MOVING FROM INJUSTICE TO EQUITY: A TIME FOR THE PHARMACY PROFESSION TO TAKE ACTION

RESEARCH

Addressing the Need for Ethnic and Racial Diversity in the Pipeline for Pharmacy Faculty

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Objective. To analyze the ethnic and racial diversity of faculty in pharmacy, medicine, and dentistry in the United States and suggest how the pipeline for pharmacy academe can be diversified.

Methods. A retrospective analysis of the representativeness of faculty at schools and colleges of pharmacy was compared to that in schools and colleges of medicine and dentistry. The range of ethnic and racial diversity across top schools of pharmacy, historically black colleges and universities (HBCUs), and newer schools of pharmacy was evaluated for both faculty and students for the year 2019-2020. The ethnic and racial diversity in residency and fellowship programs along with graduation rates provided insight into the available pipeline for future pharmacy faculty.

Results. Faculty in pharmacy, medicine, and dentistry demonstrated similarly low representation of underrepresented minorities (URMs) compared to their composition within the US population. Dentistry had the largest percentage of URMs (13.9%), compared with 8.5% in pharmacy and 7.1% in medicine. Five HBCUs contributed 32.8% of all Black faculty, yet their graduates had comparatively low residency match rates. The ratio of URM students to non-URM students in post-PharmD and graduate training programs is lower than the ratio of URM students to non-URM students in pharmacy programs.

Conclusion. Lack of access to postgraduate residency or fellowship training programs is a major barrier to progression to pharmacy academe and impacts URMs more significantly. Barriers to advanced training must be removed or decreased to create the needed diverse faculty candidates for pharmacy academe. Without intervention, students in pharmacy programs will be primarily trained by non-URM faculty, which may impact how graduates provide care in an increasingly diverse patient population.

Keywords: faculty, race, diversity, pipeline, schools and colleges of pharmacy

INTRODUCTION

American author and social reformer James Baldwin stated, “Not everything that is faced can be changed, but nothing can be changed until it is faced.” It remains unclear how the US health care system will face its failed attempts to ameliorate racial and ethnic health disparities. The health care workforce encompasses medicine, dentistry, nursing, pharmacy, and other allied health professionals. The presence of patient-provider concordance in an integrated model of care would be ideal. In addition to

improving patient outcomes, having a diverse workforce can expand researchers’ investigation into disparities. Cohen and colleagues argue that the personal, cultural, and ethnic filters of investigators shape the research agenda of the US health care system.¹ In pharmacy, clinical research conducted in practice environments only represents one piece of the puzzle. We must also rely on postgraduate students and faculty to conduct bench research and research that examines the economic and humanistic aspects of care. It is through such studies that African American distrust in medical research funded through the government was uncovered.¹ Admitting students of underrepresented backgrounds into pharmacy programs can not only impact the educational experience of all persons in that program, but also eventually

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determine their representation in both faculties and the health care workforce. The pipeline for health care professionals and the faculty that prepares them needs to be investigated to determine where additional support is warranted.

While diversifying educational and occupational spaces ensures representation of a myriad of perspectives and improves access to resources, there are costs to changing the landscape. Black faculty members that are recruited from diversity initiatives may be tokenized as the first or only Black faculty perspective in the history of the program.² Untenable climates and a lack of mentorship can create unforeseen barriers to promotion of Black faculty. The absence of shared perspectives might silence Black faculty voices, creating hostile work environments that hinder Black faculty retention. Expectations for underrepresented minority (URM) faculty (ie, Black, Hispanic, American Indian/Alaska Natives, and Native Hawaiian/Other Pacific Islander) to lead diversity efforts, advise URM students, and serve on committees may impact work-life balance for these individuals, decreasing their career satisfaction.³

Research has shown that increasing the number of underrepresented faculty in the pipeline is necessary but not sufficient to increase the number of underrepresented students. Lebovitz and colleagues found that over the last decade the enrollment of Black and Hispanic students remained relatively low, suggesting pharmacy needs to continue and sustain efforts to recruit, support, and graduate these students.⁴ In medicine, while the number of advanced degrees awarded to URM students has increased over time, the number of faculty hired to teach them has not.⁵ Examination of underrepresented faculty in other health science disciplines allows the pharmacy Academy to determine its position in changing the educational landscape. As such, the objectives of this study are to describe the representativeness of minority populations in the faculty of schools and colleges of pharmacy compared with the US census data; evaluate the representation of racial and ethnic minorities in HBCUs, newer Doctor of Pharmacy (PharmD) programs, and top ranked pharmacy programs; compare the racial and ethnic diversity of faculty within pharmacy to faculty in colleges of medicine and dentistry, and identify barriers and solutions to creating a faculty pipeline in schools and colleges of pharmacy.

METHODS

The Belmont University Institutional Review Board determined this retrospective study to be exempt. Population demographic data were obtained from the 2019

United States Census Bureau (USCB) and used as a baseline to compare the racial and ethnic composition of full-time faculty in schools of pharmacy, medicine, and dentistry. The definition of diversity used in this paper included the racial and ethnic categories used by the USCB.⁶ Faculty diversity within the academies of pharmacy, medicine, and dentistry were compared as these three health care professions have profound potential to impact patient outcomes. Demographic data for pharmacy faculty were obtained from the American Association of Colleges of Pharmacy (AACP) Institutional Database, Profile of Pharmacy Faculty (2019-2020).⁷ Race and ethnicity data for faculty in individual schools is only available when a minimum threshold of five programs is requested. Data for medical school faculty were obtained from the Association of American Medical Colleges (AAMC) Roster of Medical School Faculty for the year 2019.⁸ Data for dental school faculty were taken from the American Dental Education Association (ADEA) website.⁹ The AACP, AAMC and ADEA collect individual faculty data from member schools but only report numbers in aggregate.

To assess the scope of diversity, the racial and ethnic makeup of all faculty at pharmacy programs was compared to that which occurs in the top colleges of pharmacy, HBCUs, and newer schools of pharmacy. Pharmacy programs were identified and classified based on the 2020 rankings of the *US News and World Report* on Best Pharmacy Schools.¹⁰ These published rankings were determined by peer assessment. The status of HBCUs is designated by the Department of Education. Newer schools of pharmacy were defined as those opening since 2010 per the Accreditation Council for Pharmacy Education (ACPE) website.¹¹

Institution-specific demographic data for pharmacy students, residents, and fellows were obtained from the AACP Institutional Database, reported in the Fall 2019 Profile of Pharmacy Students.¹² The racial composition of pharmacy students was viewed in the same context as faculty. The American Society of Health-System Pharmacists (ASHP) does not characterize residency match data by race or ethnicity. The National Matching Service administers the match on behalf of the ASHP and reports overall match rates for individual schools.¹³ Match rates were calculated as the percent of students matched compared to the number active on the list.

RESULTS

A demographic shift in the racial and ethnic composition of URM populations within the United States was

identified. In 2019, Whites (non-Hispanic) made up 60.1% of the US population, while Hispanics were the largest URM group. Asians were the fastest growing minority population, representing 5.7% of the US population. The percentage of Native Hawaiian/Pacific Islanders had doubled since 2000, while American Indian/Alaska Native populations remained constant.

A comparison of racial/ethnic breakdown of the 2019 US population when compared to populations of full-time faculty in pharmacy, medicine, and dentistry is provided in Table 1. The percent representation is consistent across all ethnic and racial groups in the faculty of the three health professions. Asians continued to be overrepresented among full-time faculty in all three professions, reaching levels that are 2 to 3.5 times higher than their representation within the US population. Approximately 20% of medical school faculty were Asian. Whites were consistently the majority population within the faculty, with dentistry having the lowest representation of Whites. Dentistry had the largest percentage of Hispanic faculty, more than twice the percentage of Hispanic faculty found in pharmacy and medicine (8.5% vs 3.3% and 3.5%, respectively) but is still less than half of their representation in the US population (19%). Dentistry had the largest percent of URM faculty (13.9%) when compared with the percentages of URM faculty in medicine (7.1%) and pharmacy (8.5%).

Underrepresented minority faculty were represented to different degrees across different types of programs (Table 2). In 2000, 5.1% of faculty were Black and in 2019, of 6362 pharmacy faculty, 323 (5.0%) were Black. One hundred six (32.8%) of these Black faculty were employed in five HBCUs. These HBCUs represented only

3.5% of the total number of schools and colleges of pharmacy. For the reporting five institutions, 57.2% of faculty were Black. The top programs of pharmacy employed the smallest percentage of Black faculty when compared with the percentages of Black faculty at HBCUs and newly accredited pharmacy programs. As expected, the overall percent of URM faculty in all pharmacy programs was low, but among top programs, the numbers of these faculty were even smaller. Newer programs had done a better job at recruiting URM faculty when compared to the overall Academy and top programs, yet HBCUs continued to provide the greatest opportunities for URM faculty. Among science faculty in pharmacy, Asians were represented at 22% and Whites at 56%. Black and Hispanic faculty were underrepresented, making up only 4.4% and 3.2% of all science faculty, respectively.⁷

Among the 60,594 enrolled pharmacy students in fall 2019, Whites were underrepresented at 48% and Asians were overrepresented at 24% compared to their relative composition in the US population, both overall and in the 20-34 years age group, which theoretically represents the pool from which professional degree program applicants are drawn. In the United States, URM populations accounted for 33% of the US population but among all students enrolled in PharmD programs they constituted only 17%. As was seen with faculty, URM representation was lowest in top pharmacy programs (15.4%), greater in newer pharmacy programs (24%), and greatest in pharmacy programs at HBCUs (58.7%). Pharmacy programs at HBCUs, top pharmacy programs, and newer pharmacy programs trained 3.2%, 9.9%, and 9.7 %, respectively, of all pharmacy students. Historically Black colleges and

Table 1. Comparison of Race and/or Ethnicity in the US Population and Among US Pharmacy, Medicine, and Dentistry Faculty

	US Population ^a (n=328,239,523)	Census, Ages 20-34 years ^b (n=81,943,066)	Pharmacy Faculty, ^c (n=6,532)	Medicine Faculty, ^d (n=179, 238)	Dentistry Faculty, ^e (n=5,139)
White (%)	60.1	60.2	65.0	63.5	56.3
Black (%)	13.4	12.6	5.0	3.6	4.9
Hispanic (%)	18.5	17.5	3.2	3.3	8.5
Asian (%)	5.9	5.7	15.7	19.9	13.3
American Indian/ Alaska Native (%)	0.9	1.2	0.1	0.2	0.3
Native Hawaiian/ Pacific Islander (%)	0.2	0.2	0.2	0.1	0.2

^a US Census Data 2019.⁶

^b 2019 Age demographic chosen to represent traditional pool of applicants for professional degree programs.¹⁸

^c Data from 2019-20 Profile of Pharmacy Faculty.⁷

^d Data from 2019 Association of American Medical Colleges Faculty Roster.⁸

^e Data from 2018-19 American Dental Education Association Faculty.⁹

Table 2. Comparison of Pharmacy Faculty Demographics in Selected Program Types

	US Population ⁶ (n = 328,239,523)	Pharmacy Faculty ⁷ (n = 6,362)	HBCU Programs ^a (n = 5)	Top 10 Programs ¹⁰ (n = 10)	New PharmD Programs ⁷ (n = 23)
White (%)	60.1	65	13.5	71.3	59.5
Black (%)	3.4	5	57.2	.7	6.6
Hispanic (%)	8.5	3.2	2.2	2.5	2.4
Asian (%)	5.9	15.7	16.7	18.7	18
Native Hawaiian/Pacific Islander (%)	0.2	0.2	1.6	0.1	0.3
American Indian/Alaska Native (%)	0.9	0.1	0	0.1	0.1

⁶ US Census Data 2019

⁷ AACP 2019-2020 Profile of Pharmacy Faculty National Report. American, Marshall B. Ketchum, West Coast, Larkin, South Florida, PCOM-GA, Roosevelt, Rosalind Franklin, Manchester, Maryland Eastern Shore, Western New England, William Carey, Farleigh Dickinson, Binghamton, High Point, Cedarville, Presbyterian, South-TN, North Texas, Texas at Tyler, Marshall, Concordia, and Medical College of WI.

¹⁰ US News and World Report Education. California-SF, Florida, Illinois at Chicago, Purdue, Kentucky, Michigan, Minnesota, North Carolina, Ohio State, and Texas at Austin.

^a Howard, Florida A& M, Xavier, Maryland Eastern Shore, and Texas Southern. Hampton University was non-reporting.

Abbreviation: HBCU = Historically Black Colleges and Universities.

universities educated 19.2% of all Black pharmacy students nationally. Newer pharmacy programs and top pharmacy programs educated 15.2% and 6.25% of all Black students, respectively. A greater percentage of Hispanic students were represented in newer pharmacy programs than in top programs or HBCUs.

A post PharmD residency or fellowship is often the minimum qualification required of clinical pharmacy faculty. The racial and ethnic representation of students in residency programs affiliated with a PharmD program reflects a continuing pattern of worsening representation for Blacks and Hispanics (Table 3). Doctor of pharmacy graduates enrolled in a residency or fellowship not associated with a pharmacy program are not reported by AACP. Institutional match rates were highest for top programs (76.4%), while newer programs and HBCUs matched at 44% and 33.2%, respectively.

Postgraduate (PhD) programs often serve as the pipeline for pharmaceutical science faculty candidates. According to AACP data, the disciplines that contributed the most to overall diversity included the biological and biomedical sciences (43.7% non-White), medicinal chemistry, and pharmacognosy (43.3% non-White), pharmaceuticals (57.8% non-White) and pharmacology and toxicology (44.2% non-White). When comparing all science-based faculty to pharmacy practice faculty, Black and Hispanic faculty had roughly equal representation (46% to 54%) in both, while Asian faculty were more predominantly represented in the science disciplines than in pharmacy practice (68% vs 32%).

A visual representation of the pipeline for pharmacy practice faculty is presented in Figure 1. When compared to non-URM (ie, White and Asian) populations, the number of URM's in the pipeline started out close in representation, then narrowed significantly at the PharmD level, and continued to decrease, perhaps because of issues with progression to degree, residency opportunities, and retention. Conversely, the pipeline for Whites and Asians continued to expand at nearly every stage in the pathway to academia, truly illustrating the overrepresentation of these populations in pharmacy programs.

DISCUSSION

In comparison to the increases in percentages of URM's reflected in the US Census, representation of Black (5.0%) and Hispanic (3.2%) pharmacy faculty is woefully inadequate and has not changed despite 20 years of initiatives dedicated to changing this. The pipeline to a practice faculty position is traditionally viewed as a residency or fellowship-trained PharmD graduate. Pharmaceutical, social, and administrative science faculty are typically recruited from among science, technology, engineering, and math (STEM) graduates. Clearly, based on the findings from our analyses, the candidates delivered via the current pipeline will not increase the number of underrepresented faculty at a consistent enough rate to meet population demographics. Several strategies to address issues in the pipeline are presented below and in Table 4.

Residency programs tend to be the pipeline that delivers clinical pharmacy practice faculty candidates.

Table 3. Comparison of Student Demographics by Selected Program Types and Postgraduate Training

	White	Black	Hispanic	Asian	NH/PI	AI/AN	Two or More Races	Race Not Known	Foreign	Other
All PharmD Programs n = 60,594 (%)	29,134 (48.0)	5,624 (9.3)	4,361 (7.2)	14,566 (24.0)	124 (0.2)	219 (0.4)	1,876 (3.1)	2,532 (4.2)	1,875 (3.1)	283 (0.5)
HBCU ^a n = 1,928 (%)	293 (15.2)	1,080 (56.0)	43 (2.2)	353 (18.3)	5 (0.3)	4 (0.2)	36 (1.9)	29 (1.5)	83 (4.3)	2 (0.1)
Top 10 PharmD Programs ¹⁰ n = 6,013 (%)	3,080 (51.2)	352 (5.9)	525 (8.7)	1,436 (23.9)	26 (0.4)	26 (0.4)	169 (2.8)	227 (3.8)	169 (2.8)	3 (0.05)
New PharmD Programs ⁷ n = 5,893 (%)	2,820 (47.9)	855 (14.5)	537 (9.1)	1,151 (19.5)	3 (0.05)	19 (0.3)	159 (2.7)	237 (4.0)	72 (1.2)	15 (0.3)
PGY-1 Residency ^b N = 602 (%)	347 (57.6)	45 (7.5)	29 (4.8)	107 (17.8)	1 (0.17)	1 (0.17)	12 (2.0)	37 (6.1)	15 (2.5)	8 (1.3)
Post PharmD Fellowship ^b N = 452 (%)	170 (37.6)	56 (12.3)	6 (1.3)	169 (37.4)	4 (0.89)	0 (0)	8 (1.8)	19 (4.2)	20 (4.4)	0 (0)

^a Howard, Florida A& M, Xavier, Maryland Eastern Shore, and Texas Southern. Hampton University was nonreporting.

^b Reflects Managed Care & Community residency and fellowship data from AACP only for post graduate training programs that are associated with a college/school of pharmacy.

⁷ American, Marshall B. Ketchum, West Coast, Larkin, South Florida, PCOM-GA, Roosevelt, Rosalind Franklin, Manchester, Maryland Eastern Shore, Western New England, William Carey, Farleigh Dickinson, Binghamton, D'Youville, High Point, Cedarville, Presbyterian, South-TN, North Texas, Texas at Tyler, Marshall, Concordia, and Medical College of WI.

¹⁰ US News and World Report Education. California-SF, Florida, Illinois at Chicago, Purdue, Kentucky, Michigan, Minnesota, North Carolina, Ohio State, and Texas at Austin.

Abbreviation: HBCU = Historically Black Colleges and Universities.

Pharmacy residency programs accredited by ASHP do not report the race/ethnicity of applicants or individuals who match with and complete residency programs. In 2000, the Final Report of the Ad Hoc Committee on Affirmative Action and Diversity for AACP recommended to the Board of Directors that the ASHP, the American Pharmacist Association (APhA), and the National Pharmaceutical Association (NPhA) combine their efforts to recruit

minority students into fellowships and residencies. They should also establish a system to track the number of minority students in such programs if one does not exist, yet 20 years later, this has not been done.¹⁴ The lack of such data hides the resulting realities but not the consequences.

Students at HBCUs, which generate the largest percentage of Black graduates, have much lower residency

Figure 1. Pipeline for non-URM practice faculty versus underrepresented minority (URM) practice faculty^{a,6,7,12}

^a URM includes Black, Hispanic, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native. Asians are considered to be adequately represented in pharmacy education.

Table 4. Strategies for Increasing the Number of Underrepresented Minority Candidates in the Pharmacy Faculty Pipeline

Residency Training	<p>Track and report the race/ethnicity of residency applicants, interviews offered, positions obtained and completed</p> <p>Provide funding on an as needed basis for students who may not have the resources to pay for travel, clothing or other necessities for interviewing purposes</p> <p>Increase the diversity of residency and fellowship directors</p> <p>Apply the “Rooney Rule” to the pharmacy residency program interview process: deliberately include a diverse pool of applicants to be interviewed for available positions^a</p>
MS/PhD/Fellowship Training	<p>Don’t assume as a mentor you have all the answers, but be willing to engage with your mentees regarding their interests and values</p> <p>Provide funding to support URM interest in and completion of post graduate training</p>
Accreditation Standards	<p>Add diversity goals with measurable outcomes to the standards</p> <p>Expand pharmacy curriculum to go beyond cultural competency</p> <p>Incorporate structural racism throughout the curriculum and its impact on outcomes such as health inequities, health disparities and social determinants of health</p> <p>Assessment criteria (in preparation for NAPLEX, MJPE, other) that focus on the patient first and disease state second</p>
Pharmacy Academy	<p>Hire more than one URM faculty member at a time</p> <p>Value diversity for what it brings to the academy (new ideas, challenge the status quo, different ways of thinking)</p> <p>Revise and update promotion and/or tenure guideline to reflect more creative ways to evaluate faculty contributions</p> <p>Assess institutional climate and institute programs to address deficits and assets and make adjustments as necessary</p> <p>Set goals for diversity and inclusion for each faculty with appropriate assessments for tracking</p> <p>Evaluate all policies and procedures for potential structural barriers that inhibit student and faculty success</p> <p>Partner with programs that enroll high numbers of URMs to increase awareness of pharmacy as career</p>
Pharmacy Students	<p>Expand the use of holistic admissions processes</p> <p>Sponsor early research mentorship grants to URM pharmacy students currently enrolled in pharmacy school</p> <p>Expose URM students to academic career paths through programs such as the Walmart Scholar program</p> <p>Encourage URM students to select academic-focused elective courses and academia APPE elective rotations</p> <p>Support the entire student in a holistic manner (social, emotional, academic, financial, length of time in the program, etc)</p> <p>Investigate experience of students with respect to aspects of the educational environment that may be hostile</p>
Pharmacy Faculty	<p>Address unconscious bias</p> <p>Utilize resources for antiracist pedagogy through the centers for teaching and learning at your institutions</p> <p>Include best practices regarding the incorporation of culturally accurate patient information without perpetuating stereotypes</p> <p>Self-educate and acknowledge racial trauma of students and colleagues</p> <p>Address curricular gaps by being intentional in course design</p> <p>Create an inclusive and affirming classroom environment</p> <p>Encourage faculty to better understand the lived experiences of their students</p> <p>Create mentorship programs for junior URM faculty and assess outcomes of such efforts</p> <p>Investigate experience of faculty with respect to aspects of the work environment that may be hostile</p>

^a NFL communications <https://nflcommunications.com/Documents/NFL%20Expands%20Rooney%20Rule%20Requirements%20to%20Strengthen%20Diversity%2012.18%20FINAL%20for%20distribution.pdf>

Abbreviations: APPE=advanced pharmacy practice experience, URM=underrepresented minority, NFL=National Football League.

match rates. This troubling disparity seems indicative of a glass ceiling, which further narrows the path to obtaining a faculty position. Residency programs should examine and report racial and ethnic composition, while making intentional efforts to increase numbers of URM residents. Faculty hiring criteria should be modified to include other factors such as years of experience or demonstrated expertise in an area, particularly as competition for residency positions increases. Diversity among residency program directors (RPDs) and fellowship and pharmacy preceptors is likewise crucial.

The ACPE has no accreditation standards related to broadening diversity among students. In 2020, Campbell and colleagues reported that racial disproportionalities still exist between pharmacy students and the population of patients surrounding the pharmacy programs themselves.¹⁵ A review of pharmacy programs by accreditation status posted by ACPE echoes the Flexner Report of 1910, which closed Black medical schools.¹⁶ In 2020, one HBCU lost accreditation and one Predominantly Black Institution (PBI) was placed on probation because of issues with student progression.¹¹ The HBCUs and PBIs educate 21% of the Black pharmacy student population. Thus, failure of any of these institutions results in a major loss to the Academy as they are a major source of Black pharmacists and Black faculty.

Research outside of pharmacy provides potential solutions. When examining motivators of biomedical science PhD graduates to pursue faculty careers, researchers found that personal values played a key role.¹⁷ Motivators of non-URM biomedical scientists included academic freedom, while motivators for women and URM scientists included to research health problems facing their community. URM faculty placed a high value on impacting students through mentorship.¹⁷ In addition, diversity, equity, and inclusion initiatives are left for the URM to do. If such aspects are not valued by promotion and tenure committees, then this type of work is marginalized, and represents a barrier for URM faculty retention.¹⁸

When federal funding and dissemination of research in peer-reviewed journals are used as benchmarks for promotion, bias is already built into the system. Reviews of NIH R01 funding found that Black applicants were less likely to receive funding.¹⁹ To address this barrier, criteria used in faculty promotion should be as free from bias as possible and should be revised to reflect this reality. Ginter and colleagues found that faculty who worked at the 30 most highly funded NIH institutions had a higher probability of receiving funding regardless of their ethnic identity.¹⁹ Given the fact that Blacks receive less NIH funding moving to institutions focused on such funding might be a barrier. This may explain the low number of URM faculty

in the top-ranked research pharmacy programs. In addition, female URM face additional barriers related to the marginalization of their scholarship, negative student interactions and evaluations, and higher service loads.²⁰ These structural biases must be acknowledged and fundamentally dismantled to see any progress in increasing the number of underrepresented faculty at these institutions.

Another strategy used to direct attention to diversity includes addressing diversity and inclusion in the mission and vision statements of schools and colleges.²¹ While this is a necessary first step, institutions must go further. A recent report on the use of strategic planning for faculty diversity in medicine found no relationship between having a strategic plan for increasing diversity and an actual increase in the proportion of full-time faculty members who were URM from 1998-2015.²²

Our analyses suggest that there are other factors to consider if we want to expand the pipeline of URM faculty candidates. The commitment to increasing the representation of Blacks and Hispanics in pharmacy programs must be agreed upon by all faculty in a program. Leadership for this goal must come from senior faculty members and must be fully supported by them in tangible ways.²³ Recognize that the motivations for young URM scientists and health care students to pursue a faculty career may be different from those of non-URM students and even that of their mentors.¹⁷ Showing how these values can be achieved in a faculty career is important to attract URM pharmacy graduates to the Academy. Rather than trying to mold URM to fit into a system that was not developed with them in mind, programs need to develop environments that are flexible, welcoming, and open to new ways of thinking and new ways of rewarding faculty efforts.

The competitive nature of professional training programs can be very unattractive to prospective students who want to contribute to health care by serving society. Competition is in direct opposition to this goal. The dominant culture in the United States can be categorized as a zero-sum game, one of winners and losers. Non-URM pharmacy faculty must learn new ways of thinking by valuing what URM colleagues have to offer. Medical, dental, and pharmacy academies must seriously rethink the criteria used to recruit and admit students to health care training pipeline programs and to promote and retain URM faculty. Pipeline programs such as schools and colleges of pharmacy must value a diverse faculty and student population for the purposes of integration and learning (new ideas, different ways of thinking, challenges to the status quo) rather than for marketing purposes (attracting more students) or to feel good about their policies (doing the right thing).²⁴ The Academy must examine all aspects of its organization (power differentials, implicit and explicit

bias, etc) to determine whether the working environment in pharmacy pipeline programs is hostile, demotivating, and/or unattractive. Future research is needed to investigate the experiences of URM students and faculty within schools and colleges of pharmacy.

The findings of this study were limited by the availability of data. To overcome this limitation, we used data from a variety of sources that provided data on and/or insight into the current realities of pharmacy education. The effects of the COVID-19 pandemic on higher education are unclear and have the potential to make the goal of diversifying faculty even harder to achieve. It also has the potential to create incentives to address the dream of living in a just society. Finally, backlash to the implementation of any of the actions discussed here must be anticipated because any solution which threatens the current status quo is subject to charges of bias. It is the authors' contention that framing solutions as actions that will benefit one group at the expense of another misses the point and goes nowhere in targeting the underlying problems the Academy is trying to redress.²⁵

CONCLUSION

Academic pharmacy has made little progress in terms of the representation of URM faculty in its programs within the last 20 years, despite the formation of task forces, ad hoc committees, and studies to address diversity in the Academy.^{4,14,26-29} The lack of representativeness of ethnic and racial minorities among pharmacy faculty is also seen in medicine and dentistry to varying degrees.^{30,31} A postgraduate training program in a residency, fellowship, or MS/PhD program are the current acceptable pipelines from which new pharmacy faculty are recruited. To address the problems within these various pipelines that inhibit diversity and inclusion a multimodal approach needs to be implemented. First and foremost, dismantling structural barriers and tracking, funding, and promoting the recruitment and acceptance of students who are members of ethnic and racial minority groups into residencies, fellowships, and postgraduate training programs must occur. The time is right for pharmacy schools, residency programs, accreditation bodies, and pharmacy organizations to go beyond laudable position statements and implement specific, measurable diversity, equity and inclusion measures.

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