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Incidence of Accommodations for Patients With Significant Vision Limitations in Physicians' Offices in the US

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IMPORTANCE Despite documented disparities in health care for patients with significant vision impairments and legal mandates that patients with disability receive equitable care, little is known about the extent to which physicians practicing in the US accommodate these patients in outpatient clinical settings.

OBJECTIVE To empirically explore the extent of basic accommodations physicians practicing in the US provide to patients with significant vision limitations in outpatient care.

DESIGN, SETTING, AND PARTICIPANTS In this physician survey study, randomly selected physicians were surveyed throughout the US on their attitudes toward patients with disability. A total of 1400 randomly selected active board-certified physicians representing 7 specialties (family medicine, general internal medicine, rheumatology, neurology, ophthalmology, orthopedic surgery, and obstetrics-gynecology) were surveyed. Data were collected from October 2019 to June 2020.

MAIN OUTCOMES AND MEASURES Reported use of basic accommodations when caring for patients with significant vision limitations (defined here as blind or significant difficulty seeing even with glasses or other corrective lenses). Physicians' accommodation performance was assessed based on whether they always or usually described the clinic space and always or usually provided printed material in large font. Use of Braille materials was reported too rarely to include in analyses.

RESULTS Of the 462 survey participants, 297 of 457 (65.0%) were male. The weighted response rate was 61.0%. Only 48 physicians (9.1%; 95% CI, 6.6-12.3) provided both accommodations (always or usually describing clinic spaces and providing large-font materials), while 267 (60.2%; 95% CI, 55.3-65.0) provided neither of these accommodations. Although 62.8% (95% CI, 57.5-67.8; n = 245) of nonophthalmologists did not provide either accommodation, 29.3% (95% CI, 20.1-40.7; n = 22) of ophthalmologists also did not do so; only 24.0% (95% CI, 15.6-35.0; n = 18) of ophthalmologists provided both accommodations compared with 8.4% (95% CI, 5.4-12.7) of other physicians.

CONCLUSIONS AND RELEVANCE This survey study suggests that less than one-tenth of physicians practicing in the US who care for patients with significant vision limitations usually or always describe clinic spaces or provide large-font materials, and less than one-third of ophthalmologists do so. Actions to address this seem warranted.

Invited Commentary

Supplemental content

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With the aging US population, vision loss is a major public health problem.[1-3] Cataracts, age-related macular degeneration, diabetic retinopathy, and glaucoma contribute to increasing numbers of individuals with blindness or substantial vision impairments. Determining the prevalence of vision impairments in the US is challenging.[4] Nevertheless, recent meta-analyses across several data sets suggested that 7.08 million individuals in the US have visual acuity loss and 1.08 million are blind.[5] Vision loss affects both individuals and society,[1] influencing daily activities, health, and health care costs.[2,6,7]

Persons with impaired vision experience health care disparities, like lower rates of screening for breast or colon cancers,[8] and they may have worse health outcomes (eg, from pregnancy).[9] During the COVID-19 pandemic, people with impaired vision had more difficulty than others obtaining trusted information.[10] In focus groups, people with significant vision impairments described needing basic accommodations during health care visits, such as having clinic staff describe examination room spaces (to ensure patients' safety and comfort) and receiving printed materials (eg, instructions, prescriptions) in accessible formats (eg, Braille, large font).[11]

To our knowledge, little is known about the accommodations physicians practicing in the US provide to patients with disability. We conducted a nationally representative survey exploring reports from outpatient physicians nationwide about caring for patients with various disability types.[12,13] We included significant vision limitations, defined as people who are blind or have significant difficulty seeing, even with glasses or other corrective lenses.

Key Points

Question How often are physicians practicing in the US providing basic accommodations—describing the clinic space or giving printed materials in large font—when caring for patients with significant vision limitations?

Findings In this US physician survey study across 7 specialties including 462 respondents, less than 10% of physicians provided both basic accommodations for patients with significant vision limitations.

Meaning Despite more than 30 years since the passage of the Americans with Disabilities Act, these results suggest that many physicians practicing in the US are not meeting basic accommodation needs of their patients with significant vision limitations.

Methods

Massachusetts General Hospital/Partners Healthcare and University of Massachusetts Boston Institutional Review Boards approved this study. The survey cover letter indicated the completion and return of the survey implied the participant consent.

Survey Development

Details about survey methods appear elsewhere.[12,13] Briefly, drawing from qualitative research, we developed a survey appropriate for physicians practicing in 7 specialties: family medicine, general internal medicine, rheumatology, neurology, ophthalmology, orthopedic surgery, and obstetrics-gynecology. The University of Massachusetts Boston Center for Survey Research (CSR) pretested the survey using 8 cognitive interviews and formal pilot tests with 50 participants.[13] The final survey had 75 questions grouped into 8 modules, including modules about vision, hearing, mobility, mental health, and intellectual disabilities (eAppendix in the Supplement).

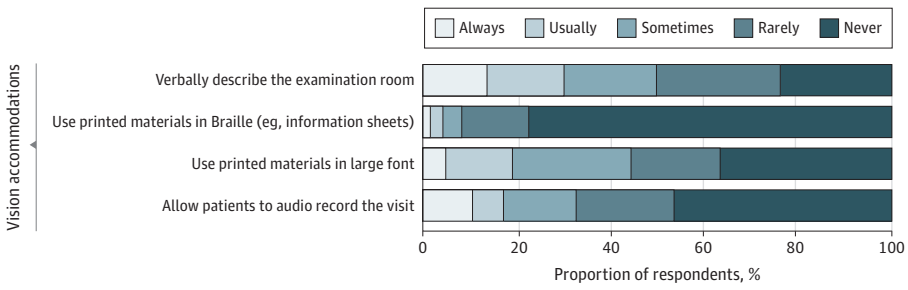
Sampling

We identified all board-certified physicians practicing in the US in the 7 specialties using data from IQVIA (n = 277 675). We excluded trainees (residents or fellows), hospitalists, several other subgroups of physicians described elsewhere,[12,13] and physicians with incomplete contact information. From the 172 734 remaining physicians, we selected simple random samples within specialties: 350 physicians each in family practice and general internal medicine and 140 physicians each in the 5 other specialties.

Survey Administration

In October 2019, CSR sent sampled physicians a paper survey via priority mail, with a $50 honorarium. Physicians could answer on paper or online. Both paper and electronic surveys

Figure. Overall Distribution of Survey Responses to Use of Vision Accommodations



The survey asked, "When seeing patients with significant vision limitations, how often do you or a staff member ...?" Options included verbally describing the examination room, using printed materials in Braille (eg, information sheets), using printed materials in large font, and allowing patients to audio record the visit. Response categories were always, usually, sometimes, rarely, never, and not applicable to their practice; we eliminated not applicable responses from analyses.

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Table. Survey Participant Characteristics and Associations With Accommodations for Patients With Significant Vision Limitations

Variable	Overall		Vision accommodation practices[a]						*P* value[b]
			Both		One but not both		Neither		
	No./total No.[c]	% (95% CI)[d]	No.[c]	% (95% CI)[d]	No.[c]	% (95% CI)[d]	No.[c]	% (95% CI)[d]	
All respondents	462	NA	48	9.1 (6.6-12.3)	147	30.7 (26.3-35.4)	267	60.2 (55.3-65.0)	NA
Sex									
Male	297/457	62.0 (57.0-66.8)	30	8.1 (5.4-11.9)	83	27.1 (22.0-33.0)	184	64.7 (58.7-70.3)	.12
Female	160/457	38.0 (33.2-43.0)	16	9.7 (5.7-16.2)	61	36.3 (28.7-44.7)	83	54.0 (45.5-62.2)	
Self-reported race and ethnicity									
Non-Hispanic White	303/450	69.3 (64.6-73.7)	31	8.4 (5.6-12.3)	86	27.6 (22.5-33.4)	186	64.0 (57.9-69.7)	.19
Other[e]	147/450	30.7 (26.3-35.4)	13	8.1 (4.4-14.4)	55	37.0 (28.9-45.9)	79	54.9 (46.0-63.5)	
Location									
Urban	417/462	87.9 (84.1-91.0)	42	8.6 (6.1-11.9)	138	32.3 (27.6-37.4)	237	59.2 (53.9-64.2)	.14
Rural	45/462	12.1 (9.0-15.9)	6	13.0 (5.7-27.0)	9	18.9 (9.6-33.9)	30	68.1 (52.4-80.5)	
Primary specialty									
Primary care	252/462	72.5 (69.8-75.0)	20	8.4 (5.4-12.7)	73	28.3 (23.0-34.2)	159	63.4 (57.1-69.2)	<.001
Ophthalmology	75/462	7.6 (7.0-8.2)	18	24.0 (15.6-35.0)	35	46.7 (35.6-58.0)	22	29.3 (20.1-40.7)	
Other specialty	135/462	19.9 (17.4-22.7)	10	6.1 (2.9-12.4)	39	33.3 (24.6-43.3)	86	60.6 (50.7-69.8)	
Owner or co-owner of practice									
Yes	197/447	41.6 (36.8-46.6)	22	.5 (6.7-16.2)	72	35.3 (28.4-42.9)	103	54.2 (46.5-61.6)	.14
No	250/447	58.4 (53.4-63.2)	26	8.5 (5.4-12.9)	69	27.2 (21.6-33.6)	155	64.4 (57.7-70.6)	
Years since graduating medical school									
<20	148/442	34.3 (29.7-39.3)	20	11.2 (6.8-17.9)	42	27.9 (20.6-36.5)	86	61.0 (52.0-69.2)	.31
≥20	294/442	65.7 (60.7-70.3)	23	6.8 (4.3-10.6)	99	32.6 (27.1-38.7)	172	60.6 (54.4-66.5)	
Practice type									
Private practice, community	295/459	63.1 (58.1-67.9)	31	9.6 (6.5-14.0)	110	36.3 (30.6-42.5)	154	54.1 (47.8-60.2)	<.001
Teaching hospital	86/459	16.7 (13.5-20.5)	13	14.6 (8.0-25.0)	21	23.6 (15.1-34.8)	52	61.8 (50.1-72.3)	
Other	78/459	20.2 (16.3-24.7)	4	3.3 (1.0-10.7)	15	18.9 (11.2-30.1)	59	77.8 (66.4-86.2)	
No. of physicians in practice									
Very small (1-3)	149/456	33.9 (29.2-38.8)	17	10.5 (6.2-17.2)	44	28.7 (21.6-37.1)	88	60.7 (52.0-68.8)	.37
Small (4-11)	211/456	47.5 (42.5-52.6)	18	7.4 (4.4-12.2)	75	35.4 (28.6-42.7)	118	57.3 (49.8-64.4)	
Large (≥12)	96/456	18.6 (15.2-22.7)	13	11.6 (6.2-20.5)	28	24.6 (16.5-35.1)	55	63.8 (52.8-73.6)	
Patients with Medicaid and/or uninsured									
Non-safety net physician (<35%)	302/417	69.7 (64.6-74.4)	31	9.3 (6.3-13.5)	96	30.7 (25.3-36.8)	175	60.0 (53.7-65.9)	.70
Safety net physician (≥35%)	115/417	30.3 (25.6-35.4)	13	9.9 (5.5-17.4)	32	26.3 (18.8-35.6)	70	63.7 (54.0-72.4)	
Lack of formal education/training about disability[f]									
Not a barrier at all/small barrier	284/455	61.5 (56.5-66.3)	34	10.2 (7.1-14.6)	93	31.9 (26.2-38.1)	157	57.9 (51.5-64.0)	.37
Moderate/large barrier	171/455	38.5 (33.7-43.5)	14	7.5 (4.1-13.4)	49	27.6 (21.0-35.4)	108	64.8 (56.7-72.2)	

(continued)

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Table. Survey Participant Characteristics and Associations With Accommodations for Patients With Significant Vision Limitations (continued)

Variable	Overall		Vision accommodation practices[a]						*P* value[b]
			Both		One but not both		Neither		
	No./total No.[c]	% (95% CI)[d]	No.[c]	% (95% CI)[d]	No.[c]	% (95% CI)[d]	No.[c]	% (95% CI)[d]	
Lack of appropriate facilities for service dogs[f]									
Not at all/small barrier	366/457	79.2 (74.8-83.0)	42	10.2 (7.3-14.0)	115	30.9 (26.0-36.4)	209	58.9 (53.3-64.3)	.20
Moderate/large barrier	91/457	20.8 (17.0-25.2)	6	5.5 (2.1-13.8)	27	26.4 (18.1-37.0)	58	68.1 (57.2-77.3)	
Lack of time[f]									
Not at all/small barrier	228/460	52.8 (47.8-57.8)	21	7.5 (4.6-12.1)	67	27.6 (21.8-34.2)	140	64.9 (58.0-71.2)	.15
Moderate/large barrier	232/460	47.2 (42.2-52.2)	27	10.9 (7.2-16.1)	78	33.7 (27.2-40.7)	127	55.4 (48.3-62.4)	
Confidence in ability to provide same quality care to disabled patients[g]									
Not very confident	270/448	63.0 (58.0-67.7)	24	7.2 (4.5-11.3)	76	25.9 (20.7-31.9)	170	66.9 (60.6-72.6)	.006
Very confident	178/448	37.0 (32.3-42.0)	22	11.2 (7.1-17.3)	67	38.5 (31.0-46.7)	89	50.3 (42.2-58.3)	
Perception of quality of care for patients with significant vision limitations[h]									
Not worse	201/454	42.0 (37.1-47.0)	33	13.9 (9.5-19.9)	71	34.9 (28.0-42.5)	97	51.2 (43.6-58.8)	.003
Worse	253/454	58.0 (53.0-62.9)	15	5.9 (3.4-10.0)	73	27.3 (21.8-33.7)	165	66.8 (60.2-72.8)	

[a] Accomodations were always or usually describing examination room and/or using large-font printed materials.

[b] Based on 2-sided χ^2 tests.

[c] May not add to the total owing to missing data.

[d] Percentages adjusted for sampling weights.

[e] All race and ethnicity categories can be found in the survey in the eAppendix in the Supplement.

[f] Based on the survey question, "Please tell us how much each of the following is a barrier for you in caring for patients with disability…?" Responses included not at all a barrier, small barrier, moderate barrier, and large barrier.

[g] Based on the survey question, "Overall how confident are you in your ability to provide the same quality of care to patients with disability as you provide to patients without disability. Would you say…?" Responses included very confident, somewhat confident, not very confident, and not at all confident.

[h] Based on the survey question, "Thinking about the broader health care system, how would you rate the quality of care patients with different significant limitations receive compared to patients without such limitations…?" Responses included much better, a little better, the same, a little worse, and much worse.

had unique participant identification numbers, allowing CSR to follow up with nonrespondents with telephone calls and 2 additional mailings. The COVID-19 pandemic extended data collection until June 2020. As detailed elsewhere,[12,13] 175 of 1400 sampled physicians (12.5%) were ineligible; a total of 714 (51.0%) responded. Using the appropriate American Association for Public Opinion Research formula,[14] the weighted response rate was 61.0%.

Variables

For the vision module, we identified potential accommodations for outpatient practices based on prior qualitative research,[11] literature review, and searching vision-related websites. The **Figure** shows the question, 4 accommodations listed, and response categories. For analyzing accommodation practices, we eliminated Braille printed materials because it was reported so rarely (Figure). We also eliminated audio recording because it can be used for reasons other than accommodating vision needs (eg, to accommodate memory loss). We focused on frequent use of 2 accommodations: always or usually verbally describing the examination room and always or usually providing large-font printed materials. We defined a 3-level outcome variable: participants reported always or usually providing (1) both, (2) one but not both, or (3) neither of these 2 accommodations.

We explored associations between accommodation practices and participants' personal and professional characteristics (**Table**). We also looked at participants' attitudes toward caring for people with disability, including barriers they perceive in serving these patients.

Statistical Analysis

From the 714 respondents, we eliminated those with no outpatients (n = 14), no patients with significant vision limitations (n = 213), and missing data on vision accommodation variables (n = 25). We analyzed the remaining 462 participants using SAS version 9.4 (SAS Institute) and SUDAAN version 11.0.3 (RTI International). We obtained population-level proportions and 95% CI using weights provided by CSR. We assessed significance of differences in the distribution of characteristics across groups using 2-sided χ^2 tests, and *P* values less than .05 were considered statistically significant. The *P* values shown in the Table do not adjust for multiple testing.

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Results

The Table displays percentages representing overall characteristics of survey participants and percentages of these characteristics by accommodation level. Of the 462 survey participants, 297 of 457 (65.0%) were male. Only 48 physicians (9.1%; 95% CI, 6.6-12.3) provided both accommodations, while 267 (60.2%; 95% CI, 55.3-65.0) provided neither accommodation. Although 62.8% (95% CI, 57.5-67.8; n = 245) of nonophthalmologists did not provide either accommodation, 29.3% (95% CI, 20.1-40.7; n = 22) of ophthalmologists also did not do so; only 24.0% (95% CI, 15.6-35.0; n = 18) of ophthalmologists provided both accommodations compared with 8.4% (95% CI, 5.4-12.7) of other physicians. Physicians who did not own their practices (155 of 250 physicians; weighted percentage, 64.4%; 95% CI, 57.7-70.6) were more likely than physicians who owned or co-owned their practice (103 of 197 physicians; weighted percentage, 54.2%; 95% CI, 46.5-61.6) to provide neither accommodation.

Physicians who reported being very confident in their ability to provide equal-quality care to patients with disability (89 of 178; weighted percentage, 50.3%; 95% CI, 42.2-58.3) were less likely than other physicians (170 of 270; weighted percentage, 66.9%; 95% CI, 60.6-72.6) to provide neither accommodation. Physicians who believe that persons with significant vision limitations get worse-quality care than other persons (165 of 253; weighted percentage, 66.8%; 95% CI, 60.2-72.8) were more likely than other physicians (97 of 201; weighted percentage, 51.2%; 95% CI, 43.6-58.8) to provide neither accommodation.

Discussion

This national survey found that approximately three-fifths of physicians practicing in the US do not always or usually describe the examination room and always or usually provide printed materials in large font to patients with significant vision limitations. More than one-fourth of ophthalmologists reported not providing both accommodations. Braille printed materials were reported so rarely that we did not analyze this accommodation. Except possibly for Braille printed materials, none of the 4 accommodations included in our survey likely cost much time or money. Therefore, failure to provide these low-cost, basic vision accommodations is troubling.

Limitations

Our survey study has important limitations. To reduce survey length, we did not assess all potential vision accommodations. Budgetary limitations prevented us from surveying enough physicians within specialties to compare outcomes by individual specialty. Our results represent physicians' self-reports, which could be affected by various factors, including positive-response bias (eg, overestimating accommodation provision). We also know little about physicians' patient panels, including prevalence of vision disability.

Conclusions

This survey study examined basic accommodations to improve health care experiences for persons with visual impairments. Various other accommodations, requiring little time or financial expense, can also enhance care for these patients.[15] As required under Titles II and III of the Americans with Disabilities Act, physicians must ask patients which accommodations they would like and seek to comply with their individual preferences.[11]

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Study concept and design: Iezzoni, Campbell.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Iezzoni.
Critical revision of the manuscript for important intellectual content: Rao, Ressalam, Bolcic-Jankovic, Campbell.
Statistical analysis: Rao.
Obtained funding: Iezzoni.
Administrative, technical, or material support: Bolcic-Jankovic.
Study supervision: Iezzoni, Campbell.

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