Public Perceptions of Physician Assistants

Report from 2018 and 2022 Surveys

June 2022

Contents

About NCCPA

The National Commission on Certification of Physician Assistants (NCCPA) is the only certifying organization for PAs in the United States. Established as a not-for-profit organization in 1974, NCCPA is dedicated to providing certification programs that reflect standards for clinical knowledge, clinical reasoning, and other medical skills and professional behaviors required upon entry into practice and throughout the careers of PAs. All U.S. states, the District of Columbia, and the U.S. territories have decided to rely on NCCPA certification as one of the criteria for initial licensure or regulation of PAs. More than 185,000 PAs have been certified by NCCPA since 1975.

For more information about NCCPA, visit our website at **www.nccpa.net**.

Executive Summary and Key Findings

The National Commission on Certification of Physician Assistant's (NCCPA's) objectives for developing and disseminating this report were twofold. First, we sought to provide comprehensive descriptive findings on public perceptions of Physician Assistants (PAs) from two separate national online surveys with data collected in late 2018 and the beginning of 2022. Second, and equally important, was to quantify any potential changes in perspectives occurring from 2018 to 2022 and set the stage for future tracking of trends over time. In this report, we provide a detailed characterization of results categorized into five major themes:

1) Factors Important in Selecting a Provider
Of the factors we assessed, results were consistent for 2018 and 2022. In both years, the top factors rated as important by respondents were medical license, whether the provider participates in their insurance plan, and medical certification. Conversely, among the least important were online reviews, recommendations from others, and type of provider (physician, PA, NP). Although reviews provided on the internet were not rated as highly as the other factors, our analysis showed that they increased significantly from 43.1% in 2018 to 48.2% in 2022, equating to an 11.8% change.

2) Knowledge of PAs
Knowledge of PAs was assessed in two distinct ways. The first was self-rated knowledge, which was evaluated by simply asking respondents if they knew what a PA is. We observed a statistically significant increase in responding in the affirmative between 2018 and 2022 (80.5% vs. 85.5%, respectively, a 6.2% increase). The second was by measuring knowledge of PAs more objectively. This entailed utilizing a variety of statements on what PAs do when rendering medical care and asking participants if each was true, false, or if they were unsure. For the nine items used in both survey years, the pattern of responses mostly showed an uptick from 2018 in the proportions of participants who correctly responded; however, only one was statistically significant. Correctly selecting true that PAs order and interpret diagnostic and lab increased by 6.7%.

When comparing self-rated knowledge and results from the true, false, not sure items, our data shows that a higher proportion reported knowing what a PA is vs. correctly answering the more objective items. The majority of respondents confirmed knowing what a PA is, but only 80% answered all nine questions about a PA's scope of practice correctly.

3) Experiences and Perspectives Toward PAs, Physicians, and NPs
The same proportion in 2018 and 2022 noted ever being treated by a PA (66.7%). Of those who reported receiving care from PAs, there was an increase in being very satisfied (52.3% vs. 55.3%) and very likely to recommend a friend or family see a PA for their medical needs (44.5% vs. 49.5%). However, these differences did not reach statistical significance. In contrast, being very likely to see PA again for medical needs significantly increased from 55.4% in 2018 to 60.8% in 2022 (9.7% change). Of participants who said they were never treated by a PA in 2018,

30.6% expressed they definitely would be willing; although not statistically significant, this proportion increased to 36.7% in 2022. In terms of quality of experience with PAs, physicians, and NPs, the highest proportion indicated having a positive experience, albeit the proportions for no experience with PAs and NP were higher than for physicians.

4) Perspective Regarding What PAs Should Do to Maintain Certification

The question on what PAs should do to maintain certification was slightly modified in the 2022 survey from that utilized in 2018. For this reason, a direct comparison between the two survey years cannot be made. The highest proportion (39.8%) in 2018 specified that PAs should be required to complete continuing medical education credits and pass an exam on a periodic basis. In 2022, the highest percentage (44.9%) held the view that PAs should participate in an ongoing process that includes medical education and assessment of medical knowledge.

5) Beliefs and Intentions Regarding PAs

Nine items with a strongly agree to strongly disagree, and not sure scale were used to evaluate public beliefs and intentions regarding PAs. The top three in both years (highest proportion of participants strongly agreeing/agreeing) were "I believe PAs should continually learn about new medical information," "I believe PAs should be assessed regularly on their medical knowledge," and "I believe PAs should be licensed by state medical boards." Statistically significant differences were observed on the responses to two items across years. The first was believing PAs should be assessed regularly on their medical knowledge—the proportion agreeing increased from 80.2% in 2018 to 84.3% in 2022. The second was related to intentions regarding PAs. In 2018, 42.7% reported intending to see a PA for medical needs. This proportion increased to 49.2% in 2022, a 15.2% change. Responses in both years show that the majority of the public surveyed believes PAs are well educated in medicine and have more time to communicate with patients about medical issues.

Summary

These results, viewed in the context of all responses, demonstrate that the public has favorable views and perceptions of PAs. This includes having positive quality experiences with PAs, being satisfied with the medical care rendered, and recommending PAs to others. The public regards PAs as well educated in medicine and having more time to communicate about medical issues. Particularly important was that we observed an uptick from 2018 in the proportion of the public reporting to know about PAs, being likely to see PAs again, and intending to see PAs for medical needs. Although there has been progress with how much the public knows about PAs, our analyses also revealed critical knowledge gaps regarding the types of medical services and procedures PAs provide. Without mitigation, these knowledge gaps could have implications for the types of medical care patients seek from PAs. The work ahead involves proactive, deliberate, and targeted outreach efforts to correct misperceptions and raise awareness of PAs' essential roles and contributions to U.S. health care.

Introduction and Background

NCCPA developed and launched a national survey of the public initially in 2016. That survey assessed three major domains—namely, public perceptions regarding what factors are important when choosing a provider, quality of experiences with physician assistants (PAs), physicians, and nurse practitioners (NPs), and perspectives regarding PA maintenance of certification. Important findings from the data gathered were shared during the 2019 AAPA (American Academy of Physician Associates) conference (1).

Two years later, in 2018, the questionnaire utilized in 2016 was substantially enhanced with the addition of new questions. We incorporated more items exploring public experiences with PAs and questions targeting knowledge, beliefs, and intentions of seeing PAs for medical needs. NCCPA research staff shared findings from specific domains explored in the 2018 survey at the 2020 AAPA conference (2). Additionally, we published results of in-depth inferential analyses in peer-reviewed journals exploring public knowledge and beliefs regarding licensure, certification, and medical education of PAs (3) and what factors matter most to patients when selecting a provider (4). A third study using the 2018 data investigated public experiences and perspectives on medical care provided by PAs. The manuscript is currently in peer review and being considered for publication.

When deliberating changes for the 2022 version of our public perception survey, it was decided to append more knowledge questions about PAs. This included the types of clinical services PAs render and procedures they perform. However, with the exception of the knowledge items, we implemented minimal modifications from the 2018 questionnaire to better assess trends. Although key findings from the 2018 survey were shared through conference presentations and peer-reviewed articles, the results of all questions used have not been disseminated in a comprehensive report format. Additionally, data collection and analysis of the 2022 survey were recently completed and thus not yet disseminated.

PAs have been providing care to patients since the 1970s and substantially contributing to the U.S. health care delivery capacity. Research demonstrates that PAs provide accessible, affordable, and high-quality care (5-8). However, only two national survey efforts conducted almost a decade ago explored public perspectives regarding PAs (9, 10). Thus, the overall purpose of this report is to provide complete descriptive results from both the 2018 and 2022 surveys and explore trends. Our report can help shed light on current public perceptions of PAs and set the stage for future tracking of trends over time.

This report reflects the culmination of public perception data collected in two years (2018 and 2022), provides information on the methodology used, descriptive findings of all questions, and comparisons to quantify potential changes between the years. Results are presented in six sections:

1. Participant characteristics and distribution by state for respondents completing the survey each year. This section also juxtaposes survey respondents and the general U.S. population on key demographics;
2. Findings on the perceived importance of eleven distinct factors and other patients may consider when selecting a practitioner for themselves or their family;
3. How much the public knows about PAs, including self-rated knowledge and results from multiple true, false, and not sure items;
4. Experiences and perspectives toward PAs, physicians, and NPs;
5. Perspectives on what PAs should do to maintain certification; and
6. Beliefs and intentions regarding PAs.

Methods

Survey Instruments

The 2018 survey was adapted from the 2016 version and further iteratively developed based on a comprehensive literature review. The primary difference in the most recent 2022 survey compared with 2018 is related to the true, false, and not sure knowledge items regarding PAs. The following item from 2018, "PAs perform procedures and assist in surgery," was changed to "PAs assist in surgery." Instead of having a general statement, "PAs perform procedures," we opted for adding items reflecting specific types of procedures in the 2022 version. We added the following knowledge items: "PAs perform procedures such as setting bones," "PAs perform procedures such as suturing (stitches)," "PAs provide telemedicine services," and "PAs manage patients infected with the Coronavirus (COVID-19)." One question in the 2018 and 2022 surveys explored public opinion regarding what PAs should be required to do to maintain certification. One of the five response options in the 2018 version was slightly revised in the 2022 survey. In 2018, the response option was phrased the following way, "PAs should participate in ongoing medical education that includes assessment questions/feedback for each question," while in 2022, it was "PAs should participate in an ongoing process that includes medical education and assessment of medical knowledge." The question stem was also changed in the 2022 version to provide respondents with more context regarding the requirements currently in place for maintaining certification. The question stem in the 2018 version was as follows, "Select one of the following statements that best represents your opinion on what PAs should be required to do in order to maintain their certification. To maintain certification..." while the 2022 version read, "Currently, to maintain certification, PAs must complete continuing medical education credits and pass a medical knowledge exam. Select one of the following statements that best represents your opinion on what PAs should be required to do in order to maintain their certification. To maintain certification…".

At the beginning of both surveys, we provided a brief description of the study, informing participants that their information would be confidential and reported in aggregate. After reading the description, participants could confirm their consent to participate. Inclusion criteria required individuals to have seen a medical provider or decided about one for a dependent in the past two years. Healthcare providers or individuals with family members who are providers were excluded from participating. The next section of both surveys relied on screening questions and recruitment quotas to ensure the samples would approximate the U.S. population's demographic profile in terms of gender, race/ethnicity, education, and geographic setting. No additional individuals were asked to participate in the surveys when quotas were met for each demographic question.

After the demographic questions, participants were asked to rate eleven factors in terms of importance when selecting a provider for themselves or their families. We used a forced-choice format such that participants were asked to choose "important," "not important," or "not sure"

rather than check all that apply. This survey design element was included, given that the forced-choice format has been demonstrated to foster deeper item processing (11). Another design element implemented in our survey was counterbalancing items within a section of the survey to eliminate response order effects (e.g., response to the initial item impacting response to the second item) (12). This procedure was employed in two sections of the survey—the first was with items assessing factors important in selecting providers.

The next section of the survey explored participants' self-rated knowledge of PAs (i.e., do you know what a PA is), followed by the true, false, not sure knowledge items. Counterbalancing was also applied to this section. After being presented with the knowledge items about PAs and prior to being asked about experiences with PAs, certification maintenance requirements, as well as beliefs, and intentions, participants were provided the explanations for correct responses.

To ensure quality responses, we embedded an attention check item whereby participants were asked, "From the options below, please select neither agree nor disagree" in 2018 and "From the options below, please select neutral" in 2022. All respondents who failed the attention check (did not follow instructions and select the appropriate response) were excluded from the final samples.

Data Collection and Analysis

After IRB approvals, the 2018 and 2022 questionnaires were programmed and deployed using the Qualtrics survey platform. Quota samples for both cross-sectional online surveys were obtained from Qualtrics, which maintains a panel with more than 90 million respondents. Data collection for the 2018 survey occurred between late November and early December, with 1,388 completed responses. Slightly more respondents completed the 2022 survey (N=1,521) in January of that year. Each survey took approximately 10 minutes to complete.

Analyses consisted of descriptive statistics (counts and percentages) for all questions in the 2018 and 2022 surveys. We calculated percent change for all items that were used in both years. Chi-square tests were used to detect statistically significant differences by survey year, while Cramer's V was employed as a measure of effect size to determine the magnitude of differences between 2018 and 2022 for each item. *P* less than 0.05 was considered statistically significant.

Results

Section 1: Comparisons Between Participant Characteristics and Distribution by State

Both surveys relied on quota sampling to approximate the proportions in demographics of the U.S. population. As can be seen in Table 1, there were no significant differences between 2018 and 2022 participants in terms of gender ($p=0.222$) and ethnicity ($p=0.571$), and proportions were similar to that reported by the U.S. Census Bureau (13). U.S. Census data shows that in 2021 50.8% were female, and 18.5% were Hispanic/Latino (13). Although statistically significant differences were found by year for age and race, these were small, as evidenced by Cramer's V being less than 0.2. Moreover, the racial distribution of participants in both years was similar to that described by U.S. Census, whereby 76.3% were white, 13.4% African American, 5.9% Asian, 1.3% American Indian or Alaska Native, and 0.2% Native Hawaiian or Pacific Islander (13).

Table 1. Age, Gender, Race, and Ethnicity by Survey Year: 2018 vs. 2022

Demographic Characteristics	Year 2018 (N=1388) n	2018 %	2022 (N=1521) n	2022 %	% Change	p-value	Cramer's V
Age							
18-24	168	12.1%	134	8.8%	-27.3%	<0.001	0.131
25-34	248	17.9%	256	16.8%	-6.1%		
35-44	234	16.9%	235	15.5%	-8.3%		
45-54	245	17.7%	431	28.3%	59.9%		
55-64	230	16.6%	220	14.5%	-12.7%		
65+	263	18.9%	245	16.1%	-14.8%		
Gender							
Male	671	48.4%	694	46.1%	-4.8%	0.222	0.023
Female	715	51.6%	810	53.9%	4.5%		
Race							
American Indian or Alaskan Native	54	3.9%	21	1.4%	-64.1%	<0.001	0.087
Asian	82	5.9%	90	5.9%	0.0%		
Black or African American	185	13.3%	195	12.8%	-3.8%		
Native Hawaiian or Pacific Islander	8	0.6%	3	0.2%	-66.7%		
White	1005	72.4%	1155	75.9%	4.8%		
Other	54	3.9%	57	3.7%	-5.1%		
Ethnicity							
Non-Hispanic/Latino	1167	84.1%	1267	83.3%	-1.0%	0.571	0.011
Hispanic/Latino	221	15.9%	254	16.7%	5.0%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.

There were no significant differences when evaluating potential differences between respondents in 2018 and 2022 regarding education and self-rated health (Table 2). In terms of education, the U.S Census shows that 32.9% of the U.S. population has a bachelor's degree or higher (13), which is similar to our survey participants in 2018 and 2022 (34.3% and 34.9%, respectively). We did detect differences by year for urbanicity, the number of provider visits in the past 12 months, and health insurance status; however, all had Cramer's V of less than 0.2, suggesting minor differences in magnitude. The proportion of participants in our surveys with health insurance was similar to 91.4% provided in the 2020 census data (14).

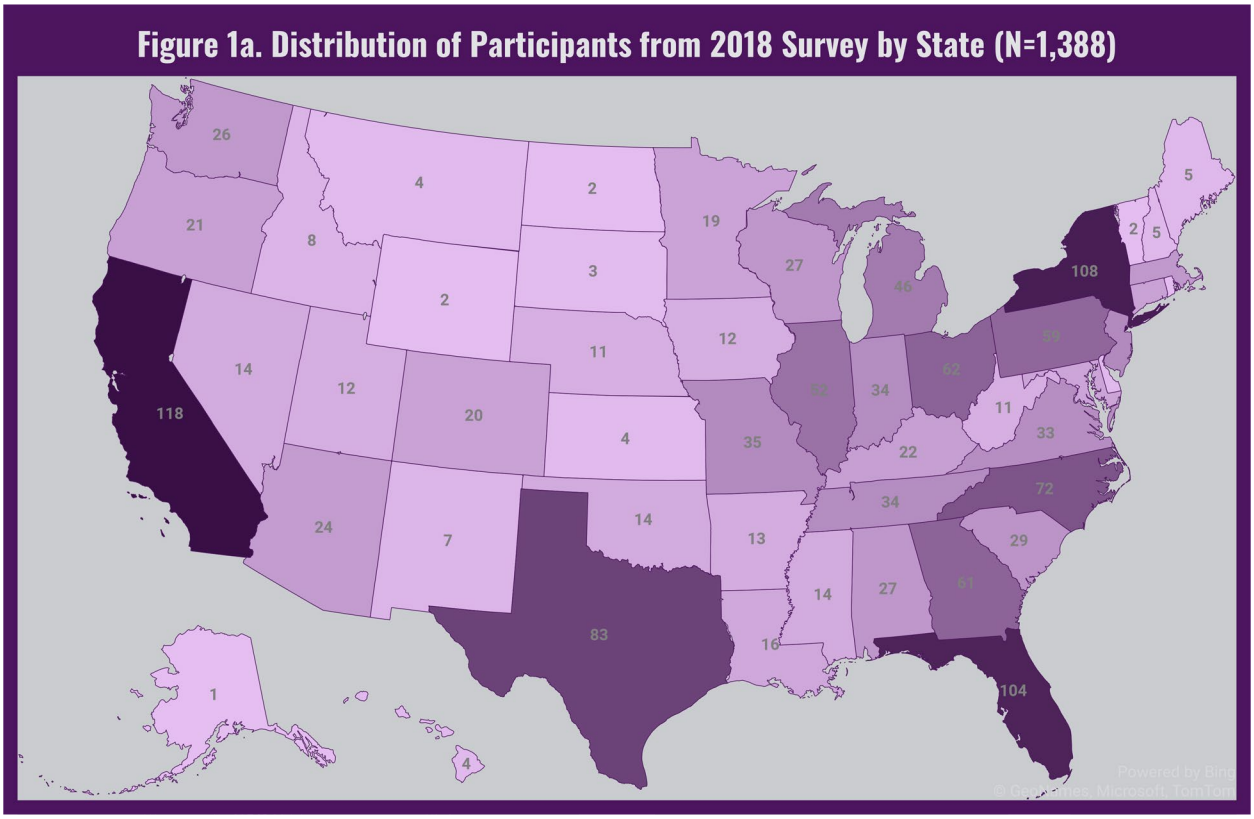
Table 2. Education, Rural-Urban Setting, Self-Rated Health, Number of Provider Visits in Last 12 Months, and Health Insurance Status by Survey Year

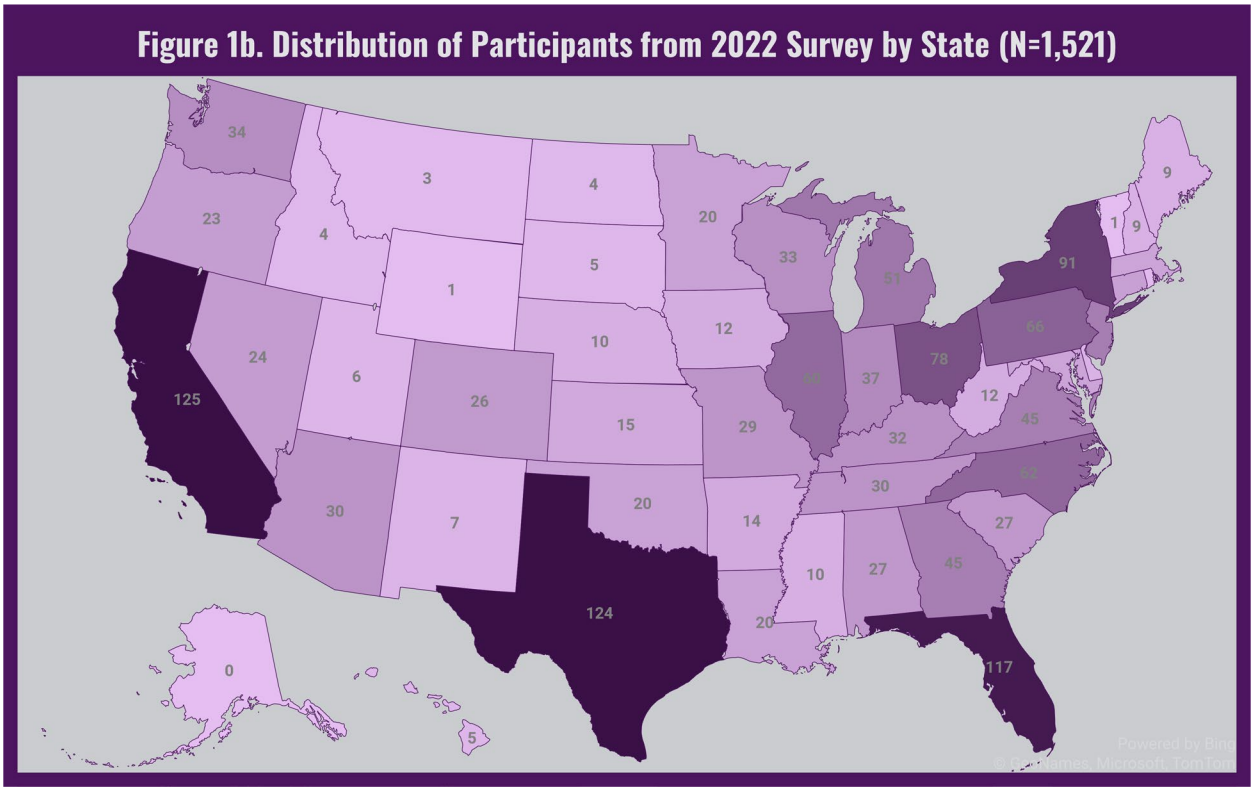
Demographic Characteristics	Year 2018 (N=1388) n	2018 %	2022 (N=1521) n	2022 %	% Change	p-value	Cramer's V
Education							
No high school diploma	128	9.2%	102	6.7%	-27.2%	0.174	0.059
High school graduate	406	29.3%	439	28.9%	-1.4%		
Some college, but no degree	238	17.1%	275	18.1%	5.8%		
Associate's degree	140	10.1%	174	11.4%	12.9%		
Bachelor's degree	294	21.2%	343	22.6%	6.6%		
Master's degree	126	9.1%	142	9.3%	2.2%		
Professional degree	28	2.0%	22	1.4%	-30.0%		
Doctoral degree	28	2.0%	24	1.6%	-20.0%		
Rural-urban setting							
Rural	387	27.9%	359	23.6%	-15.4%	0.022	0.051
Suburban	652	47.0%	776	51.0%	8.5%		
Urban	349	25.1%	386	25.4%	1.2%		
Self-rated health							
Excellent	184	13.3%	184	12.1%	-9.0%	0.550	0.027
Good	783	56.4%	897	59.0%	4.6%		
Fair	354	25.5%	368	24.2%	-5.1%		
Poor	67	4.8%	72	4.7%	-2.1%		
Visits to provider in the last 12 months							
0	47	3.4%	63	4.1%	20.6%	<0.001	0.086
1-5	950	68.4%	1123	73.8%	7.9%		
6-10	236	17.0%	231	15.2%	-10.6%		
11-15	93	6.7%	57	3.7%	-44.8%		
16 and over	62	4.5%	47	3.1%	-31.1%		
Health insurance status							
Does not have health insurance	137	9.9%	104	6.8%	-31.3%	0.003	0.055
Has health insurance	1251	90.1%	1417	93.2%	3.4%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.

Figure 1a illustrates the distribution of the 1,388 survey participants by state from 2018, while figure 1b depicts the 1,521 respondents from 2022. In both surveys, participants were well represented across the U.S. For the 2018 survey, respondents were from all 50 states and

Washington D.C. In 2022, Alaska was the only state where we did not have any survey participants. Moreover, the states with the most respondents in both years included California, Texas, Florida, and New York. These states are also the ones with the largest number of PAs (15).





Section 2: Factors Important in Selecting a Provider

The initial section of the 2018 and 2022 surveys explored what factors are important to participants when searching for a provider for their own or their family's medical needs. In both years, the top factors rated as important by respondents were medical license, whether the provider participates in their insurance plan, and medical certification (Table 3). Only reviews provided on the internet (p=0.008) and other factors (p=0.001) significantly differed by survey year. As illustrated in Figures 2a and 2b, the proportion reporting online reviews to be important changed from 43.1% in 2018 to 48.2% in 2022, which equates to an 11.8% increase. Selecting other to be important decreased by 12.4%. An open-ended text section allowed participants to explain "other" as the response. For both survey years, the most frequent answers included "bedside manner," "attitude," "friendliness," "demeanor," "takes their time with the patient," and "genuinely cares and listens."

Table 3. Factors Important in Selecting a Provider by Survey Year

Factors		Year 2018 (N=1388) n	2018 (N=1388) %	2022 (N=1521) n	2022 (N=1521) %	% Change	p-value	Cramer's V
Medical license	Important	1280	92.2%	1407	92.5%	0.3%	0.226	0.032
	Not important	58	4.2%	74	4.9%	16.7%		
	Not sure	50	3.6%	40	2.6%	-27.8%		
Participates in your insurance plan	Important	1244	89.6%	1390	91.4%	2.0%	0.110	0.039
	Not important	89	6.4%	91	6.0%	-6.3%		
	Not sure	55	4.0%	40	2.6%	-35.0%		
Medical certification	Important	1248	89.9%	1353	89.0%	-1.0%	0.484	0.022
	Not important	91	6.6%	117	7.7%	16.7%		
	Not sure	49	3.5%	51	3.4%	-2.9%		
How quickly you can be seen	Important	1203	86.7%	1332	87.6%	1.0%	0.639	0.018
	Not important	141	10.2%	149	9.8%	-3.9%		
	Not sure	44	3.2%	40	2.6%	-18.8%		
Office location	Important	1125	81.1%	1246	81.9%	1.0%	0.812	0.012
	Not important	218	15.7%	230	15.1%	-3.8%		
	Not sure	45	3.2%	45	3.0%	-6.3%		
Cost	Important	1116	80.4%	1214	79.8%	-0.7%	0.234	0.032
	Not important	216	15.6%	260	17.1%	9.6%		
	Not sure	56	4.0%	47	3.1%	-22.5%		
Amount of education	Important	1068	76.9%	1142	75.1%	-2.3%	0.390	0.025
	Not important	227	16.4%	278	18.3%	11.6%		
	Not sure	93	6.7%	101	6.6%	-1.5%		
Years of experience	Important	1012	72.9%	1131	74.4%	2.1%	0.673	0.017
	Not important	295	21.3%	307	20.2%	-5.2%		
	Not sure	81	5.8%	83	5.5%	-5.2%		
Type of provider (MD, DO, PA, NP, etc.)	Important	998	71.9%	1132	74.4%	3.5%	0.142	0.037
	Not important	296	21.3%	280	18.4%	-13.6%		
	Not sure	94	6.8%	109	7.2%	5.9%		
Recommendations from others	Important	761	54.8%	813	53.5%	-2.4%	0.052	0.045
	Not important	505	36.4%	604	39.7%	9.1%		
	Not sure	122	8.8%	104	6.8%	-22.7%		
Reviews provided on the internet	Important	598	43.1%	733	48.2%	11.8%	0.008	0.057
	Not important	653	47.0%	630	41.4%	-11.9%		
	Not sure	137	9.9%	158	10.4%	5.1%		
Other	Important	403	29.0%	387	25.4%	-12.4%	0.001	0.068
	Not important	302	21.8%	417	27.4%	25.7%		
	Not sure	683	49.2%	717	47.1%	-4.3%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.

Figure 2a.
Factors Rated Important in Selecting a Provider: 2018 vs. 2022

*Significant differences were detected between 2018 and 2022 on reviews provided on the internet (p=0.008; Cramer's V=0.057) and other (p=0.001; Cramer's V=0.068).

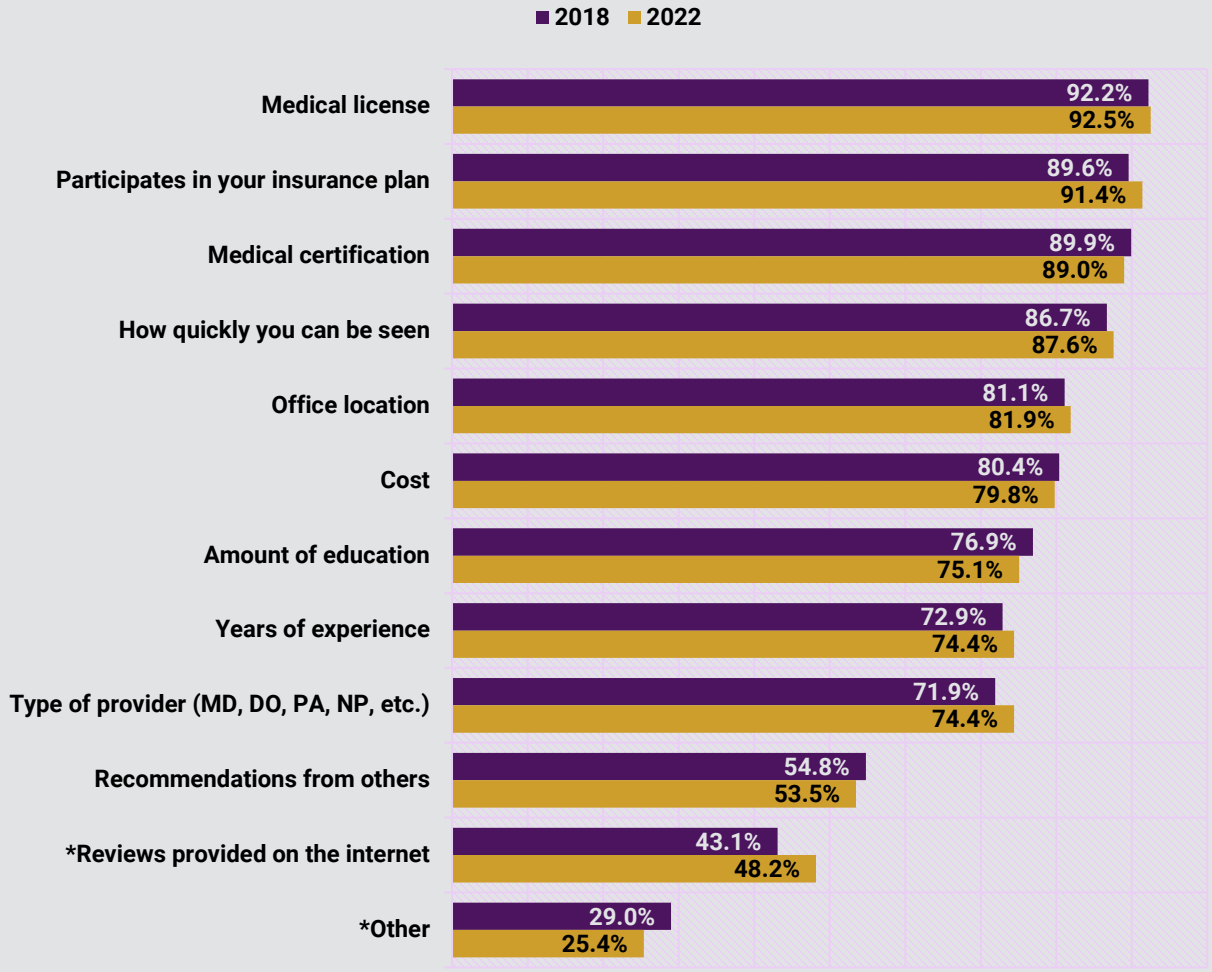
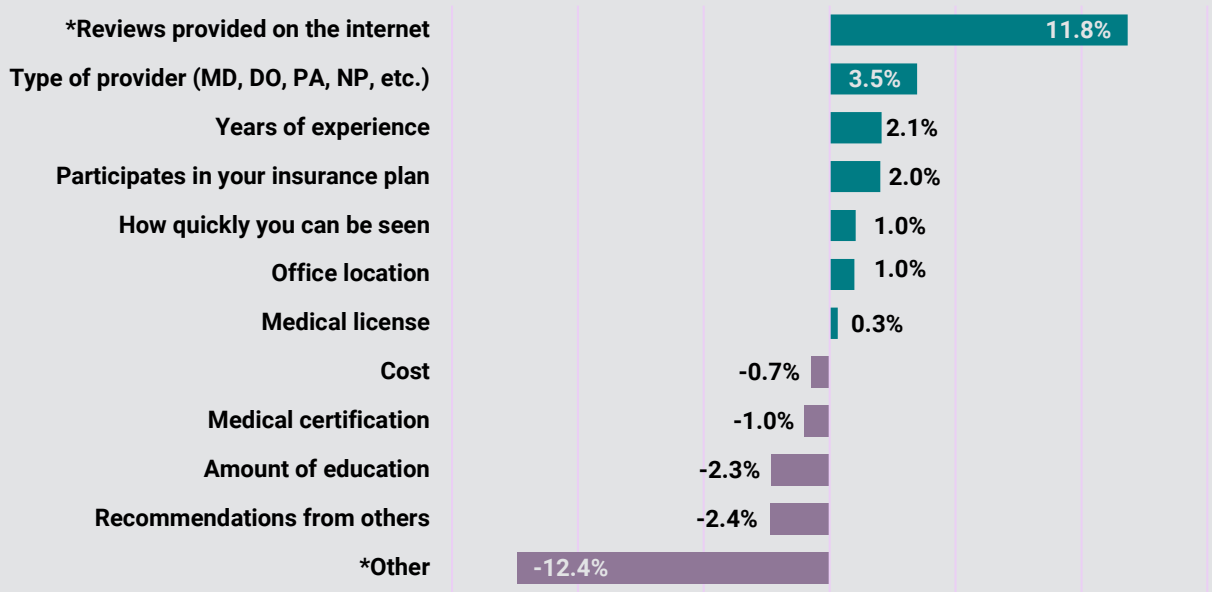


Figure 2b.
Percent Increase and Decrease in Factors Rated Important in Selecting a Provider between 2018 and 2022



Section 3: Knowledge of Physician Assistants

We assessed the public's knowledge of PAs in two ways. The first involved self-rated knowledge, which was evaluated by simply asking respondents, "Do you know what a Physician Assistant (PA) is?" Figure 3a shows that responses to this question statistically significantly differed by survey year (p=0.001). The proportion acknowledging to know what a PA is increased by 6.2% from 2018 to 2022 (Figure 3b).

Figure 3a.
Self-Reported Knowledge of PAs: 2018 vs. 2022

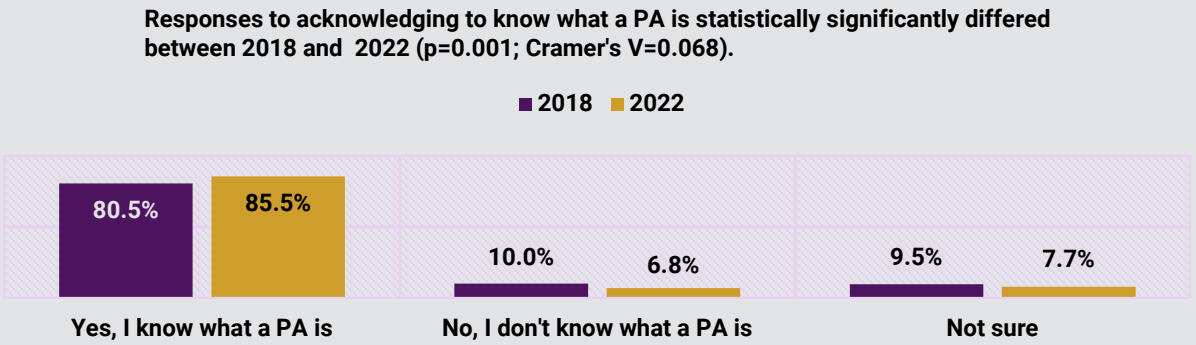
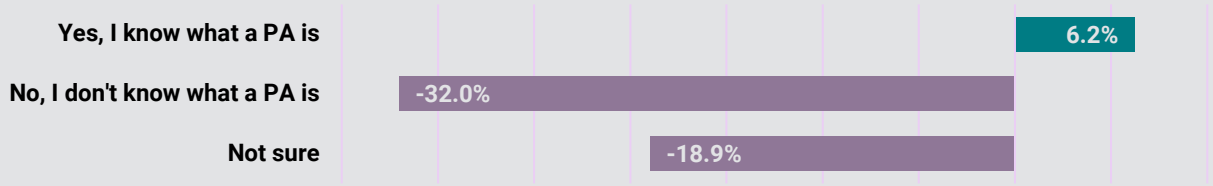


Figure 3b.
Percent Increase and Decrease in Responses to Knowing about What a PA is between 2018 and 2022



The second way we measured public knowledge about PAs was by relying on a range of true, false, not sure items. These items mostly explored participants' familiarity with what PAs do when rendering patient care. Although we added more questions in the 2022 survey, Table 4 depicts the nine items deployed in both years. We detected only one statistically significant difference by year. Participants in 2022 compared to 2018 were more likely to correctly answer "true" that PAs order and interpret diagnostic and lab tests (p=0.041).

Table 4. Knowledge Questions Regarding PAs Included in both 2018 and 2022 Surveys

True, False, Not Sure Knowledge Questions		Year: 2018 (N=1385) n	2018 %	2022 (N=1521) n	2022 %	% Change	p-value	Cramer's V
PAs obtain medical histories and examine patients.	True*	1086	78.4%	1225	80.5%	2.7%	0.365	0.026
	False	105	7.6%	104	6.8%	-10.5%		
	Not sure	194	14.0%	192	12.6%	-10.0%		
PAs must pass a national certifying exam as one requirement for obtaining an initial license to practice medicine.	True*	1051	75.9%	1151	75.7%	-0.3%	0.883	0.009
	False	55	4.0%	66	4.3%	7.5%		
	Not sure	279	20.1%	304	20.0%	-0.5%		
PAs work in collaboration with physicians in every medical and surgical specialty.	True*	916	66.1%	1027	67.5%	2.1%	0.363	0.026
	False	163	11.8%	154	10.1%	-14.4%		
	Not sure	306	22.1%	340	22.4%	1.4%		
PAs can only work in front office staff positions, answering phones, completing paperwork, patient scheduling, and communicating information from the medical facility to the patient.	True	207	14.9%	233	15.3%	2.7%	0.751	0.014
	False*	949	68.5%	1023	67.3%	-1.8%		
	Not sure	229	16.5%	265	17.4%	5.5%		
PAs order and interpret diagnostic and lab tests.	True*	844	60.9%	989	65.0%	6.7%	0.041	0.047
	False	208	15.0%	222	14.6%	-2.7%		
	Not sure	333	24.0%	310	20.4%	-15.0%		
PAs prescribe medications.	True*	721	52.1%	835	54.9%	5.4%	0.053	0.045
	False	386	27.9%	433	28.5%	2.2%		
	Not sure	278	20.1%	253	16.6%	-17.4%		
PAs develop treatment plans.	True*	721	52.1%	827	54.4%	4.4%	0.152	0.036
	False	304	21.9%	290	19.1%	-12.8%		
	Not sure	360	26.0%	404	26.6%	2.3%		
PAs can only accompany patients to exam rooms, measure vital signs, and record information into patient charts.	True	458	33.1%	545	35.8%	8.2%	0.102	0.040
	False*	672	48.5%	678	44.6%	-8.0%		
	Not sure	255	18.4%	298	19.6%	6.5%		
PAs can only perform routine medical tasks such as drawing blood, removing sutures, changing dressings, and administering medications while under supervision.	True	633	45.7%	727	47.8%	4.6%	0.257	0.031
	False*	489	35.3%	493	32.4%	-8.2%		
	Not sure	263	19.0%	301	19.8%	4.2%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.
**Denotes correct answer*

When looking at items used in both years, the ones with the highest proportion of correct responses included that PAs obtain medical histories and examine patients, followed by that PAs must pass a national certifying exam as one requirement for obtaining an initial license to practice medicine and that PAs work in collaboration with physicians in every medical and surgical specialty (Figure 4a). Figures 4a and 4b demonstrate that the proportion correctly identifying that PAs order and interpret diagnostic and lab tests increased from 60.9% in 2018 to 65.0% in 2022, a 6.7% increase.

Figure 4a.
Proportions Correctly Answered Knowledge Questions Included in 2018 and 2022 Surveys

*Significant difference was found by year on responding correctly to "PAs order and interpret diagnostic and lab tests" (p=0.041; Cramer's V=0.047).

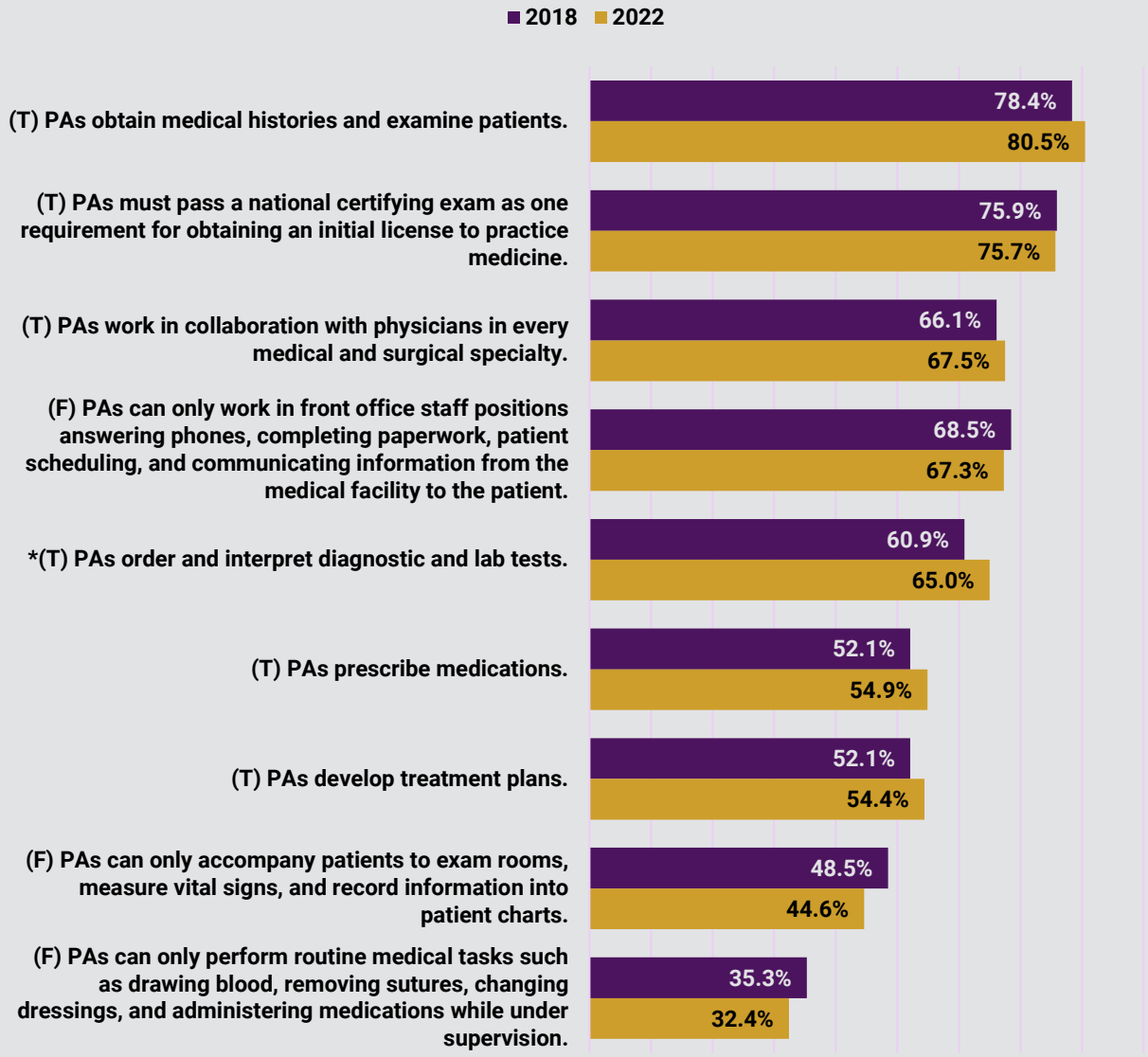


Figure 4b.

Increases and Decreases in Proportions from 2018 to 2022 in Correctly Answering Knowledge Questions Included in Both Surveys

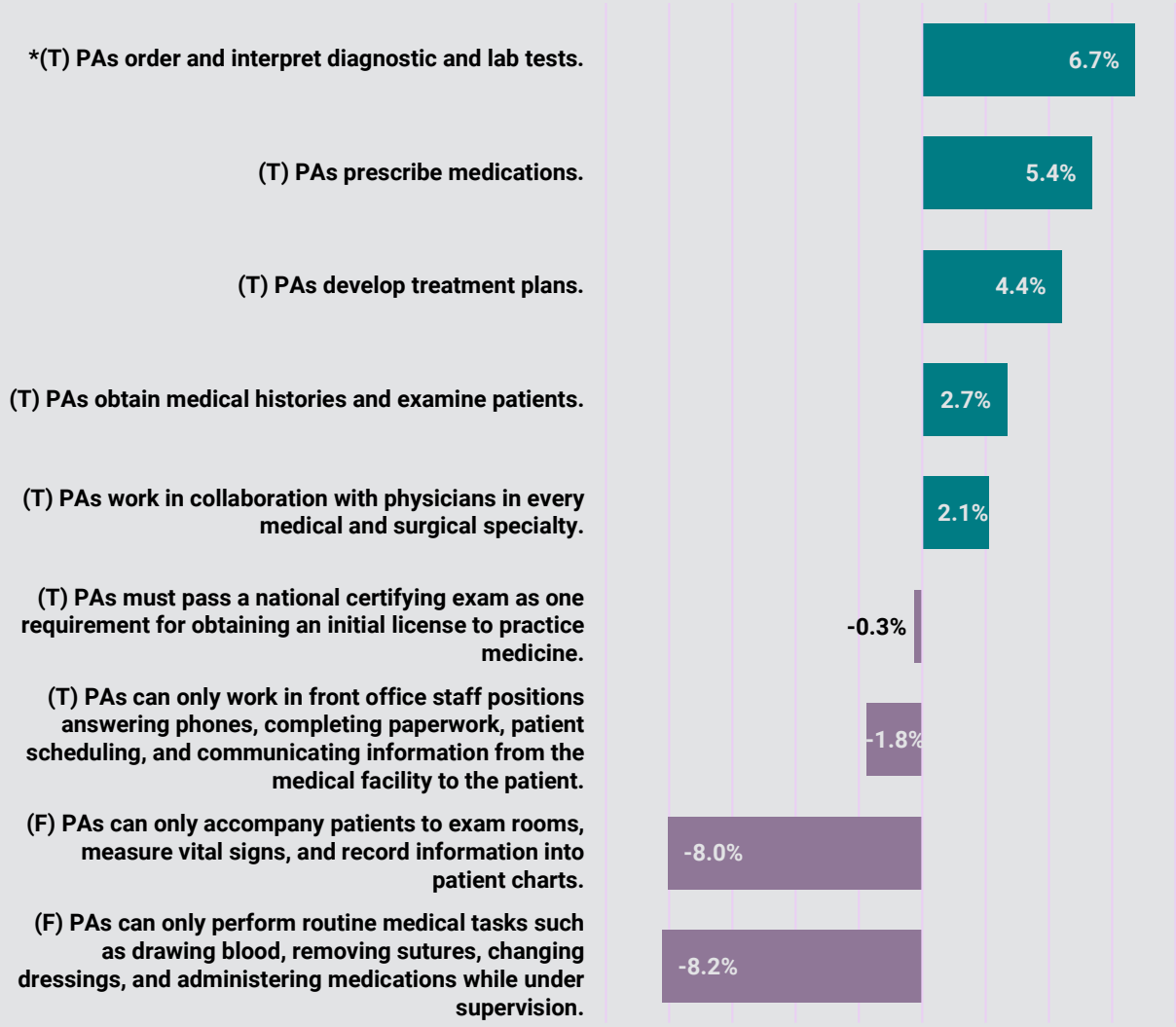


Figure 4c displays proportions of all 15 true, false, not sure items used in the 2022 survey. The highest percentages of participants correctly selected “true” that PAs obtain medical histories and examine patients (80.5%), followed by PAs must pass a national certifying exam as one requirement for obtaining an initial license to practice medicine (75.7%) and that PAs work in collaboration with physicians in every medical and surgical specialty (67.5%). Moreover, 67.3% correctly indicated “false” that PAs can only work in front office staff positions answering phones, completing paperwork, patient scheduling, and communicating information from the medical facility to the patient. The items with the smallest proportion of participants responding

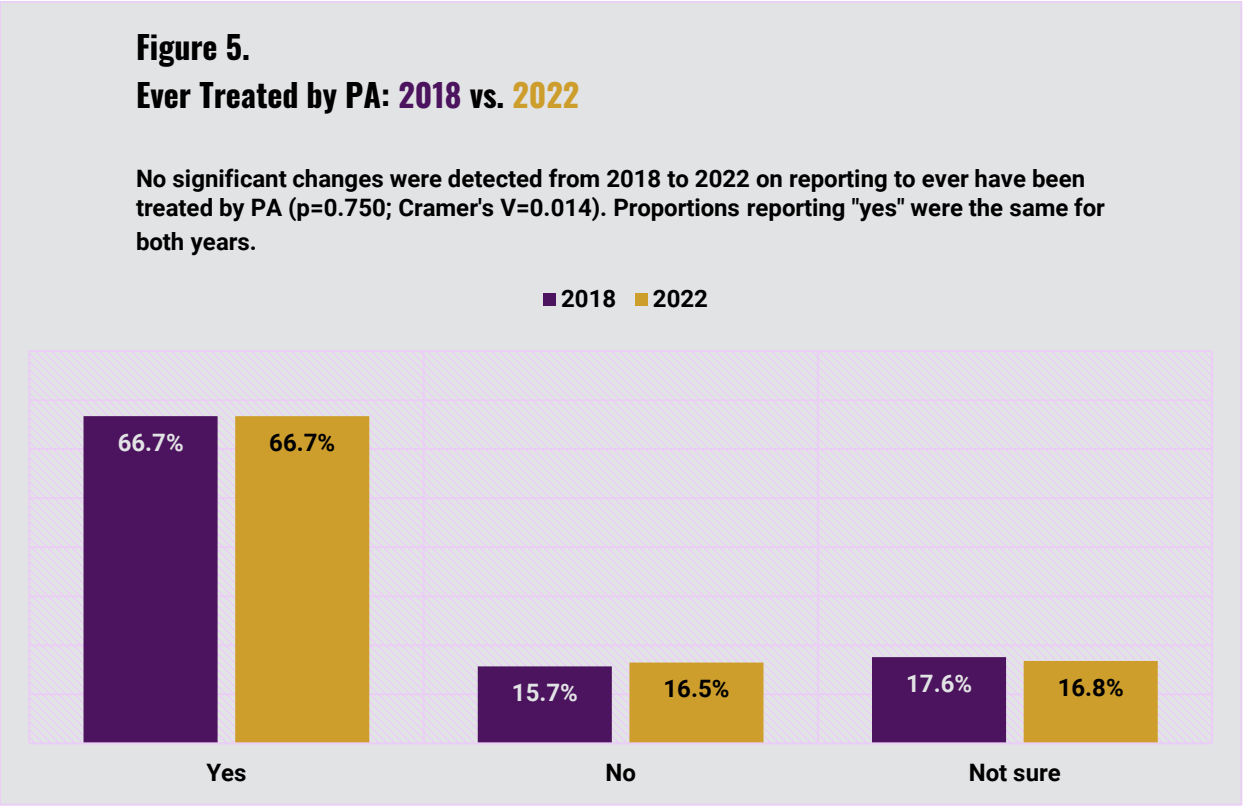
correctly included that PAs perform procedures such as lumbar puncture (18.8%) and setting bones (28.3%) along with that PAs can only perform routine medical tasks such as drawing blood, removing sutures, changing dressings, and administering medication while under supervision (32.4%).

Figure 4c.
All Knowledge Questions Regarding PAs with Proportion Answered Correctly in 2022 Survey

Section 4: Experiences and Perspectives Regarding Physician Assistants and Comparisons to Other Providers

The next section of the 2018 and 2022 surveys explored public experiences and perspectives regarding PAs. When asked if participants have ever been treated by a PA, 66.7% in 2018 and 2022 selected “yes” (Figure 5). In 2022, a slightly higher proportion indicated “no,” and a lower percentage said they were unsure, but this finding was not statistically significant (p=0.750).

Figure 5.
Ever Treated by PA: 2018 vs. 2022



Similarly, we also inquired whether a family member has ever been treated by a PA (Figures 6a and 6b). Although a higher proportion in 2022, compared to 2018, responded in the affirmative, this result was not statistically significant (54.8% vs. 52.6%; p=0.476).

Figure 6a.
Family Member Ever Treated by PA: 2018 vs. 2022

No significant differences by year were observed on identifying that a member of the family has ever been treated by PA (p=0.476; Cramer's V=0.023).

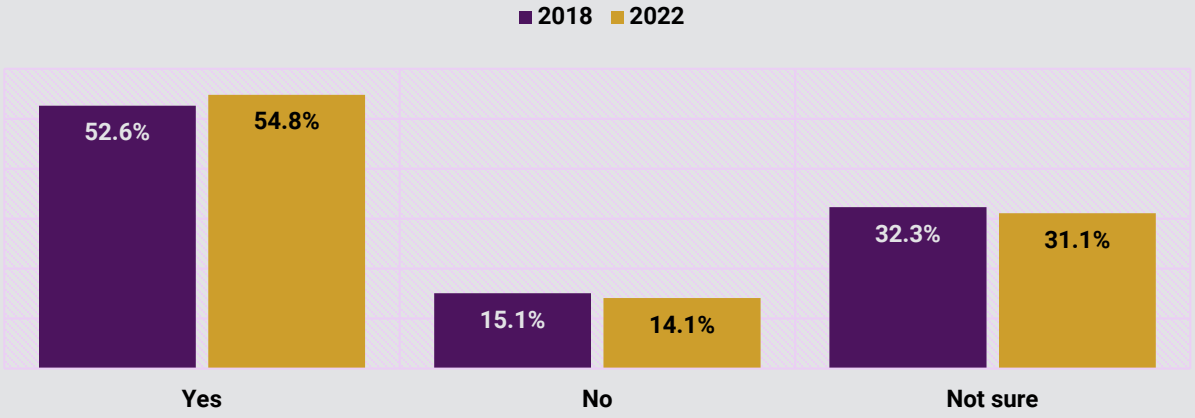
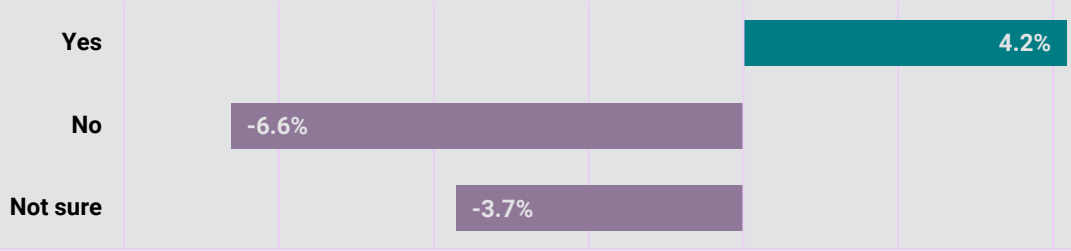


Figure 6b.
Increases and Decreases in Proportions Reporting Whether a Family Member was Treated by a PA



Members of the public who indicated never being treated by a PA or were unsure were asked about their willingness to see a PA for their medical needs. As seen in figure 7a, the majority reported either “yes, definitely would” or “yes, but for minor medical needs” in both years. The proportion who “definitely would” grew from 30.6% in 2018 to 36.7% in 2022—an increase of almost 20% (Figure 7b); however, we did not observe this finding as statistically significant (p=0.259).

Figure 7a.
Willingness to See a PA for Medical Needs: 2018 vs. 2022

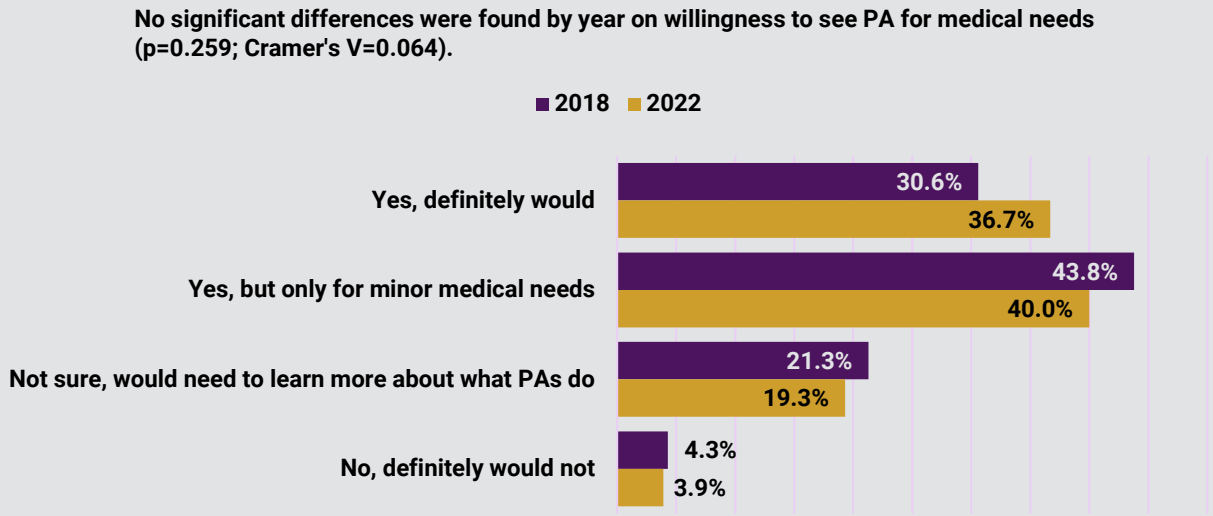
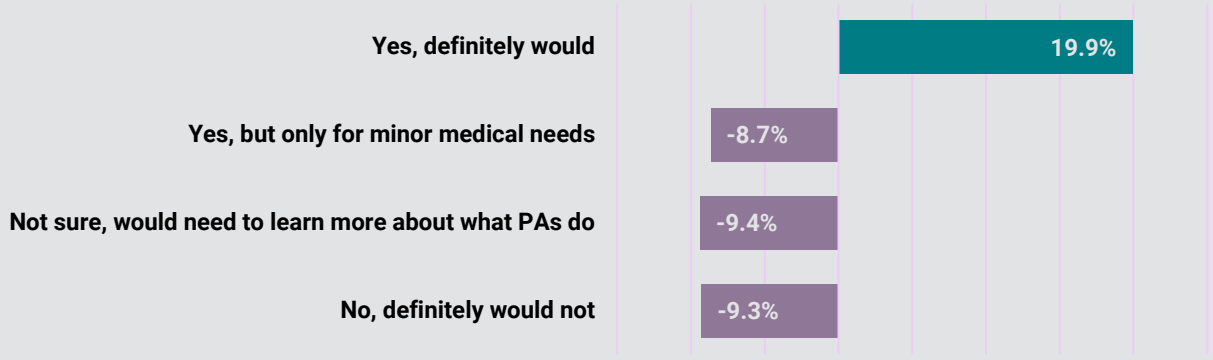


Figure 7b.
Increases and Decreases in Proportion Being Willing to See a PA from 2018 to 2022



The next series of questions targeted the perspectives of participants who indicated having been treated by PAs in the past. They included satisfaction with care delivery, the likelihood of seeing PA again, and recommending friends and family see PA for their medical needs. Figure 8a depicts that the vast majority of respondents in 2018 and 2022 were either very satisfied or satisfied with the clinical services rendered by a PA, and we did not find statistically significant differences by year (p=0.166).

Figure 8a.
Satisfaction with Medical Care Rendered by PAs: 2018 vs. 2022

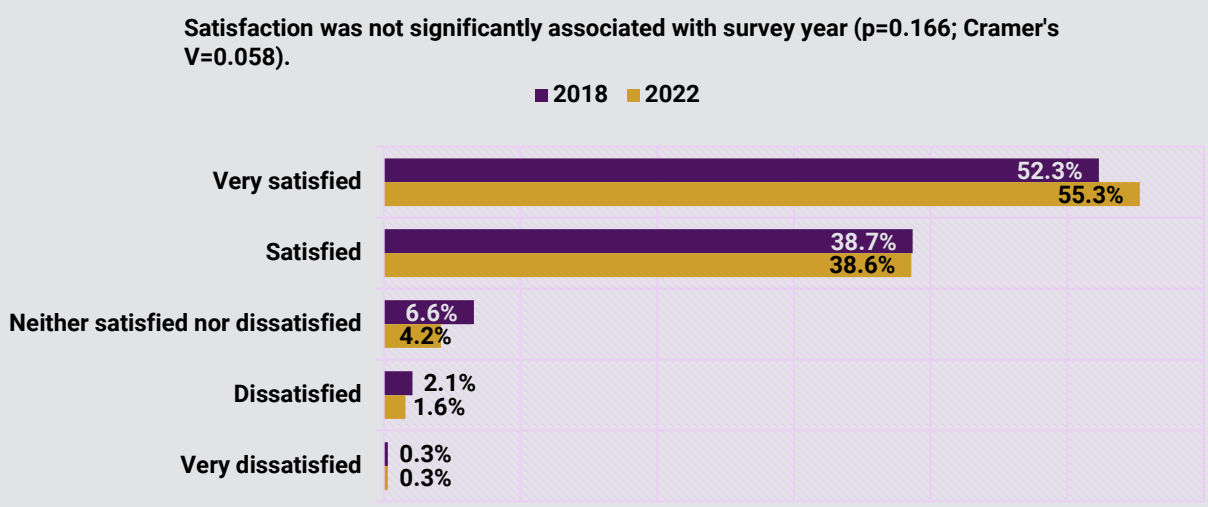
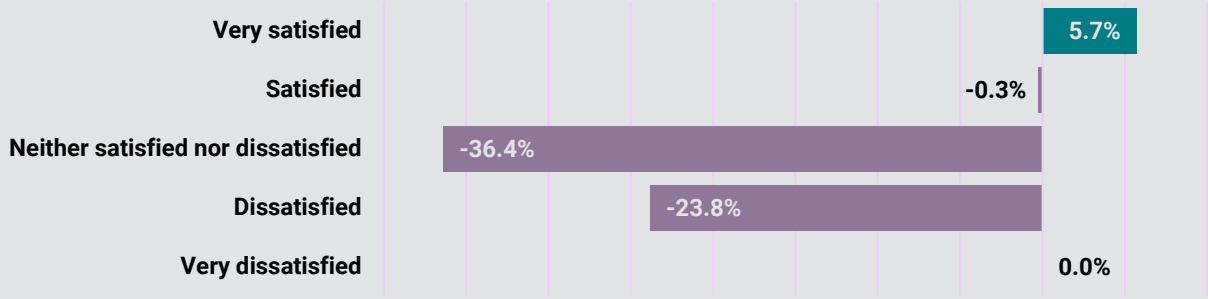


Figure 8b.
Increases and Decreases in Proportion Being Satisfied with Medical Care Rendered by PAs from 2018 to 2022



When considering the likelihood of seeing a PA again for medical needs, we identified a statistically significant percent change from 2018 to 2022 of reporting “very likely” (Figure 9a; 55.4% vs. 60.8%; p=0.026). This corresponds to almost a 10% increase (Figure 9b).

Figure 9a.
Likelihood of Reporting to See PA Again for Medical Needs: 2018 vs. 2022

Likelihood of reporting to see a PA again statistically significantly differed between 2018 and 2022 (p=0.026; Cramer's V=0.075).

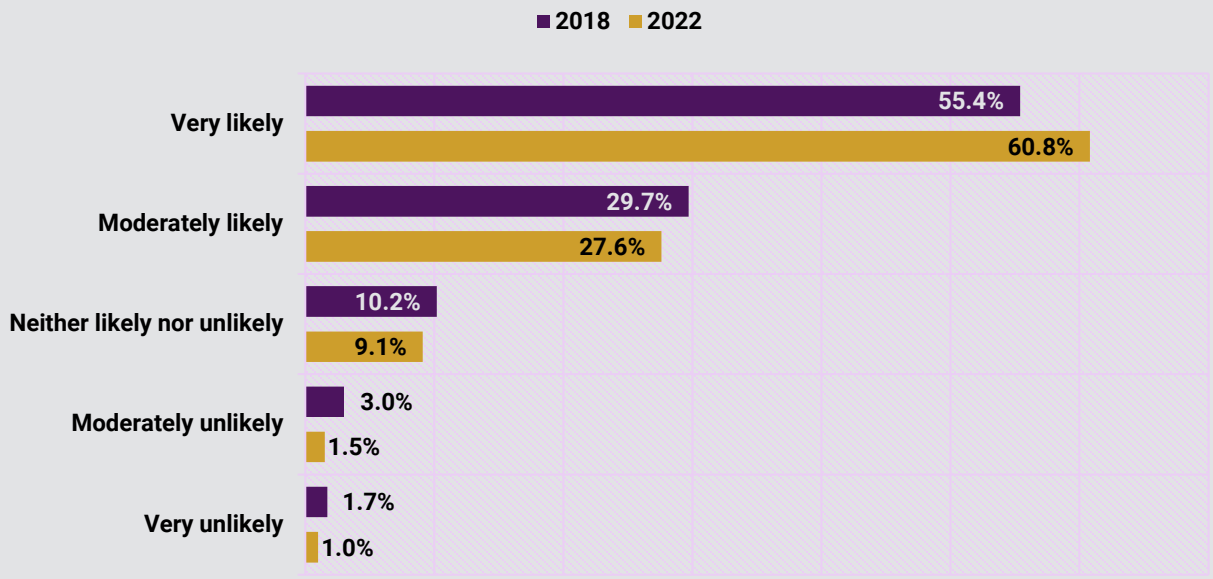


Figure 9b.
Increases and Decreases in Proportion of Likelihood to See PA Again from 2018 to 2022

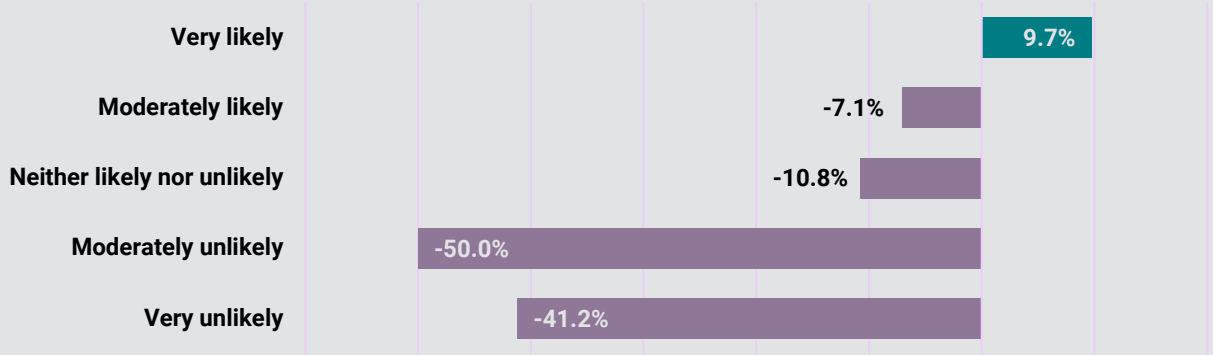


Figure 10a refers to the association between the likelihood of recommending friends or family see a PA for their medical needs and survey year, demonstrating that it was marginally non-significant (p=0.051). In terms of differences in proportions by year, Figure 10b illustrates that being "very likely" to recommend changed from 44.5% in 2018 to 49.5% in 2022—an 11.2% increase.

Figure 10a.
Likelihood of Recommending Friend or Family Member See a PA for Medical Needs: 2018 vs. 2022

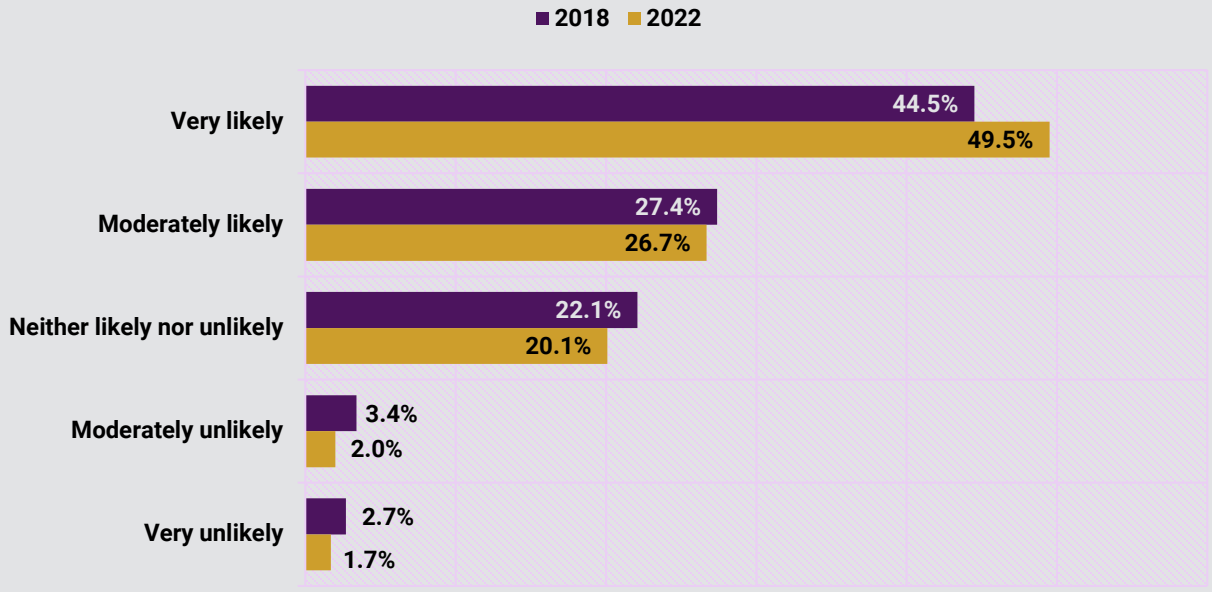


Figure 10b.
Increases and Decreases from 2018 to 2022 in Proportion Likely to Recommend Friend or Family See a PA for Medical Needs

When it comes to comparisons with other types of providers, we evaluated participant quality of experiences in the last 12 months with physicians, PAs, and NPs. The response scale included positive, negative, and mixed experiences along with no experience with providers of this type. We detected a significant difference by year concerning the quality of experience with physicians (p=0.021) but not for PAs (p=0.420) or NPs (Table 5; p=0.595). In 2022 when compared with 2018, a relatively higher number of respondents indicated having no experience in the last 12 months with physicians (3.3% vs. 4.9%). Overall, regardless of year, the highest proportion of participants expressed having a positive experience with all three types of providers—very few noted negative experiences. One difference between the three clinician types was that more respondents cited having no experience with PAs or NPs in the last year compared with physicians.

Table 5. Experience with Physicians, PAs, and NPs in the Last 12 Months: 2018 vs. 2022

Provider Experience		Year						
		2018 (N=1385)		2022 (N=1521)				
		n	%	n	%	% Change	p-value	Cramer's V
Physician	Positive experience	1107	79.9%	1233	81.1%	1.5%	0.021	0.058
	Negative experience	38	2.7%	31	2.0%	-25.9%		
	Mixed experiences with providers of this type	196	14.2%	182	12.0%	-15.5%		
	No experience with this type of provider	44	3.2%	75	4.9%	53.1%		
PA	Positive experience	866	62.5%	982	64.6%	3.4%	0.420	0.031
	Negative experience	43	3.1%	39	2.6%	-16.1%		
	Mixed experiences with providers of this type	146	10.5%	138	9.1%	-13.3%		
	No experience with this type of provider	330	23.8%	362	23.8%	0.0%		
NP	Positive experience	903	65.2%	1023	67.3%	3.2%	0.595	0.026
	Negative experience	40	2.9%	41	2.7%	-6.9%		
	Mixed experiences with providers of this type	161	11.6%	156	10.3%	-11.2%		
	No experience with this type of provider	281	20.3%	301	19.8%	-2.5%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.

Section 5: Perspective Regarding What Physician Assistants Should Do to Maintain Certification

It should be noted that the certification question was slightly modified for the 2022 survey. For this reason, percent change and inferential analyses were not conducted. Figure 11a shows that in 2018 the highest proportion selected that PAs should be required to complete continuing

medical education credits and pass an exam on a periodic basis, followed by PAs should participate in ongoing medical education that includes assessment questions/feedback for each question. In 2022, close to half (44.9%) of respondents indicated that PAs should participate in an ongoing process that includes medical education and assessment of medical knowledge (Figure 11b). The second-highest proportion (27.2%) was that PAs should be required to complete continuing medical education credits and pass an exam on a periodic basis.

Figure 11a.
2018 Question (N=1385) on PA Certification: What PAs should be required to do in order to maintain their certification?

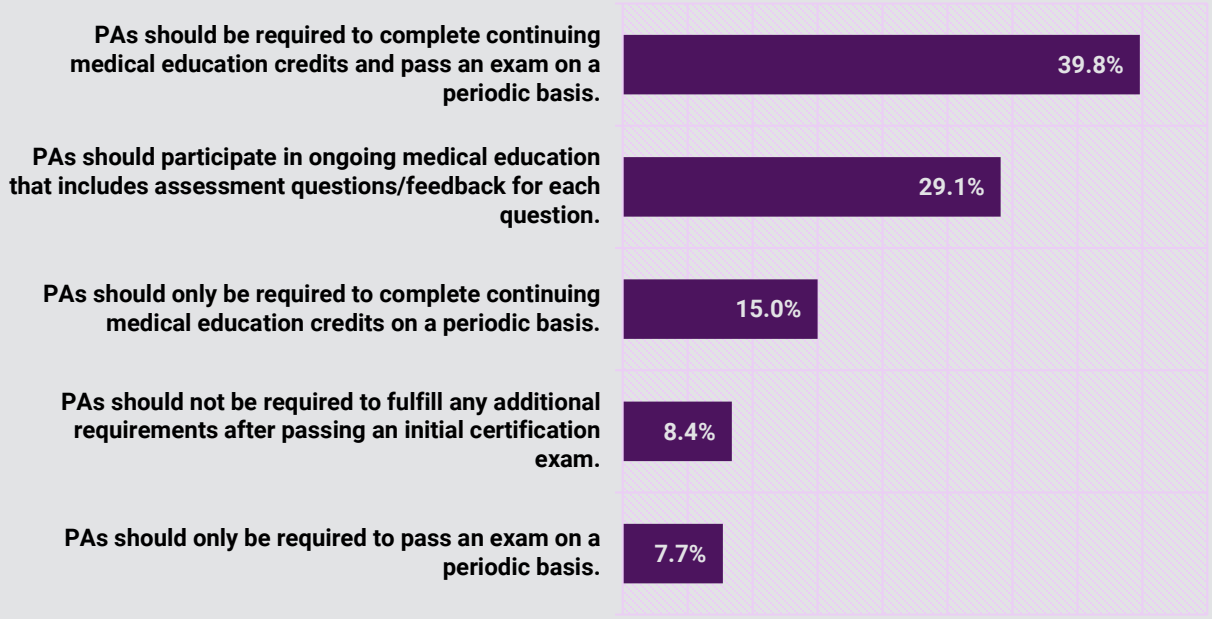
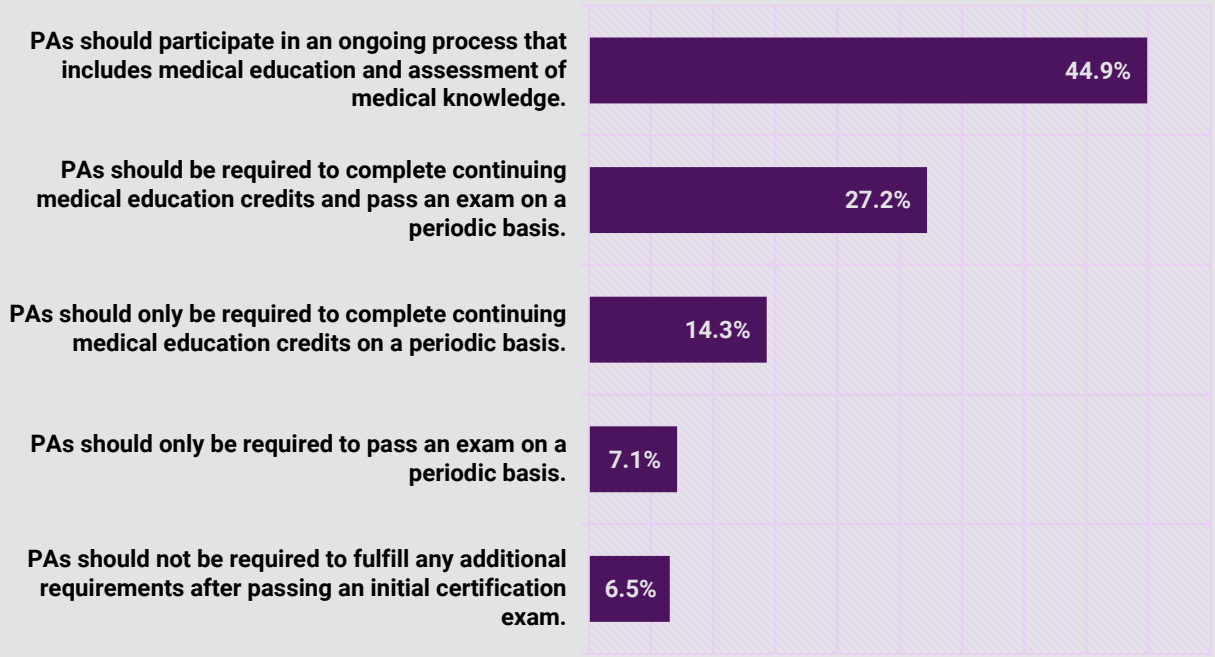


Figure 11b.
2022 Certification Question (N=1521): What PAs should be required to do in order to maintain their certification?



Section 6: Beliefs and Intentions Regarding Physician Assistants

The last section of the 2018 and 2022 surveys consisted of nine questions designed to investigate public beliefs and intentions toward PAs. Table 6 provides a detailed characterization of responses across the full agreement scale for each question and results of each statistical test assessing for differences by survey year. Of the nine items exploring beliefs and intentions provided to participants, two significantly differed between 2018 and 2022. The first was believing that PAs should be assessed regularly on their medical knowledge (p=0.006). The second involved intending to see a PA for medical needs (p=0.008). For ease of interpretation, we collapsed the agreement scale such that agree included both strongly agree and agree. Results are presented in figures 12a and 12b. Agreeing to believe that PAs should be assessed regularly on their medical knowledge increased from 80.2% in 2018 to 84.3% in 2022, which is a 5.1% increase. The proportion intending to see a PA for medical needs increased the most out of all beliefs and intentions we assessed—from 42.7% in 2018 to 49.2% in 2022, which equates to a 15.2% increase.

Table 6. Beliefs and Intentions Regarding PAs: 2018 vs. 2022

Beliefs and Intentions		Year 2018 (N=1385) n	2018 (N=1385) %	2022 (N=1521) n	2022 (N=1521) %	% Change	p-value	Cramer's V
I believe PAs should continually learn about new medical information.	Strongly Agree	747	53.9%	774	50.9%	-5.6%	0.527	0.038
	Agree	506	36.5%	604	39.7%	8.8%		
	Neither Agree nor Disagree	100	7.2%	108	7.1%	-1.4%		
	Disagree	10	0.7%	11	0.7%	0.0%		
	Strongly Disagree	3	0.2%	6	0.4%	100.0%		
	Not Sure	19	1.4%	18	1.2%	-14.3%		
I believe PAs should be assessed regularly on their medical knowledge.	Strongly Agree	544	39.3%	609	40.0%	1.8%	0.006	0.075
	Agree	567	40.9%	674	44.3%	8.3%		
	Neither Agree nor Disagree	213	15.4%	179	11.8%	-23.4%		
	Disagree	23	1.7%	36	2.4%	41.2%		
	Strongly Disagree	8	0.6%	4	0.3%	-50.0%		
	Not Sure	30	2.2%	19	1.2%	-45.5%		
I believe PAs should be licensed by state medical boards.	Strongly Agree	683	49.3%	668	43.9%	-11.0%	0.069	0.059
	Agree	508	36.7%	608	40.0%	9.0%		
	Neither Agree nor Disagree	153	11.0%	185	12.2%	10.9%		
	Disagree	13	0.9%	18	1.2%	33.3%		
	Strongly Disagree	2	0.1%	6	0.4%	300.0%		
	Not Sure	26	1.9%	36	2.4%	26.3%		
I believe PAs are well educated in medicine.	Strongly Agree	432	31.2%	519	34.1%	9.3%	0.059	0.060
	Agree	614	44.3%	702	46.2%	4.3%		
	Neither Agree nor Disagree	251	18.1%	219	14.4%	-20.4%		
	Disagree	40	2.9%	32	2.1%	-27.6%		
	Strongly Disagree	9	0.6%	10	0.7%	16.7%		
	Not Sure	39	2.8%	39	2.6%	-7.1%		
I believe PAs should be held to the same standards of care as physicians.	Strongly Agree	550	39.7%	560	36.8%	-7.3%	0.342	0.044
	Agree	517	37.3%	620	40.8%	9.4%		
	Neither Agree nor Disagree	221	16.0%	222	14.6%	-8.8%		
	Disagree	55	4.0%	70	4.6%	15.0%		
	Strongly Disagree	14	1.0%	14	0.9%	-10.0%		
	Not Sure	28	2.0%	35	2.3%	15.0%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.

Table 6 (Con't). Beliefs and Intentions Regarding PAs: 2018 vs. 2022

Beliefs and Intentions		Year 2018 (N=1385) n	2018 (N=1385) %	2022 (N=1521) n	2022 (N=1521) %	% Change	p-value	Cramer's V
I believe PAs have more time to communicate with me about my medical issues.	Strongly Agree	326	23.5%	364	23.9%	1.7%	0.304	0.046
	Agree	530	38.3%	586	38.5%	0.5%		
	Neither Agree nor Disagree	379	27.4%	432	28.4%	3.6%		
	Disagree	68	4.9%	74	4.9%	0.0%		
	Strongly Disagree	30	2.2%	17	1.1%	-50.0%		
	Not Sure	52	3.8%	48	3.2%	-15.8%		
I intend to see a PA for my medical needs.	Strongly Agree	221	16.0%	290	19.1%	19.4%	0.008	0.073
	Agree	370	26.7%	458	30.1%	12.7%		
	Neither Agree nor Disagree	560	40.4%	560	36.8%	-8.9%		
	Disagree	122	8.8%	102	6.7%	-23.9%		
	Strongly Disagree	46	3.3%	37	2.4%	-27.3%		
	Not Sure	66	4.8%	74	4.9%	2.1%		
I intend to see a PA only for my minor medical needs.	Strongly Agree	186	13.4%	220	14.5%	8.2%	0.704	0.032
	Agree	395	28.5%	457	30.0%	5.3%		
	Neither Agree nor Disagree	496	35.8%	506	33.3%	-7.0%		
	Disagree	170	12.3%	189	12.4%	0.8%		
	Strongly Disagree	74	5.3%	74	4.9%	-7.5%		
	Not Sure	64	4.6%	75	4.9%	6.5%		
I would only see a PA if a doctor was not available.	Strongly Agree	215	15.5%	218	14.3%	-7.7%	0.215	0.049
	Agree	412	29.7%	411	27.0%	-9.1%		
	Neither Agree nor Disagree	384	27.7%	427	28.1%	1.4%		
	Disagree	219	15.8%	289	19.0%	20.3%		
	Strongly Disagree	117	8.4%	136	8.9%	6.0%		
	Not Sure	38	2.7%	40	2.6%	-3.7%		

Note: Cramer's V is an effect size measurement for the chi-square test assessing how strongly two categorical variables are associated. Less than or equal to 0.2 is a weak association, 0.3 to 0.6 is moderate and above 0.6 is strong.

Figure 12a.
Proportion Agreed/Agreed Strongly to Statements Regarding Beliefs and Intentions Toward PAs: 2018 vs. 2022

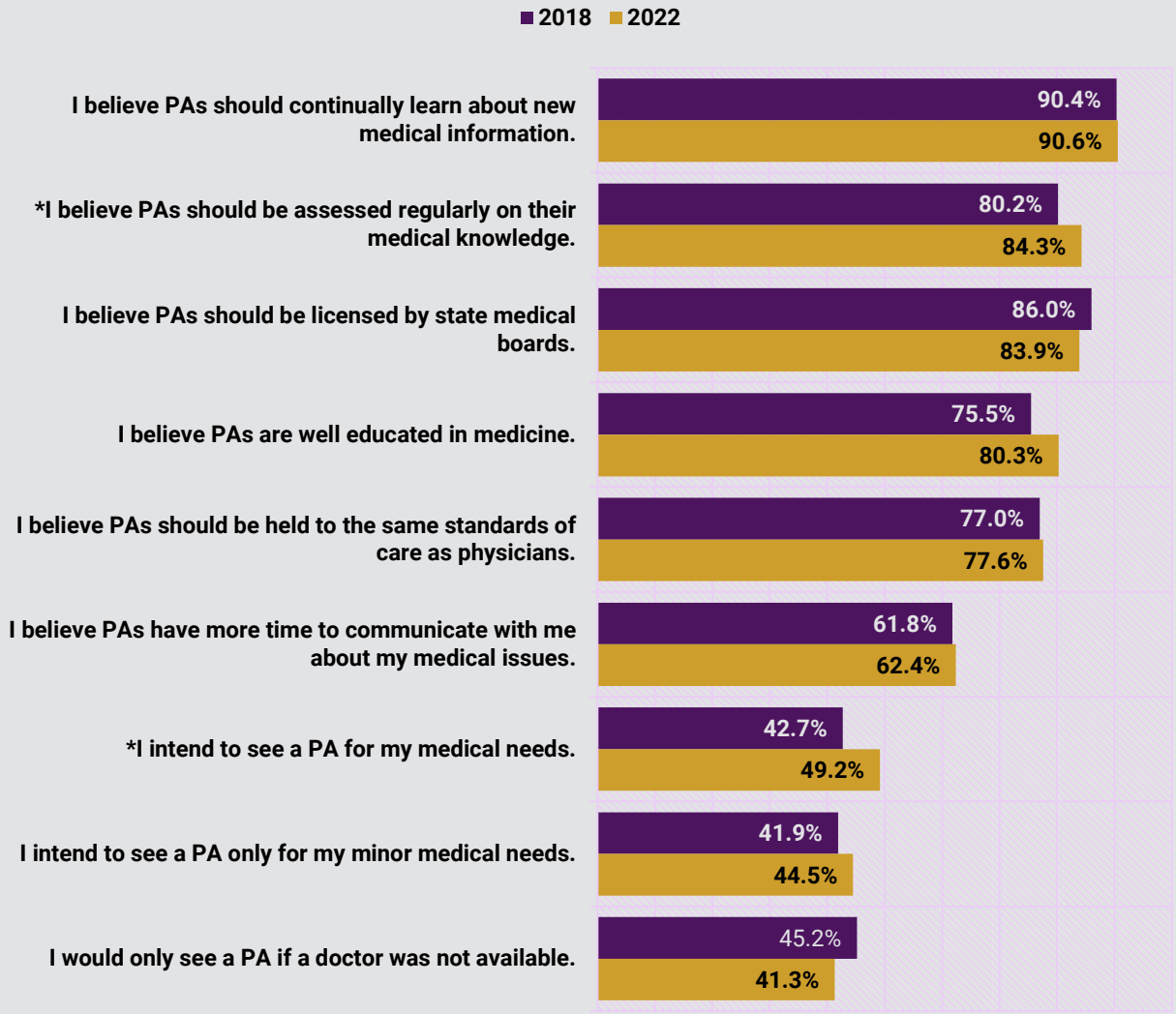
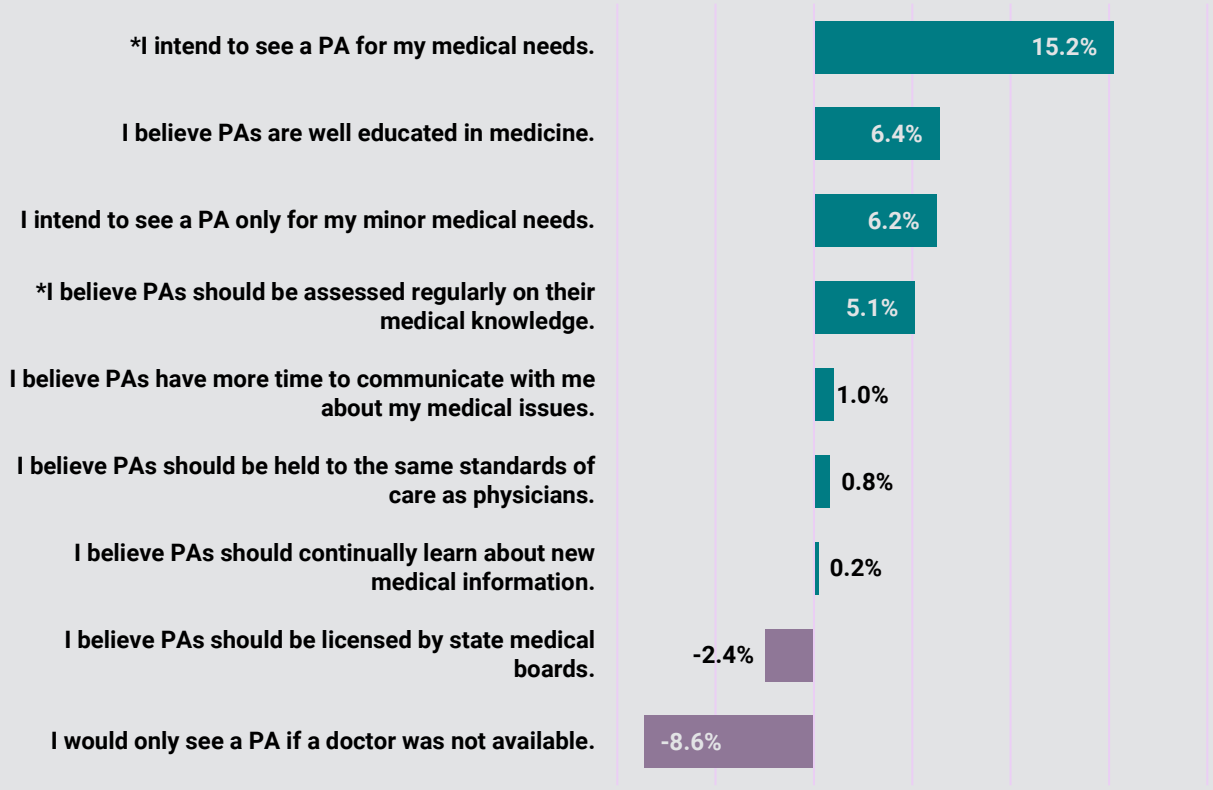


Figure 12b.

Increase and Decrease in Proportions from 2018 to 2022 in Agreement to Statements Regarding Beliefs and Intentions Toward PAs



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