

THE MARCH GOES ON: COMMUNITY ACCESS FOR PEOPLE WITH DISABILITIES

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Abstract

Although civil rights legislation designed to remove barriers to and promote full and equal participation in communities has led to some improvements, barriers remain. These barriers create participation disparities among people with disabilities, which in turn contribute to feelings of isolation and poorer health. We used participatory action research to understand present-day accessibility of important and understudied community settings, namely, state and local government facilities, programs, and services. Using an innovative approach to examining accessibility, we were able to compare the experiences of researchers with and without disabilities, thereby allowing us to identify disparities between the two groups. We found that some progress in providing access has been achieved but that other barriers persist; access for individuals with vision-related disabilities maybe most problematic. Findings indicate that more needs to be done to achieve full accessibility and inclusion. QC 2015 Wiley Periodicals, Inc.

Introduction

Although federal civil rights legislation designed to remove barriers to and promote full and equal participation for individuals with disabilities (e.g., the Architectural Barriers Act of 1968, the Rehabilitation Act of 1973, and the Americans with Disabilities Act [ADA] of 1990) has led to improvements, barriers to community life for people with disabilities persist (Freiden, 2010; Kaplan, Hernandez, Balcazar, Keys, & McCullough, 2001). People with disabilities experience disparities in multiple domains including employment, assets, education, health, technology, and political participation (Katz & DeRose, 2010; Soffer, McDonald, & Blanck, 2010; Schur & Adya, 2012; Schur, Kruse, & Blanck, 2013). People with disabilities feel isolated from their communities and experience poor health (White, Simpson, Gonda, Ravesloot, & Cable, 2010; Sherwin, 2010; National Organization on Disability, 2004; Partington, 2005; Taylor, 2000).

Accessibility—the extent to which a setting can be approached, entered, and used safely and with dignity regardless of an individual’s functioning—is a critical issue to the millions of Americans living with disability, and a foundational element in community-level factors influencing the participation and well-being of people with disabilities (Crowe, Picciarini, & Poffenroth, 2004; Seekins, Arnold, & Ipson, 2012). Barriers include factors that work to prevent a person with a disability from using a facility and the services provided.

Historically, there has been a strong focus on the physical features of built and natural environments when thinking about removing barriers and increasing accessibility; today, we draw increasingly from more inclusive frameworks such as the socioecological model of disability in

addressing these issues (Drum et al., 2009; Whiteneck et al., 2004). As a result, in addition to the presence or absence of such things as curb cuts and ramps, we consider as well the attitudes and knowledge of those who deliver services, how information is available and communicated, and the ways services are provided (e.g., process barriers such as requiring a state driver's license as the sole valid form of ID, rather than a state- issued ID, or an application available only online that is not accessible for someone using a screen reader; Blanck, 2014; Rimmer, Riley, Wang, Rauworth, & Jurkowski, 2004; Scheer, Kroll, Neri, & Beatty, 2003).

People with disabilities experience greater barriers to participation (Nary, Froehlich, & White, 2000) and these barriers impede them from full involvement in community life (Clarke, Ailshire, Nieuwenhuijsenm, & de Kleijn-do Vrankrijker, 2011; Kaplan et al., 2001; N.O.D./Harris, 2004). As a result of encountering inaccessible settings, people with disabilities experience demanding and frustrating situations and may thus be limited in opportunities to seek out and excel in diverse life pursuits (Crowe et al., 2004).

Efforts to measure accessibility have often used compliance with existing regulations (Thapar et al., 2004). Furthermore, much of this scholarship has been from the perspective of accessibility for people who use wheelchairs and examined in settings of privately operated commercial entities. While progress is seen in the physical accessibility of these settings, full accessibility is rare (Frieden, 2010; Kaplan et al., 2001; Seekins et al., 2012): Research indicates that barriers persist such as inadequate parking and signage, entrances without ramps, curbs without curb cuts, obstacles placed in sidewalks or along the path of travel, and bathrooms and restrooms with inadequate room to enter and navigate while using a wheelchair (Crowe et al., 2004; Hernandez, McCullough, Balcazar, & Keys, 2008; McClain, 2000; Seekins et al., 2012).

Others argue that regulations do not provide a high enough standard of accessibility, that too often attempts to promote accessibility do not yield true access for people with disabilities, and that people with disabilities need to be included in accessibility pur- suits (Gray, Gould, & Bickenbach, 2003; Lazar, Olalere, & Wentz, 2012). In response, researchers have developed measures of accessibility that are multidimensional and extend beyond the built environment and legal baselines (e.g., Rimmer, Riley, Wang, & Rauworth, 2005).

Others seek to examine functional access (e.g., Lazar et al., 2012) by having peo- ple with diverse disabilities attempt to complete tasks. Using this approach, Thapor and colleagues (2004) found that in buildings related to civic and cultural participation, education, transportation, recreation, and leisure, people who use wheelchairs encountered more barriers (often in the form of inaccessible entrances, which can render an entire service or facility unusable for a person who uses a wheelchair) and had more difficulty completing tasks than people with mobility disabilities who do not use wheelchairs and people with vision loss.

Although state and local government entities (addressed in Title II of the ADA) have received less attention, they represent important settings and services (Drum et al., 2009; Waterstone, 2005). For example, libraries play a substantial role in promoting access to information and resources, including serving as voting facilities and places where people can access technology (Tokaji & Colker, 2007; Wiler & Lomax, 2000). Similarly, access to local government buildings and functions ensure that people can participate in community activities, including recreational and cultural events, and have full access to key services for civic engagement. However, many public entities may not be fully accessible.

In fact, although results are mixed, some studies have found that government build- ings are *less* accessible than stores, restaurants, and churches (Crowe et al., 2004). For example, although the American Library Association Council approved a policy on ser- vices to patrons with disabilities (Burke, 2009), many libraries do not have full-time staff available to assist them, do not fully train staff on their access needs and how to provide assistive technologies, and do not have their own policies for serving patrons with disabilities (Myhill, Hill, Link, Small, & Bunch, 2012; Wiler & Lomax, 2000). Subsequently, many households with people with disabilities report that libraries are inaccessible, and physical accessibility may be better than access through assistive technology (Burke, 2009; Fulton, 2011). Related, researchers have found that state governments are not meeting the needs of people with disabilities in the way information is presented on websites (Rubaii-Barrett & Wise, 2008).

These findings are reflected in the views of people with disabilities: Some do not perceive greater accessibility since the enactment of federal legislation, although some perceive better accessibility in the public sector than in the private sector. And people with mobility and hearing related disabilities report greater accessibility than people with vision-related disabilities (Hinton, 2003). It is not fully clear what accounts for these mixed findings. Nonetheless, this research demonstrates that “access remains an elusive goal and an unkept promise” (Meyers, Anderson, Miller, Shipp, & Hoening, 2002, p. 1445). Barriers to participation persist despite a long history of legislation designed to support equal opportunity for people with disabilities and the responsibility of state and local government to allow full access to people with disabilities. The failure to deliver on its promise may be related in part to limited enforcement of the ADA, which is often prompted by complaints.

Although making important advancements, extant scholarship underattends to important settings, sometimes departs from narrow rather than more inclusive framings of accessibility, fails to systematically study the full access needs of individuals with diverse disabilities, and often examines access only within one or two communities. As a result, this scholarship does not always result in a complete understanding of accessibility from the perspective of individuals with different functional needs.

In the current study, we use participatory action research (PAR), an equal partnership between those affected by an issue and researchers studying an issue (Whyte, 1991), to further this scholarship. Specifically, we studied the experiences of people with and without disabilities as they seek to identify information about local and state government entities and services remotely and to complete site- relevant activities in person, with a focus on comparing accessibility experiences between people with and with disabilities; offsite ver- sus onsite activities; among people with different types of access needs (wheelchair users, people with vision loss, and people with hearing disabilities); and different types of state and local government services or functions. This research is innovative because it directly involved people with disabilities, included a more inclusive framework of accessibility, and focused on an understudied and important community context.

Methods

Sample

We conducted this research in six states served by the Southeast ADA Center, using a seventh state (two additional communities) to conduct an initial pilot of the research protocol and instrumentation described here. To collect data from diverse communities that may represent a spectrum of accessibility, we selected six communities that are part of federal settlement agreements

aimed at improving the accessibility of local and state government (Department of Justice, 2012) by identifying communities in each state that had longer standing agreements and represented significant population centers.

Within each state, we then selected six sociodemographically comparable communities without agreements matched for population size. The 12 communities ranged in total population size from 30,000 to 647,000 and reflected a range of diversity in terms of the racial and ethnic, educational, and household income characteristics of residents reflective of the southeast (<http://factfinder2.census.gov>). In each community, we assessed five local and state government entities and services (city hall, civic center, park, public library, and police station); after lengthy discussion, we selected these settings as important community entities for people with disabilities. Within each community, we selected facilities that were centrally located or most significant in the area. In all, as planned, we collected data from 60 entities or services.

Measures, Procedures, and Analysis

We used two instruments to assess physical and programmatic accessibility. We used an adapted version of the *ADA Checklist for Readily Achievable Barrier Removal* (Barrier Free Environments & Adaptive Environments Center, 2005) to assess all entities except the police station. We selected this measure because it reflects legal standards, is user friendly (accessibility ratings are based on yes or no answers to explicit access criteria) and is frequently used in research and community-led initiatives.

Our adaptations included removing information that would be difficult to determine (e.g., enforcement procedures for parking violations), removing existing suggestions for greater access to create a simpler checklist, and including a place for comments alongside each item. The adapted version included 99 items tapping into five priority areas: (a) approaches and entrances, (b) goods and services, (c) rest rooms, (d) drinking fountains, and (e) telephones. We do not report data on public telephone accessibility given their increasing absence from public spaces (thereby leaving 90 items on the checklist). The researcher using a wheelchair completed one checklist per site (e.g., city hall, civic center, park, and public library) in each community, assessing each entity only on site-relevant items (i.e., skipping items about drinking foundations when they were absent).

To complement the technical requirements, focus, we also developed a standardized task-oriented assessment tool that had researchers attempt to complete site-relevant activities both remotely and in-person, representing critical activities related to access to goods and services. We took several steps to develop this instrument. We created an initial version based on prior research, modifying items to reflect our purpose and context. To bolster its ecological validity, team members with disabilities and who work with people with disabilities then suggested further modifications to ensure key aspects of accessibility were included, and that the tasks attempted were meaningful and site relevant. We then pilot tested the instrument in two communities in a seventh pilot state, making further improvements for clarity, usability, and ecological validity (for example, we expanded and standardized response options for format of information, accommodations, adaptive equipment, and assistive technologies, revised skip patterns for responses to telephone inquiries, and clarified data collection instructions).

The final assessment tool provided directions on information inquiries to make remotely, tasks to attempt onsite, and how to document experiences and outcomes. Specifically, items asked about the availability of accommodations, adaptive equipment and assistive technology (e.g., features on websites, availability of sign language interpreters), presence of policy modifications, plans for evacuating people with disabilities, and the success of site-specific tasks. We also asked each researcher to rate overall accessibility (on a scale of 1–4 where higher agreement indicated greater accessibility). For police services only, researchers also asked about shelters for people with a disability in emergency situations and a manual for emergency preparedness.

Each of the five cross-disability researchers first attempted to gather information about each entity using e-mail (researchers without a disability), the telephone (researchers without disability), Text Telephones/Telecommunications Device for the Deaf (TTY/TDD) or relay (researchers with hearing disability), or the Internet (researchers with mobility disability and researchers with vision loss). Researchers then tried to complete a specific onsite task at all facilities except police services: (a) locating the office that provides information about city council meetings and asking for their meeting schedule and how to raise an issue for the agenda at city halls, (b) asking for information on obtaining a library card and using the card catalog to identify and locate a book at libraries, (c) obtaining a program schedule and watching a show at civic centers, and (d) identifying a picnic area and having a picnic at parks.

We used a train-the-trainer model to train researchers. First, we identified a lead researcher in each state. Most of the lead researchers were part of the research team responsible for the initial design of the project. We trained lead researchers on research (definition of, reliability, validity, ethics), PAR, and the research protocol. Lead researchers also practiced data collection at a library and had opportunities thereafter for more feedback and clarifications of procedures.

We then worked with each lead researcher to identify a team of five researchers in each state (six cross-disability research teams in all), including a person who uses a wheelchair, a person with vision loss, a person with a hearing disability, and two people without disabilities (for purposes of comparison). Lead researchers sought to identify a team comprising individuals from diverse racial and ethnic backgrounds, ages, and genders (striving to create a team whose background was similar to the sociodemographic makeup of the two selected communities in their state), who had experience or interest in accessibility, and who demonstrated qualities that would assist them to complete the data collection accurately and reliably.

We also developed a training for the cross-disability research teams. This training included information about the ADA, accessibility, research and PAR, the purpose of the research, data collection procedures (including how to use one's body as an ADA Measuring Stick so as to make measurement less intrusive), practice with training scenarios, and the opportunity to practice data collection. State lead researchers obtained consent to participate and trained their cross-disability research team on the data collection procedures, coordinated data collection, and provided ongoing support. The training, practice, and ongoing support ensured that researchers correctly followed research procedures; although we assessed reliability for training purposes, we did not evaluate reliability during data collection.

Teams collected data in a single day in each community, staggering visits to each entity throughout the day (in no instance did a team report that staff appeared suspicious or unwilling to

respond after several visits) and scheduling data collection in each community in their state relatively close together. In all, over 50 people contributed to data collection through organizing and/or collecting data.

After a pilot phase in which we used the research protocol and instrumentation (revised as described above) with two communities in one state, we collected data in two phases (three states at a time) and made further minor improvements to phase two data collection instruments based on phase one experience. As such, for some variables we do not have data from all 12 communities. During data collection and in a debriefing meeting afterwards, all researchers made notes about and shared their experience; we use quotes from these notes in the discussion section to capture in vivo experiences.

We trained research assistants to enter and verify data. We used SPSS to calculate descriptive statistics and parametric (e.g., analysis of variance) and nonparametric (e.g., chi-square, Kruskal-Wallis) tests of statistical significance (using $p < 0.05$ as the criteria for statistical significance) as appropriate for sample size and type of variable (see below for details). Because our focus is on the access gaps that may occur between individuals with and without disabilities, we present findings from the perspectives of individual users.

RESULTS

Accessibility of ADA Priority Areas for Readily Achievable Barrier Removal

Researchers who use wheelchairs assessed four types of facilities in each community using the *ADA Checklist for Readily Achievable Barrier Removal* (48 entities in all). We examined the percent of accessible features overall and by priority area by calculating the ratio of items

Table 1. Features Coded Accessible in the ADA Checklist at Least 90% of the Time

<i>ADA checklist item</i>	<i>Priority area</i>	<i>Percent accessible</i>
Thickness of carpets/mats	1	100
Clear opening of door in public space	2	100
Bathroom door height	3	100
Toilet midline	3	100
Accessible stalls in bathrooms with 6 or more stalls	3	100
Clear opening of door	1	98
Threshold height	1	97
Restroom doorway width	3	97
Lavatory rim height	3	97
Width between railings or curbs	1	96
Quality of carpeting (pile, weave, attached)	2	96
Call buttons in hallway height	2	96
Aisles and pathways width	2	95
Lift used without assistance and clear space	2	95
Toilet seat height	3	95
Bathroom staff free of prodding objects	3	95
One fountain with clear floor space	4	95
Route width	1	94
Lavatory apron height	3	94
Securely installed edges	1	93
Adequate width of accessible route to all public spaces	2	93
Clear wall space on pull side of door next to handle	1	92
Pull side of door-clear wall space	2	92

Door handle height and operable with closed fist	2	92
Lavatory clear space in front	3	92
Fountain controls mounted on the front or side near front edge and operable with closed fist	4	92
Stair-free route of travel	1	91
Detection of objects in path by person with visual disability using cane	1	91
Door handle height and operable with closed fist	1	91
All public routes on accessible route of travel	2	91
Ramps, lifts, or elevators to all public levels	2	91
Ramp slope	1	90
Ramp or lift	1	90
Accessible entrance with direct access to main floor, elevator, or lobby	2	90

determined accessible (i.e., those scored yes) compared to the total number of items. We found two (4%) entities fully accessible. Another 12 (25%) entities had accessibility problems on 5% or less of the items. We found no statistically significant differences in accessibility ratings based on ADA priority area, $F(2.166, 75.811) 1.63, ns$, partial eta squared 0.045, or type of entity, $\chi^2_{k-w} 1.389, ns$ (percent of accessible features ranged from 70 to 94). We also examined entity features that were scored as accessible at least 90% of the time (see Table 1) or as accessible 75% of the time or less (see Table 2).

Accessibility of ADA Priority Area 2 (Goods and Services): Site-Specific Tasks

Offsite information gathering and accessibility. Using e-mail, telephone, TTY/TDD or relay, and the Internet, researchers tried to locate information about each entity. Researchers sought information about accommodations, adaptive equipment, and assistive technology for people with disabilities and then followed-up by asking about specific accommodation needs for that individual's disability. Across all communities, accommodations, adaptive equipment, and assistive technology that enable access were available less than 50% of the time (see Table 3).

Researchers reported that 64% of the time there was a designated staff member who coordinates services for people with disabilities. In those cases, in which researchers were able to identify the hours these staff members were available, 86% of the time they were available at all hours of operation. And among researchers who reported on the availability of modifications to policies and procedures, they were available 81% of the time. In instances in which researchers were able to report on whether the entity had a written policy describing services and accommodations for people with disabilities, 54% found that the entity did.

Among those who were able to identify the information, 62% of the time there was a staff member who provides assistance with assistive technology. However, in 21% of cases, researchers were referred to special services in another office or department for assistance with their questions. Among researchers who sought and were able to identify information on the availability of emergency evacuation plans for people with disabilities,

Table 2. Features Coded Accessible in the ADA Checklist 75% of the Time or Less

<i>ADA checklist item</i>	<i>Priority area</i>	<i>Percent accessible</i>
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Emergency intercom usable without voice communication	2	75
Emergency intercom identified by Braille and raised lettering	2	75
Doors open easily	1	74
Doors open easily	3	74
Height, contrast, and glare of letters on signs	2	73
Visible and verbal audible door opening/closing and floor indicators in elevator	2	73
Braille and raised characters on pictograms or symbols used to identify restrooms	3	72
Accessible soap and other dispensers	3	71
Parking space size	1	70
Access aisles part of accessible route to accessible entrance	1	70
Directional and informational signs legible	2	70
Level landings on ramps	1	69
Doors equipped with accessible handles	3	68
Food ordering counter height and space	2	67
Threshold edges height	2	63
Signage	2	63
Emergency system has flashing lights and audible system	2	60
Cashier counters height	2	59
Ramp rise	1	57
Enforcement procedure for parking space	1	57
Stairs with continuous rails	2	53
Stair treads with nonslip surfaces	2	50
Inaccessible entrances have signs indicating nearest accessible entrance	1	47
Inaccessible restrooms have directions to accessible ones	3	43

Table 3. Availability of Accommodations, Adaptive Equipment, and Assistive Technology Available for People With Disabilities

<i>Accommodations, adaptive equipment, and assistive technology</i>	<i>Percent</i>
Sign language interpreters	49%
Personal assistance available to help with materials	33%
Signed and captioned performances (civic center)	27%
Materials available in large print	22%
TTY/TDD	21%
Modification of lending rules (library)	20%
Relay services	19%
Synopses and scripts in advance (civic center)	18%
Captioned videos	16%
Telephone requests (library)	15%
Material available in digital format	14%
Material available in cassette	14%
Retrieval of material from stacks (library)	14%
Material available in audio	14%
Materials available in CD	14%
Photocopy assistance (library)	13%
Screen enlargement	12%
Wi-fi	10%
Materials available in Braille	7%
Reformatting to another medium	7%
Scanner/reader	7%
Materials available online	7%
Delivery service (library)	6%
Braille printer	6%
Specialized orientation tours (civic center)	5%

Specialized reference services (library)	5%
Speech synthesis	5%
Closed Captioned TV	4%
Tape recorder	4%
Braille typewriter	3%
Discount for online searching (library)	1%
Hand-held scanner	1%
Keyboard overlay	1%

such plans were available 88% of the time. And among the researchers who sought and reported information from city halls on the presence of a city ADA coordinator, 83% reported identifying that the municipality had one.

Although researchers with hearing disabilities using TTY/TDD or relay were equally successful as researchers without disabilities who used the telephone in having their call answered (each at about 75%), researchers using relay services indicated that only 78% of the time did staff know how to use relay services. Researchers who attempted to use the Internet and a screen reader to obtain information reported that in almost one half of instances, meaningful text descriptions of graphics were not available, with another 12% of sites including some text descriptions, but not for all content. Similarly, about one half of websites that included tables did not have information on row and column headers; another 17% of these websites inconsistently provided this information. And of the websites that included PDFs, 64% were not accessible and 34% of online forms were also not accessible. In no instance did a website using flash, Java, or JavaScript provide an alternative interface.

Despite these barriers and different approaches to finding out information, none of the researchers with disabilities reported significantly more trouble than researchers without disabilities in obtaining the information sought, $\chi^2 7.23$, ns. Nonetheless, between 25% and 50% of all researchers reported encountering trouble-obtaining information, with researchers with hearing disabilities reporting the greatest trouble obtaining information. Similarly, researchers with and without disabilities did not report different levels of success in obtaining information, $\chi^2 5.75$, ns, with many researchers reporting not obtaining all or any of the needed information.

Onsite task performance and accessibility. Visiting each entity in person (except police stations), researchers attempted to complete an activity or series of activities (e.g., attending an event at civic centers, having a picnic at the park, finding out how to raise an issue for the city council agenda, requesting an application for a library card and locating a book). As relevant, researchers reported on whether the information sought was available in alternative formats: They noted that personal assistance was offered about two thirds of the time at city halls and libraries. Libraries often had large print books available at a similar rate. To a lesser extent, this information was sometimes available in an electronic medium. However, researchers found that park signage was available only in Braille about one quarter of the time.

Additionally, at civic centers, only 46% of the time were companion seats available along with seats in the auditorium designated for individuals who use wheelchairs. Similarly, among researchers seeking designated seating for those who had requested a sign language interpreter, only 38% of the time were they available.

We found significant differences among researchers in their ability to complete activities, $\chi^2 31.40$, $p < 0.05$. Specifically, researchers with vision loss (69%) were less likely to complete activities than

researchers without disabilities (94%), with hearing disabilities (94%), or with mobility disabilities (99%). Not surprisingly, when asked to provide an overall rating of each facility's accessibility, we also found differences in researchers' ratings of facilities' accessibility, $F(3, 216) 16.83, p < 0.05$, partial eta square 0.19.

Similar to task completion, researchers with vision loss ($M 2.54$) reported lower levels of accessibility than researchers without disabilities ($M 3.61$), with hearing disabilities ($M 3.27$), and with mobility disabilities ($M 3.43$). We also found differences by researcher in ratings of the accessibility of park routes, $\chi^2_{k-w} 8.54, p < 0.05$. Again, researchers with vision loss ($M 2.50$) reported less accessibility of park routes than researchers without disabilities ($M 3.55$), with hearing disabilities ($M 3.75$), and with mobility disabilities ($M 3.50$). However, we did not find differences by researcher in ratings of staff's availability, $\chi^2_{k-w} 0.68, ns$, and sensitivity, $\chi^2_{k-w} 0.311, ns$, nor the accessibility of picnic areas, $\chi^2_{k-w} 2.21, ns$, and picnic tables, $\chi^2_{k-w} 2.32, ns$. We also did not find significant differences in researchers' ability to complete different types of activities (e.g., such as locating a book or finding out how to raise an issue on the City Council's agenda), $\chi^2 6.21, ns$.

We also examined whether researchers experienced differential access by type of facility assessed. Comparing entities to one another, researchers reported greater problems securing information from police services than other entities, $\chi^2 44.68, p < 0.05$. Similarly, researchers rated the accessibility of information from police services ($M 1.57$) as less accessible than information from civic centers ($M 2.63$), $F(4, 117) 3.39, p <$

0.05 . In fact, across all strategies and settings, attempting to find information offsite was more difficult than many of the onsite tasks, $\chi^2 = 32.63, p < 0.05$.

Discussion

We used PAR to study the accessibility of state and local government entities important to individuals with disabilities. Overall, we found evidence of some degree of accessibility. Illustrating these findings, some PAR researchers reported being pleased by many examples of accessibility that they encountered while collecting data, including new discoveries such as accessible park benches and picnic tables. One researcher noted¹: "This was the most accessible website I have ever seen. I could completely access the entire website and library info [using] my screen reader." PAR researchers also noted many staff contributed to positive experiences, including expressing a willingness to put together a needed accommodation. One PAR researcher reported receiving a "very prompt and helpful response"; another added: "Excellent facility for accessibility. Staff is knowledgeable and sensitive to people with disability."

However, we also found that barriers persist for many people with disabilities as they strive to engage in community life. Our findings suggest this may be particularly true for people with vision-related disabilities wishing to access goods and services from state and local government. For example, although sign language interpreters are somewhat more widely available, many other accommodations, adaptive equipment, and assistive technology are less frequently so. Indeed, overall, there were relatively few printed materials provided in alternative formats (e.g., Braille, large print, electronic). With respect to staff expertise and roles, not all entities had a staff member who coordinated services for people with disabilities, and only about one-half have written policies about providing services to people with disabilities. Moreover, researchers frequently encountered staff that did not know how to

use relay or TTY/TDD and websites with inaccessible features. It is critical to emphasize that some of these access barriers represent access *failures*, as they present barriers that fully deny access (Seekins et al., 2012). Although our research teams comprising people with and without disabilities allowed us to identify that everyone, not just those with disabilities, encountered difficulties in obtaining information or completing site-specific activities, we note that these shared difficulties may yield differential outcomes: What are challenges to some may become obstacles to participation for people with disabilities. This may be particularly true for those who need to plan activities in advance and be confident that a service will be available, or a facility will be accessible when they arrive (e.g., the availability of assistive listening devices or wheelchair and companion seating).

Indeed, PAR researchers were dismayed by their regular encounter with inaccessible paths to informational signs, misplaced signage that led to user errors, and other barriers. Many of the PAR researchers found locating information about emergency preparedness from police services particularly challenging. Researchers using TTY found many entities either did not have it or did not know how to use it. And, in some cases, researchers noted that absent or hard-to-find and see signage was frustrating and challenging.

More seriously, one researcher reported that when emergency exit information was reviewed for the audience at a civic center, there was no mention of accessible emergency exit information. And again, PAR researchers emphasized the importance of the quality of interactions with staff. Describing negative interactions, one PAR researcher noted: "I couldn't wait to get out of there. The staff seemed baffled by suggestions of special needs"; another reported: "This was not a good experience." In another encounter, a PAR researcher indicated: "The person I spoke with about the sign language interpreter was frustrated with me and I could feel it through the phone."

At times PAR researchers later learned that more accommodations were available than they were able to initially identify. For example, researchers who tried to find out information via e-mail did not always receive a return e-mail. At other times, information received offsite did not match information identified onsite. For example, one PAR researcher was told there were no assistive devices available but was later provided with an assistive listening device when he visited the civic center.

These types of experiences left PAR researchers wondering whether and how often staff might receive training on how to provide services to people with disabilities and their legal responsibilities to do so. In fact, PAR researchers noted that learning *how* to ask questions to staff that would trigger accurate and complete responses sometimes helped with learning about assistance and accommodations. In one instance, a PAR researcher asked about library materials for individuals with vision-related disabilities and received little helpful information. In talking to another PAR researcher after data collection, she discovered the library had a collection of audiobooks. From these experiences, PAR researchers highlighted the importance that *all staff* have current knowledge on assistance and accommodations provided by their facility and think broadly about what options may be available.

These findings resonate with prior work on accessibility and access barriers (Crowe et al., 2004; Hernandez et al., 2008; Hinton, 2003; Kaplan et al., 2001; Nary et al., 2000; Rimmer et al., 2004; Seekins et al., 2012; Scheer et al., 2003; Thapar et al., 2004). They also highlight the need to measure accessibility in ecologically valid ways, and the advantages of comparing the experiences of people with

and without disabilities. We may have been able to detect a broader range, or more nuanced aspects, of accessibility concerns that present barriers to people with disabilities.

Access to all aspects of community life is critically important for people with disabilities: The ADA has helped to increase opportunities for people with disabilities to be able to benefit equally from employment and transportation. Moreover, disability leaders suggest that the ADA has helped improve the self-esteem of people with disabilities and how others perceived them (Freiden, 2010). Given the important safety, social, civic, and economic functions that public entities play in everyone's lives, it is troublesome that so many access barriers remain for people with disabilities. While the ADA and related efforts may be increasing the quality of life for many people with disabilities, there is still more to achieve in terms of economic independence, community living, healthcare, housing, and employment (Frieden, 2010). Attention to how federal law is implemented and enforced may prove fruitful (Waterstone, 2005).

Limitations and Strengths

These findings should be considered in light of limitations. First, although they identify critically important information, accessibility assessments such as those reported here are fairly resource-intensive endeavors and are not always feasible to conduct or replicate, particularly in an ideally inclusive survey of all local and state government entities covered in this part of the ADA (for example, we were not able to include public transportation, sidewalks and curb cuts, or courthouses in our research).

Furthermore, our findings rely on six state-specific teams of people collecting data in two communities in each state. While boosting ecological validity, this approach introduces reliability concerns as different individuals assessed different communities. To proactively address this concern, we trained and supported a local lead researcher, trained all PAR research teams, and provided onsite and remote support during data collection; nonetheless, it is possible that variation in data collection may reduce the reliability of our findings.

We also note that these data were collected during difficult financial times and, in some locales, in areas dramatically affected by natural disasters; both of these conditions can challenge the maintenance of and investments in accessibility. And we note the absence of researchers with intellectual and other developmental disabilities on our team and encourage future teams to be more inclusive of a broader range of access needs. The cognitive access needs of these individuals may be particularly underattended to (Blanck, 2014; Bohman & Anderson, 2005); as a result, the disparities they experience are particularly acute. Last, we note that we collected data prior to the implementation of the 2010 ADA Standards for Accessible Design and therefore do not reflect these legal changes (for an overview of changes, see New England ADA Center, 2012).

Nonetheless, this research reflects a number of important strengths. First, our use of PAR augmented the social relevance of the research to people with disabilities and the ecological validity of measures of accessibility as they captured subtle aspects of accessibility. Similar to others (Lazar et al., 2012), our use of PAR researchers with diverse disabilities may have allowed for a more sensitive, and thus a more accurate, measurement of accessibility. Indeed, PAR researchers reported that they felt they were able to identify access issues that may not have been apparent to individuals without

disabilities. In one PAR researcher's words: "It is unfortunate that some public venues think they are providing adequate access to services, but the consumer's experience may be quite different."

Another benefit to including researchers with disabilities on the team is that the increased presence of people with disabilities seeking access to facilities may have served as an opportunity to raise staff knowledge and awareness of their service needs. As one research team reported:

The last person who visited the city hall . . . heard a couple of individuals talking. . . "What I want to know is are we prepared? . . . I'm not just talking about people in chairs, I mean all types . . . do we have alternative formats?"

Our inclusion of entities from multiple communities may also have captured a more accurate view of contemporary accessibility. Last, PAR researchers expressed positive feelings from having engaged in the project, learned about legal rights and accessibility, and, for some, left feeling a greater desire to engage in change efforts to remove barriers. As a result, research of this nature can foster development in people with disabilities and expand the number of members of the community who are working towards positive change (Oden, Hernandez, & Hidalgo, 2010). For example, spurred by their participation in this research, one of the states has continued to develop the tool (initially created for research purposes) to access state and local government programs and services. Self-advocates with disabilities across the state will use this tool to assess public facilities, programs, and services in their own communities. There are also plans for disability organizations in two additional Southeast states to engage in this activity in their states.

Conclusion

As we strive to improve community accessibility and ensure equal access, we must continue efforts to remove barriers. To achieve this, we need multidimensional responses that include people with disabilities as full partners in framing the discussion and contributing to ongoing and thorough efforts to improve policies, procedures, and training. Given reliance on complaints for ADA enforcement, we underscore the importance of community involvement. Communities that have gone beyond compliance in creating accessible settings and services are important partners in these change efforts.

Inaccessible settings and policies keep many people with disabilities from participating in civic life and using services, venues, and activities; they also prevent communities from benefiting from the contributions of people with disabilities. Challenges in identifying whether accommodations are available place additional burdens on and disparate outcomes for people with disabilities as they seek to participate fully. Written policies and procedures, training for staff in the implementation of policies and procedures, and making accessibility information readily and consistently available, both offsite and onsite, help people with disabilities make needed advance preparations.

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