

Race, Ethnicity, and Other Patient and Clinical Encounter Characteristics Associated with Patient Experiences of Access to Care

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Abstract

The Press Ganey (PG) Outpatient Medical Practice Survey measures patients' experiences of healthcare access in the U.S. We aimed to identify differences in experiences of access to care by patient race, ethnicity, and other sociodemographic characteristics, an important first step in informing health policy and ensuring equitable healthcare delivery. We performed a cross-sectional analysis of PG surveys for adult outpatient visits within the University of Pennsylvania Health System from 2014–2017, including 119,373 unique patients. Compared with White patients, Black (odds ratio [OR] 0.84; 95% confidence interval [CI] 0.80–0.87), Asian (OR 0.62; 95% CI 0.58–0.66), and other/unknown race patients (OR 0.83; 95% CI 0.72–0.94) were each less likely to report the maximum score for timely access to care. Patients of all minoritized groups, as well as those whose primary language was not English, reported lower scores in secondary access measures related to communication and respect, compared to White and primarily English-speaking patients, respectively. Efforts to improve the experience of access to care among racial and ethnic minoritized patients are imperative to achieve equity in healthcare delivery.

Keywords

access to care, patient satisfaction, Press Ganey survey, healthcare disparities, patient experience, race, ethnicity, language accessibility

Introduction

In the United States (U.S.), disparities in access to health care have persisted or worsened over the last couple of decades.^{1–4} For example, racial and ethnic minoritized individuals are less likely to be insured or have a primary care provider, are more likely to forgo treatment due to cost, and are increasingly more likely to experience barriers to health care not directly associated with cost, compared to White individuals.^{1,4} There is a considerable body of literature that identifies these and other barriers to accessing health care and how they contribute to existing healthcare disparities. However, little is known about the patient experience of accessing health care, such as perceived timeliness of care and courtesy of staff scheduling appointments, and how experiences may differ by patient characteristics such as race, ethnicity, and other sociodemographic factors.

The Press Ganey (PG) Outpatient Medical Practice Survey is commonly used to evaluate the patient experience of health care across six domains: Access, Moving Through Your Visit, Nurse/Assistant, Care Provider, Personal Issues,

and Overall Assessment. Most studies of the PG survey have focused on evaluating the Care Provider domain and have been limited to relatively narrow patient populations (ie patients from single medical specialty).^{5–9} To our knowledge, no studies to date have evaluated the Access domain, which includes a series of questions pertaining to patients' ability to access and their experiences of accessing health care. Thus, to better understand patient experiences of healthcare access and identify those who are reporting poorer

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experiences, we evaluated the associations between patients' experiences of access to care as measured by the PG survey Access domain and patient sociodemographic characteristics among a diverse, urban, ambulatory patient population across all medical specialties.

Methods

Study Design and Data Sources

We performed a cross-sectional analysis to examine the associations between the patient experience of access to health care, as measured by responses to the PG Outpatient Medical Practice Survey Access domain questions, and patient sociodemographic and other patient and clinical encounter characteristics. The primary data source was patient experience surveys, which included components of the Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG CAHPS) survey and the Access domain of the PG survey.¹⁰ The study included returned surveys for outpatient visits within the University of Pennsylvania Hospital System (UPHS) between July 2, 2014, and May 30, 2017. Patient and clinical encounter data were obtained from the survey and the electronic medical record. The study was approved by the University of Pennsylvania institutional review board. A waiver of informed consent was approved because the data were de-identified.

The Access domain of the PG survey includes 8 Likert-type item questions and 5 answer options ranging from 1 (very poor) to 5 (very good) (Table 1). Paper or electronic surveys were sent to all patients who received outpatient care within UPHS during the study period. Patients did not receive surveys if they declined solicitation or did not have a valid mailing or email address on file. The survey response rate during the study period was 19.9%.

Study Population

The study included returned surveys for all adult (18 years or older) outpatient visits within UPHS during the study period. Surveys were excluded if any of the following applied: (1) patient race or ethnicity was missing; or (2) the primary outcome was missing. If a patient returned multiple surveys during the study period, only the first survey was included in an effort to minimize bias by evaluating the first or earliest interaction with the healthcare system.

Outcomes

Primary Outcome. The primary outcome was derived from the score for the item, "Ability of getting an appointment within a reasonable time frame" in the Access domain of the PG survey. Because responses were highly skewed with most scores clustered at the high values, we used the top box scoring method whereby scores were dichotomized as 5 (maximum score) or less than 5.¹¹ This method is consistent with current practices for patient experience score reporting.^{8,12–14}

Secondary Outcomes. Each of the remaining 7 questions under the Access domain of the PG survey served as secondary outcomes. Each secondary outcome score was also dichotomized as 5 versus less than 5.

Covariates

The primary independent variable of interest was patient race and ethnicity as a combined variable and categorized as non-Hispanic White (hereafter referred to as White), non-Hispanic Black (hereafter referred to as Black), non-Hispanic Asian (including Southeast Asians and Pacific Islanders; hereafter referred to as Asian), Hispanic ethnicity of any race (hereafter referred to as Hispanic), or other race. Race and ethnicity data were obtained from self-report in the CG CAHPS survey or, if unavailable from the survey, the medical record. Other variables of interest included other patient sociodemographic and clinical encounter characteristics including age, sex, marital status, insurance, highest education level, median annual household income of the patient's zip code of residence, primary language, overall health, and overall mental or emotional health. Highest education level, overall health, and overall mental or emotional health were obtained via patient-report from the survey. All other patient variables were obtained from the medical record unless otherwise indicated. Clinical encounter characteristics included medical specialty, visit type, location, and year as documented in the medical record.

Table 1. Press Ganey Outpatient Medical Practice Survey Access Domain.

Access Domain Legend

Initial Prompt: "Mark the response that best describes your experience."

Question #:	Question Text	Answer Choices:
1	Ease of scheduling your appointment	1 (very poor), 2 (poor), 3 (fair), 4 (good), 5 (very good)
2	Courtesy of person who scheduled your appointment	5 (very good)
3 ^a	Ability of getting an appointment within a reasonable time frame	
4	Ease of getting through to the practice on the phone	
5	Our helpfulness on the telephone	
6	Our promptness in returning your phone calls	
7	Convenience of our office hours	
8	Courtesy of staff in the registration area	

^aPrimary outcome of study.

Table 2. Patient and Clinical Encounter Characteristics: Overall and by Primary Access Outcome Score.

Patient Baseline Characteristics	Overall (n = 119 373)	Maximum Score for Access ^a (n = 75 162)	Less Than Maximum Score for Access ^b (n = 44 211)	p-value
Age (years)				
Mean (SD)	56.42 (16.01)	58.17 (15.46)	53.45 (16.48)	<.0001
Median (IQR)	59 (46, 68)	61 (49, 69)	56 (40, 66)	<.0001
Female	72 871 (61.04)	44 625 (59.37)	28 246 (63.89)	<.0001
Race/Ethnicity				<.0001
White	94 069 (78.80)	60 588 (80.61)	33 481 (75.73)	
Black	17 148 (14.37)	10 269 (13.66)	6879 (15.56)	
Asian	4326 (3.62)	2053 (2.73)	2273 (5.14)	
Hispanic	2802 (2.35)	1667 (2.22)	1135 (2.57)	
Other	1028 (0.86)	585 (0.78)	443 (1.00)	
Marital Status				<.0001
Single	29 724 (24.90)	16 846 (22.41)	12 878 (29.13)	
Married or with Partner	75 131 (62.94)	48 707 (64.80)	26 424 (59.77)	
Divorced or Widowed	13 944 (11.68)	9260 (12.32)	4684 (10.59)	
Other	574 (0.48)	349 (0.46)	225 (0.51)	
Insurance				<.0001
Commercial	65 561 (54.92)	38 634 (51.40)	26 927 (60.91)	
Medicaid	5867 (4.91)	3465 (4.61)	2402 (5.43)	
Medicare	36 321 (30.43)	25 582 (34.04)	10 739 (24.29)	
Mixed	6608 (5.54)	4292 (5.71)	2316 (5.24)	
Other	5016 (4.20)	3189 (4.24)	1827 (4.13)	
Education				<.0001
HS/GED Graduate	20 809 (17.43)	14 074 (18.72)	6735 (15.23)	
Some College	27 044 (22.66)	17 668 (23.51)	9376 (21.21)	
4-year College Graduate	26 196 (21.94)	15 771 (20.98)	10 425 (23.58)	
More than 4-year college graduate	44 601 (37.36)	27 202 (36.19)	17 399 (39.35)	
Missing	723 (0.61)	447 (0.59)	276 (0.62)	
Median Household Income (USD) ^c				
Mean (SD)	77 516 (31 799)	77 915 (31 282)	76 838 (32 648)	<.0001
Median (IQR)	74 626 (55,991, 96 929)	75 913 (56,336, 96 929)	73 848 (52,929, 96 929)	<.0001
Primary Language English	118 099 (98.93)	74 448 (99.05)	43 651 (98.73)	<.0001
Overall Health				<.0001
Excellent	18 072 (15.14)	12 613 (16.78)	5459 (12.35)	
Very Good	43 288 (36.26)	27 581 (36.70)	15 707 (35.53)	
Good	37 666 (31.55)	22 908 (30.48)	14 758 (33.38)	
Fair	16 355 (13.70)	9639 (12.82)	6716 (15.19)	
Poor	3527 (2.95)	2101 (2.80)	1426 (3.23)	
Missing	465 (0.39)	320 (0.43)	145 (0.33)	
Emotional Health				<.0001
Excellent	39 478 (33.07)	28 189 (37.50)	11 289 (25.53)	
Very Good	41 556 (34.81)	25 444 (33.85)	16 112 (36.44)	
Good	25 829 (21.64)	14 551 (19.36)	11 278 (25.51)	
Fair	10 316 (8.64)	5756 (7.66)	4560 (10.31)	
Poor	1817 (1.52)	982 (1.31)	835 (1.89)	
Missing	377 (0.32)	240 (0.32)	137 (0.31)	
Clinical Encounter Characteristics				<.0001
Specialty ^d				
Medical	46 412 (38.88)	29 650 (39.45)	16 762 (37.91)	
Surgical	31 551 (26.43)	21 628 (28.78)	9923 (22.44)	
Dermatology	15 665 (13.12)	8743 (11.63)	6922 (15.66)	
Other	25 745 (21.57)	15 141 (20.14)	10 604 (23.98)	
Visit Type				<.0001
New	40 411 (33.85)	22 503 (29.94)	17 908 (40.51)	
Return	77 507 (64.93)	51 763 (68.87)	25 744 (58.23)	
Office Procedure	1455 (1.22)	896 (1.19)	559 (1.26)	

(continued)

Table 2. (continued)

Patient Baseline Characteristics	Overall (n = 119 373)	Maximum Score for Access ^a (n = 75 162)	Less Than Maximum Score for Access ^b (n = 44 211)	p-value
Location				<.0001
Main	49 284 (41.29)	31 877 (42.41)	17 407 (39.37)	
Affiliated, Philadelphia	44 109 (36.95)	27 059 (36.00)	17 050 (38.57)	
Satellite, Pennsylvania	22 881 (19.17)	14 205 (18.90)	8676 (19.62)	
Satellite, New Jersey	3099 (2.60)	2021 (2.69)	1078 (2.44)	
Survey Year				<.0001
2014	23 125 (19.37)	14 985 (19.94)	8140 (18.41)	
2015	41 211 (34.52)	26 243 (34.92)	14 968 (33.86)	
2016	38 591 (32.33)	23 784 (31.64)	14 807 (33.49)	
2017	16 446 (13.78)	10 150 (13.50)	6296 (14.24)	

^aScores of 5 (the maximum score) in “Ability of getting an appointment within a reasonable time frame” in the Press Ganey survey Access domain.

^bScores less than 5 (the maximum score) in “Ability of getting an appointment within a reasonable time frame” in the Press Ganey survey Access domain.

^cMissing: N = 743 (0.62%)

^dMedical specialties included family practice, general internal medicine, and all internal medicine specialties. Surgical specialties included anesthesia or pain; cardiac; colorectal; ear, nose, and throat; gastrointestinal; neurologic; oncologic; orthopedic; plastic; thoracic; trauma; transplant; urologic; and vascular surgery. The other specialty category includes neurology, obstetrics-gynecology, ophthalmology, palliative care, physical medicine and rehabilitation, psychiatry, and radiology.

Abbreviation: SD, standard deviation; IQR, interquartile range; HS/GED, high school/general education diploma; USD, United States Dollars.

Statistical Analysis

Patient and clinical encounter characteristics were summarized with descriptive statistics. Multivariable logistic regression was used to evaluate the associations between each outcome and patient and clinical encounter characteristics of interest. Patient age, sex, race and ethnicity, and all other covariates that were significantly associated with the primary outcome at α level of 0.05 in bivariate analyses were included in the multivariable model. Median household income was divided by 10 000 to reflect a \$10 000 change. Statistical significance was determined by 2-sided P values at $P < 0.05$. Secondary outcomes were considered exploratory, so P values were not adjusted for multiplicity. Data were complete for 117 202 of 119 373 (98.2%) patients included in the study. To evaluate the robustness of our results, we performed a sensitivity analysis whereby, among patients who returned multiple surveys during the study period, a randomly selected survey was included. Statistical analyses were performed using SAS (version 9.4).

Results

Patient and Clinical Encounter Characteristics

The study included 119 373 unique patients. Patient and clinical encounter characteristics are summarized in Table 2. The mean (standard deviation, SD) patient age was 56.4 (16.0) years, and 72 871 patients (61.0%) were female. The racial and ethnic distribution was as follows: 78.8% White (n = 94 069), 14.4% Black (n = 17 148), 3.6% Asian (n = 4326), 2.4% Hispanic (n = 2802), and 0.9% other or unknown race (n = 1028). Most patients had commercial insurance (65 561 patients [54.9%]) and reported being at least a

4-year college graduate (70 797 patients [59.3%]). The mean (SD) median annual household income was \$77 515 (\$31 799). Most clinical encounters were return visits (77 507 encounters [64.9%]) and were among medical (46 412 encounters [38.9%]) and surgical (31 551 encounters [26.4%]) specialties.

Primary Outcome

Overall, 60 588 (80.6%) White patients reported the maximum score, compared with 10 269 (13.7%) Black, 2053 (2.7%) Asian, 1667 (2.2%) Hispanic, and 585 (0.8%) other race patients ($P < 0.0001$). In adjusted analyses, compared with White patients, Black (odds ratio [OR] 0.84; 95% confidence interval [CI] 0.80–0.87), Asian (OR 0.62; 95% CI 0.58–0.66), and other race patients (OR 0.83; 95% CI 0.72–0.94) were each less likely to report the maximum score for their ability to get an appointment within a reasonable time frame. Adjusted odds ratios for the associations between the primary outcome and each patient and clinical encounter characteristic included in the multivariable logistic regression model are illustrated in Table 3.

Other patient characteristics that were significantly associated with lower odds of reporting the maximum score for timely access to care include being single (OR 0.93; 95% CI 0.90–0.96) and higher household income (OR 0.99; 95% CI 0.99–1.00). Less than excellent self-reported overall health was also associated with lower likelihood of reporting the maximum score: very good (OR 0.80; 95% CI 0.77–0.83); good (OR 0.69; 95% CI 0.66–0.72); fair (OR 0.64; 95% CI 0.61–0.67); and poor (OR 0.70; 95% CI 0.64–0.76). A similar pattern was seen with less than excellent overall mental or emotional health: very good (OR 0.68;

Table 3. Unadjusted and Adjusted Odds Ratios (ORs) for the Maximum Press Ganey Score for the Primary Access Outcome by Patient and Clinical Encounter Characteristics.

Patient Characteristics	UNADJUSTED		ADJUSTED	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age	1.02 (1.02, 1.02)	<0.001	1.01 (1.01, 1.01)	<0.001
Sex				
Female	Reference			
Male	1.21 (1.18, 1.24)	<0.001	1.03 (1.00, 1.06)	0.05
Race/Ethnicity				
White	Reference			
Black	0.83 (0.80, 0.85)	<0.001	0.84 (0.80, 0.87)	<0.001
Asian	0.50 (0.47, 0.53)	<0.001	0.62 (0.58, 0.66)	<0.001
Hispanic	0.81 (0.75, 0.88)	<0.001	0.97 (0.90, 1.06)	0.53
Other	0.73 (0.65, 0.83)	<0.001	0.83 (0.72, 0.94)	0.004
Marital Status				
Married/Partnered	Reference			
Single	0.71 (0.69, 0.73)	<0.001	0.93 (0.90, 0.96)	<0.001
Divorced/Widowed	1.07 (1.03, 1.11)	<0.001	0.98 (0.94, 1.02)	0.27
Other	0.84 (0.71, 1.00)	0.04	0.97 (0.81, 1.15)	0.71
Insurance				
Commercial	Reference			
Medicaid	1.01 (0.95, 1.06)	0.85	1.21 (1.14, 1.28)	<0.001
Medicare	1.66 (1.62, 1.71)	<0.001	1.23 (1.18, 1.27)	<0.001
Mixed	1.29 (1.23, 1.36)	<0.001	1.17 (1.11, 1.24)	<0.001
Other	1.22 (1.15, 1.29)	<0.001	1.18 (1.11, 1.26)	<0.001
Education				
>4-year College Graduate	Reference			
4-year College Graduate	0.97 (0.94, 1.00)	0.04	1.07 (1.04, 1.11)	<0.001
Some College	1.21 (1.17, 1.24)	<0.001	1.32 (1.28, 1.37)	<0.001
Up to High School or General Education Diploma	1.34 (1.29, 1.38)	<0.001	1.40 (1.35, 1.46)	<0.001
Median Household Income (per \$10 000)	1.01 (1.01, 1.01)	<0.001	0.99 (0.99, 1.00)	<0.001
Primary Language English				
Yes	Reference			
No	0.75 (0.67, 0.84)	<0.001	0.93 (0.82, 1.05)	0.24
Overall Health				
Excellent	Reference			
Very good	0.76 (0.73, 0.79)	<0.001	0.80 (0.77, 0.83)	<0.001
Good	0.67 (0.65, 0.70)	<0.001	0.69 (0.66, 0.72)	<0.001
Fair	0.62 (0.59, 0.65)	<0.001	0.64 (0.61, 0.67)	<0.001
Poor	0.64 (0.59, 0.69)	<0.001	0.70 (0.64, 0.76)	<0.001
Overall Mental or Emotional Health				
Excellent	Reference			
Very good	0.63 (0.61, 0.65)	<0.001	0.68 (0.66, 0.71)	<0.001
Good	0.52 (0.50, 0.53)	<0.001	0.57 (0.55, 0.59)	<0.001
Fair	0.51 (0.48, 0.53)	<0.001	0.57 (0.54, 0.60)	<0.001
Poor	0.47 (0.43, 0.52)	<0.001	0.54 (0.48, 0.60)	<0.001
Clinical Encounter Characteristics				
Specialty				
Medical	Reference			
Surgical	1.23 (1.20, 1.27)	<0.001	1.26 (1.22, 1.30)	<0.001
Dermatology	0.71 (0.69, 0.74)	<0.001	0.67 (0.64, 0.70)	<0.001
Other	0.81 (0.78, 0.83)	<0.001	0.88 (0.85, 0.91)	<0.001
Visit Type				
Return	Reference			
New	0.63 (0.61, 0.64)	<0.001	0.64 (0.62, 0.65)	<0.001
Procedure	0.80 (0.72, 0.89)	<0.001	0.98 (0.87, 1.10)	0.7
Location				
Main	Reference			
Affiliated – Philadelphia	0.87 (0.84, 0.89)	<0.001	0.87 (0.85, 0.90)	<0.001

(continued)

Table 3. (continued)

Patient Characteristics	UNADJUSTED		ADJUSTED	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Satellite – Pennsylvania	0.89 (0.87, 0.92)	<0.001	0.88 (0.85, 0.91)	<0.001
Satellite – New Jersey	1.02 (0.95, 1.11)	0.55	0.96 (0.89, 1.04)	0.32
Survey Year				
2014	Reference			
2015	0.95 (0.92, 0.99)	0.005	0.99 (0.96, 1.03)	0.59
2016	0.87 (0.84, 0.90)	<0.001	0.94 (0.90, 0.97)	<0.001
2017	0.88 (0.84, 0.91)	<0.001	0.97 (0.92, 1.01)	0.11

Regression models included the following variables: patient age, gender, race/ethnicity, education, income, marital status, insurance, primary language, overall health, and mental and emotional health; clinical encounter type, location, and specialty; and survey year. Scores refer to scores on the Press Ganey Outpatient Medical Practice survey, Access Domain question: “ability of getting an appointment within a reasonable time frame.” Abbreviation: OR, odds ratio; CI, confidence ratio.

95% CI 0.66–0.71); good (OR 0.57; 95%CI 0.55–0.59); fair (OR 0.57; 95% CI 0.54–0.60); and poor (OR 0.54; 95% CI 0.48–0.60). Additionally, compared to patients returning PG surveys for medical specialty visits, those who returned surveys for dermatology visits were less likely to report the maximum score for timely access to care (OR 0.67; 95% CI 0.64–0.70), while those who returned surveys for surgical visits were more likely to report the maximum score (OR 1.26; 95% CI 1.22–1.30).

Patient characteristics that were significantly associated with higher odds of reporting the maximum score for timely access to care include older age (OR 1.01; 95% CI 1.01–1.01), male sex (OR 1.03; 95% CI 1.00–1.06), and having a four-year college education or less, compared to having more than a four-year college education: four-year college graduate (OR 1.07; 95% CI 1.04–1.11); some college (OR 1.32; 95% CI 1.28–1.37); up to high school or general education diploma (OR 1.40; 95% CI 1.35–1.46). Having non-commercial insurance was also associated with higher reported scores: Medicaid (OR 1.21; 95% CI 1.14–1.28); Medicare (OR 1.23; 95% CI 1.18–1.27); mixed (OR 1.17; 95% CI 1.11–1.24); or other non-commercial insurance (OR 1.18; 95% CI 1.11–1.26). The sensitivity analysis yielded results similar to those obtained in the primary analysis.

Secondary Outcomes

ORs for the associations between the secondary outcomes and patient and clinical encounter characteristics were similar to those of the primary outcome with a few additional and notable significant associations (Supplementary Table). Hispanic ethnicity and non-English primary language were each significantly associated with lower odds of reporting the maximum score for courtesy of the person who scheduled their appointment (OR 0.89; 95% CI 0.81–0.97 and OR 0.83; 95% CI 0.73–0.95, respectively) and staff in registration area (OR 0.89; 95% CI 0.82–0.97 and OR 0.86; 95% CI 0.75–0.97, respectively). Hispanic ethnicity was also significantly associated with lower odds of reporting the maximum score for promptness of returned phone calls (OR 0.89; 95% CI

0.82–0.97), and non-English primary language with helpfulness over the phone (OR 0.78; 95% CI 0.69–0.89).

Discussion

In this study, patients’ experiences of access to health care differed by race, ethnicity, and other patient and clinical encounter characteristics. Specifically, Black, Asian, and other race patients reported poorer experiences of accessing care in a timely manner compared to White patients. Less than excellent self-reported overall health and emotional well-being were also independently associated with poorer experiences of access to care, suggesting that those with arguably greater medical needs may have a harder time accessing care. Additional and notable significant associations between Hispanic ethnicity or non-English primary language and secondary outcomes related to communication and respect also suggest that cultural differences or language barriers may impact patients’ experiences of accessing health care.

Interestingly, compared to commercial insurance, having public insurance was associated with better reports of access to care, and higher education and income were associated with poorer reports of access to care. Our findings are in contrast to other studies that have found higher socioeconomic status and private insurance status to be positively associated with access to health care.^{15–18} One interpretation of our results is that patients with public insurance or those with lower education levels or income truly experience better and more timely access to care at this large academic institution compared to patients with private insurance or higher education levels or income, respectively. However, another interpretation may be that different expectations of care among patients with different health insurance or socioeconomic status account for our unexpected findings. For example, a patient with Medicaid insurance who may be accustomed to longer wait times or even complete denial of care may consider a 3-month wait for an appointment to be a good experience compared to a patient with commercial insurance who generally has better access to care and might consider a similar wait time for an appointment

unacceptable. Our study is unable to account for potential differences in expectations of care; therefore, our findings should be interpreted with caution.

It should also be noted that cultural differences in score reporting may also influence our study's results. For example, prior studies found that Asian respondents were less likely to report the highest scores on patient experience surveys compared to White respondents, and that these differences were greater when patients were asked to "rate" experiences, rather than "report" them, based on the survey instrument employed.^{19,20} This trend may be due, in part, to cultural differences in the approach to providing survey-based ratings of healthcare experiences.

In regard to clinical encounter type, we found that poorer access scores were associated with dermatologic appointments (compared to medical), new visits (compared to return), and satellite clinic visits (compared to main campus). These findings may reflect poorer experiences of care access due to longer wait times for the aforementioned encounter types²¹ and potential differences in clinic resources by geographic setting. Interventions targeting these challenges, such as initiatives to increase specialty clinic capacity, ease of scheduling new appointments, and telehealth services, should be considered.^{22,23} Additionally, interventions to improve language accessibility are integral for all practice locations and medical specialties.

Strengths and Limitations

Study strengths include a large, racially diverse study population and the inclusion of a broad range of patient and clinical encounter characteristics. Limitations include low survey response rate (though typical for the PG survey),¹¹ potential non-response bias, and possibly limited generalizability to patient populations with different sociodemographic characteristics or who are unable to access healthcare entirely. Additionally, this study represents patient experiences of access to care and does not account for medical appropriateness as a factor in healthcare access.

Conclusion

This study provides new insights about patients' experiences of timely access to health care and how they differ by patient race, ethnicity, primary language, and other important socio-demographic and clinical encounter factors. Black, Asian, and Hispanic patients and those whose primary language was not English reported poorer experiences of access to care across some or all of the PG Access domain, compared to White and primary English speakers, respectively. Our findings highlight the need to improve the experience of accessing health care in the U.S. for minoritized groups and those with the greatest health needs in a culturally mindful manner. Such efforts may include, for example, cultural humility training and greater language access services, among others. Further investigation to understand the

causes of different experiences of access to healthcare as well as differential scoring on the PG survey among specific patient populations is warranted to achieve equity among patient experiences.

Author Contributions

Concept and design: JWG, RF, DBS, JT; Acquisition, analysis, or interpretation of data: JWG, RF, DBS, JT; Drafting of the manuscript: JWG, JT; Critical revision of the manuscript for important intellectual content: JWG, RF, DBS, JT; Statistical analysis: RF; Administrative, technical, or material support: JT; Supervision: DBS, JT

Additional Contributions

McWellington H. Todman, MS, and Craig J. Loundas, PhD (Perelman School of Medicine, University of Pennsylvania) granted permission to use and assisted with accessing the data necessary for our study. Ting-Shan Chiu, MS (Perelman School of Medicine, University of Pennsylvania), created an analytic data set. None of these individuals was compensated for these contributions.

Conflict of Interest Disclosures

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IRB & Ethics Statement

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Supplemental Material

Supplemental material for this article is available online.

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