

Physician Assistants in Geriatric Medicine

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Abstract

Background

The US population is aging. As of 2020, over 16% of adults, or over 52 million people, are age 65 or older. With a population that is increasingly "gray," the nation is short of medical providers who specialize in geriatrics. The number of geriatrician physicians per 10,000 adults 65 years and older has decreased since 2000, and geriatricians were approximately 5,300 in 2018. Nurse practitioners in geriatric care are an order of magnitude smaller, numbering 598 in 2018. Considering that the projected geriatrician needs by 2030 will be over 30,000, the trajectory of geriatricians is becoming increasingly inadequate for the aging population. Physician assistants (PA) are another class of providers that are filling this need, although little is known about their distribution in geriatric patient care.

Methods

The National Commission on Certification of Physician Assistants databank provided the number and characteristics of PAs in geriatric medicine. PAs in geriatrics, their distribution, income, was compared to certified PAs. Analysis included descriptive statistics, Chi-Square and Wilcoxon Rank Sum tests for comparisons between PAs practicing in geriatrics vs. all other clinical specialties. For all analyses where a comparison between PAs in geriatrics and other specialties was made, a P value of .05 or less was considered statistically significant. Statistical analyses were conducted using R

Results

As of 2018, there were 794 certified PAs, or 0.8% of the PA workforce, specifically in geriatrics. This cadre has grown significantly 2010 both in total number (increasing over 400%) and as a percentage of the PA workforce. The median age of PAs in geriatrics is 45 years, and 79% are female. Almost half (46%) of the PA geriatric workforce are in extended care facilities or nursing homes - which differs from PAs in non-geriatric medicine specialties (0.3%). Another 8% work in federal government facilities with an additional 8% in rehabilitation facilities. In 2018, the median annual income for this PA cadre was \$106,680.

Conclusions

As the American population continues to age, the relative growth of PAs in geriatric medicine makes them a natural part of the solution to the projected physician geriatrician deficit.

Background

Increased life expectancy at birth, and declining birth rates are changing the demographics of America. At the end of the second decade of the 21st century, over 52 million people are age 65 or older, making up

16% of the population (USCB, 2018). According to the US Census Bureau, by 2030, all baby boomers will be 65 or older. This will enlarge the size of the older adult population such that one in every five residents will be “retirement age” (USCB, 2018). With a population that is increasingly “gray,” the nation faces a shortage of medical providers who specialize in geriatrics. The number of geriatrician physicians per 10,000 adults older than 65 years has decreased steadily since 2000, and the total geriatric physician workforce numbers were approximately 5,300 as of 2018 (Rowe 2016). Nurse practitioners (NPs) in geriatric care are an order of magnitude smaller, numbering 598 in 2018 (HRSA 2018). Considering that the projected geriatrician needs by 2030 will be over 30,000, the trajectory of geriatrician providers will become increasingly inadequate for the aging population (HRSA 2017).

To address this “geriatric imperative,” greater demands are placed on medical educators to train clinicians who can meet the needs of the aging population. The National Academy of Medicine recommends that comprehensive humanistic medical education in geriatrics be integrated throughout the curricula of medical schools along with PA and NP education programs (Rowe 2016). Based on their broad-based primary care medical training, PAs are ideally situated to help meet this increasing shortfall, but there is limited information on the trajectory and practice characteristics of the PA geriatric workforce. To address the limited literature on the subject, a comprehensive, descriptive profile of PAs in geriatric medicine was undertaken. The intent is to set the stage for needed investigation essential to inform research, clinical managers, and policy makers about this overlooked medical workforce.

Method

This study draws on the National Commission on Certification of Physician Assistants (NCCPA) *PA Professional Profile* data. These data contain specific demographic and self-reported practice information on every certified PA in the US (NCCPA 2020). The *PA Professional Profile* is an optional algorithm-driven survey consisting of a set of questions about the type and characteristics of the practice where the PA is employed (Glick 2013). Of the total number of certified PAs at the end of 2018 ($n = 131,152$), excluded were those who a) did not update their NCCPA profile in the last three years, or b) indicated they were not active clinically, or c) did not answer the practice specialty question. These criteria resulted in the exclusion of 24.8% of all certified PAs, for a final study population of 98,625. Data on the number and temporal trend of PAs in geriatrics, their distribution, income, and how they compare to the total population of certified PAs was extracted. Analysis included descriptive statistics as well as Chi-Square and Wilcoxon Rank Sum tests, as appropriate, for comparisons between PAs practicing in geriatrics vs. all other clinical specialties. For all analyses where a comparison between PAs in geriatrics and other specialties was made, a P value of .05 or less was considered statistically significant. Statistical analyses were conducted using R (R Core Team 2020. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>).

Results

At year's end 2018, 794 certified PAs in the U.S. self-identified as working in geriatrics, representing 0.8% of the study population (n = 98,625). Of note, the proportion of PAs working in geriatrics has grown by over 260% since 2013, while the absolute number of PAs working in geriatrics has increased by 470% (Fig. 1).

The PA geriatric workforce is, on average, older than PAs outside of geriatric medicine. Over 62% of PAs in geriatrics are < 49 years old (Fig. 2), with a median age of 45. However, geriatrician PAs are underrepresented among the youngest PA age band compared to PAs in all other specialties (< 30 years: 6.8% PAs in geriatrics versus 11.3% non-geriatric specialties), and overrepresented among the oldest PA age groups (60 + years: 15.7% geriatrician PAs versus 8.4% non-geriatrician PAs).

The PA geriatric workforce is composed of a higher percent of female providers than the remainder of the PA workforce. Approximately 79% of PAs in geriatrics are female as compared to 68% of PAs in non-geriatrics specialties (Fig. 3).

When comparing years of practice between certified geriatrician PAs and all certified PAs, on average, PAs in geriatrics tend to have been in practice longer (Table 1). Among recently certified PAs (1–5 years), the percent in geriatrics is less than that of all other specialties (18.3% vs. 28.6%, respectively). For PAs licensed for over 15 years, however, there is a significantly larger percent practicing in geriatric medicine relative to all other specialties (Table 1).

Table 1
Years Since Certified –PAs in geriatrics versus non-geriatric specialties 2018

Table 1: Years Since First Certified -- Physician Assistants in Geriatrics vs Non-Geriatrics						
Years certified	Certified PAs in Geriatrics		PAs Not in-Geriatric Medicine		p-value	
	Number	Percent	Number	Percent		
1–5	145	18.3	27929	28.6	< 0.001	
6–10	173	21.8	23620	24.2		
11–15	141	17.8	17378	17.8		
16–20	150	18.9	14197	14.5		
21–25	89	11.2	7651	7.8		
26–30	41	5.2	2903	3.0		
31–35	31	3.9	2329	2.4		
36–40	17	2.1	1399	1.4		
> 40	7	0.8	357	0.4		
Mean (SD)	14.6 (9.20)		11.9 (8.58)			< 0.001
Median	13		10			

The principal clinical practice setting of PAs employed in geriatric medicine differs substantially from PAs in non-geriatrics specialties (Fig. 4). Almost half (46%) of PAs who report working in geriatrics identify their primary location of employment as extended care facilities or nursing homes, while less than one percent (0.3%) of PAs in non-geriatric specialties work in such settings. Another 23% are office-based in private practices – which is less than the 41% PA in all other specialties self-report this employment setting. Additionally, 8% of PAs in geriatrics work in federal government facilities (such as the Department of Veterans Affairs or federal prison), and an additional 8% of PAs in geriatrics work in rehabilitation facilities.

The distribution of geriatric PAs by state is shown in Fig. 5. The five states with the largest numbers of geriatrician PAs are – FL, CA, CO, NY, TX.

Self-report income from PAs in geriatrics was compared to PAs in all other specialties (Fig. 6). The mean, and median incomes are centered in their distribution with median income of PAs in geriatrics at \$106,680 versus all PAs at \$115,000 and a mean of \$105,000 versus \$110,567, respectively.

Discussion

This is the first study to describe the demographic and occupational profile of PAs working in geriatric medicine. At year's end 2018, 0.8% of the PA workforce was practicing in geriatrics, with significant growth (260%) in this specialty practice area over a six-year span. During this time, the absolute number of PAs in geriatrics more than quadrupled as well. The median age of the 2018 PA geriatric cohort is 45 years, and 79% are female.

The trajectory of PA growth in geriatrics is in an acceleration phase, suggesting that this medical specialty is in strong demand. This growth is not matched by physicians and nurse practitioners (HRSA 2017; HRSA 2018). For example, the physician geriatrician workforce is anticipated to grow just 17.5% by 2025, to a total of 6,230, with a projected deficit of physician geriatrician providers of 26,980 by 2025 (HRSA, 2017). Nor is it matched by change in the PA workforce during this same time period, which is projected to increase by 31% (2016–2026) (BLS 2020). Similar to physician geriatricians, the majority of PAs who work with older adults are female (NCCPA 2018).

An important practice distinction for PAs in geriatric medicine is their presence in long term care facilities – almost half (46%) identify working in an extended care or nursing home facility. Less than one percent of PAs in all other specialties list their practice setting as a nursing home or similar care institution. Another 8 percent work in rehabilitation localities, compared to < 1% of PAs in non-geriatrics specialties. This is similar to the geriatric nurse practitioner workforce, which is also concentrated in long term care facilities but smaller in number than PAs in geriatric medicine (HRSA 2019).

Knowing the characteristics of the PA geriatric workforce contributes to understanding how medical care is delivered to an aging American population. Such medical provider information is needed in planning for a society with a growing number and proportion of older adults, as well as the characteristics of those focused on the care of the aged. This new knowledge holds implications for health workforce planning, deployment projections, and estimating clinical career productivity.

In summary, the American physician assistant movement is in a growth phase, and geriatrics is one of the 70 or more medical and surgical roles where they are represented (NCCPA 2018). Their numbers are significant, and their employment settings suggest where high concentrations of older adults are located.

Limitations and Strengths

This study draws upon data from NCCPA's *PA Professional Profile*, which is the most comprehensive national collection of workforce data on all certified PAs. The use of self-report data is always subject to misinterpretation of the question and the option of not completing the algorithm-driven questionnaire embedded in the NCCPA secure portal (Barnhill 2017). However, survey compliance and validation attestation research suggest the NCCPA data is reliable and overlaps well using federal data comparisons (Smith 2020). This is reassuring that the reported results are valid and representative. Future research could triangulate these findings with national data rooted in state and federal agencies, such as the US Census, Bureau of Labor Statistics, American Community Survey, and others.

Conclusion

Understanding PA characteristics and employment settings is an important foundation in how this profession is responding to medical labor supply and demand forces. In this undertaking, a six-year trend analysis revealed that the workforce of PAs in geriatrics is growing at an unprecedented rate and represents a needed source of expertise in American medical care delivery. That the majority are working in extended care facilities, and private physician offices suggests they are deployed where the greatest older adult medical interface is occurring. With this foundation of the contemporary PA geriatric workforce, the next step is to understand the economics of such labor, outcomes of care, relationships with other members of the medical team, and patient satisfaction.

Abbreviations

CA

California

CO

Colorado

FL

Florida

NCCPA

National Commission on Certification of Physician Assistants

NP

Nurse practitioner

NY

New York

PA

Physician assistant or physician associate

TX

Texas

US

United States of America

Declarations

Ethics approval and consent to participate: The University of Utah Institutional Review Board determined this is exempt from review since the data is anonymous and not detailed at the individual level.

Consent for publication: Our manuscript does not contain any individual person's data in any form (including any individual details, images or videos).

Availability of data and materials: The data that support the findings of this study are available from the NCCPA, and some restrictions may apply to the availability of these data, which were used under license for the current study. A minimal dataset (anonymous to individuals) is available for analysis and was used during the study.

Competing interests: The authors declare that they have no competing interests.

Funding (Financial Disclosure): None.

Author Contributions (Roles): Drs Kozikowski, Honda, and Hooker had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

- **Acquisition, analysis, or interpretation of data:** TJ, AK, FS, RH had full access to the data and contributed to the analysis.
- **Administrative, technical, or material support:** TJ, AK, FS, RH had full access to the administrative information and contributed to the technical and material support.
- **Statistical analysis:** AK & TH provided statistical analysis.
- **Design analysis:** RH & TH designed the project and the analysis
- **Interpretation of results:** TJ, AK, FS, RH contributed equally to the interpretation of the results.

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Author Information: upon request.

Consent for Publication: agreed by all authors.

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Figures

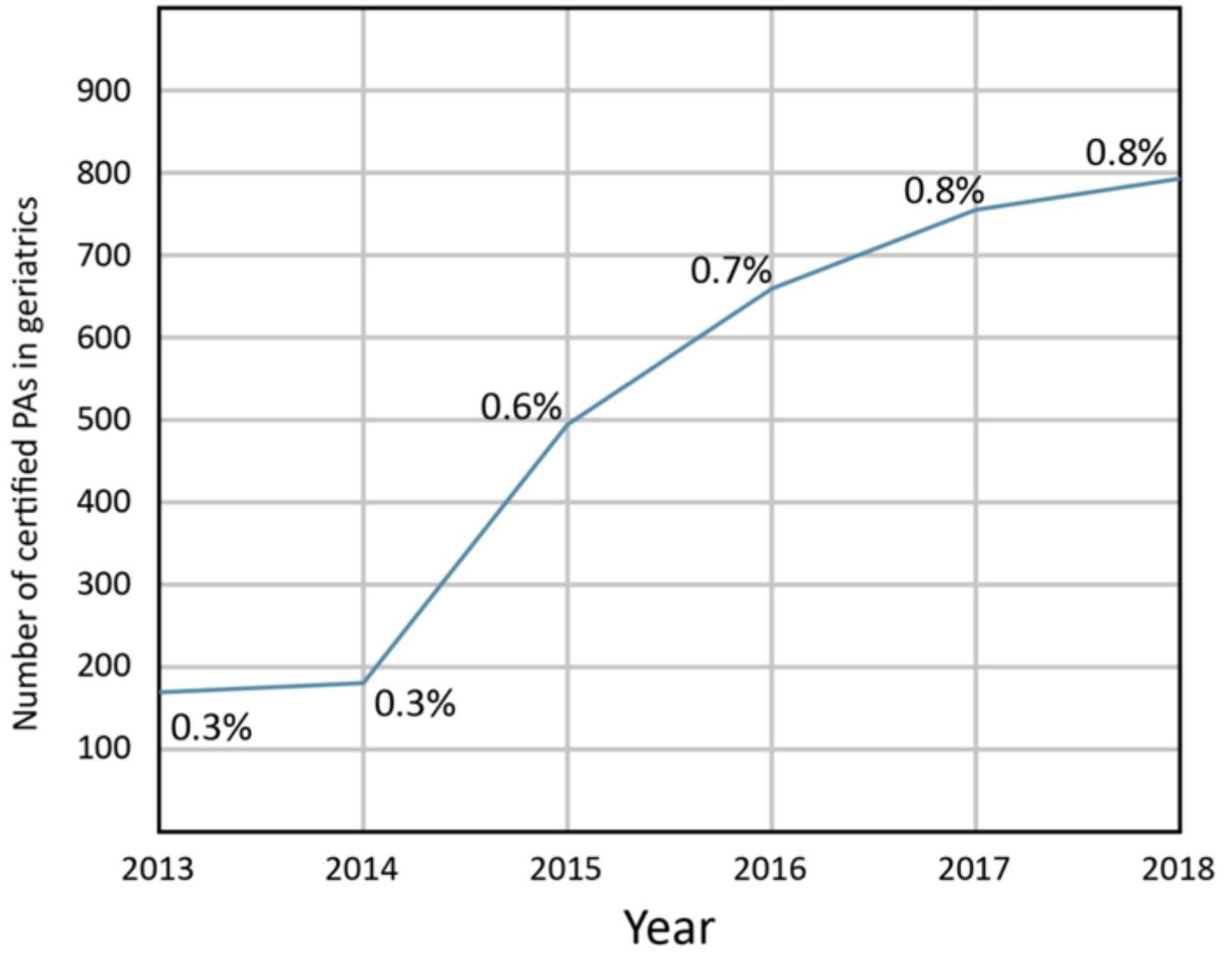


Figure 1

Growth of PAs in Geriatric Medicine

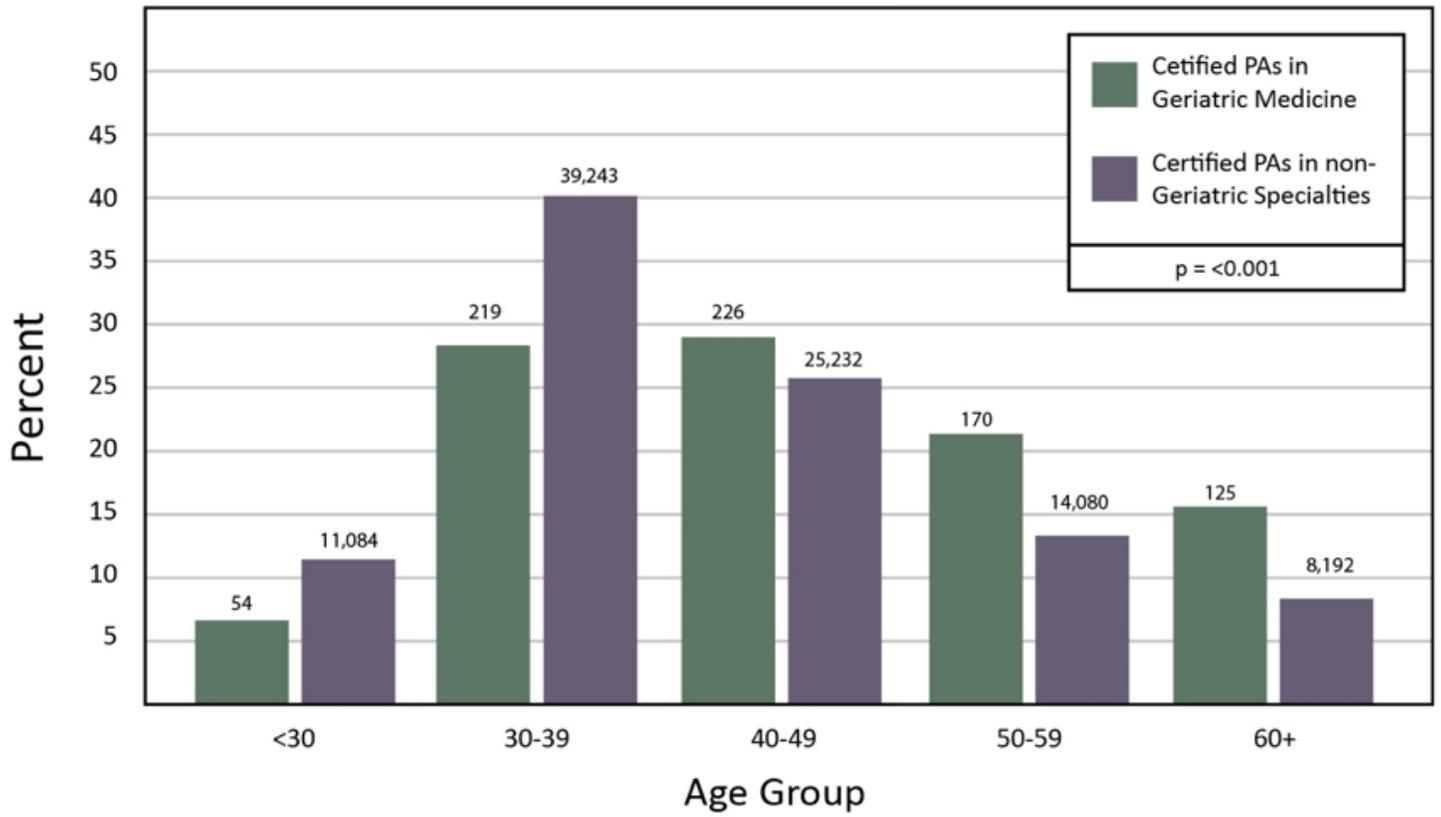


Figure 2

Age of PAs in Geriatric Medicine vs. non-Geriatric Medicine Specialties (2018)

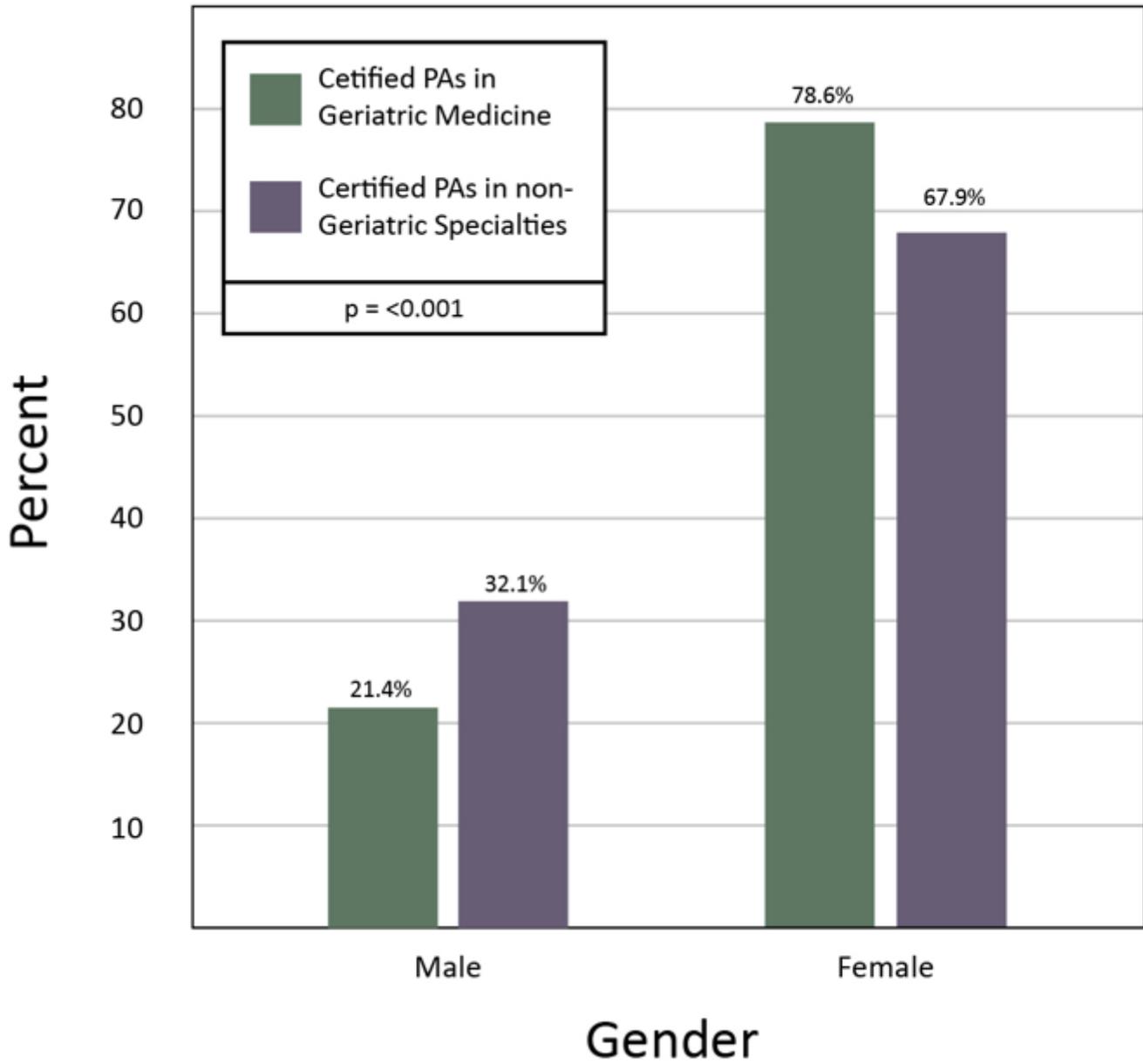


Figure 3

Gender of PAs in Geriatric Medicine vs. non-Geriatric Medicine (2018)

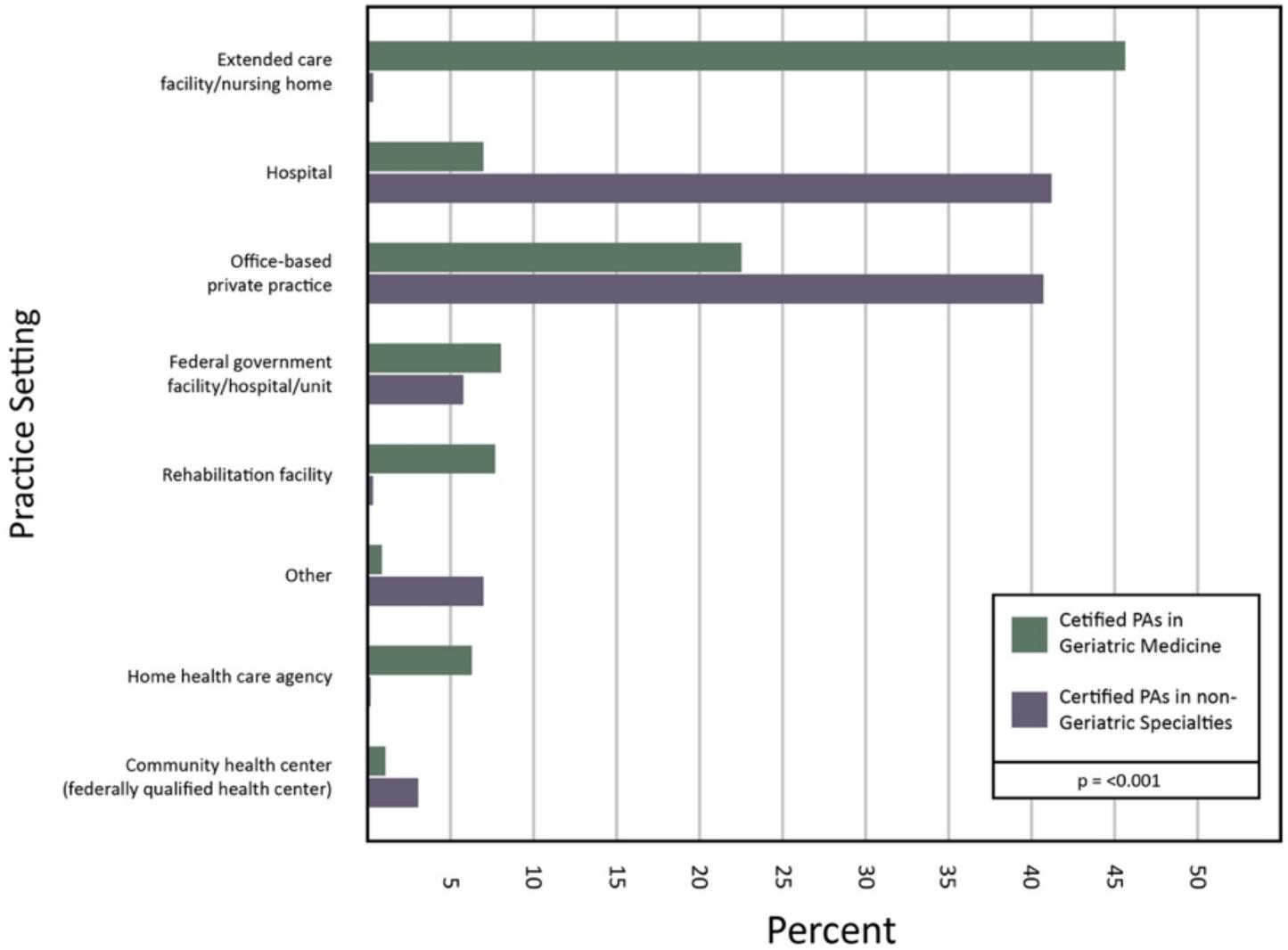


Figure 4

Practice Setting of Geriatric PAs vs. Non-Geriatrics Specialties (2018)

PA's in Geriatric Medicine

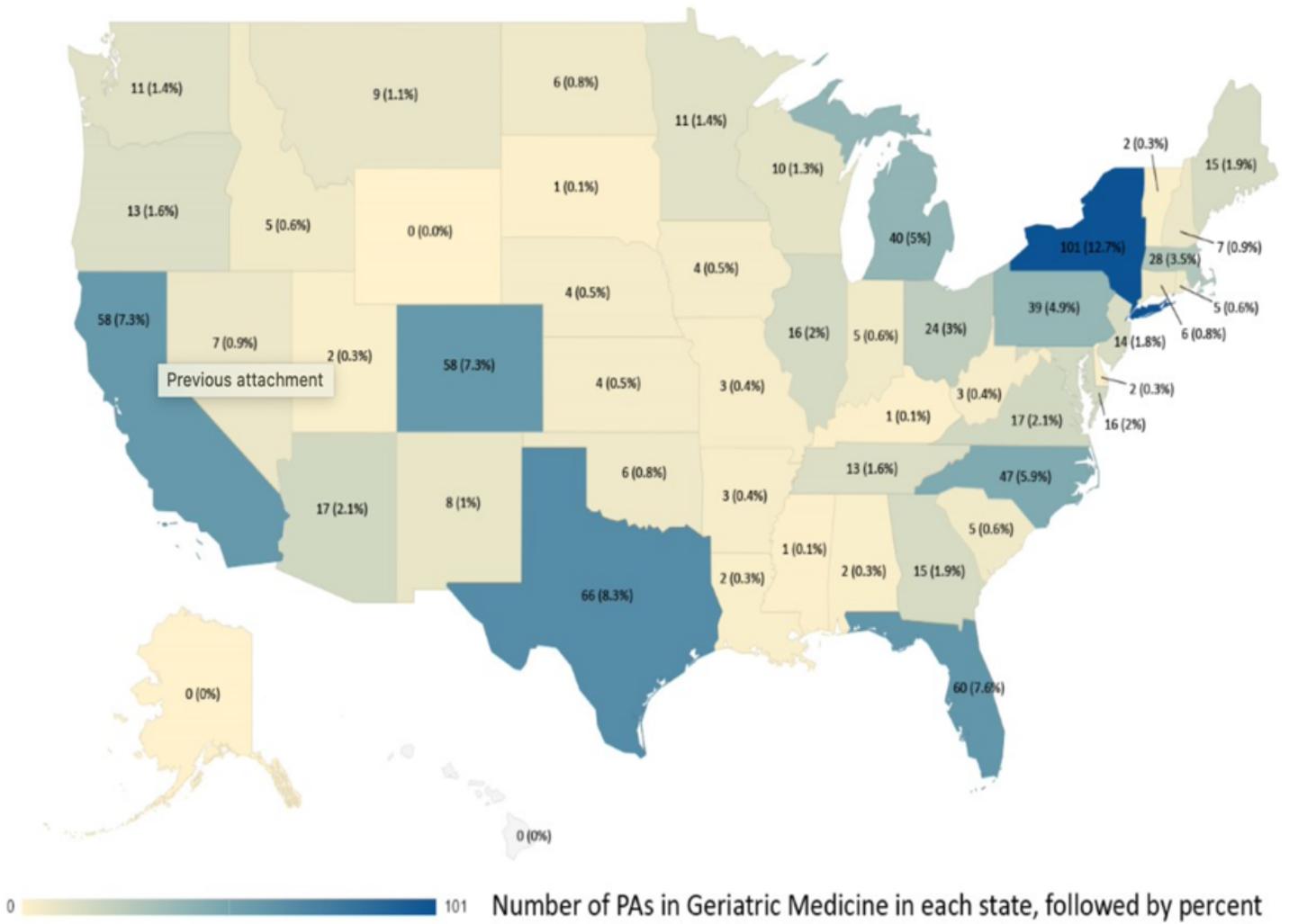


Figure 5

Geographic Distribution of PAs in Geriatric Medicine (2018)

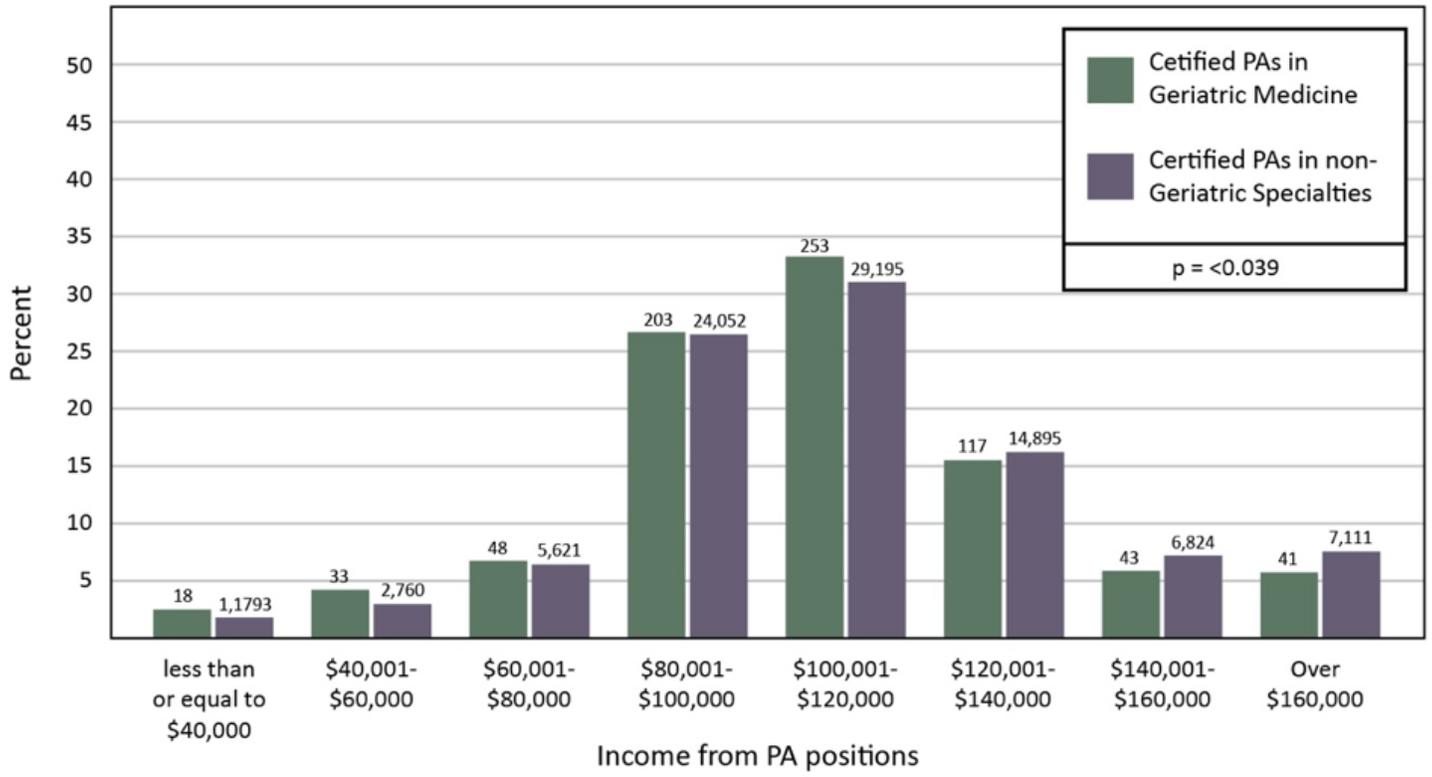


Figure 6

Self-report income from PAs in geriatrics was compared to PAs in all other specialties