

# The Importance of Diversity in the Physician Assistant/Associate Workforce: Examining the Profession's Growth and Trends in Demographic Composition

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## ABSTRACT:

**Introduction:** Healthcare workforce diversity is essential for increasing access and reducing racial/ethnic health disparities. We examined the growth and trends in physician assistant/associate (PA) workforce demographic composition by initial year of certification.

**Methods:** Drawing on data from the National Commission on Certification of Physician Assistants, we aggregated gender, age (1975-2020), race/ethnicity, and underrepresented in medicine (URiM) (2000-2020). Descriptive statistics of demographics were calculated by the initial certification year and assessed for trends using the Cochran-Armitage test.

**Results:** Analyses revealed an 11.7% annual growth rate in PAs earning initial certification and a change in gender composition (23.9% to 74.2% female) from 1975 to 2020. Between 2000 and 2020, we observed significant increases (all  $p < 0.001$ ) in the proportions of PAs who self-identify as Asian (5.7 percentage points), Hispanic/Latino(a) (3.5 percentage points), and multiracial (2.4 percentage points). However, there was a decline (all  $p < 0.001$ ) in the proportions of PAs who self-identify as Black/African American (1.2 percentage points), American Indian/Alaska Native (0.1 percentage points), Native Hawaiian/Pacific Islander (0.1 percentage points), and other race (1.1 percentage points). Trend analyses revealed that the proportion of PAs identifying as URiM decreased over the past 21 years.

**Conclusion:** Ongoing assessment of the PA workforce demographics is essential to track the progress and effectiveness of diversification initiatives.

## Introduction

Fostering healthcare workforce diversity is an essential strategy for increasing access to quality, equitable, and culturally effective care for our increasingly diverse society and reducing racial and ethnic health disparities.<sup>1,2</sup> The US Census population projections indicate that by 2045, the US will experience a significant demographic transition, with the non-Hispanic White population no longer being the majority.<sup>3</sup> In contrast, many healthcare professions in the US currently lack diversity among their ranks, and projections suggest limited improvements.<sup>2</sup>

Increasing diversity in healthcare professions has been a salient policy concern for several decades,

with influential bodies, including the National Academy of Medicine, committed to improving the representation of people of color in the healthcare workforce.<sup>4-7</sup> Within the physician assistant/associate (PA) profession, various organizations have embraced diversity initiatives. The Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) added a diversity standard in 2020 (A1.11) as a requirement for which PA programs are held accountable to attain and maintain accreditation.<sup>8</sup> The National Commission on Certification of Physician Assistants (NCCPA) has ongoing initiatives to increase awareness of the PA profession, such as the "Back2School" program for elementary and secondary students and outreach events to undergraduate students at Historically

Black Colleges and Universities (HBCUs) to promote diversity in the PA profession.<sup>9</sup> More recently, NCCPA convened a summit in 2022 to strengthen and support effective paths to promote diversity, equity, and inclusion (DEI) in the PA workforce.<sup>10</sup> The PA Education Association (PAEA) and the American Academy of Physician Associates (AAPA) have set initiatives to increase PA workforce diversity as a high priority.<sup>11,12</sup> PAEA designed a DEI toolkit outlining specific strategies for PA programs and championed Project Access, focusing on underrepresented in medicine (URiM) recruitment of high school students.<sup>13</sup>

The importance of studying PA diversity reflects the profession's growing role in the US healthcare workforce. The PA profession is one of the fastest-growing occupations. The US Bureau of Labor Statistics estimates a 28% growth from 2021 to 2031.<sup>14</sup> Moreover, the PA profession has a rich history of providing care to medically under-resourced communities.<sup>15–18</sup> The PA profession was established in the 1960s based on the medical school model to meet the growing demand for primary care in rural and medically underserved areas/populations (MUAs/MUPs).<sup>19</sup> Due to a long history of racial/ethnic residential segregation in the US, under-resourced communities lack access to adequate healthcare resources.<sup>20,21</sup> As of 2021, the Commonwealth Fund reports that around 30 million people in the US are still uninsured, with the majority being people of color.<sup>22</sup> Few physicians work in MUAs/MUPs due to low reimbursement rates, as the population in these settings predominantly has Medicaid healthcare coverage or is uninsured.<sup>4,23</sup> As a result of the scarcity of healthcare providers, there is limited access to healthcare services, and people of color are more likely to receive care in community health centers, public hospitals, or emergency departments.<sup>24</sup> The literature demonstrates that PAs are more likely than other healthcare providers to work in rural and healthcare-shortage areas.<sup>15</sup>

Nevertheless, there is a substantial gap between the racial and ethnic composition of the PA profession and the increasingly diverse patient population it cares for and treats.<sup>2,25</sup> Table 1 illustrates the demographic characteristics of the 2020 and 2022 US PA workforce and 2020 US Census population data. According to the US Census, 50.9% of the population were female, 18.7% Hispanic/Latino(a), 12.1% Black/African American, 5.9% Asian, 0.7% American Indian/Alaska Native, and 0.2% Native Hawaiian/Pacific Islander.<sup>26</sup> In comparison, the PA

workforce in 2020 was majority (69.7%) female, 6.5% Hispanic/Latino(a), 6.0% Asian, 3.3% Black/African American, 0.4% American Indian/Alaskan Native, and 0.3% Native Hawaiian/Pacific Islander.<sup>27</sup> Thus, PAs identifying as Hispanic/Latino(a), Black/African American, and American Indian/Alaskan Native are underrepresented compared to their representation in the general US population. Available data suggest this is similar to physician and nurse practitioner (NP) workforces. The Association of American Medical Colleges (AAMC) reports that the demographic composition of all active physicians is 5.8% Hispanic/Latino(a) and 5.0% Black/African American.<sup>28</sup> The 2020 National Nurse Practitioner Sample Survey showed that 8.1% of NPs are Black/African American and 5.0% Hispanic/Latino(a).<sup>29</sup>

Several pivotal studies were conducted on the PA profession's demographic makeup, using different data sources and examining unique historical timeframes. Perry<sup>30</sup> carried out a questionnaire with PA graduates between 1967 and 1974, examining gender but not race or ethnicity. Carter et al.<sup>31</sup> in 1984 used a combination of enrollment information provided by PA programs and national surveys to characterize PA students graduating between 1978 and 1982. In 2007, Larson and Hart<sup>32</sup> used AAPA census survey data to assess the characteristics of PA graduates from 1967 to 2000. Unfortunately, race and ethnicity information was not available in their data. A few years later, in 2009, He et al.<sup>33</sup> utilized US Census and American Community Survey datasets containing employed PA gender, race, and ethnicity from 1980, 1990, 2000, 2005, and 2007. A more recent study in 2021 by Quella and colleagues<sup>34</sup> analyzed longitudinal data using 2000 to 2006 AAPA survey student data and 2003 to 2016 AAPA census data.<sup>34</sup>

Despite these efforts to characterize the PA profession, gaps still exist in our understanding as different studies explored disparate time frames and demographic characteristics. To this date, no prior research has used NCCPA administrative and PA Professional Profile data to investigate the growth and trajectory of the PA workforce demographic composition over time. Our study seeks to use a novel data source to triangulate findings from prior studies, fill informational gaps, and extend previous research efforts by exploring changes in the diversity of PA cohorts by year of initial certification from 1975 to 2020 for gender and age and from 2000 to 2020 for race/ethnicity, and URiM.

## Methods

The Sterling Institutional Review Board (IRB# 8759) determined this research to be exempt, and all methods were carried out following relevant guidelines and regulations. This retrospective study used comprehensive national PA workforce data collected by NCCPA. An individual's administrative record begins when they graduate from an accredited PA program and pass the Physician Assistant National Certifying Examination (PANCE). In addition to administrative information, NCCPA has collected workforce data on Board Certified PAs' demographic and practice characteristics since 2012 via the PA Professional Profile housed on a secure portal on the organization's website. PAs can update their information on the PA Professional Profile anytime or when they log Continuing Medical Education (CME) credits.

Gender, birth year, and initial certification date were extracted from the administrative database. Almost

complete gender information (0.01% missing) and age at initial certification (0.01% missing) were available for PAs initially certified from 1975 to 2020. Age at initial certification was calculated by subtracting birth year from initial certification year. The initial certification year was available for 171330 PAs during the 46-year epoch.

Race and ethnicity were self-reported data assessed through 2 separate questions in the "About Me" module of the PA Professional Profile. Race was assessed through the following item, "How would you classify your race?" with American Indian/Alaska Native, Asian, Black/African American, Native Hawaiian/Pacific Islander, White, multiple races, other, and prefer not to answer as responses. Ethnicity was asked as follows, "Are you of Hispanic, Latino(a), or Spanish origin?" with responses of yes, no, and prefer not to answer. Prefer not to answer for race and ethnicity were categorized as missing. PAs can only select one

**Table 1**

### A Comparison of 2022 and 2020 PA Workforce Demographic Characteristics with US Population Census Data

Demographics	PA Workforce (2022 NCCPA data) <sup>71</sup>	PA Workforce (2020 NCCPA data) <sup>27</sup>	US Population (2020 Census) <sup>26</sup>
<b>Age (median)</b>			
	38.0	38.0	38.8
<b>Gender</b>			
Female	70.6%	69.7%	50.9%
Male	29.3%	30.3%	49.1%
Other	<0.1%	—	—
<b>Race</b>			
White	80.3%	80.8%	57.8%
Asian	6.5%	6.0%	5.9%
Black/African American	3.3%	3.3%	12.1%
American Indian/Alaska Native	0.3%	0.4%	0.7%
Native Hawaiian/Pacific Islander	0.3%	0.3%	0.2%
Multiple races	2.3%	2.1%	4.1%
Other	2.7%	2.8%	0.5%
Prefer not to answer	4.3%	4.5%	—
<b>Ethnicity</b>			
Hispanic/Latino(a)	7.0%	6.5%	18.7%
Non-Hispanic/non-Latino(a)	93.0%	93.5%	81.3%

Sources: National Commission on Certification of PAs Reports<sup>71,27</sup> and US Census Bureau<sup>26</sup>

response. The URiM variable was categorized as defined by AAMC<sup>35</sup>: Hispanic/Latino(a) of any race, non-Hispanic/Latino(a) Black/African American, non-Hispanic/Latino(a) American Indian/Alaska Natives, and non-Hispanic/Latino(a) Native Hawaiian/Pacific Islander. However, race and ethnicity had excessive missing data prior to 2000 (ranging from 83% missing in 1975 to 16% in 1999), whereas missing data for race and ethnicity for the years 2000 to 2020 ranged from a high of 15% in 2000 to a low of 4.4% in 2013; thus, we analyzed these variables from 2000 to 2020 (21 years).

Descriptive statistics, including counts and percentages for categorical variables (gender, race, ethnicity, URiM) and mean and standard deviation for age, were calculated and parsed by the initial year of certification. To determine whether there was a significant change in proportions by year of initial

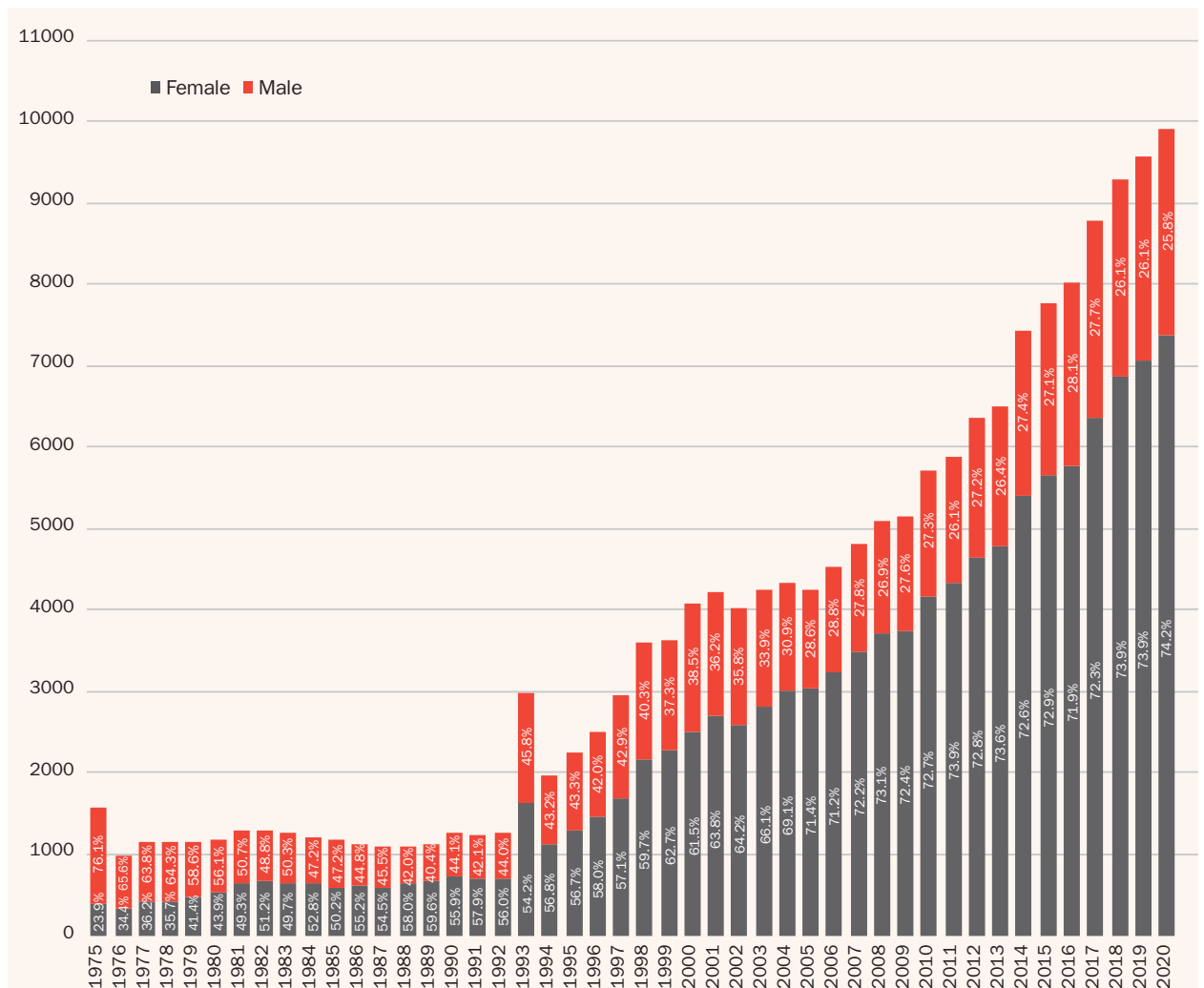
certification (1975 to 2020 for gender and 2000 to 2020 for racial/ethnic diversity), we performed the Cochran-Armitage test for trend; results were considered statistically significant at a 2-tailed  $p < 0.05$ . All analyses were conducted using R statistical software (Version 4.2.1; R Foundation for Statistical Computing, Vienna, Austria).

### Results

Between 1975 and 2020, 171330 PAs earned initial certification. The number of PAs certified each year has been on a steady incline. In 1975, there were 1559 PAs initially certified, reaching 9914 in 2020—representing an annual growth rate of 11.7%. Of the 171330, the majority (75.8%), or 129926, were initially certified between 2000 and 2020.

Figure 1 shows a remarkable shift in the gender distribution of PAs by initial year of certification.

**Figure 1**  
**PA Gender Distribution by Initial Year of Certification: 1975 to 2020 ( $p < 0.001$ )**



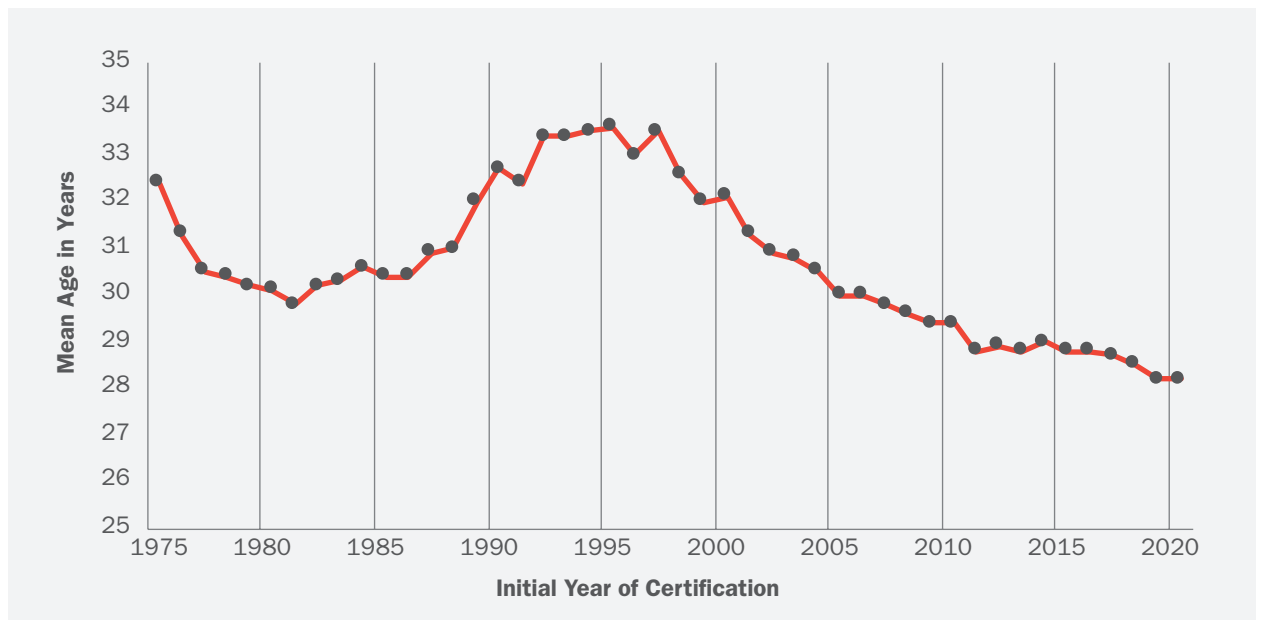
The proportion of initially certified female PAs increased significantly over the study period ( $p < 0.001$ ). In 1975, the gender composition of initially certified PAs was 76.1% male; parity was reached in the early 1980s, and in 2020, the cohort of initially certified PAs was majority (74.2%) female. Overall, between 1975 and 2020, 67.1% were females, and 32.9% were males.

Figure 2 illustrates the mean age of PA cohorts at initial year of certification. Between 1975 and

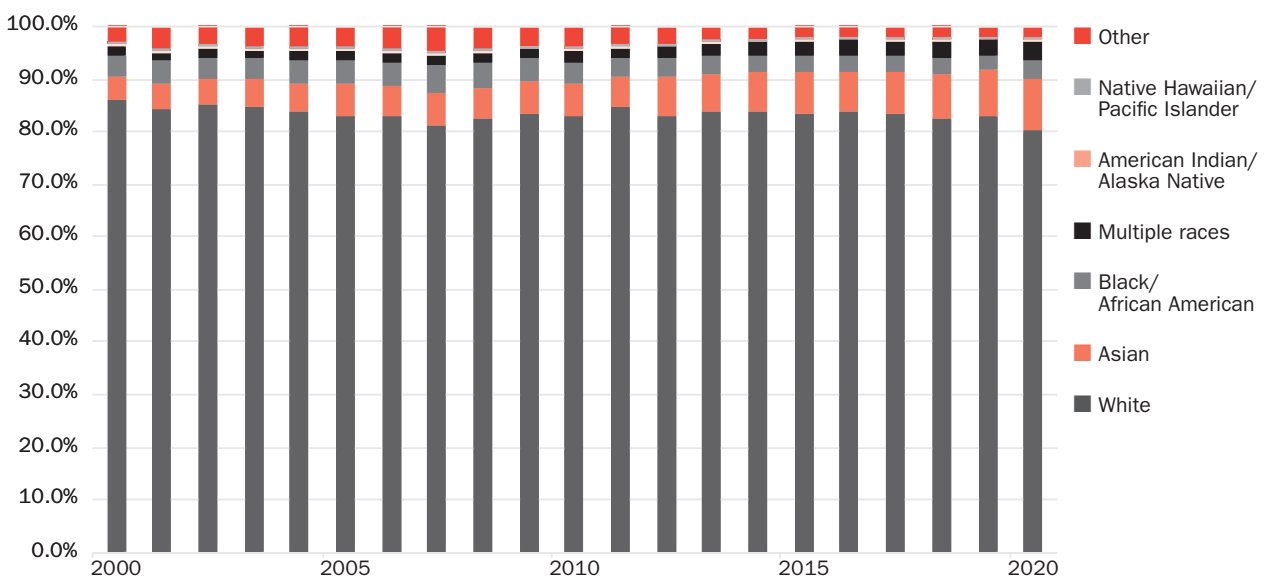
1981, the mean age at initial certification steadily decreased from 32.4 to 29.8, then increased, peaking in 1995 at 33.6 and subsequently declining to 28.2 by 2020. Except for the period from 1975 to 1980, the mean age of male PAs was older than their female colleagues, ranging from 0.4 to 4.4 years.

Figures 3a and 3b depict the racial distribution of yearly PA cohorts, while Figure 4 shows changes in URiM composition from 2000 to 2020. We

**Figure 2**  
**Mean Age of PAs in the US at Year of Initial Certification: 1975 to 2020**

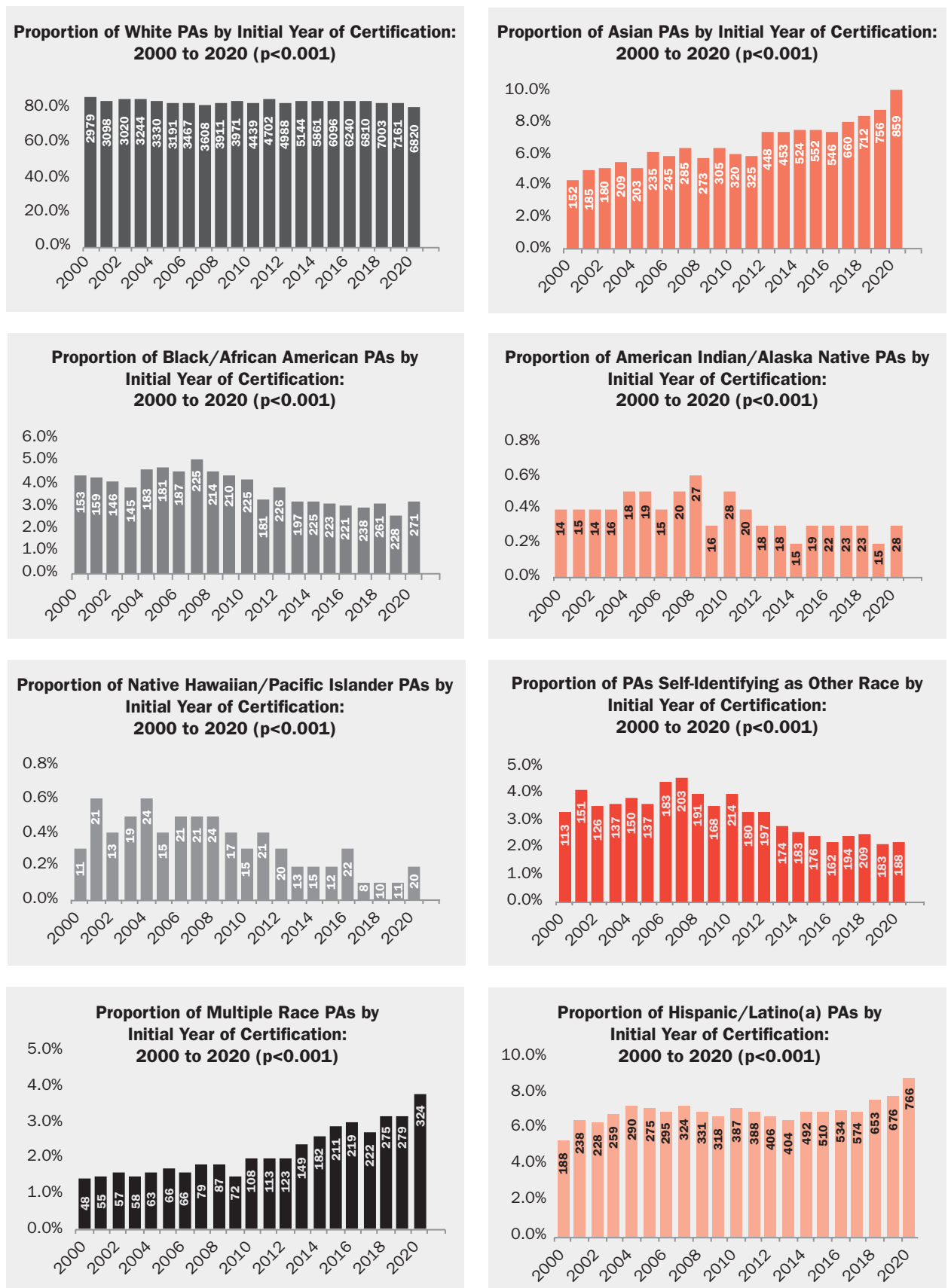


**Figure 3a**  
**PA Race by Initial Year of Certification: 2000 to 2020**



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**Figure 3b**  
**Breakdown of PA Race and Ethnicity by Initial Year of Certification: 2000 to 2020**



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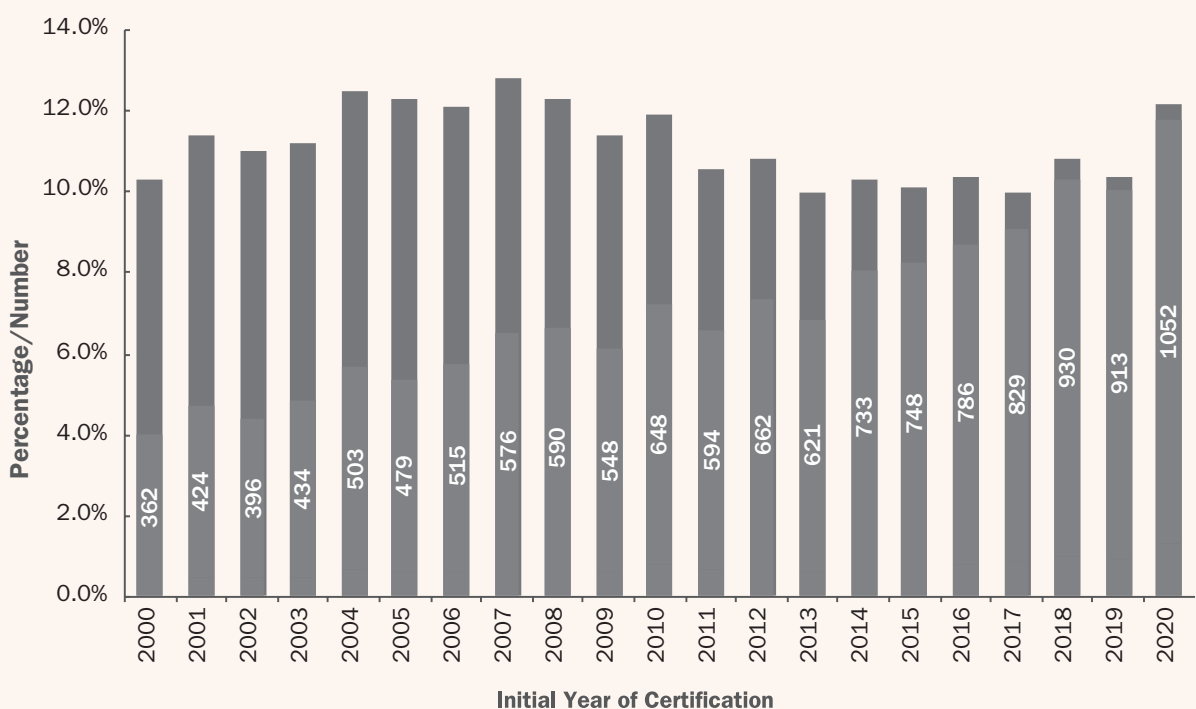
observed a statistically significant ( $p < 0.001$ ) decrease (5.8 percentage points, from 85.9% to 80.1%) in the proportion of PAs identifying as White during this period. Trend analyses also revealed that there were statistically significant decreases (all  $p < 0.001$ ) in the proportion of PAs identifying as Black/African American (1.2 percentage points, from 4.4% to 3.2%), other race (1.1 percentage points, from 3.3% to 2.2%), American Indian/Alaska Native (0.1 percentage points, from 0.4% to 0.3%), and Native Hawaiian/Pacific Islander (0.1 percentage points, from 0.3% to 0.2%). Conversely, the proportion of Asian PAs ( $p < 0.001$ ) and those who self-identify as multiple races ( $p < 0.001$ ) increased by 5.7 (from 4.4% to 10.1%) and 2.4 (from 1.4% to 3.8%) percentage points, respectively. In terms of the total absolute numbers of initially certified PAs from 2000 to 2020, 99083 (83.2%) identified as White, followed by 8427 (7.1%) Asian; 4299 (3.6%) Black/African American; 3619 (3.0%) other race; 2856 (2.4%) multiple races; 403 (0.3%) American Indian/Alaska Native; and 353 (0.3%) Native Hawaiian/Pacific Islander. Representation among initially certified PAs who identify as Hispanic/Latino(a) had significantly increased ( $p < 0.001$ ) from 2000, when the proportion was 5.4%, to 8.9% in 2020 (3.5 percentage points). During this time, a total of

8536 (7.2%) PAs were Hispanic/Latino(a). Overall, our trend test showed that the percentage of initially certified PAs who identified as URiM statistically significantly decreased between 2000 and 2020 ( $p < 0.001$ ), although there was an uptick in the 2020 cohort. During these 21 years, a total of 13343 (11.2%) PAs self-identified as URiM, with the highest proportion of URiM PAs seen in 2007 at 12.8% ( $n = 576$ ).

## Discussion

We explored trends in the demographic composition of PA cohorts by initial year of certification using 46 years of data on gender and age and 21 years on race and ethnicity—providing an update and extension of previous studies. Four principal findings emerged from our trend analyses. First, there has been a rapid growth in the number of PAs earning initial certification—particularly starting in the 1990s. Second, there has been a remarkable shift in gender composition—changing from a majority male in 1975 to a majority female by 2020. Third, the mean age of PAs at initial certification has been decreasing since the 1990s. A fourth and concerning finding was that despite some progress in increasing proportions of PAs who identify as Asian,

**Figure 4**  
Proportion of URiM PAs by Initial Year of Certification 2000 to 2020 ( $p < 0.001$ )



Hispanic/Latino(a), and multiracial, we observed declines in the percentage of PAs who identify as Black/African American, American Indian/Alaska Native, and Native Hawaiian/Pacific Islander.

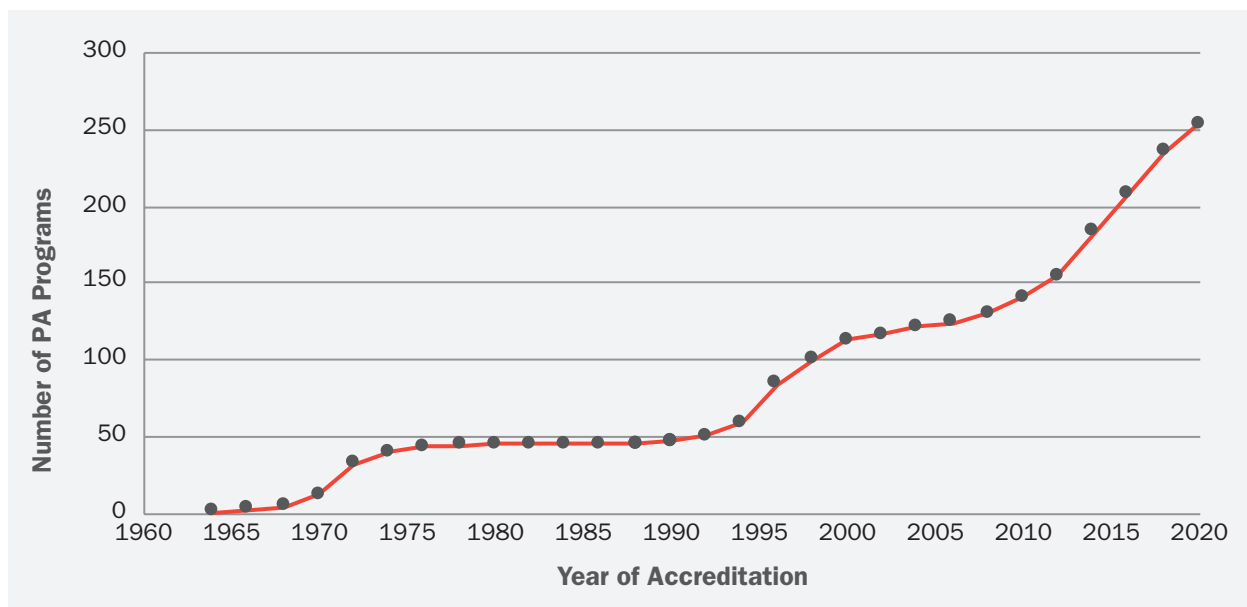
The current findings regarding the growth trends of PA cohorts on age and gender, for the most part, track well with and corroborate results from Larson and Hart<sup>32</sup>; however, yearly PA counts were not identical in our study and their report for the same years assessed (1975-2000). This may be due to methodological differences—data capturing graduates from PA school versus earning initial certification. PA students who graduate in a particular year may not necessarily earn initial certification in that year—for instance, when graduation occurs towards the later part of the year.<sup>32</sup> NCCPA data suggests that the vast majority of PAs earn initial certification within a year post-graduation. Furthermore, our study extends the findings from Larson and Hart by including age at initial year of certification, race, and ethnicity. Moreover, we have expanded the timeframe to provide PA demographic trends, now covering the period from 2000 to 2020.<sup>32</sup> The main strength of our study is the use of a robust national dataset not previously used to characterize the trajectory of PA demographic composition over this extended timeframe.

Although the PA profession has increased steadily over the years, we observed that the higher yearly growth of initially certified PAs started in the early 1990s, similar to that reported in the Larson and

Hart study for PA graduates.<sup>32</sup> Reasons for this sharp increase are likely multifactorial, but Cawley and Hooker offered potential explanations and insights. These include more favorable perceptions and acceptance of the PA profession, primary care provider shortages, changes in federal policy and state legislature, along with increasing numbers of PA programs.<sup>36</sup> As PAs are general practitioners trained after the medical school model, they were at the frontline of filling the healthcare provider shortfalls in rural and medically underserved areas and helping to fill the gap in physician shortage. With the growing need for healthcare providers, policymakers and constituents advocated expanding the scope of practice of PAs to provide a broader range of services and reduce barriers to practice medicine as PAs primarily served in family/primary care settings.<sup>37</sup> Title VII of the Health Professions Reauthorization Act of 1988 aimed to increase support for educational programs and training of healthcare professionals to fill the gap in physician shortages of a growing US population.<sup>38,39</sup> Following these legislative changes, the number of PA programs doubled from 47 to 100 from 1990 to 1998 (Figure 5).<sup>40</sup>

The finding on PA gender shift is also consistent with previous reports<sup>32,33</sup> and has been observed and documented more generally in the health workforce literature among different professions.<sup>41,42</sup> Several driving forces may have contributed to this shift. Many students in PA programs in the early

**Figure 5**  
**Number of Accredited PA Programs Per Year: 1965 to 2020<sup>72</sup>**





history of the profession consisted primarily of males who were ex-military corpsmen and medics.<sup>31,43</sup> In 1972, Title IX in the Educational Amendment prohibited gender discrimination in access to higher education.<sup>44</sup> Since then, a growing number of women have completed a college education—surpassing men by the 1980s.<sup>45</sup> Curtis et al.<sup>46</sup> noted that women make up a greater proportion of the applicant pool for PA programs, contributing to the transformation in the PA profession's gender profile. Additionally, research from Lindsay<sup>47</sup> revealed that female PAs often chose the PA career path because it is rewarding, flexible, and enables work-life balance. The physician workforce observed similar gender shifts. The proportion of women physicians increased by 300% from 1980 to 2000,<sup>42</sup> but not to the same degree as the PA profession. According to AAMC, in 2021, 37.1% of all active physicians were female; however, the proportion varied widely depending on specialty. For example, females comprised 65.0% of pediatricians while only 5.9% of orthopedic surgeons.<sup>48</sup> Conversely, the NP profession did not observe gender shifts comparable to the PA workforce. From 2008 to 2018, the number of male NPs increased by 10% in this predominantly female profession.<sup>49</sup>

We also found interesting changes in the average age of initially certified PA cohorts over the study period. The mean age decreased from 1975 to the 1980s, then increased throughout the 1990s, and since then has been steadily lowering. The initial decrease in average age is likely due to fewer students with military backgrounds entering PA programs.<sup>43</sup> The PA profession was a second career for ex-military persons who were more likely to be older than their counterparts without having served in the US forces. Perry<sup>30</sup> noted that half of the PAs who graduated between 1967 and 1974 had been medical corpsmen. However, by 1981-1982, only 14% of PA students had previous military experience.<sup>31</sup> The reversal in the average age trend in the 1980s through the mid-1990s may have been due to those cohorts having more healthcare experience prior to enrolling in PA programs.<sup>50</sup> Additional research is needed to elucidate this finding. Conversely, from 1997 to 2020, the mean age has been decreasing. A potential explanation for this trend may be that during this time, the number of PA programs tripled, while at the same time, requirements for prior healthcare experience have decreased.<sup>43</sup> Compared to the PA profession, the mean age of the nursing workforce in 2018 was higher, at 44.<sup>51,52</sup> According to the Federation of State Medical Boards (FSMB), in 2022, the average

age of licensed physicians was 51.9.<sup>53</sup> There has been a notable increase in the proportion of physicians over the age of 65, rising from 8% in 1981 to 11% in 2001; this trend continues with more recent data showing that 22% are over 65.<sup>53-55</sup>

Our finding that URiM representation in the PA profession has been decreasing despite some progress for Hispanic/Latino(a) PAs is consistent with prior studies. Although assessing a different time frame, the study by He et al. demonstrated that between 1980 and 2007, the proportion of employed PAs identifying as Black/African American decreased from 9.5% to 7.8%, while Hispanic/Latino(a) and Asian increased from 5.4% to 8.2% and 1.6% to 5.5%, respectively.<sup>33</sup> Our results also align with research exploring trends in PA programs. McDaniel and Ruback characterized matriculants to PA schools from 2007 to 2015.<sup>43</sup> The researchers found that Black/African American matriculants decreased from 4.2% to 3.0%, while Hispanic/Latino(a) matriculants increased from 5.8% to 7.9%, and Asian matriculants increased from 8.2% to 9.4%.<sup>43</sup> Another potential explanation for URiM students' decline could be the requirement for PA programs to transition to graduate degrees in 2000. In 1996, only 25% of PA programs awarded a master's degree; by 2015, the proportion of PA programs granting master's degrees increased to 92%.<sup>56</sup> Coplan and colleagues<sup>57</sup> analyzed URiM PA program characteristics in 2002/2003 compared to 2012/2013. They discovered that the proportion of Black/African American students decreased from 6.2% to 4.4% and attributed this demographic shift to the change in degree requirements.<sup>57</sup> Additionally, the rise of higher education tuition,<sup>58</sup> and lack of measurable DEI benchmarks from institutional or PA programs may also explain URiM matriculation decline.<sup>59</sup>

Insufficient progress in increasing diversity among providers who diagnose and treat patients is not unique to the PA profession. Peabody et al. analyzed the demographic distribution of 66542 family physicians by year of initial certification from 1987 to 2017, finding that the proportion of physicians identifying as Asian increased.<sup>60</sup> However, growth was only modest for Black/African American and Hispanic/Latino(a) physicians, remaining underrepresented relative to the general US population.<sup>60</sup> Similar trends were observed for other physician specialties, including radiation and medical oncology,<sup>61</sup> critical care,<sup>62</sup> and internal medicine.<sup>63</sup> In the NP workforce, between 2012 and 2020, the proportion identifying as Hispanic/Latino(a)

increased by only 2 percentage points, from 3% to 5%, and the proportion identifying as Black/African American grew by 3 percentage points from 5% to 8%.<sup>29,64</sup> Other allied health professions, including physical therapy (PT) and occupational therapy (OT), have experienced similar racial/ethnic demographic changes. From 2004 to 2013, the percentage of White and Hispanic/Latino(a) PT students increased from 78.5% to 79.4% and 7.4% to 8.0%, respectively, while the percentage of PT students identifying as Black/African American decreased from 9.2% to 4.9%.<sup>65,66</sup> Considering the historical, political, and societal influences on the healthcare workforce for the last several decades, our study helps to shed light on changes in the PA workforce demographic distribution over time. This data is valuable for increasing the understanding of PA demographic shifts and may provide insights for potential initiatives and interventions related to recruitment and retention efforts to facilitate greater diversity in the profession.

Improving the diversity of the PA workforce will require multifactorial strategies. This includes increasing awareness of the PA profession among students starting early in their education (spanning from elementary to high school) and allocating funds for more educational pathway programs. Another important aspect is reducing educational debt for URiM providers and students by increasing opportunities for scholarships and grants. Mentorship support for URiM students is of critical importance throughout their educational journey. Additionally, reforming requirements, admissions, retention policies, and revising legislative policies are needed to optimize for a more diverse healthcare workforce. These approaches, in conjunction with institutional changes such as anti-racism and equity-minded reform, directed institutional funding, advancing justice, equity, diversity, and inclusion efforts, implicit bias training, and recruitment, retention, and advancement of faculty of color should be considered.<sup>67,68</sup> The work ahead involves the continued implementation of intentional interventions that can effectively address the lack of diversity in the health professions. Positive steps have recently been taken, with \$1.5 billion invested in grants to increase the size and diversity of the healthcare workforce.<sup>69</sup> The Allied Health Workforce Diversity Act of 2021 was introduced to implement additional educational programs to enhance the diversity of healthcare professions.<sup>70</sup>

## Limitations

Although our study captured robust data that provides detailed information on demographic trends in the PA workforce, several limitations are worth mentioning. First, race and ethnicity variables had considerable missing data from 1975 to the 1990s. For this reason, we were not able to analyze data and draw inferences about the racial and ethnic composition of PA cohorts for that period. Second, there was also missing data for race (4.0%) and ethnicity (4.0%) from 2000 to 2020. Additionally, for both race and ethnicity, PAs were provided a “prefer not to answer” option. For race, 4.4% chose not to respond, and for ethnicity, it was 3.8%. In our analyses, these responses were categorized as missing data; thus, the total proportion missing for race was 8.4%, and ethnicity was 7.8%. If URiM PAs were more likely to leave the race and ethnicity questions blank or indicate “prefer not to answer,” then our findings may have underestimated the true proportions of initially certified PAs during the 21-year period. Although our findings were consistent with prior reports and PA educational program statistics, this is a limitation. Despite these limitations, we provide historical trends and contemporary data that canvas the initially certified PA gender and age distribution spanning over 46 years and race, ethnicity, and URiM over 21 years.

## Conclusion

Racial and ethnic representation in the PA workforce is critically important to meet the healthcare needs of an increasingly diverse US population. A multifactorial approach is needed to diversify the PA workforce to enhance its capacity to serve the heterogeneous patient population that reflects the US society. Trends in the demographic composition of the PA workforce are important to document, and our findings deepen the understanding of the demographic trajectory of the PA workforce. Assessment and monitoring over time of the PA workforce demographic makeup using comprehensive NCCPA data may be beneficial for tracking progress and the effectiveness of diversification initiatives. These findings should be a benchmark to initiate more extensive analysis in comparing PA admissions, programs, and workforce data to identify any discrepancies that could further explain the scarcity of a diverse PA workforce. Future studies should be directed to examine PA workforce supply, such as provider socioeconomic backgrounds, cultures, sexual orientations, and religions represented in the

current workforce. Expanding and developing state and federal initiatives is imperative from a policy perspective. These initiatives should enhance accessibility and diminish obstacles to healthcare professional education, thereby diversifying the PA workforce. An increase in representation within the healthcare workforce not only fosters cross-cultural communication and reduces health disparities but also stimulates innovation, improves patient outcomes, and enhances the quality of healthcare delivery.

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