Hispanic Faculty Trends in U.S. Medical Schools: A 50-Year Perspective

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ABSTRACT

The U.S. Hispanic population has grown substantially over the past 50 years, and simultaneously, the number of U.S. medical schools and medical school faculty has increased. This study examines the trends for Hispanic faculty in clinical and basic science departments at U.S. medical schools.

Method

This retrospective, cross-sectional observational study analyzed data from the Association of American Medical Colleges Faculty Roster for faculty at all LCME-accredited medical schools from 1973 to 2022. Proportions of faculty were compared according to department, sex, rank, and Hispanic status using a 2-independent-sample t-test and simple linear regressions.

Results

The percentage of Hispanic medical school faculty increased from 1.7% in 1973 to 5.4% in 2022, with similar rates of increase in basic science and clinical departments. In 2022, departments with the highest representation of Hispanic faculty included family medicine and obstetrics and gynecology. The departments with the lowest representation of Hispanic faculty were orthopedic surgery and otolaryngology. In 2022, only 1.5% and 3.1% of all full professors were Hispanic females and males, respectively.

Conclusion

There was a minimal increase in the percentage of Hispanic faculty in medical schools over the last 50 years, and the rank was disproportionally higher at the Assistant Professor level, particularly for females. The combination of a rapid increase in the U.S. Hispanic population and a slow increase in Hispanic faculty has resulted in Hispanic medical school faculty being more underrepresented in academic medicine in 2022 than in 1973.

1. Introduction

Fifty-three percent of the U.S. population growth in the last decade was attributable to the Hispanic population.1 One in six individuals, or 19% of the U.S. population, is Hispanic.2 Meanwhile, health disparities among Hispanics continue to increase, with Hispanics having higher rates of diabetes, hypertension, and uninsured status compared to White

adults.3 In 2022, the American College of Physicians and the American Medical Association called for increasing racial diversity in the physician workforce as one crucial strategy to promote health equity.[3,4] Efforts to increase the racial diversity of physicians date back to the 1970s.[4] It is uncertain what impact these initiatives have had on the representation of Hispanic faculty in U.S. medical schools.

The racial demographics of medical school faculty are closely tied to the racial demographics of trainees. Unfortunately, Hispanics are significantly underrepresented among medical school applicants and matriculants, lagging nearly 70% behind the age-adjusted U.S. population.[5] An analysis by Martinez et al. in 2022 demonstrated a severe shortage of Hispanic resident physicians. Hispanic resident physicians comprise only 6% of the resident physician workforce, translating into 14 Hispanic resident physicians for every 100,000 Hispanics in the U.S. population compared to a national average of 37 residents for every 100,000 population.[6]

There are several reasons why Hispanic faculty are crucial for medical education. First, Hispanic faculty are vital for mentoring trainees. Hispanic trainees report that having mentors with a shared sense of history is essential and that they have a difficult time finding Hispanic faculty mentors.[7] Second, Hispanic faculty are essential for addressing the pressing issue of health disparities, as minority physicians are more likely to work in underserved areas.[8] Third, Hispanic physicians are more likely to speak Spanish than non-Hispanic physicians.[9] In 2010, 9% of the U.S. population had limited English proficiency, and two-thirds spoke only Spanish.[10] Improved patient communication has been demonstrated with race and ethnic concordance.[11]

Many programs have been launched to increase the number of minorities in medicine. [12-14] Fifty years have passed since President Nixon's administration passed the first legislation to promote diversity in medicine.[15,16] Over this period, preexisting and new medical schools significantly expanded in the 1960s and 1970s and from 2002 to 2018. Understanding the impact of the expansion in the number of medical school faculty and the numerous initiatives to increase the number of Hispanic physicians is critical.

Given the dynamics of rapid growth in the U.S. Hispanic population and the increase in the number of U.S. medical schools, in this study, we examined trends among Hispanic faculty in clinical and basic science departments at U.S. medical schools. We asked how rapidly the numbers of male and female Hispanic faculty are increasing, how this compares between departments, and whether appointments in academic rank are similar to non-Hispanic faculty. The definition of equal representation is that a workforce's racial makeup mirrors that group's representation in the population. The U.S. population is 19% Hispanic. Therefore, we asked how close we are to having 19% Hispanic medical school faculty.

2. Method

This retrospective observational study did not involve human research participants and was deemed exempt from review by the University of Chicago Institutional Review Board. We examined the racial diversity of all full-time faculty in basic science and clinical departments at every Liaison Committee on Medical Education (LCME)-accredited U.S. medical school. We chose 50 years (from 1973 through 2022) to include periods of expansions of pre-existing and new medical schools.

2.1 Data collection

For this cross-sectional study, we used data from the Association of American Medical Colleges (AAMC) Faculty Roster, a comprehensive national database of all full-time faculty in clinical and basic science departments at LCME-accredited U.S. medical schools. We obtained this data in October 2023 through the FAMOUS (Faculty Administrative

Management Online User System) online portal. Variables extracted from the FAMOUS dataset included race/ethnicity, gender, academic rank, and medical specialty. We examined trends in Hispanic and non-Hispanic faculty by obtaining these variables for each faculty member for every year between 1973 and 2022. We divided faculty into four demographic groups: Hispanic males, Hispanic females, non-Hispanic males, and non-Hispanic females. In the AAMC Faculty Roster, Hispanics are self-reported as being of Hispanic or Spanish origin. The Roster does not allow the designation of a specific nationality and groups all the following together: Argentinean, Colombian, Cuban, Dominican, Mexican, Mexican American, Chicano/Chicana, Peruvian, Puerto Rican, Other Hispanic, or another Spanish origin. Due to the limitations of the data source, for this analysis, all Hispanics were combined in one category, including those of White and Black races. Sex is used to classify a person as male or female according to the reproductive organs and chromosome complement. In this study, we use gender to refer to a person's self-representation as male or female, as the dataset variable is self-reported. Non-full-time faculty (e.g., part-time or volunteer faculty) were excluded from this analysis because this information was considered incomplete and unreliable. We also excluded the small number of faculty members whose gender was not reported, or the department was not identified.

2.2 Outcome measures

The primary outcome measures were the numbers and proportions of faculty by gender, ethnicity (Hispanic, non-Hispanic), and academic rank (Assistant Professor, Associate Professor, Full Professor) yearly between 1973 and 2022. Through this 50-year analysis (from 1973 to 2022), we aimed to identify long-term trends during substantial faculty expansion nationally.

2.3 Statistical analysis

We performed a 2-independent sample *t-test* to compare faculty subgroup proportions for each department for 1973, 1997, and 2022. A simple linear regression model was fitted for each department, where the year was an independent variable. We used regression slopes to capture annual rates of change in the proportions of faculty by gender and rank. The 95% confidence intervals (CIs) for the slopes allowed us to determine statistically significant differences across departments over the years. All P values were 2-sided, and we considered a $P < .05$ statistically significant. We conducted statistical analyses with SAS version 9.4 (SAS Institute, Cary, North Carolina). We determine the representation of Hispanic faculty compared to Hispanics in the U.S. population using a representation quotient (RQ) adapted from the work of Lett and colleagues.[5] An RQ of 1 suggests equitable representation of Hispanic faculty relative to their representation in the U.S. population; an RQ greater than 1 indicates overrepresentation, and an RQ less than 1 indicates underrepresentation.

3. Results

3.1 Rise in Hispanic faculty

Expansion of pre-existing and new medical schools led to a 483.0% (from 34,380 to 200,551) increase in all medical school faculty from 1973 to 2022. During the same time, Hispanic faculty increased in the basic science (from 126 to 931; 638.9%) and clinical (from 381 to 9,861; 1950.1%) departments. This percentage increase in Hispanic faculty was significantly higher than that of non-Hispanic faculty in basic science (from 7,339 to 17,129; 133.4%) and clinical (from 20,324 to 147,677; 626.6%) departments. However, although the raw numbers of Hispanic faculty increased, as a percentage of all faculty, Hispanic representation increased during this period in basic science from only 1.7% to 5.2% and in clinical departments from 2.3% to 6.3%.

3.2 Increasing underrepresentation of Hispanic faculty

In 1973, 5% of the U.S. population was Hispanic, and 2.1% of medical school faculty were Hispanic, giving a representation quotient of 0.42. In 2022, 19% of the U.S. population was Hispanic, and 6.3% of medical school faculty were Hispanic, giving a representation quotient of 0.33. The lower the representation quotient, the more underrepresented a population is. Therefore, a decrease in the RQ from 0.42 to 0.33 indicates that Hispanic faculty are more underrepresented in 2022 than in 1973.

3.3 Gender distribution of Hispanic faculty

Hispanic faculty in basic science departments were predominately males in 1973. Growth in the number of Hispanic faculty led to more Hispanic females becoming basic science faculty, although the entry of new female faculty remained lower than males. By 2022, the percentages of Hispanic faculty in basic science departments remained slightly higher for males than females (2.9% versus 2.3%; $P < .001$).

Fig. 1 depicts changes in the percent (**Fig. 1A**) and number (**Fig. 1B**) of male and female medical school faculty yearly from 1973 to 2022. The annual number of Hispanic faculty who were males increased slightly more than for females (+ 110.5 Hispanic males versus +90.7 Hispanic females per year; trend $P < .001$). By 2022, the percentage of all faculty who were Hispanic males was slightly higher than Hispanic females (3.4% versus 2.8%, $P < .01$).

3.4 Hispanic faculty in specific departments

The number of Hispanic faculty increased in all medical school departments. The distribution of Hispanic faculty in departments is compared for 1973, 1997, and 2022 (**Fig. 2**). Since 1973, all clinical and basic science departments significantly increased Hispanic faculty. In 2022, the clinical departments with the highest percentages of Hispanic faculty were family medicine, obstetrics and gynecology, and pediatrics, while the lowest rate of Hispanic faculty was in orthopedic surgery, otolaryngology, radiology, and ophthalmology. The distribution of Hispanic faculty was similar in all basic science departments. In 2022, Pathology had the most Hispanic faculty among basic science departments, and biochemistry had the least.

3.5 Academic ranks of Hispanic faculty

Fig. 3 depicts academic rank (Assistant Professor, Associate Professor, and Full Professor) among Hispanic and non-Hispanic faculty in U.S. medical schools from 1973 to 2022. Since 1973, there has been an increase in Hispanic female Assistant and Full Professors and a decrease in Hispanic male and female Associate Professors. Hispanics are more likely to hold the rank of Assistant than Associate or Full Professors. Hispanic males were more likely to have a higher rank than Hispanic females. Compared to non-Hispanic males, Hispanic males were consistently more likely to be Assistant Professors and less likely to be Full Professors. In 2022, only 3.1% of all Full Professors were Hispanic males (n=1,263), and 1.5% were Hispanic females (n=601).

4. Discussion

The growth of the U.S. Hispanic population has outpaced that of all other ethnic groups, increasing from 5% to 19% over the last 50 years.[1] Therefore, we comprehensively analyzed trends among Hispanic faculty in U.S. medical schools. Fifty years was chosen to include times of expanding faculty at new and pre-existing medical schools and to

capture the effects of Affirmative Action. Our results indicate that the number of Hispanic medical school faculty members grew in all basic science and clinical departments during this period. However, the percentage increase in Hispanic faculty over 50 years was slow (from 1.7% to 5.2% for basic science departments and 2.3% to 6.3% for clinical departments). The representation quotient for Hispanic faculty is worse in 2022 than in 1973. At this rate, the representation of Hispanic faculty is unlikely to ever reach parity with Hispanics in the U.S. population.

Our findings concerning Hispanic faculty are consistent with those of Mora et al. regarding medical students, who reported that it would take 92 years of sustained doubling of the number of enrolling Hispanic students to correct the deficit of Hispanic physicians in 2015.[17] The low Hispanic representation amongst basic science faculty is equally concerning. Given these minimal rates of increase in Hispanic faculty compared to the growth in the U.S. Hispanic population, we must reconsider our efforts to increase the number of Hispanics in academic medicine and critically evaluate which strategies have worked and which have not.

4.1 Variation between departments

It was encouraging that all departments demonstrated increased Hispanic faculty members during the 50-year study period. However, the representation of Hispanic faculty across clinical and basic science departments was highly variable. Our results indicate that two of the largest specialties (pediatrics and internal medicine) contributed nearly half of the overall pool of Hispanic faculty in clinical departments. Our data analysis shows that three specialties (ophthalmology, otolaryngology, and dermatology) had less than 85 Hispanic faculty members each. Obstetrics and Gynecology is one of the specialties with the most significant increase in the percentage of Hispanic female faculty, with an over 5-fold increase in 30 years.[18] Similar variation has been reported in graduate medical education, with psychiatry having the highest representation of Hispanic residents and ophthalmology having the lowest.[19] In otolaryngology in 2017, among 1,596 residents, only 98 were Hispanic.[20]

Several specialties with low representation of minority physicians have put forth targeted strategies to increase the recruitment of Hispanic physicians. In orthopedic surgery, V.H. Hernandez et al. advocated for early exposure to the specialty in medical school and collaborative advancement and mentorship activities for trainees and faculty. [21] In ophthalmology, several national research and career mentorship programs spanning from high school to junior faculty have been launched to increase diversity in the field. [22]

4.2 Strategies for recruiting more Hispanic faculty

A diverse faculty cohort is essential to recruiting and mentoring underrepresented minority (URM) students and residents. The data reported here demonstrate that recruiting Hispanic faculty to join medical schools has been a long-standing challenge. Strategies by de Jesus Perez et al. aimed at recruiting more Hispanic faculty members include addressing bias and discrimination in the workplace, increasing mentorship, and reducing the financial burden, among others.[23]

Table 1 shows examples of national, institution-level, and department-level strategies to increase Hispanic faculty. One national strategy is the founding of the Hispanic Association of Colleges and Universities (HACU) in 1986. This resulted in the federal recognition of institutions with high Hispanic enrollment as Hispanic Serving Institutions (HSIs). Twenty-four of these institutions have medical schools.[24] Also, in 1994, the National Hispanic Medical Association was launched to empower Hispanic physicians.[25] Initiatives explicitly focused on increasing the number of Hispanic medical students began when medical students created regional organizations, which laid the foundation for the Latino Medical Student Association (LMSA), launched in 2009.[26]

National strategies aimed at increasing racial and ethnic diversity among medical students date back to the 1970s when the AAMC officially recommended increasing enrollment of URM students and created a task force charged with this goal.[4,27] Despite this effort, the under-representation of minority medical students worsened between the mid-1970s and 1980s.[28] In 1990, HW Nickens led a renewed effort by the AAMC entitled Project 3000 by 2000, an initiative with the explicit goal of enrolling 3000 URM medical students per year by the year 2000; this resulted in a 27% increase in URM students over three years.[29] Twenty years later, in 2009, the LCME implemented a medical school accreditation standard focused on policies that attract URM students, faculty, and staff. Ten years after implementing the LCME standard, enrollment of Hispanic medical students increased from 6% to 9%.[30] The Accreditation Council for Graduate Medical Education (ACGME) followed suit with a similar initiative in 2020 when workforce diversity was added to the Common Program Requirements.[31] These efforts focused on trainees could ultimately increase Hispanic medical school faculty.

Disheartening trends of a continuous low representation of Hispanics among medical school faculty are reported here and by others.[9,32] These findings support the urgency of national policies to increase Hispanic enrollment in higher education. Historically, one strategy to achieve this goal has been emphasizing minority student enrollment through affirmative action.[33] Research has shown that when bans on Affirmative Action were instituted, enrollment of URM medical students decreased from 14.8% to 10.8% within five years.[34] It remains to be seen what impact the 2023 U.S. Supreme Court ruling ending affirmative action initiatives will have on Hispanic medical student enrollment and, ultimately, Hispanic representation among medical school faculty.

A second crucial national policy that impacts Hispanics in medicine is the Deferred Action for Childhood Arrivals (DACA) program, which protects eligible individuals from deportation and grants them work permits.[35] After the implementation of DACA, the AAMC reported an 8-fold increase in the number of medical students indicating DACA status.[36] By some estimates, DACA has the potential to contribute up to 31,860 new, predominantly Hispanic, physicians in the coming decades.[37] Other strategies that could efficiently increase the number of Hispanic medical school faculty include increasing the number of residency slots and recruiting Hispanic international medical graduates to these positions.[38]

Retention and promotion of Hispanic faculty members

Retention is critical for sustaining and ultimately increasing the number of Hispanic faculty. In this analysis, we were unable to determine the attrition of faculty. Others have reported a higher attrition rate from academic medicine for URM physicians due to financial debt, lack of engagement, and other career intentions.[39] Academic promotion is essential for faculty retention. The probability of promotion is lower for URM faculty.[39] Supporting this, our findings show that male and especially female Hispanic faculty were likelier to be at the Assistant Professor rank. While this may be due to Hispanic faculty being recruited more recently, it is discouraging that in 2022, only 1.5% and 3.1% of all Full Professors were Hispanic females and males, respectively. These results demonstrate the importance of intentional and longitudinal mentorship and sponsorship for Hispanic faculty. Based on a national survey of medicine departments in U.S. medical schools, Vela et al. outlined critical strategies for retaining and promoting URM medical faculty, including an explicit commitment to workforce diversity from leadership and establishing infrastructure and mentorship to advance URMs to senior leadership positions.[40]

Limitations of the study

A limitation of this study is the terminology used to define this ethnic group. Hispanic is a term that the U.S. Census defined as Americans who trace their origin to Spanish-speaking countries.[39] Although commonly used in research, this term is sometimes confusing and problematic for individuals to whom it applies and can lead to inaccuracies in

reporting.[31] For example, by the fourth generation, half of Americans with Hispanic ancestry do not identify as Hispanic.[40] A second limitation of the study is that it included only full-time Hispanic faculty. Therefore, the results do not provide insight into Hispanic physicians who work part-time or volunteer faculty or those who changed careers or moved to nonacademic settings.

Table 1 National and Institutional Strategies to Increase Hispanic Faculty at U.S. Medical Schools

National Strategies	Institution and Department Strategies
Increase medical school enrollment at Hispanic Serving Institutions.	Establish early formalized mentorship programs for Hispanic clinical trainees focused on transitioning to academic medicine after training.
Reinstate Affirmative Action legislation.	Deploy targeted initiatives in subspecialties with low numbers of Hispanics.
Continue and expand DACA and establish routes for permanent legal citizenship.	Protect the ability of DACA and undocumented students and residents to study and practice medicine in the U.S.
Continue and expand LCME and ACGME accreditation standards.	Decrease financial burden through loan repayment and other measures.
Launch a new national goal of recruiting 4,000 Hispanic medical school faculty by 2040.	Launch programs focused on early mentorship of Hispanic undergraduate students toward medical school.
Increase the number of residency slots and fill the slots with Hispanic international medical school graduates.	Institute holistic review for medical school admissions that considers various factors when evaluating applicants.
Increase the college attendance rate and science focus in K-12 education systems in Hispanic communities.	Implement department-level accountability plans for the recruitment and retention of Hispanic faculty.
Increase scholarships, clinical exposure, and research opportunities for community college students.	Establish formal longitudinal mentorship and sponsorship programs to advance Hispanic faculty members to senior leadership and full professor rank.
Expand support for Centers of Excellence, funded by the Health Resources and Services Administration, demonstrating growth in Hispanic faculty.	Provide support for chapters in the Latino Medical Student Association (LMSA) and the Society for the Advancement of Chicano/Hispanics and Native Americans in Science (SACNAS)
Advocate for the continued support of Diversity, Equity, and Inclusion offices in higher education.	Demonstrate allyship and advocacy for those holding diversity, equity, and inclusion leadership roles.

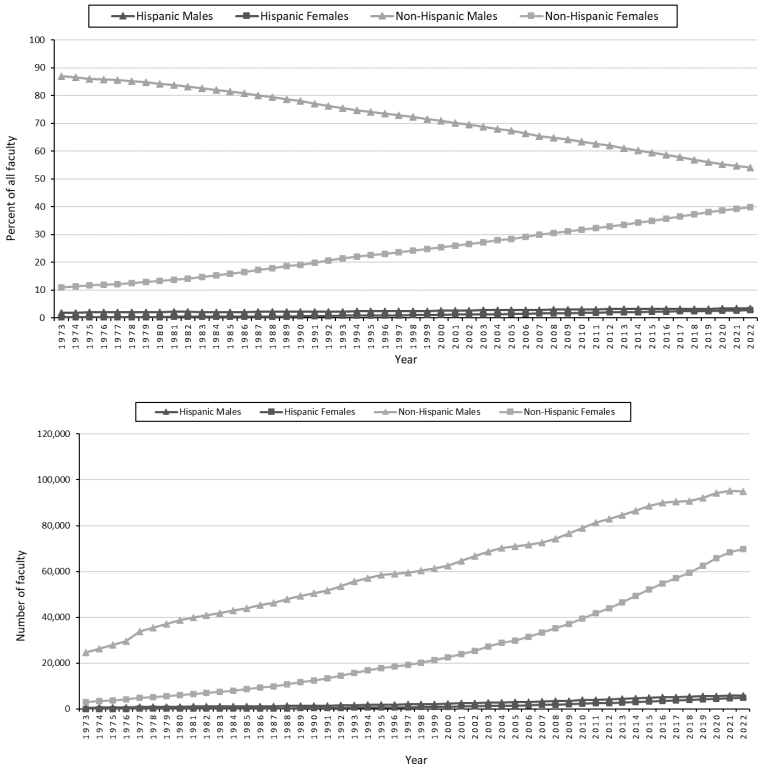
Abbreviations: DACA, Deferred Action for Childhood Arrivals; LCME, Liaison Committee on Medical Education; ACGME, Accreditation Council for Graduate Medical Education.

1. Conclusion

In summary, this study shows that over the last 50 years, there has been only an incremental increase in the representation of Hispanic faculty in basic science and clinical departments of U.S. medical schools. Representation at the senior academic ranks is particularly striking as our results show that of Full Professors in U.S. medical schools, only a tiny percentage are Hispanic. These incremental increases in Hispanic faculty are in the backdrop of a dramatic increase in Hispanics in the U.S. population over the same period. This dynamic has resulted in Hispanics being more under-represented in academic medicine in 2022 than in 1973.

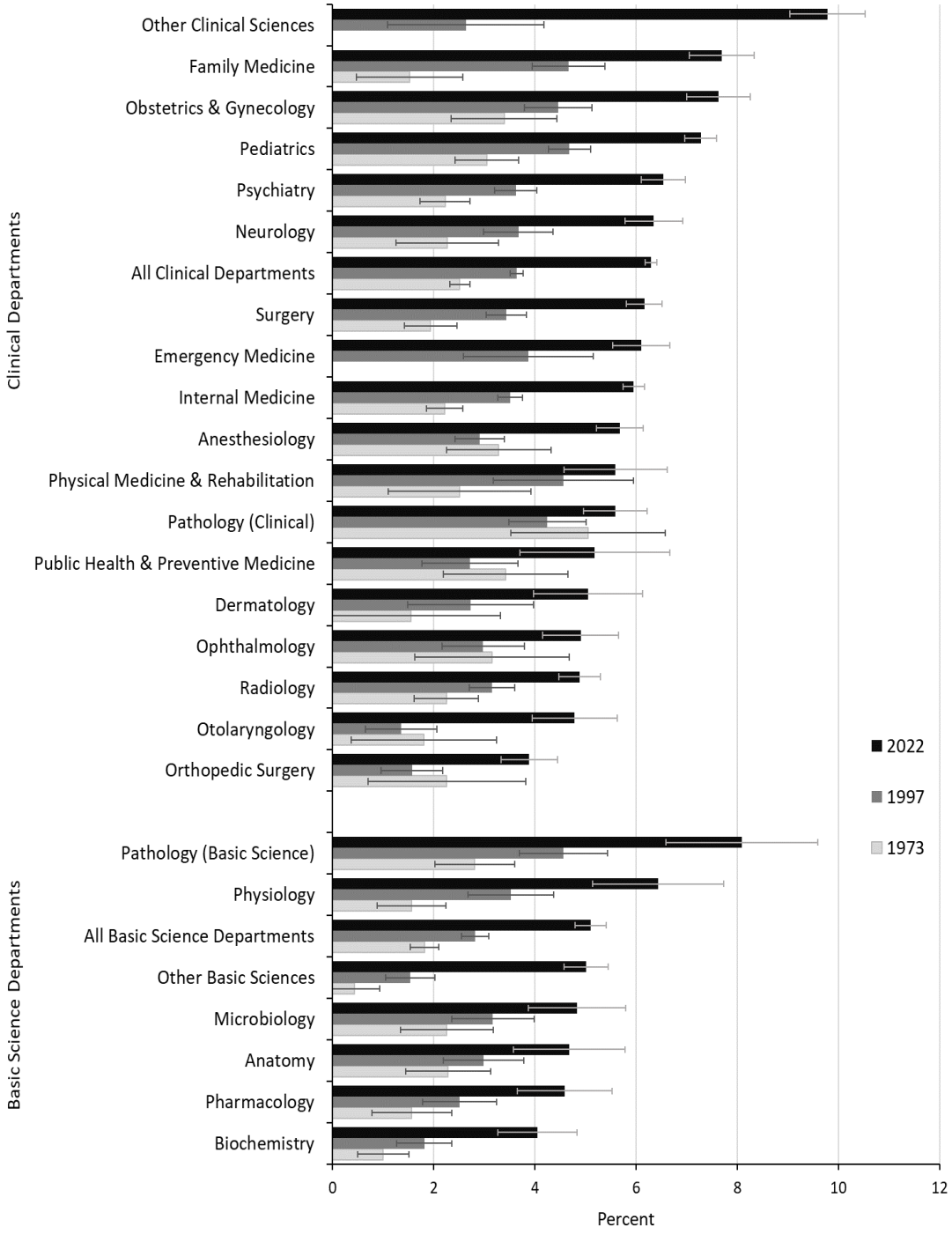
In 1990, HW Nickens et al. concluded that American medicine had yet to reach the goal of population racial parity, so hopefully, set out decades beforehand and that medicine would fall even further behind in achieving this goal without a remarkable increase in the participation of underrepresented minorities in medicine.[26] More than thirty years later, the findings reported here and elsewhere regarding Hispanic medical school faculty demonstrate that a remarkable increase in Hispanic faculty did not occur. At this point, it is no longer sufficient to continue defining the diversity problems in medicine; instead, it is time to implement tangible, bold, and high-impact solutions, including those outlined in **Table 1**. The findings of this study serve as a call to action for members of the academic medical community to understand that the rapidly expanding Hispanic population in the U.S. compels us to redouble our efforts to increase recruitment, retention, and promotion of Hispanic faculty members.

Figure 1 (a & b)



Numbers of all full-time Hispanic and non-Hispanic male and female faculty in all U.S. medical schools, 1973 – 2022. All trendline *P* values were < .001. Data from the Association of American Medical Colleges Faculty Roster.

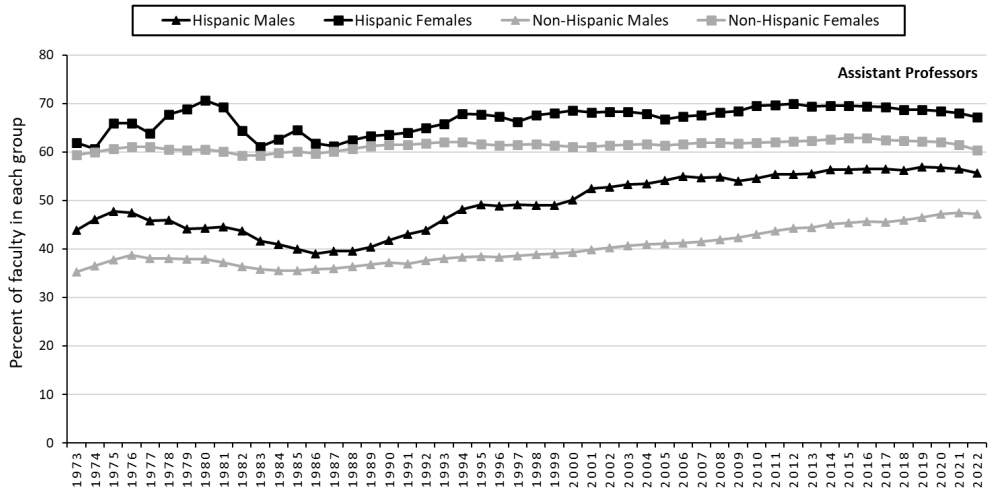
Figure 2



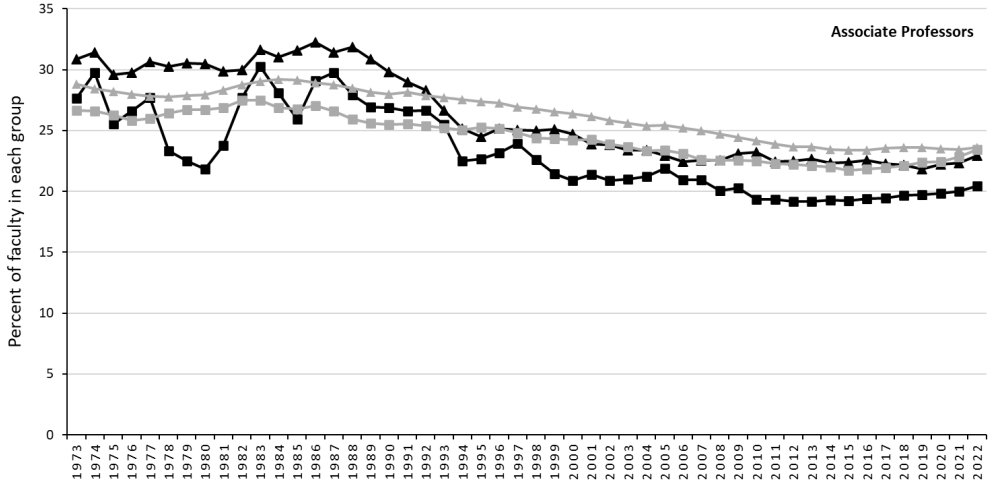
Department-specific comparisons between the percentages of all full-time Hispanic faculty in 1973, 1997, and 2022. Error bars represent 95% confidence intervals for means. Overlapping error bars represent insignificant differences between percentages—data from the Association of American Medical Colleges Faculty Roster.

Figure 3

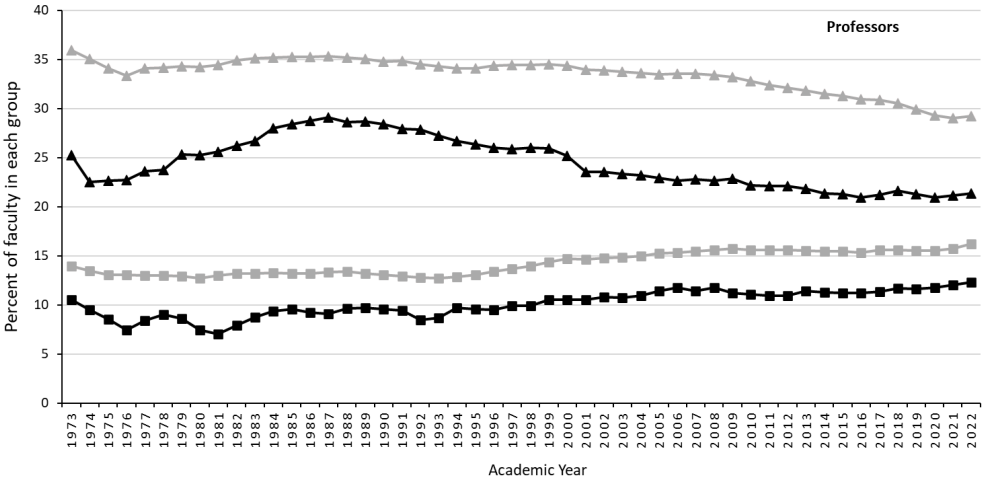
A)


Hispanic Males
Hispanic Females
Non-Hispanic Males
Non-Hispanic Females
Assistant Professors
Percent of faculty in each group

B)


Associate Professors
Percent of faculty in each group

C)


Professors
Percent of faculty in each group
Academic Year

Academic rank (Assistant Professor, Associate Professor, and Full Professor) among Hispanic and non-Hispanic faculty in U.S. medical schools, 1973-2022. All trendline P values were < .001. Data from the Association of American Medical Colleges Faculty Roster. Colleges Faculty Roster.

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