester	<i>n</i> of Institutions	<i>M</i>	<i>SD</i>
2000	8	64.25	98.65
2012	8	106.62	127.86

Figure 1 depicts the mean number for undergraduate Hispanic students. The mean number of undergraduate Hispanic students almost doubled from the fall of 2000 to the fall of 2012.

This difference represents an increase of 70.0% over this period. Yet as previously mentioned this difference was not determined to be statistically significant.

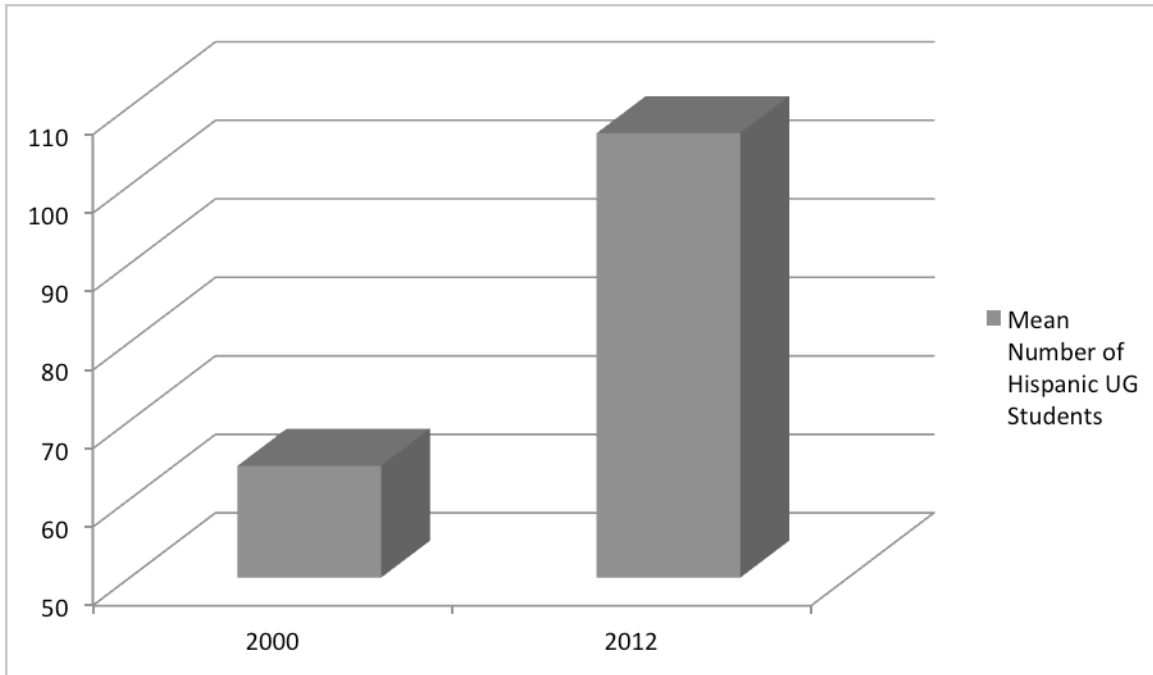


Figure 1. Mean number of Hispanic students enrolled in undergraduate degrees at Texas health-related institutions.

Regarding the percentage of Hispanic students enrolled in undergraduate degree programs in Texas, a statistically significant difference was not present, $t(6) = -1.24, p = .26$. Although not statistically significant, the average percentage of Hispanic students enrolled increased from the fall of 2000 through the fall of 2012. Descriptive statistics are presented in Table 3.

Table 3

Descriptive Statistics for the Percentage of Hispanic Students Enrolled in Undergraduate Degree Programs at Texas Health-Related Institutions for the Fall Semester 2000 and the Fall Semester 2012

Fall Semesters	<i>n</i> of Institutions	<i>M</i>	<i>SD</i>
2000	7	14.00%	0.18%
2012	7	16.99%	0.10%

Despite the lack of statistical significance, the mean percentage of undergraduate Hispanic students increased almost three percentage points from the fall of 2000 through the fall of 2012. The data for undergraduate Hispanic students are from seven institutions and do not include many institutions where this segment of the population may be increasing such as community colleges. Figure 2 depicts the mean average percentage of undergraduate Hispanic students.

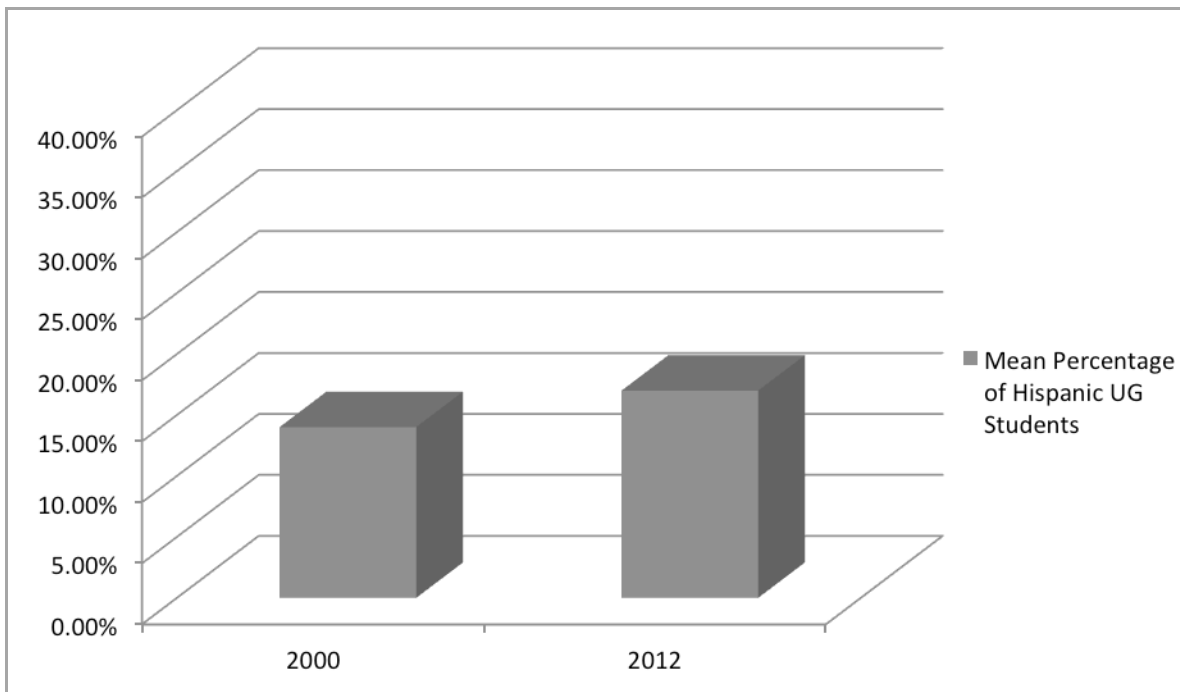


Figure 2. Mean percentage of Hispanic students enrolled in undergraduate degrees at Texas health-related institutions for the fall of 2000 and the fall of 2012.

Health-Related Degrees Awarded

From the fiscal year 2000 through the fiscal year 2012, 4,987 certificates were awarded at Texas health-related institutions, and 925 were awarded to Hispanic students. Throughout the 13-year period, the number of Hispanic students receiving health-related certificates increased. However, a slight decline was observed in the 2004 through the 2006 fiscal years with a recovery and upward trend until fiscal year 2012. A detailed listing of the number certificates awarded to Hispanic students by fiscal year as well as the mean number of certificates awarded by institution is presented in Table 4. The number of certificates awarded increased for the total enrollment and the Hispanic student populations. The lowest year following the initial fiscal year 2000 was fiscal year 2009 with only 36 degrees awarded to Hispanic students.

Table 4

Descriptive Statistics for the Number of Health-Related Certificates Awarded to Hispanic Students at Texas Health-Related Institutions by Fiscal Year

Fiscal Year	Total Hispanic Health-Related Certificates	<i>Mdn</i>	<i>M</i>	<i>SD</i>
2000	22	0.00	3.14	5.43
2001	78	0.50	9.75	21.90
2002	96	0.50	12.00	28.46

2003	87	1.50	10.88	24.84
2004	64	0.50	8.00	16.55
2005	65	0.50	8.13	16.78
2006	67	1.50	8.38	19.67
2007	90	1.50	11.25	28.61
2008	69	1.50	8.63	20.80
2009	36	1.50	4.50	10.35
2010	101	3.50	12.63	27.78
2011	81	1.50	10.13	22.36
2012	69	2.00	8.63	16.73

Note. Seven health-related institutions provided data for each of these fiscal years.

A statistically significant difference was not present, $t(7) = -1.33, p = .233$. Although not statistically significant, the average number certificates awarded to Hispanic students at Texas health-related institutions increased from the fiscal year 2000 to fiscal year 2012. Descriptive statistics are presented in Table 5.

Table 5
Descriptive Statistics for the Number of Certificates Awarded to Hispanic Students at Texas Health-Related Institutions for Fiscal Year 2000 and Fiscal Year 2012

Fiscal Year	<i>n</i> of Institutions	<i>M</i>	<i>SD</i>
2000	7	3.14	2.05
2012	7	8.63	6.68

Despite the lack of statistical significance, the mean number of certificates awarded to Hispanic students more than tripled from fiscal year 2000 to fiscal year 2012. Although a difference was present, Hispanic enrollment has not increased by an amount needed to be reflective of the population increase (U.S. Census Bureau, U.S. Department of Commerce, Economics, and Statistics Administration, 2011; Wright, 2008). Figure 3 depicts the mean number of certificates awarded to Hispanic students.

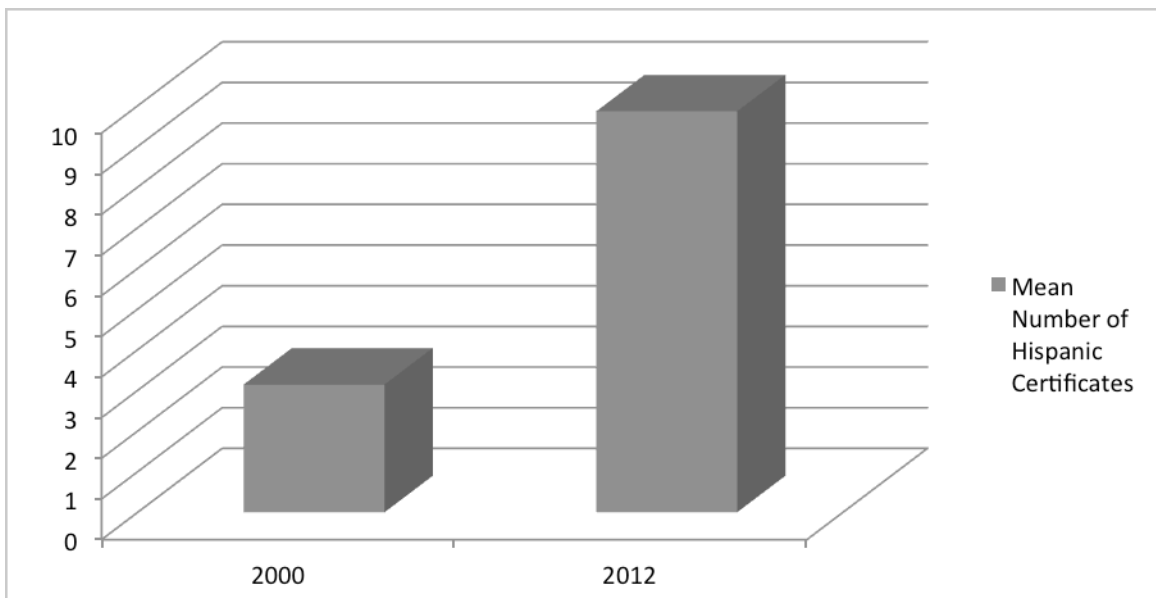


Figure 3. Mean number of certificates awarded to Hispanic students at Texas health-related institutions for fiscal year 2000 and fiscal year 2012.

From the 2000 through the 2012 fiscal years, 18,564 bachelor degrees were awarded at Texas health-related institutions, and 3,499 of these bachelor degrees were awarded to Hispanic students. Throughout the 13-year period, the number of Hispanic students receiving health-related bachelor degrees increased. However, fluctuations were observed in the fiscal year 2004 through the fiscal year 2009 with a recovery and upward trend until fiscal year 2012. A detailed listing of the number bachelor degrees awarded to Hispanic students by fiscal year as well as the mean number of bachelor degrees awarded by institution is presented in Table 6.

Regarding bachelor degrees awarded, a statistically significant difference was not present, $t(6) = -1.33$, $p = .233$. Although not statistically significant, the average number bachelor degrees awarded to Hispanic students at Texas health-related institutions increased from the fiscal year 2000 through fiscal year 2012. Descriptive statistics are presented in Table 7.

Despite the lack of statistical significance, the mean number of bachelor degrees awarded to Hispanic students almost tripled from fiscal year 2000 to fiscal year 2012. This difference represents an increase of approximately 214.0% during this period. Figure 4 depicts the mean number for bachelor degrees awarded to Hispanic students.

Table 6
Descriptive Statistics for the Number of Health-Related Bachelor Degrees Awarded to Hispanic Students at Texas Health-Related Institutions by Fiscal Year

Fiscal Year	Total Hispanic Health-Related Bachelor Degrees	<i>Mdn</i>	<i>M</i>	<i>SD</i>
2000	191	8.00	27.29	38.90
2001	196	9.00	24.50	33.86
2002	180	12.50	22.50	32.92
2003	194	12.50	24.25	36.78
2004	233	14.50	29.13	43.31
2005	260	17.00	32.50	42.77
2006	228	19.50	28.50	32.90
2007	264	21.00	33.00	39.20
2008	239	17.50	29.88	37.79
2009	283	24.50	35.37	42.90
2010	362	28.50	45.25	54.35
2011	414	33.50	51.75	56.77
2012	455	36.50	56.88	65.66

Note. Seven health-related institutions provided data for each of these fiscal years.

Table 7
Descriptive Statistics for the Number of Bachelor Degrees Awarded to Hispanic Students at Texas Health-Related Institutions for Fiscal Year 2000 and Fiscal Year 2012

Fiscal Year	<i>n</i> of Institutions	<i>M</i>	<i>SD</i>
2000	7	27.29	39.90
2012	7	56.88	69.79

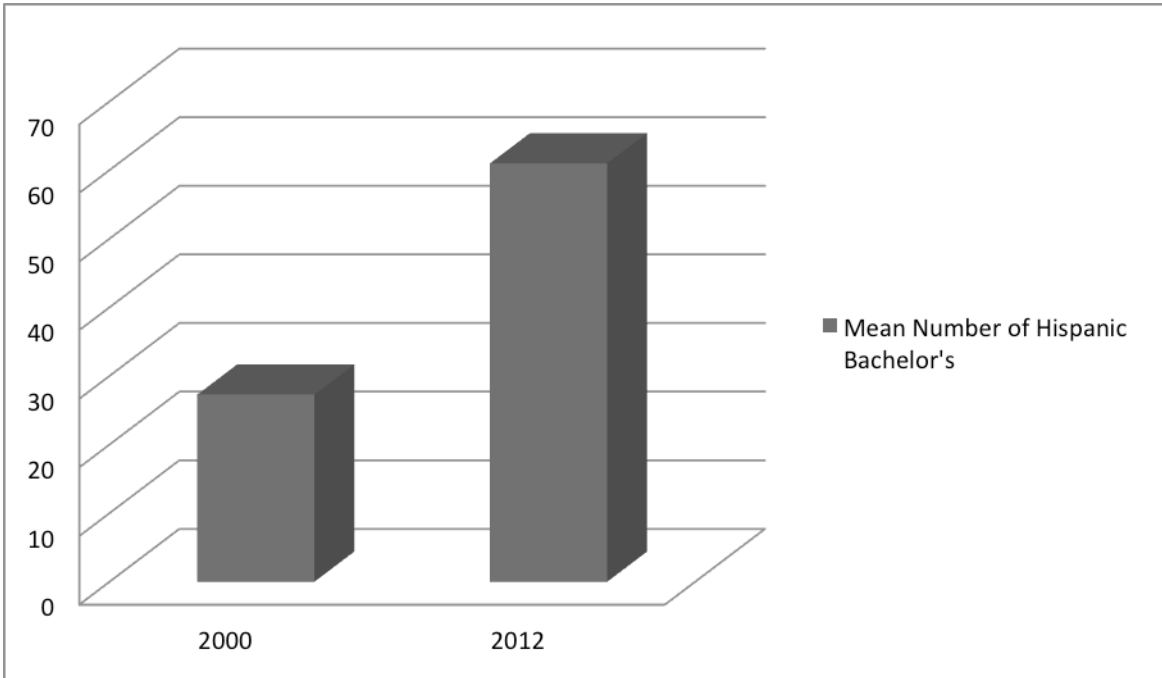


Figure 4. Mean number of bachelor degrees awarded to Hispanic students at Texas health-related institutions for fiscal year 2000 and fiscal year 2012.

Percentage of Hispanic Undergraduate Enrollment

From the 2000 fall semester through the 2012 fall semester, 37,137 students were enrolled in undergraduate health-related degrees at Texas health-related institutions, and Hispanic student enrollment for this period was 7,655. Throughout the 13-year period, the percentage of Hispanic students enrolled in undergraduate health-related degree programs increased. A detailed listing of the percentage of Hispanic students enrolled by fall semester is presented in Table 8.

Table 8
Descriptive Statistics for the Percentage of Hispanic Students Enrolled in Undergraduate Degrees at Texas Health-Related Institutions by Fall Semester

Fall Semester	<i>Mdn</i>	<i>M</i>	<i>SD</i>
2000	11.00%	14.00%	0.12%
2001	11.67%	14.25%	0.11%
2002	15.00%	18.10%	0.10%
2003	15.61%	17.26%	0.10%
2004	13.71%	16.25%	0.10%
2005	13.90%	16.43%	0.09%
2006	12.56%	15.71%	0.08%
2007	12.63%	15.39%	0.09%
2008	12.72%	15.51%	0.10%
2009	16.05%	17.48%	0.08%
2010	17.03%	18.56%	0.07%
2011	16.78%	18.29%	0.08%
2012	12.76%	16.99%	0.10%

Note. Seven health-related institutions provided data for each of these fall semesters.

Overall, the percentage of Hispanic students increased during this time with two periods of increases followed by declines. The largest increase occurred in the fall to the fall of 2012. The fall semester of 2001 was the semester with the least percentage of students. Figure 5 depicts the change in trends over time.

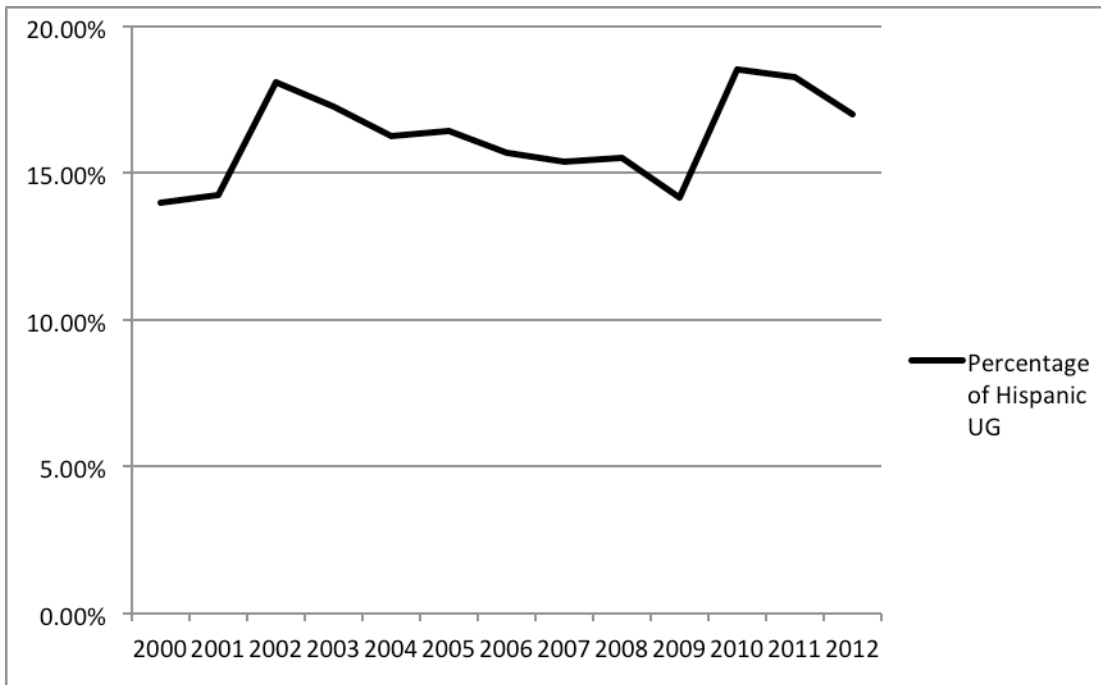


Figure 5. Percentage of Hispanic student enrollment to the total student enrollment in health-related undergraduate degrees for the fall 2000 through fall 2012.

Percentage of Students Awarded Degrees

From the fiscal year 2000 through the 2012 fiscal year, 4,987 health-related certificates were awarded at Texas health-related institutions, and 925 Hispanic students earned one of these certificates. Throughout the 13-year period, the percentage of Hispanic students receiving certificates increased with several periods of fluctuations. A detailed listing of the percentage of certificates awarded Hispanic students by fiscal year is presented in Table 9.

Table 9

Descriptive Statistics for the Percentage of Health-Related Certificates Awarded to Hispanic Students at Texas Health-Related Institutions by Fiscal Year

Fiscal Year	<i>Mdn</i>	<i>M</i>	<i>SD</i>
2000	7.00%	8.36%	0.08%
2001	7.69%	12.57%	0.14%
2002	10.26%	12.14%	0.14%
2003	15.94%	17.95%	0.11%
2004	13.49%	12.48%	0.11%
2005	14.29%	11.51%	0.10%
2006	7.14%	11.15%	0.11%
2007	5.65%	10.08%	0.15%
2008	6.60%	9.34%	0.10%
2009	4.64%	6.01%	0.06%
2010	15.27%	19.00%	0.19%
2011	9.95%	11.29%	0.10%
2012	8.33%	11.51%	0.10%

Note. Six health-related institutions provided data for each of these fiscal years.

The largest increase occurred in fiscal year 2003 and fiscal year 2010. Further, the year with the lowest percentage of certificates awarded to Hispanic students was fiscal year 2009 at 6.01%. Figure 6 depicts the trend in percentages over time.

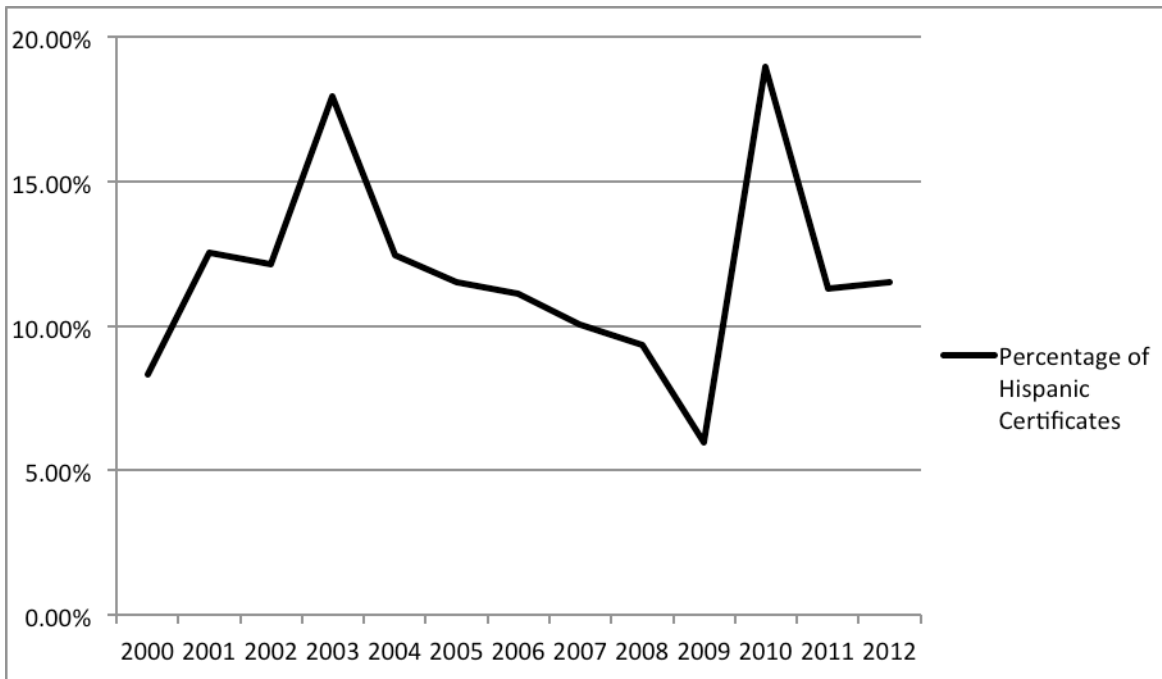


Figure 6. Percentage of health-related certificates awarded to Hispanic students from the fiscal year 2000 through the fiscal year 2012.

From the fiscal year 2000 through the fiscal year 2012, health-related bachelor degrees were awarded to 18,564 students at Texas health-related institutions. Hispanic students received 3,499 of those degrees. Throughout the 13-year period, the percentage of Hispanic students receiving bachelor degrees increased with several periods of fluctuations. A detailed listing of the percentage of bachelor degrees awarded Hispanic students by fiscal year is presented in Table 10.

The largest increase occurred in the 2010 and 2011 fiscal years. The two years with the lowest percentage of bachelor degrees awarded to Hispanic students were fiscal year 2000 (10.71%) and fiscal year 2002 at 10.96%. Figure 7 depicts the trend in percentages over time.

Table 10

Descriptive Statistics for the Percentage of Health-Related Bachelor Degrees Awarded to Hispanic Students at Texas Health-Related Institutions by Fiscal Year

Fiscal Year	<i>Mdn</i>	<i>M</i>	<i>SD</i>
2000	7.77%	10.71%	0.09%
2001	13.36%	15.53%	0.09%
2002	9.04%	10.96%	0.12%
2003	13.39%	16.04%	0.11%
2004	12.04%	16.76%	0.11%
2005	14.00%	17.11%	0.09%
2006	14.36%	17.07%	0.10%
2007	13.31%	15.74%	0.08%
2008	11.06%	14.11%	0.09%
2009	11.95%	15.10%	0.09%
2010	16.31%	15.90%	0.10%
2011	17.94%	19.14%	0.08%
2012	15.89%	18.48%	0.10%

Note. Six health-related institutions provided data for each of these fiscal years.

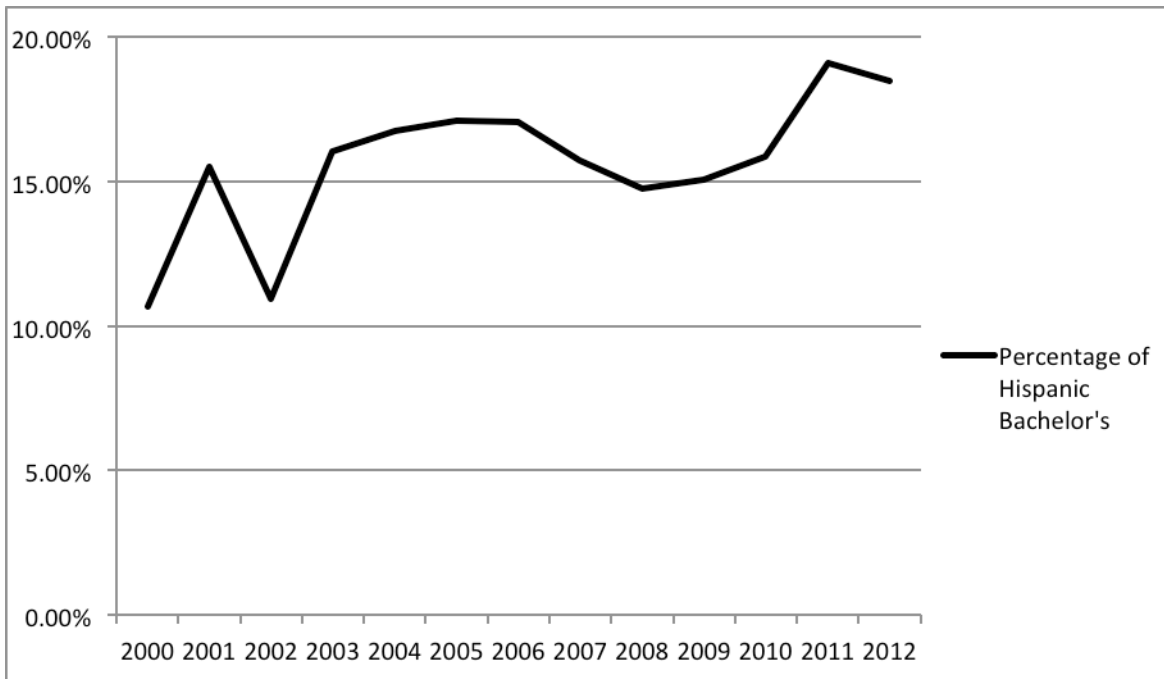


Figure 7. Percentage of health-related bachelor degrees awarded to Hispanic students from the fiscal year 2000 through the fiscal year 2012.

Discussion

A goal of this study was to add to the literature by specifically addressing the participation and success of Hispanic students in health-related degrees. The original intent of the study was to examine the participation and success rates of Hispanic students for *all* healthcare programs where data are reported to determine the efficacy of initiatives to decrease disparities in health professions. However, as health-related data available from the Texas Higher Education Accountability System are limited to the nine designated Texas Health-Related Institutions the scale of the study was severely truncated.

When examined as a group or in the context of the Texas Hispanic population increases, meaningful success in most areas appears to be limited. The increase in numbers but not in percentages reflects the natural increase in the Hispanic population. For the increase to be meaningful, an equal increase should be present in the percentage of Hispanic enrollment of the total student population other than what would occur by chance (Gall et al., 2007).

Visually, trends in both enrollment and health-related degrees awarded to Hispanic students over 13 years reveal slight increases overall with areas of fluctuation throughout the period. Noticeable declines following periods of growth occurred in the percentage of Hispanic student undergraduate and master enrollment between the 2004 and 2009 fall semesters. Similarly, trends for percentages of health-related degrees awarded to Hispanic students were relatively unimpressive over the same period with minimal fluctuations.

President Barak Obama (2009) emphasized the importance of college completion and degree attainment in a global economy. In 2011, the publication *Winning the Future: Improving Education for the Latino Community* was released by the White House in recognition of the rapidly increasing Hispanic population and their impact on the national labor force (U.S. Department of Education, 2011). Highlighted in this initiative were dire warnings that Hispanics have the lowest attainment of any other group in the United States with 13% holding bachelor degrees and only 4% holding master degrees. Texas State Comptroller Susan Combs (2008) also warned of the potential negative financial impact of the inability of the state to supply skilled workers and a larger, less-educated workforce. However, this problem was evident before 2008. The THECB initiative *Closing the Gaps 2015* was adopted eight years prior, in 2000, as a proactive attempt to eliminate the consequences of an increasing undereducated portion of the state population. Although the Closing the Gaps percentage targets are not expressly for health-related degrees, the participation goal which could be extrapolated for all degree types for Hispanic student was an increase of 2.7% from 2000 to 2015 (THECB, 2010). Participation from the 2000 through 2012 fall semesters increased approximately 3% for undergraduate, 4% for master, 3% for doctoral (statistically significant), less than 2% for medical, and 9% for dental degree programs. Thus, the Closing the Gaps plan goals were met for the majority of health-related degrees, the progress was not a statistically significant one. It would be expected that the efforts and expense of initiatives with the attention of government agencies and warnings of dire economic consequences would result in more sustentative change.

To plan and to prepare for the years beyond 2015, the THECB (2013) released the higher education Enrollment Forecast for the years 2013-2020. The forecasts are predicted based on current trends predicting a growth of enrollment in Texas public 2-year and 4-year institutions from 1.44 million enrollees in 2012 to a predicted 1.58 million in 2020. An

interesting area of projected growth in enrollment is in 2-year colleges, which are expected to outpace university enrollment. The forecast specifically mentions the lack of projections for health-related institutions because their enrollments are more state policy driven than tied to state population. Beneficial research would be the re-examination of measures from the current study when data become available.

Hispanic student success in higher education is based on four constructs for success: technical support, emotional and moral support, financial support, and mentorship support (Valverde & Rodriguez, 2002). In the original research for the theory, for healthcare measures, successful Hispanic students identified the roles of mentors from the healthcare community as important factors for their continued success. Thus, researchers should focus on which constructs are important for Texas students.

Results within this study were consistent with the findings of Cason et al. (2008), Grumbach and Mendoza (2008), and Smedley, Butler, and Bristow (2004) in that Hispanic students are underrepresented in the health professions. Furthermore, the current study findings are consistent with Fry's (2011) assertion that college completion rates remain one of the biggest disparities between White and Hispanic students. Findings were consistent with Santiago (2010) and Gardner (2011) in that Hispanic enrollment and number of degrees are increasing in general. However, the increases are not enough to attain the goals set for *Closing the Gaps 2015* initiative.

With the limited data reporting required by the Texas Higher Education Coordinating Board, it is difficult to assess state progress accurately with respect to Hispanic student enrollment and completion in health-related degrees. Therefore, accountability does not exist for benchmarks and measures that are not being assessed. As data were not reported for almost 1.2 million students, the majority of which are community college students where Hispanic students would be more accurately accounted, it is imperative that the state make available all data indicators and measures for each reporting institution. Both nursing and allied health professions were specifically identified as critical areas for increasing minority representation in the *Closing the Gaps 2015* initiative. Currently, finding accurate answers to straightforward questions regarding Hispanic student success and access in health care professions is not likely to happen with the publically published data. Instead, data are presented in a puzzle fashion where the pieces do not match; hence, limiting the ability to determine the larger picture. From reporting measures, to initiatives, state policy makers and higher education administrators owe the taxpayers of Texas an accurate assessment of state funded health-related programs to ensure the state's fiscal health, quality of health services, and labor force stability.

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