

FLATTEN INACCESSIBILITY

RESEARCH REPORT | SEPTEMBER 2020

Impact of COVID-19 on Adults Who Are Blind or Have Low Vision in the United States

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Troy Otilio, chief executive officer of Aira, had the initial idea for the Flatten Inaccessibility survey. His idea quickly grew into a nationwide study supported by 16 organizations and companies. We thank Aira for creating the Flatten Inaccessibility website.

Dr. Kirk Adams, president and CEO of the American Foundation for the Blind (AFB), recognized the importance of the Flatten Inaccessibility survey and requested Dr. L. Penny Rosenblum, director of research, and Dr. Paola Chanes-Mora, policy research specialist, take lead roles in developing, deploying, analyzing data, and writing this report.

The research team worked tirelessly and included the following individuals who volunteered their time: Mr. Joshua Flewellen (Aira), Dr. C. Rett McBride (Georgia State University Perimeter College), Dr. Niranjani Nagarajan (Wilmer Eye Institute, Johns Hopkins University), Dr. Rosemary Nave Stawasz (Western Michigan University), Dr. Bonnie O'Day (volunteer), and Dr. Bonnielin Swenor (Wilmer Eye Institute, Johns Hopkins University). Additional research assistance was provided by Dr. Jonathan Noel and Dr. Kathleen Thompson.

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SUGGESTED CITATION

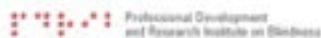
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ACCESSIBILITY

COLLABORATING ORGANIZATIONS

The following 16 organizations collaborated on the Flatten Inaccessibility survey. Through their commitment to this project, we were able to widely share information about the study.



afb.org/FlattenInaccessibility

TERMINOLOGY

The following terms are used in the report (please note that these definitions are not comprehensive, but cover the ways in which the terms are used in this report):

- **Accessible information:** Information that can be accessed via screen reader software, magnification, braille, audio description, captioning, sign languages (e.g., ASL, Signed English), and visual interpreters/support service providers. For example, maps, charts, and images may be accessible if they include a text description of visual content, large fonts, and high-contrast colors in the design.
- **Adult onset:** Visual impairment diagnosed after 18 years of age.
- **Child onset:** Visual impairment diagnosed between 2 and 18 years of age.
- **Congenital:** Visual impairment present at birth or before 2 years of age.
- **Orientation and mobility (O&M):** One's ability to travel safely and efficiently through one's environment.
- **Screen magnification software:** Software that allows low vision users to adjust the size of the screen content and select alternative background/font combinations to make viewing content easier.
- **Screen reader software:** Software that converts text to speech and allows the individual to use keyboard commands when using a mouse is not possible or efficient.
- **Social or physical distancing:** Maintaining at least 6 feet between yourself and others to minimize COVID-19 spread.
- **Visual interpreting service:** A service, often accessed through a smartphone or other device, that provides human descriptions of visual phenomena (e.g., reading the display on a thermometer, locating an empty seat on a bus, or stating whether there is moving traffic at an intersection). Two companies that provide this service are Aira, which employs trained agents, and Be My Eyes, which uses volunteers¹.
- **Visually impaired:** Individuals who are blind or have low vision are referred to as visually impaired (VI) in this report unless specific information is provided related to either blindness or low vision.

¹ Aira's CEO Troy Otillo had the initial idea for the Flatten Inaccessibility survey and Aira (<https://aira.io>) created and paid for the Flatten Inaccessibility website.

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FLATTEN INACCESSIBILITY

EXECUTIVE SUMMARY | 2020

Impact of COVID-19 on Adults Who Are Blind or Have Low Vision in the United States

The Flatten Inaccessibility survey investigated the experiences of adults who are blind or have low vision during the start of the COVID-19 pandemic.

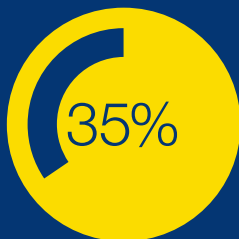
This report summarizes findings from 1,921 participants on healthcare, transportation, employment, education, social experiences, access to food, meals, and supplies, and voting.

PARTICIPANT SNAPSHOT

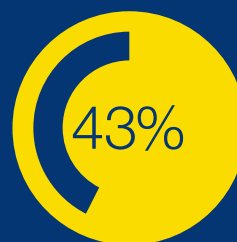
- **Location:** All 50 states, the District of Columbia, and Puerto Rico were represented
- **Gender:** Female, 63.4%; male, 35.2%; transgender or gender nonconforming, 1%; and no response, 0.37%
- **Race or ethnic background:** White, 77%; Hispanic, Latinx or Spanish Origin, 7%; Black or African American, 7%; Multiracial, 4%; Asian, 3%; American Indian or Alaska Native, 1%; Native Hawaiian or Pacific Islander, 0.11%; and Other, 1%
- **Age distribution:** 18–34 years, 23.5%; 35–54 years, 34%; and 55 and older, 42.5%
- **Employment status:** 29% were employed full time, 10% were employed part time, 3% had been employed full time and 6% had been employed part time prior to the pandemic, but were now unemployed, 29% had not been employed prior to the pandemic, and 23% were retired
- **Living arrangements:** 43.5% of participants lived with a spouse or partner, 33.6% lived alone, and 15.3% lived with other family members
- **Technology use:** 93.4% of participants had Internet access at home; 92% reported using a smartphone; 51.7% used screen reader software; 74.7% used social media; 68.2% used web conferencing tools; and 72% used online shopping apps

Level of vision

of participants were blind and



35% had low vision

Additional disabilities

of participants reported having an additional disability, with diabetes, hearing impairment, and significant psychiatric disorders being the most frequently reported

KEY AREAS OF CONCERN²

68%

of participants had concerns about transportation, particularly related to safety, restricted access to transportation options (paratransit, public transit, taxis, rideshare), and fears they would not be able to get themselves or loved ones to COVID-19 test sites or healthcare providers if they were to get sick

54%

of participants had concerns about healthcare, and 59% felt their underlying health conditions made them particularly vulnerable to COVID-19 complications

56%

of participants expressed concern about social experiences; in particular, they had fears related to their ability to social distance, asking for help, asking for physical assistance, and using touch as they normally might (e.g., using tactile sign language)

59%

of participants had concerns about their education due to their vision loss, with 35% reporting their rehabilitation center/agency had discontinued center-based classes, and 23% reporting they were no longer receiving in-home instruction

30%

of participants reported meeting with their healthcare provider using telehealth, but 21% of these participants reported the telehealth platform was not accessible

² Please see the full report to assist in interpreting the percentages provided in this summary as the number of participants who answered any one question varied.

47% of participants had concerns about employment, with 38% reporting accessibility problems with at least one of the technology tools needed to do their job and 22% reporting they were unable to access technology at home that was essential for their job

Participants enrolled in higher education **experienced access issues to online platforms** and often did not have the accommodations for classes (e.g., braille) that they received on-campus

47% of parents/caregivers had concerns about their child's education, with 60% reporting the technology tools they needed to use were not accessible and 90% reporting they received no training in the new technology

51%

of participants had concerns about access to food, meals and supplies; in particular, they worried about unavailable items, lack of delivery slots, difficulty applying for food assistance, and food insecurity due to unemployment or reduced work hours

Although 91% of participants said they were registered to vote, 39% were unsure if they had an accessible voting system, and 23% reported they did not have an accessible system

OUR RECOMMENDATIONS

TECHNOLOGY

- Critical public health information must be accessible to people who are visually impaired.
- Grocery delivery services, Internet communications platforms, and telehealth should adhere to accepted accessibility standards such as the W3C WCAG.
- Provision should be made for visual interpreting services, such as Aira and Be My Eyes, for people with limited financial resources.

TRANSPORTATION

- Transportation providers should establish community advisory committees that include people with disabilities, and they should work with local governments to offer alternatives for those who are disabled when services in a community are limited or discontinued in an emergency.
- Long-term investments should include transportation access in underserved areas, as well as sidewalks that connect people to services, transportation hubs, and their destinations.
- Drive-through or curb-side pick-up services, such as COVID-19 testing sites or food banks, must provide alternatives for those who do not have access to a vehicle.

SOCIAL EXPERIENCES

- Advocacy groups should launch awareness campaigns to explain the human guide technique and why someone with a visual impairment may not be able to maintain a social distance when using it or requesting assistance.
- Mental health providers need up-to-date training to better meet the specific needs of adults who are visually impaired.
- Game developers, exercise instructors, and website/app developers should build accessibility and usability into all offerings.

HEALTHCARE

- Healthcare facilities must recognize that people with visual impairments may need someone to accompany them to visually interpret the environment when necessary and advocate on their behalf.
- Medical providers should make written information accessible to individuals who are visually impaired by providing electronic, braille, and large print options.
- Electronic health records, secure video platforms, and other telehealth systems should meet the highest accessibility and usability standards.

ACCESS TO FOOD, MEALS, AND SUPPLIES

- Businesses should provide disability-specific training to employees to ensure people with disabilities are served appropriately; stores should provide specific hours for seniors or those with disabilities to shop; and online and app-based ordering platforms must be accessible to those who use screen reader or screen magnification technology.

- Home health companies, consumer organizations, policymakers, and others must work together to ensure home healthcare professionals receive training and follow all safety protocols.
- Online purchasing with SNAP and WIC benefits should be extended to every U.S. state and territory, and eligible retailers should be expanded.

EMPLOYMENT

- Companies must ensure recruitment and application platforms are accessible, and that employees are trained on new technologies and have access to technical support.
- Employers should ensure employees have access to comparable accommodations whether working from home or in the office.
- Employers should establish virtual meeting policies that may include providing materials to attendees in accessible formats, use of captioning or interpreters where appropriate, nonvisual communication techniques, and having individuals identify themselves before speaking.

EDUCATION

- Educational institutions must ensure visually impaired students and instructors are able to use all selected learning tools and receive accessible training in their use.
- Disability resource offices should have a plan for providing appropriate accommodations, accessible materials, and course access to students whether for live or online classes.
- Instructors should be given accessibility training and support to ensure they can create equitable learning experiences for all students.

EXPERIENCES SUPPORTING CHILDREN IN K–12 EDUCATION

- Schools must provide learning materials in alternative formats to accommodate students or their caregivers, and in the event that Internet access or appropriate devices are unavailable.
- Training and guidance on any online communication and learning tools should be provided in accessible format.
- Any accommodations a child receives in the classroom through an Individualized Education Program (IEP) or 504 Plan should follow the child home, or alternative accommodations should be provided.

VOTING

- Voters must be provided with options that allow for independent and private voting at the polls or at home.
- Accessible voting machines must be available at all polling locations, and workers must be trained on their use so they can provide instruction to voters as needed.
- Remote voting options must be accessible, secure, and widely available.

INTRODUCTION

“We keep thinking we can outwit this thing, and that things will ‘go back to normal.’ Let’s overwrite ‘normal’ and use this opportunity to make it BETTER for us.” —*Congenitally VI White female, aged 45 to 54 years, with additional disabilities*



The coronavirus disease 2019 (COVID-19) pandemic presents an opportunity for those who are visually impaired, policymakers, industry leaders, consumer organizations, and others to understand and reduce the challenges in the lives of adults who are blind or have low vision. Some of the challenges experienced by those who are visually impaired are unique to the pandemic, yet others bring to the forefront systemic inequalities that have been recognized by those with vision loss for many years. This pandemic presents a unique opportunity to examine the effect of vision loss and to effect change to ensure full access within all facets of life for Americans who are visually impaired, including those who have additional disabilities or health challenges.

Conceptualized during the last week of March 2020, the Flatten Inaccessibility survey sought to answer a simple question:

How has the COVID-19 pandemic affected the lives of adults with vision loss in the United States?



The COVID-19 pandemic began to affect Americans in late February 2020. The survey began on April 3 and closed on April 13, 2020; therefore, this survey was conducted in the early stages of the U.S. response to COVID-19. According to the U.S. Centers for Disease Control and Prevention, as of September 9, 2020, there have been 6,310,663 confirmed cases and 189,147 total deaths due to COVID-19³. However, when this survey was disseminated, only 257,986 people in the United States had tested positive for COVID-19 between the week of March 1, 2020, and the week of April 4, 2020. In this same period, there were 13,686 COVID-19–related deaths. Thus, although COVID-19 was affecting Americans’ lives, numbers were not high compared with early September 2020 when the Flatten Inaccessibility report was being finalized. Readers should keep this information in mind as they view this report. It is probable if the survey were conducted again in September 2020, for example, that more participants would have indicated concerns about the effect of COVID-19 on their lives.

³ <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/past-reports/04102020.html>

Data for the Flatten Inaccessibility survey were collected through an accessible, online survey on a dedicated website: flatteninaccessibility.com. At the end of the survey, participants were given the opportunity to provide their email address to be entered into a drawing for 20 Amazon gift cards, each valued at \$20. After careful review of the data, 1,921 U.S. participants and 39 foreign participants (n=1,960) completed the survey. Because we only analyzed the responses that came from individuals in the U.S., 1,921 surveys were included in the final analysis. This report presents this data and recommendations based on the study findings.

PARTICIPANT RECRUITMENT

The 1,921 participants who took part in the Flatten Inaccessibility survey may not be representative of the general U.S. population who are visually impaired. The participants identified predominantly as White (77%), female (63%), and older (44% were over the age of 55 years). Additionally, important groups who have different experiences, such as individuals who identify as Black, Hispanic, Asian, and nonbinary, are not fully represented in this study sample. In the future, researchers in the blindness field must engage more diverse populations to have a more representative sample.

Also, because the survey was available online and advertised primarily through email and social media outlets, individuals who were not online or connected with one of the 16 organizations and companies that collaborated to advertise the survey may have missed the opportunity to participate. However, the study sample does provide a snapshot of how the COVID-19 pandemic was affecting a group of visually impaired individuals throughout the U.S. during the first half of April 2020. The data gathered from the participants not only highlight challenges related to COVID-19, but also provides documentation of the systemic issues those who are visually impaired encounter on a daily basis. Further, through the experiences that participants shared, the researchers have highlighted recommendations that can be valuable in shaping the lives of those with vision loss today and in the future.

SURVEY DESIGN AND ANALYSIS

A group led by Dr. L. Penny Rosenblum, AFB's director of research, developed the survey. Using JAWS, NVDA, and VoiceOver, the survey was checked for accessibility. Participants could choose which of the 11 sections and 171 questions they answered. The 11 sections of the survey included:

1. About You
2. About Your Technology Use
3. Healthcare
4. Transportation
5. Employment
6. Current Education Experience
7. Children You Are Supporting in K12 Education
8. Your Social Experiences
9. Access to Food, Meals, and Needed Supplies
10. Voting
11. Final Questions

Quantitative data were analyzed using descriptive statistics. The qualitative data gathered through open-ended questions were reviewed by two coders who identified themes within each survey section.



DEMOGRAPHIC VARIABLES AND CONCERN STATEMENTS

To aid in analysis and interpretation of the participants' responses, the researchers created six demographic variables as explained below:

- **Gender (male, female, other):** Participants identified as female, male, transgender, nonbinary, nonconforming, or other, with the latter four categories collectively referred to as “other” in this report unless the participant specifically provided their gender identity. There were 15 participants who preferred to not disclose their gender identity and 9 participants who did not select an answer choice.
- **Race/ethnicity (White, Black, Indigenous, People of Color):** Only participants who identified as White were classified as White; all participants who selected other racial/ethnic groups were collectively classified as Black, Indigenous, People of Color (BIPOC). There were 62 participants who did not select an answer choice.
- **Current age (18–34 years, 35–54 years, 55 years and older):** Participants were asked their age range with eight options, including “prefer not to disclose.” These age ranges were then collapsed to create the three final age ranges. There were 11 participants who did not disclose their age range.
- **Age at onset of visual impairment (congenital, child-onset, adult-onset):** Participants were asked to select the age range in which they became visually impaired. There were 10 options, including “prefer not to disclose.” These nine age ranges were then collapsed to create the three final age ranges. There were 20 participants who did not disclose the age range in which they became visually impaired.
- **Level of vision (blind, low vision):** There was no survey question that specifically asked participants if they considered themselves to be blind or to have low vision. To create this variable, the researchers took participant answers to the question, “How do you access a computer, smartphone, and/or tablet?” and used participants' responses to create the level-of-vision variable. Participants who said they used screen reader software (e.g., JAWS, VoiceOver) and/or a refreshable braille display were coded as blind. Participants who used screen magnification software (e.g., ZoomText), a combination of screen reader and screen magnification software, built-in features on the device (e.g., enlarged font, reverse contrast), or reported they made no changes to the manufacturer's settings were recoded as low vision. There were 187 participants who did not answer the question used to create the level-of-vision variable.
- **Presence of an additional disability (yes, no):** Participants who reported at least one additional disability were coded as “yes” and those who did not report any additional disabilities were coded as “no.” There were 42 participants who did not answer the question used to create the presence of an additional disability variable.

With the exception of the *About You, Voting, and Final Questions* sections, each section comprised between 2 and 17 concern statements. Participants were asked to select their level of agreement with the concern using the ratings “strongly disagree” (1), “disagree” (2), “neither agree nor disagree” (3), “agree” (4), or “strongly agree” (5). Participants also had the option to select “not applicable to me.” Concern statements that had under 299 participant responses are not shown in tabular format by demographic variables; however, these data are provided in the narrative for the entire number of participants who selected a response between (1) and (5). Data of participants who did not disclose or who did not answer the demographic question are not included in the concern tables. When provided, their data are included in all other quantitative data presented in the report.

The researchers understand that the experience of each of the participants who chose “other” as their gender identity have sexual and biological identities that can vary from that of others. Given our comparatively low sample of the “other” gender subgroup, we believed the reliability of these data could misrepresent the experiences of individuals who identified as transgender, nonbinary, nonconforming, or other. Therefore, the 26 participants who selected “other” for gender are not included in the concern tables. Some quotes in the qualitative data were selected to provide snapshots of specific experiences reported by those in the “other” gender subgroup and also of those from the BIPOC subgroups.

THE IMPORTANCE OF THE RECOMMENDATIONS

After presenting data for each study topic, relevant recommendations based on the study findings are provided. These recommendations share best practices for businesses, consumer organizations, professionals working with adults who are visually impaired, and policymakers. It is the intent of the researchers that the recommendations will lead to changes that will positively impact the lives of those who are visually impaired.

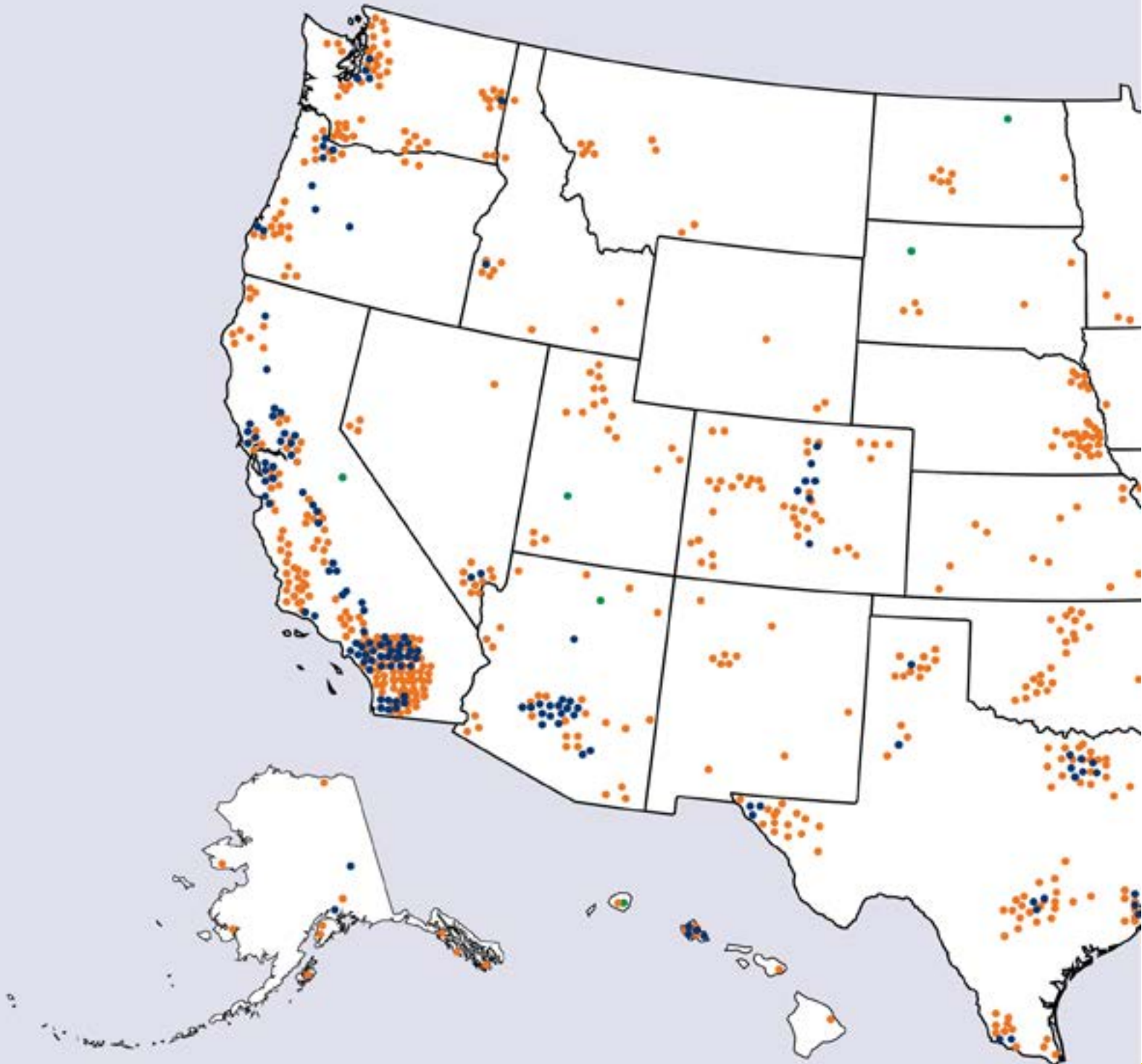
“We absolutely know that not driving is the reason we had to relocate during this pandemic. We don’t trust the bus and having to touch everything on it and its limited service. Uber has been more costly. Access a Ride extremely limited their services. However, since we can’t go to the store and get a shopping assistant anymore, it doesn’t matter so much that we can’t drive. ... We talk every day about how disadvantaged we are for not being able to drive ... in this situation.” —*Congenitally VI White female, aged 45 to 54 years, with additional disabilities*

PARTICIPANTS' DEMOGRAPHIC INFORMATION

The 1,921 participants resided in all 50 U.S. states, the District of Columbia, and Puerto Rico. The states with the highest number of participants were California, Texas, and New York.

Using 2010 U.S. Census Data⁴, participants who provided their zip code were classified into one of three communities:

FIGURE 1: WHERE PARTICIPANTS LIVE



⁴ <https://www.census.gov/programs-surveys/geography/about/faq/2010-urban-area-faq.html>

INTRODUCTION

- Urban: 50,000 or more people
- Urban Cluster: At least 2,500 and less than 50,000 people
- Rural: All areas not included in urban or urban cluster areas.

Zip code data were available for 1,840 participants: 32 rural, 301 urban, and 1,507 urban clusters. Puerto Rico had one participant and is not shown below.

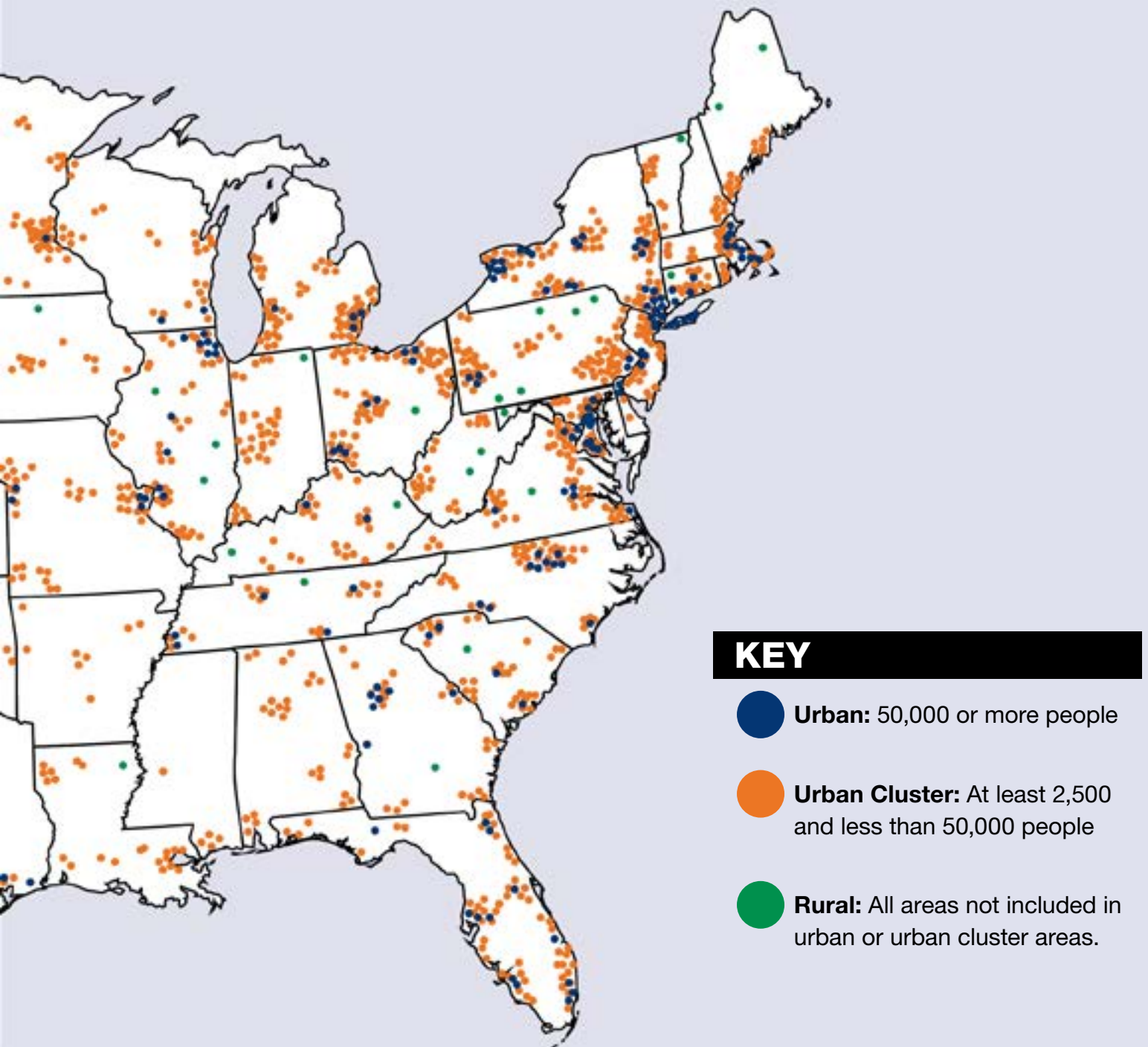


Table 1 reports the demographic characteristics of the participants for gender identity, race/ethnicity, age range, age of onset of visual impairment, level of vision, and presence of additional disabilities. The study sample was predominately White (77%, n=1,427), female (64%, n=1,202), and older (43%, n=807). Additionally, 60% (n=1,117) of participants were congenitally visually impaired, and just over half (57%, n=1,064) reported not having any additional disabilities.

Participants were allowed to select multiple choices that described their living arrangement, 640 participants lived alone, 828 lived with a partner, 292 lived with other family members, and 172 did not provide information about their living arrangements. Only 153 participants reported they had changed their living arrangement or where they lived due to COVID-19, though they were not asked to give a reason for the change. Some participants shared comments that suggested they changed their living arrangement in order to have access to transportation, to not be alone, to have others to assist them, and/or to have access to shopping or to have someone to shop for them.

Recognizing that COVID-19 is especially dangerous for those who have underlying health conditions, participants were asked to self-identify if they had other disabilities or health conditions. Diabetes, hearing impairment, and significant psychiatric disorders were the most frequently reported other disabilities or underlying health conditions.

Deafblindness, the combined effect of a hearing and visual impairment, presents communication challenges under normal circumstances. For those who are deafblind, COVID-19 presents unique barriers to communication, especially with the need to social distance.

“Deaf-blindness is isolation enough. Without face-to-face and tactile communication, I might as well be in solitary confinement.” —*Congenitally VI White female, aged 45–54 years, with additional disabilities*

TABLE 1:**Participants' Demographic Characteristics**

Demographic	n	Percentage
Gender (n=1,897)		
Male	667	35
Female	1,204	63
Transgender, Gender Nonconforming, or Other	19	1
No Response	7	.37
Race/Ethnicity (n=1,859)		
White	1,427	77
Hispanic, Latinx, or Spanish Origin	132	7
Black or African American	129	7
Multiracial	70	4
Asian	57	3
American Indian or Alaska Native	17	1
Native Hawaiian or Pacific Islander	2	.11
Other	25	1
Age (n=1,895)		
18–34 Years	446	23.5
35–54 Years	642	34
55 Years and Older	807	42.5
Became VI (n=1,874)		
Congenital	1,117	60
Childhood	268	14
Adulthood	489	26
Level of Vision (n=1,734)		
Blind	1,128	65
Low Vision	606	35
Additional Disability (n=1,860)		
Yes	796	43
No	1,064	57

FIGURE 2:

10 Most Frequently Listed Additional Disabilities by the Participants

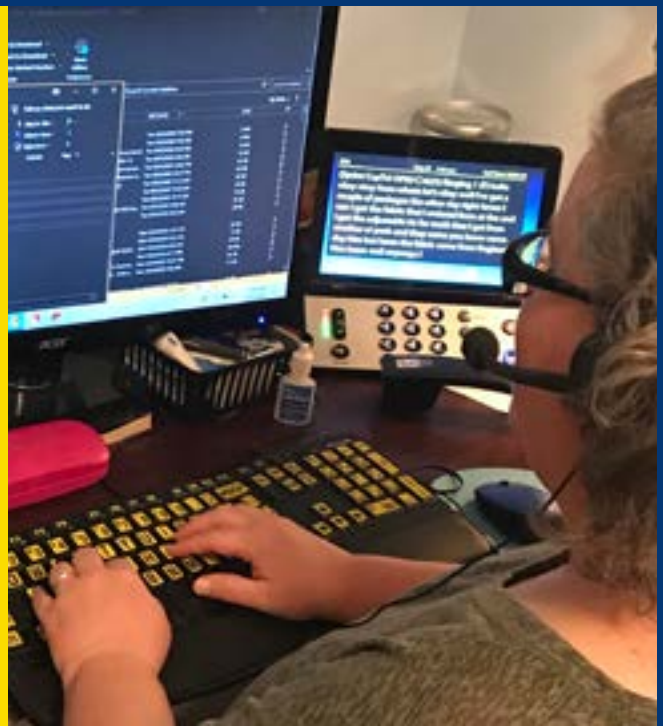


More than **40%** (n = 781) of participants reported having at least one additional disability or underlying health concern. Participants were provided a list of health concerns and asked to select all that applied to them. The 10 most frequently reported additional disabilities or underlying health concerns are listed below from highest to lowest frequency.

- Diabetes
- Deaf/Hard of Hearing
- Psychiatric disorder
- Nervous system disorder
- Pulmonary or respiratory condition
- Mobility/physical impairment
- Heart disease
- Compromised immunity
- Suppressed immunity
- Epilepsy/seizure disorder

TECHNOLOGY USAGE

“[I]nstead of face-to-face learning, I’m doing it online, which cuts out my need to commute on the city bus to school and back. My computer and iPhone cover that gap by allowing access to my classes.” — *Congenitally VI White female, aged 25 to 34 years, with no additional disabilities*



The participants had access to technology, as evidenced by the 1,771 (92%) who reported using smartphones. In addition, only 138 (7%) of the participants indicated needing assistance to complete the online survey. Eighteen (<1%) participants reported they had obtained their smartphone because of the COVID-19 pandemic.

Internet access was available to 1,781 (93%) of 1,907 participants who had Internet access prior to the COVID-19 pandemic. Twelve (<1%) participants did not have Internet at home prior to COVID-19 but had obtained it, 10 (<1%) participants reported they canceled their Internet access due to COVID-19, whereas 58 (3%) reported they only had Internet on their smartphones. Yet, access to the Internet and a smartphone was no guarantee of access to information. Apps, websites, graphics on news sites, and documents are often not accessible to those who are visually impaired.

Participants repeatedly shared their frustrations with their lack of access to specific information about COVID-19, in addition to challenges with technology tools used to access other health-related information, transportation, shopping, employment, socializing, education, and voting. Specific technology challenges in these areas are discussed in those corresponding sections of this report.

Participants provided their level of agreement to two concern statements.⁵

1. I am concerned that visual information about the COVID-19 pandemic is being shown on the television and that this information is not accessible to me. (n=1,692, M=3.51, SD=1.23)
2. As a result of the COVID-19 pandemic, I have increased my use of apps designed to connect people with visual impairments with sighted assistance (e.g., Aira, Be My Eyes). (n=1,542, M=2.77, SD=1.20)

Participants were asked to rate their level of agreement with the statement: “I am concerned that visual information about the COVID-19 pandemic is being shown on the television and that this information is not accessible to me.” Of the participants who rated this statement more females (33%) than males (19%) expressed they agreed or strongly agreed and those 55 years and older had the highest concern (21%) among the three age categories. Participants with a congenital vision loss (31%) had greater concern than those with a childhood vision loss (8%) or vision loss during adulthood (13%). This statement was of higher concern to those who were blind (37%) compared with those with low vision (15%). There was a slightly higher level of concern for participants who did not have an additional disability (28%) compared with those who did have an additional disability (24%).

⁵ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

USE OF TECHNOLOGY TOOLS, APPS, AND PROGRAMS

Most participants reported at least five different ways they were accessing information about COVID-19. The top response was local television news (n=1,276), followed by national television news (n=1,158), news websites (n=1,049), family and friends (n=1,034), and social media (n=965).

In their daily lives, participants reported using a wide range of technology tools and apps/programs. The top three technology tools most often used by participants were iPhones (n=1,563), laptop computers (n=1,269), and smart speakers, such as an Amazon Echo or Google Nest (n=1,010). The top three categories of apps/programs participants reported using were email (n=1,810), social media tools (e.g., Facebook, LinkedIn, and Twitter) (n=1,395), and conferencing tools (e.g., Zoom and Google Hangouts) (n=1,278).

Participants were asked to rate their level of agreement with the statement: “As a result of the COVID-19 pandemic, I have increased my use of apps designed to connect people with visual impairments with sighted assistance (e.g., Aira, Be My Eyes).” Of the participants who rated this statement more females (17%) than males (9%) expressed they agreed or strongly agreed. Participants with a congenital vision loss (16%) had greater concern than those with a childhood vision loss (4%) or vision loss during adulthood (5%). This statement was of higher concern to those who were blind (20%) compared with those with low vision (6%). There was a slightly higher level of concern for participants who did not have an additional disability (14%) compared with those who did have an additional disability (11%).

“I’ve added multiple news source information to my [news digest] on my Echo device to obtain more information about COVID-19.” —Congenitally VI Hispanic female, aged 25–34 years, with no additional disabilities

For some participants, as a result of COVID-19, the manner in which visual-interpreting services were being used was changed. Some participants reported using these services to verify the location of items delivered to their homes and left by drivers, to read and enter CAPTCHA information on websites, and to read information such as expiration dates on food products or directions on bottles.

“[M]y usage of social media tools has changed. I use them to connect with others who have shared interests via groups to help maintain my mental health due to quarantine/social distancing guidelines and requirements.”—*Congenitally VI White male, aged 25 to 34 years, with no additional disabilities*

SOCIAL CONNECTIONS USING TECHNOLOGY

Technology allowed participants to connect with others known to them prior to the COVID-19 pandemic and others they had met as a result.

When an individual identifies with others who share a similar characteristic, such as those who are visually impaired, some individuals find it helpful to connect with others who share the same identity. There were 808 participants who reported they reached out to other visually impaired individuals in their personal networks for support related to COVID-19. An almost equal number, 785 participants, did not reach out to any organized group for support or information. For those participants who did reach out to one or more groups, 412 found support from social media groups, 399 sought support from consumer organizations (e.g., American Council of the Blind, Blinded Veterans Association, Foundation Fighting Blindness, National Federation of the Blind, National Organization of Albinism and Hypopigmentation), 254 connected with support group members, and 125 reached out to vocational rehabilitation agencies.

“It is important for the blind community to support each other to give us the strength to help us get through these challenging times.” —*Congenitally VI Hispanic female, aged 25 to 34 years, with no additional disabilities*

RECOMMENDATIONS

The inaccessibility of websites, apps, and graphical information has made obtaining information during the pandemic challenging for those with visual impairments as many workplace, retail, educational, social, and health interactions have moved online to prevent person-to-person disease spread. People who are blind or have low vision have long advocated for digital inclusion, and the pandemic has only served to heighten this need.

- Just as emergency alert information on television is required to be presented in accessible formats, critical public health information must also be accessible to people who are visually impaired. Therefore, any government agency distributing information about the coronavirus should provide equivalent levels of access to people who are visually impaired. The Section 508 guidelines provide clear directions to the Federal Government while states can and should use accepted standards, such as the W3C Web Content Accessibility Guidelines⁶, to design and implement digital information and services.
- Information presented in graphical form, such as maps and bar graphs need to be provided with text equivalents. For example, images can be provided with text alternatives through alt attributes, and graphs can be provided with tables presenting the equivalent data with text descriptions of any trends apparent from the graph. All graphics in this report have alternative text to ensure accessibility by those who are visually impaired.
- Product developers should incorporate digital accessibility into products as the products are initially being developed. Grocery delivery services, internet communications platforms, and telehealth should adhere to accepted standards such as the W3C WCAG, in order to remove access barriers for those who are visually impaired.⁷
- Provision should be made for visual interpreting services, such as Aira and Be My Eyes, to ensure that people with limited financial resources can take advantage of these services.
- Employees or volunteers of visual interpreting services need training so they are effective in providing users with necessary and unbiased information.

⁶ See <https://www.w3.org/WAI/standards-guidelines/wcag>.

⁷ See <https://developer.android.com/guide/topics/ui/accessibility/apps> and <https://developer.apple.com/accessibility/ios>.

TRANSPORTATION

“Transportation has been one of my greatest fears during all of this.

I don't want to risk all of the germs in an Uber, not to mention there are less drivers. Things like buses and trains have been shut down.” —*Adult-onset VI*
White male, aged 65 to 74 years, with no additional disabilities



Access to reliable, affordable, and efficient transportation is a systemic issue for people who are visually impaired. The COVID-19 pandemic has increased transportation challenges for those who are visually impaired due to a combination of factors, including service reductions, policy changes, and concerns about safety. Of the 1,921 participants, 1,162 (63%) had concerns about transportation due to COVID-19 and answered questions about this topic, 84 (5%) had concerns about transportation but did not choose to answer questions, and 587 (32%) did not have concerns about transportation.

Participants provided their level of agreement to 11 concern statements.⁸

1. Due to the COVID-19 pandemic, I do not feel safe taking public transit (e.g., bus, subways). (n=1,072, M=4.36, SD=0.95)
2. I am concerned that because I do not drive, I will not be able to get myself or a family member to a COVID-19 test center. (n=1,115, M=4.24, SD=1.06)
3. Due to the COVID-19 pandemic, I do not feel safe taking taxis. (n=1,047, M=4.19, SD=1.00)
4. I am concerned that because I do not drive, I will not be able to get myself or a family member to a hospital or healthcare facility if they have severe COVID-19 symptoms. (n=1,107, M=4.18, SD=1.11)
5. I am concerned that due to the COVID-19 pandemic my community has restricted or will soon restrict public transit, paratransit, taxis, and/or rideshare services such as Uber or Lyft. (n=1,101, M=4.17, SD=1.01)
6. Due to the COVID-19 pandemic, I do not feel safe taking paratransit. (n=918, M=4.12, SD=1.06)
7. Due to the COVID-19 pandemic, I do not feel safe using rideshare services such as Uber or Lyft. (n=1,094, M=4.07, SD=1.07)
8. I am concerned that because I do not drive, I will have difficulty getting groceries or other key essentials. (n=1,105, M=3.86, SD=1.19)
9. I am concerned that due to the COVID-19 pandemic my community has stopped public transit, paratransit, taxis, and/or rideshare services such as Uber or Lyft. (n=857, M=3.45, SD=1.25)
10. I am concerned that when I use public transportation I am being required to enter and/or exit at the rear of the bus. (n=740, M=3.34, SD=1.21)
11. I am concerned that due to my reduced work hours, being laid off, or the business I worked for closing, I can no longer afford to use the transportation methods I have used in the past. (n=433, M=3.28, SD=1.36)

⁸ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

TRANSPORTATION TO ACCESS HEALTHCARE

During a pandemic, knowing whether one has the virus is at the forefront of people's minds. For those who are nondrivers, getting tested for COVID-19 and potentially needing transportation to a facility for treatment caused extreme anxiety and concern for many participants. These frustrations stemmed from many transportation services no longer allowing passengers with certain symptoms to use the service.

In addition, individuals themselves reported they did not want to endanger a driver or fellow passengers by using a transportation service if they had COVID-19 symptoms. Many participants expressed frustration about officials having no alternative testing options or recommendations for how to get to a facility, other than by ambulance.

Participants were asked to rate their level of agreement with the statement: “I am concerned that because I do not drive, I will not be able to get myself or a family member to a hospital or healthcare facility if they have severe COVID-19 symptoms.” Of the participants who rated this statement more females (55%) than males (25%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (33%) among the three age categories. Participants with a congenital vision loss (51%) had greater concern than those with a childhood vision loss (11%) or vision loss during adulthood (17%). This statement was of higher concern to those who were blind (53%) compared with those with low vision (26%). There was a higher level of concern for participants who did not have an additional disability (44%) compared with those who did have an additional disability (36%).

“I am not sure how I would get to a mobile testing site. I wouldn't feel comfortable using public transportation or ride-share services for fear of backlash or spreading [COVID-19].”—Congenitally VI Black or African American female, aged 35 to 44 years, with no additional disabilities

SAFETY WHEN USING TRANSPORTATION

For some participants, their safety concerns related to transportation included

- not being able to social distance in the vehicle,
- not being able to tell if others were wearing masks,
- not knowing who had been in the vehicle prior to them and the health status of previous riders, and
- not being able to judge the cleanliness of the vehicle.

There were a few participants who expressed concerns about transportation stemming from their personal characteristics beyond their visual impairment, such as their ethnic identity or additional disabilities.



“I am also Asian, and with the rise in hate crimes and discrimination against Asian-Americans, I am afraid to use public transportation or rideshare in fear of getting hurt or denied access.” —Congenitally VI Asian female, aged 25–34 years, with no additional disabilities

TABLE 2: The number and percent of participants who strongly agreed/agreed to the following:**“Due to the COVID-19 pandemic, I do not feel safe taking [form of transportation].”**

Demographic	Public Transportation	Taxis	Paratransit	Rideshare
Gender	n=1,040	n=1,019	n=895	n=1,062
Male	266 (26%)	249 (24%)	205 (23%)	244 (23%)
Female	605 (58%)	550 (54%)	477 (53%)	547 (52%)
Race/Ethnicity	n=1,042	n=1,020	n=892	n=1,064
White	672 (64%)	617 (60%)	513 (58%)	614 (58%)
BIPOC	203 (19%)	182 (18%)	169 (19%)	178 (17%)
Age	n=1,065	n=1,040	n=910	n=1,086
18–34 Years	203 (19%)	176 (17%)	159 (17%)	172 (16%)
35–54 Years	296 (28%)	269 (26%)	222 (24%)	266 (24%)
55 Years and Older	394 (37%)	370 (36%)	314 (35%)	370 (34%)
Became VI	n=1,058	n=1,034	n=905	n=1,081
Congenital	546 (52%)	490 (47%)	416 (46%)	484 (45%)
Childhood	127 (12%)	117 (11%)	104 (11%)	121 (11%)
Adulthood	213 (20%)	202 (20%)	170 (19%)	198 (18%)
Level of Vision	n=983	n=961	n=840	n=1,007
Blind	542 (55%)	502 (52%)	422 (50%)	487 (48%)
Low Vision	279 (28%)	248 (26%)	213 (25%)	256 (25%)
Additional Disability	n=1,044	n=1,020	n=892	n=1,065
Yes	402 (39%)	355 (35%)	321 (36%)	364 (34%)
No	472 (45%)	444 (44%)	357 (40%)	428 (40%)

Most participants who expressed a strong concern about using public transit, taxis, paratransit, and rideshare services were congenitally visually impaired, White, female, aged 55 years or older, and did not have any additional disabilities.

Participants were asked to rate their level of agreement with the statement: “I am concerned that because I do not drive, I will not be able to get myself or a family member to a COVID-19 test center.”

Of the participants who rated this statement more females (57%) than males (24%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (33%) among the three age categories. Participants with a congenital vision loss (52%) had greater concern than those with a childhood vision loss (12%) or vision loss during adulthood (18%). This statement was of higher concern to those who were blind (56%) compared with those with low vision (26%). There was a higher level of concern for participants who did not have an additional disability (44%) compared with those who did have an additional disability (37%).

THE EFFECT OF POLICIES AND SCHEDULING ON TRANSPORTATION USE

Policies enacted by bus companies to have passengers board the bus through the rear door have placed a burden on riders. For some, their physical needs resulting from their visual impairment or another disability, such as arthritis, inhibits their ability to climb stairs. For others, not having access to speak with the bus driver to confirm information or ask a question presents challenges. Though participants recognized the need for drivers to maintain their own personal safety, they felt that a balance needed to be struck so they could board through the front door if needed or speak to the driver.

“When they are [strapping my power chair down], they have no choice [but] to get close, which is understandable. The thing that I didn’t like is [the driver] never either changed his gloves from when he was driving the bus to when he strapped me down. ... [In my opinion, he needed to] wipe the straps and area down to clean anything that I may have to touch like a handle for stability.” —Congenitally VI White male, aged 35 to 44 years, with additional disabilities

Participants were asked to rate their level of agreement with the statement: “I am concerned that when I use public transportation I am being required to enter and/or exit at the rear of the bus.” Of the participants who rated this statement more females (26%) than males (15%) expressed they agreed or strongly agreed. Participants with a congenital vision loss (26%) had greater concern than those with a childhood vision loss (7%) or vision loss during adulthood (8%). This statement was of higher concern to those who were blind (28%) compared with those with low vision (13%). There was little difference in the level of concern for participants by presence of an additional disability.

“We do have to enter and exit at the rear of the city bus, which can be difficult. They tell you not to touch the railing, but I have to hold the railing in order to try to gauge depth perception since I use a dog rather than a cane.” —*Adult-onset VI White female, aged 35 to 44 years, with no additional disabilities*

In some communities, transportation options have been discontinued or schedules have been limited, which directly affects the ability of those with visual impairments to travel, shop, go to work, access healthcare, etc. Although transportation restrictions due to stay-at-home orders are understandable, people will still have an occasion to leave their homes. For many who are visually impaired, access to transportation is essential to meet basic needs or to perform duties as essential workers.

Some study participants speculated about how having access to an autonomous (self-driving) vehicle would enable them to maximize their independence while limiting their exposure to others during transit.

Participants were asked to rate their level of agreement with the statement: “I am concerned that due to the COVID-19 pandemic my community has restricted or will soon restrict public transit, paratransit, taxis, and/or rideshare services such as Uber or Lyft.”

Of the participants who rated this statement more females (53%) than males (24%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (31%) among the three age categories. Participants with a congenital vision loss (50%) had greater concern than those with a childhood vision loss (10%) or vision loss during adulthood (17%). This statement was of higher concern to those who were blind (52%) compared with those with low vision (25%). There was a higher level of concern for participants who did not have an additional disability (44%) compared with those who did have an additional disability (33%).

“About 2 weeks ago, the local bus transit arbitrarily, with only 24-hour’s notice, changed how passengers access buses. Passengers must now enter at the back door and self-distance. I stopped using the buses and now walk 1.5 miles to work and 1.5 miles back home each weekday as I have essential work duties that [require me] to be on site. ... I feel like walking is best to keep proper distance, but want our leaders to know that some of us with visual impairments have essential job duties that require us to still go to the job site every weekday to gladly do our part.” —*Adult-onset VI White male, aged 55 to 64 years, with additional disabilities*

RECOMMENDATIONS

People who are visually impaired are workers; provide care to others and need to access healthcare themselves; go to school and have children who attend school; and need access to food and other supplies. Transportation related concerns were expressed by almost all of the participants in the study. Improvements to transportation would dramatically affect mobility and increase full community participation for those with vision loss, both during the COVID-19 pandemic and long term.

- Transportation providers should establish community advisory committees that include people with disabilities and solicit input on specifics to ensure those with visual impairments are as comfortable as possible using services.
- Transportation providers and local governments must plan for transportation service alternatives for those who are disabled when services in a community are limited or discontinued in an emergency. If fixed-route service is suspended, access to accessible non-shared ride on-demand services may improve access to critical services and jobs.
- Transportation planning should be inclusive of people with disabilities and go beyond minimum accessibility requirements. Long-term investments should include transportation access in underserved areas, including rural areas, as well as accessible, navigable sidewalks that connect people to services, transportation hubs, and their destination.
- Transit agencies can mitigate concerns about cleanliness of vehicles or if drivers are wearing masks by adjusting service so that social distancing is possible on transit vehicles, by clearly communicating how and when vehicles will be cleaned, by providing personal protective equipment to drivers, and by making masks available to passengers who do not have their own.
- Companies and public agencies need to consider those with disabilities, as they develop autonomous vehicles for buses or personal travel. Vehicles must be fully accessible.
- Services, such as COVID-19 testing sites or food banks, must recognize not everyone in need of their services has a vehicle and can participate in the “drive-through” option. Alternatives must be provided for community members to access these services on site by allowing community members to walk up. In addition, for those who cannot travel into the community, optional service delivery practices must be established.

- Public transit agencies must make their apps and websites fully accessible to those who are visually impaired. Information posted on apps and websites must be immediately accessible to riders.
- Public transit agencies must release updates in a timely manner, ideally several days before implementation, to allow riders enough time to plan their trips.
- When enacting policies such as rear-door boarding on buses, public transportation companies and policymakers must recognize that there are often negative ramifications of these changes. Policies should ensure that people who need certain features of public transportation, such as front door boarding, close access to the driver, or wheelchair lifts, are able to access these features safely.

“I have some real concerns about getting to testing if I need to be evaluated or hospitalized. My health insurance provider has helped me develop a plan to address some of these [needs], but transportation is a constant concern—to the extent of researching options in my area in case I am infected.” —*Adult-onset VI White female, aged 75 years or older, with no additional disabilities*



SOCIAL EXPERIENCES

“I have had fleeting what-if thoughts about my going right 'round the bend if all this goes on for months longer than we anticipate; but, thus far, my wife is here, and one of our very helpful adult children lives in a nearby city.” —*Congenitally VI*
White male, aged 65 to 74 years, with no additional disabilities



The COVID-19 pandemic has affected the social experiences of all Americans as stay-at-home orders limited access to others, social distancing necessitated not having physical contact with people, and individuals' anxiety, fear, and stress increased as the number of COVID-19 cases and deaths in the U.S. continued to rise throughout March and April, 2020.

Of the 1,921 participants, 1,025 (56%) had concerns about social experiences due to COVID-19 and answered questions about this topic, 125 (7%) had concerns about social experiences but did not choose to answer questions, and 660 (37%) did not have concerns about social experiences.

Participants provided their level of agreement to seven concern statements.⁹

1. I am concerned about asking someone to physically assist me with tasks such as grocery shopping or going to medical appointments due to practicing social distancing. (n=938, M=4.00, SD=1.16)
2. I am concerned about asking someone to be my human guide in the community due to practicing social distancing. (n=888, M=4.00, SD=1.18)
3. Due to practicing social distancing, I am concerned about asking someone to touch my hands/allow me to touch their hands, for example when using tactile sign language or being shown how to do something using hand-over-hand. (n=726, M=3.97, SD=1.15)
4. I am concerned that because of social distancing, (staying more than 6 feet apart from others) I feel more depressed, sad, or lonely. (n= 998, M=3.70, SD=1.15)
5. Since the COVID-19 pandemic began, I have increased anxiety, fear, or concern about my health and well-being. (n=990, M=3.66, SD=1.13)
6. I am concerned about my mental health and fear I may be overwhelmed or have a breakdown due to all the things that are out of my control. (n=997, M=2.83, SD=1.33)
7. I am concerned that I do not have access to technology tools that allow me to connect with family, friends, or others. (n=943, M=2.09, SD=1.11)

Those participants who faced significant social barriers before the COVID-19 pandemic reported these barriers were compounded due to factors such as having limited income, living alone, having minimal or no support systems, and/or having additional disabilities. Participants shared their thoughts and emotions, the challenges of social distancing, the importance of social networks, and strategies they found helpful to maintain a positive balance in their lives.

⁹ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

FEELINGS AND EMOTIONS

Participants were asked to rate their level of agreement with the statement: “I am concerned that because of social distancing (staying more than 6 feet apart from others) I feel more depressed, sad, or lonely.” Of the participants who rated this statement more females (46%) than males (21%) expressed they agreed or strongly agreed and those 55 years and older had the highest concern (24%) among the three age categories. Participants with a congenital vision loss (43%) had greater concern than those with a childhood vision loss (8%) or vision loss during adulthood (15%). This statement was of higher concern to those who were blind (42%) compared with those with low vision (23%). There was a higher level of concern for participants who did not have an additional disability (34%) compared with those who did have an additional disability (32%).

Not surprisingly, social isolation brought about by stay-at-home orders and the need to social distance caused many participants to feel anxious, isolated, and/or fearful about the future. For those participants who were experiencing life challenges prior to COVID-19, the pandemic exacerbated these challenges.

One’s attitude toward their visual impairment, the pandemic, and life in general can influence reactions to challenging events and one’s outlook. There were a few participants, however, who were able to “look on the bright side.”

“I have had mental health issues in the past, which I attributed to my vision impairment [that] I have had since birth—specifically anxiety and clinical depression. I have been successfully treated and feel that I am very stable at this point. I have adopted a ‘failure is not an option’ mindset.” —Adult-onset VI White female, aged 65 to 74 years, with no additional disabilities

Participants were asked to rate their level of agreement with the statement: “Since the COVID-19 pandemic began, I have increased anxiety, fear, or concern about my health and wellbeing.” Of the participants who rated this statement more females (45%) than males (20%) expressed they agreed or strongly agreed and those 55 years and older had the highest concern (27%) among the three age categories. Participants with a congenital vision loss (41%) had greater concern than those with a childhood vision loss (9%) or vision loss during adulthood (16%). This statement was of higher concern to those who were blind (41%) compared with those with low vision (24%). There was a slightly higher level of concern for participants who did have an additional disability (33%) compared with those who did not have an additional disability (32%).

“I need physical touch to connect with people. I need handshakes and hugs that Sunday always brought from going to church. I was waiting on a counselor to be available to get me through a [crime I experienced] before COVID-19. ... Now we are supposed to stay home and keep at least 6 feet from others. I’ve been alone with my own thoughts since mid-February. Depression has set in, my PTSD hasn’t been put back in check from the [crime], and neither has anxiety. I’m just a wreck.” —*Adult-onset VI Multiracial female, aged 35 to 44 years, with additional disabilities*

SOCIAL DISTANCING

Participants were asked to rate their level of agreement with the statement: “I am concerned about asking someone to physically assist me with tasks such as grocery shopping or going to medical appointments due to practicing social distancing.” Of the participants who rated this statement more females (52%) than males (23%) expressed they agreed or strongly agreed and those 55 years and older had the highest concern (29%) among the three age categories. Participants with a congenital vision loss (50%) had greater concern than those with a childhood vision loss (9%) or vision loss during adulthood (17%). This statement was of higher concern to those who were blind (53%) compared with those with low vision (23%). There was a higher level of concern for participants who did not have an additional disability (41%) compared with those who did have an additional disability (34%).

Being visually impaired typically necessitates a higher level of physical contact compared with sighted peers. For example, when using human guide, the person who is visually impaired holds the guide’s arm above the elbow. For some who are deafblind, the use of tactile sign language requires the two individuals to touch each other’s hands. In some communities, there was more strict enforcement of social-distancing policies. Participants noted when they were not abiding by distancing policies in stores, other customers or employees occasionally made comments or the participants worried about others making comments.

Participants were asked to rate their level of agreement with the statement: “Due to practicing social distancing, I am concerned about asking someone to touch my hands/allow me to touch their hands, for example when using tactile sign language or being shown how to do something using hand-over-hand.” Of the participants who rated this statement more females (47%) than males (25%) expressed they agreed or strongly agreed and those 55 years and older had the highest concern (28%) among the three age categories. Participants with a congenital vision loss (46%) had greater concern than those with a childhood vision loss (9%) or vision loss during adulthood (18%). This statement was of higher concern to those who were blind (53%) compared with those with low vision (20%). There was a higher level of concern for participants who did not have an additional disability (39%) compared with those who did have an additional disability (34%).

THE IMPORTANCE OF SOCIAL NETWORKS

People are social beings by nature. The COVID-19 pandemic has affected the way people interact with each other. For some, technology has enabled them to stay connected or even, in some cases, forge new connections.

“I stay in contact with my friends and family using text, Facebook, phone calls, FaceTime, and Zoom. I talk to three to four people a day that are not in my house. And my husband is supportive, and we are each other’s favorite people so spending time together is helpful to our mood. ... I miss my friends and family... [b]ut staying in contact has not been a problem.” —*Adult-onset VI White female, aged 35 to 44 years, with no additional disabilities*

Prior to the COVID-19 pandemic, many participants reported they routinely left the house to attend faith-based services, volunteer, go to class, work, exercise, and otherwise socialize. The quick shift to stay-at-home orders, companies having employees working from home, and online classes challenged many participants. In some cases, consequences of the stay-at-home orders led participants to experience depression, anxiety, or feelings of isolation.

“I’m being asked to work at home full time. While I know that is the safest thing to do, work for me is also a social outlet, and I miss going to the office and mingling with my co-workers. I’m feeling very isolated and am glad for organizations like ACB [American Council of the Blind], as well as being able to connect with family and friends to help me get through this situation.” —*Congenitally VI White male, aged 55 to 64 years, with no additional disabilities*

Participants discussed the importance of family in their lives. Having regular contact with a spouse, children, or other relatives enabled them to maintain social equilibrium. There were a few participants who spoke of the value of consumer organizations in their lives. Specifically, connecting with others who are visually impaired allowed participants to affirm their experiences with others as they have similar life experiences. Connecting with others also allowed for sharing practical strategies and finding empathy from others who “get it” because they too are visually impaired.

“I’m lucky that I have a strong family support system. While I do have anxiety and mild depression, I am able to lean on family and God’s love to help get me through this.” —Congenitally VI White female, aged 55 to 64 years, with additional disabilities

STRATEGIES PARTICIPANTS UTILIZED TO IMPROVE THEIR OUTLOOK

The uncertainty of the COVID-19 pandemic, coupled with the challenges of visual impairment, introduced more complications for study participants. For example, while using FaceTime or Zoom, participants shared concerns about not being able to see the people they were visiting with or feeling left out of the interaction. They expressed uncertainty about how others would interpret their request for a human guide. Prior to the COVID-19 pandemic, many participants had people in their lives who provided support with tasks such as reading mail, shopping, or joining them to exercise. Many, if not all, of these interactions abruptly stopped for most participants as COVID-19 concerns became more widespread.

Participants were asked to rate their level of agreement with the statement: “I am concerned about asking someone to be my human guide in the community due to practicing social distancing.” Of the participants who rated this statement more females (50%) than males (25%) expressed they agreed or strongly agreed and those 55 years and older had the highest concern (30%) among the three age categories. Participants with a congenital vision loss (48%) had greater concern than those with a childhood vision loss (10%) or vision loss during adulthood (17%). This statement was of higher concern to those who were blind (55%) compared with those with low vision (20%). There was a higher level of concern for participants who did not have an additional disability (40%) compared with those who did have an additional disability (34%).

Although some participants expressed frustration with technology, others discovered that technology was a positive social connector.

“Tech is the only thing keeping many of my friendships intact right now. It is also the only thing allowing my partner and [me] to have interaction with people besides one another. I have always been grateful for technology, but never more than now.” —*Congenitally VI White female, aged 35 to 44 years, with no additional disabilities*

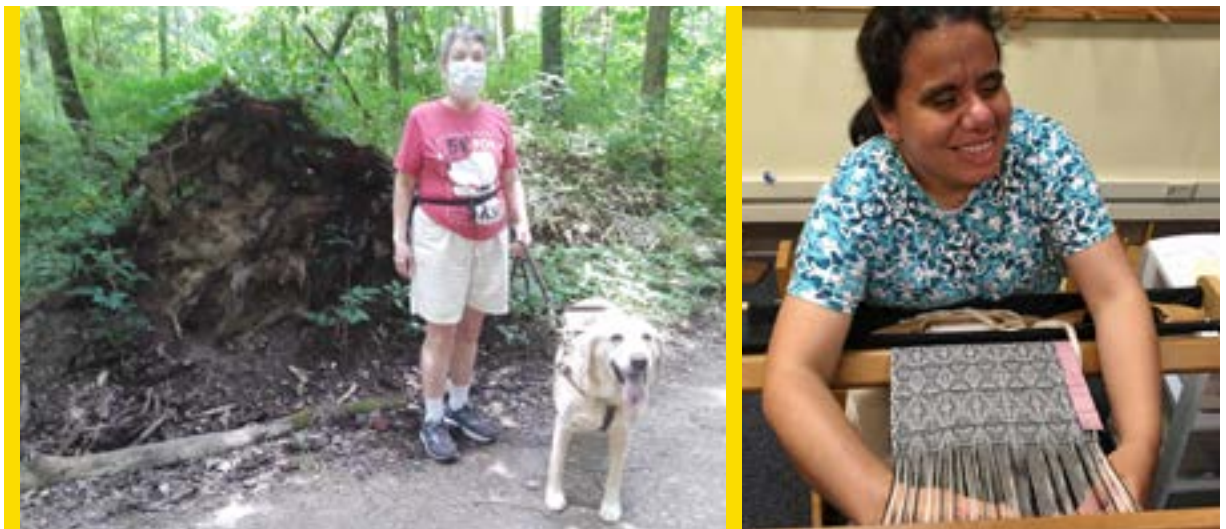
As a way to reduce their stress and to gain more balance in their lives, some participants discussed activities or practices they participated in on a regular basis.

“I have definitely felt overwhelmed and stressed at times during this experience. ...I work really hard to remember that I am in control of a lot of things right now still. I also use the practice of gratitude journaling every day to remind me of the good things that are still happening in my life.” —*Congenitally VI White female, aged 25 to 34 years, with no additional disabilities*

RECOMMENDATIONS

The pandemic has created social barriers for all people. Participants who are visually impaired identified the following unique challenges caused by the pandemic: the unavailability of physical touch as a primary sensory experience, the inability to gauge distance from others, societal misconceptions of those with visual impairments, inaccessible virtual platforms for social and recreational activities, and the inability to find individuals willing to provide human guide assistance. For some participants, mental health challenges and social isolation were exacerbated due to the COVID-19 pandemic. At the same time, some participants found themselves using new technologies to maintain social connections.

- Organizations that advocate for those with visual impairments should develop public service announcements, trainings, and other ways to educate the public about the human guide technique, so that the public understands that someone with a visual impairment may not be able to always maintain a social distance.
- Mental health providers who do not have knowledge of the challenges people with disabilities face, which are exacerbated by COVID-19, need up-to-date training to meet the needs of adults who are visually impaired. Consumer organizations, vocational rehabilitation professionals, and others can work with mental health providers to design training materials, which can be widely distributed.
- To encourage participation in exercise and to ensure full participation, recreational instructors providing in-person or online classes and/or companies developing exercise apps need to ensure they provide clear verbal explanations of movements, decrease the level of the music so participants can hear directions, and for apps, build-in accessibility to allow those using screen reader software or visual access to fully take advantage of all features of the app.
- Commercial product developers should build accessibility and usability into all features of their apps and websites and provide accessible training materials that will enable users to build skills and confidence with the products.
- Companies that provide visual interpreting services, such as Aira or Be My Eyes, need to be universally available or inexpensive so any user can afford to use them to assist them with social distancing, exercising, shopping, etc.
- Games need to be accessible so that those with vision loss can play in the same way as sighted people. Both online games and those played in the physical world must be developed with inclusive design in mind.



HEALTHCARE

“Despite my various disabilities and age, I am a productive, happy, and relatively healthy, self-sufficient person. I believe my life to be worth living. However, I fear that a healthcare provider will devalue my life because of their preconceptions about disability.” —*Congenitally VI White female, aged 65 to 74, with additional disabilities*



The researchers were surprised to some degree that, during a pandemic, slightly more participants had concerns about transportation and social experiences than they did about healthcare. This may be a result of the data collection occurring in early April 2020, when the spread of the virus was not as high as it was during the later spring and summer of 2020. Despite this, healthcare concerns were still numerous for participants.

Of the 1,921 participants, 1,010 (54%) had concerns about healthcare due to COVID-19 and answered questions about this topic, 180 (10%) had concerns about healthcare but did not choose to answer questions, and 686 (36%) did not have concerns about healthcare.

The 796 participants who reported they had an underlying health condition were asked if they felt their health condition made them more vulnerable during the COVID-19 pandemic. There were 466 (59%) participants with an underlying health condition who felt more vulnerable.

“I have an irregular heart rhythm, and I’m scared that the virus will make my heart problems worse and cause complications. I am scared that no one will be able to advocate for me if I get very sick and require ventilator support.” —Congenitally VI Hispanic female, aged 25 to 34 years, with no additional disabilities

For those participants with mental health issues, the COVID-19 pandemic has exacerbated their symptoms and limited their access to professionals. In addition, some participants raised concerns about the treatment they would receive should they need to be hospitalized due to COVID-19.

“I’m afraid that I’ll be denied services due to people not understanding my vision impairment or my mental health issues. ... With COVID, everything is changed and you are usually alone, which is horribly frightening.” —Congenitally VI White female, aged 35 to 44 years, with additional disabilities

Participants provided their level of agreement to 17 concern statements.¹⁰

These statements were as follows:

1. I am concerned about touching things in public, such as elevator panels, self-serve kiosks, or restroom doors to check signage. (n=939, M=4.23, SD=1.00)
2. I am concerned that if I am hospitalized with COVID-19, that I will not be allowed to have a caregiver with me who would normally assist me with accessibility issues in a hospital setting. (n=812, M=3.68, SD=1.31)
3. I am concerned about getting access to accurate and current information about those who may be infected in my area. (n=966, M=3.64, SD=1.26)
4. I am concerned that I will not be able to care for someone living with me who contracts the COVID-19 virus. (n=729, M=3.63, SD=1.34)
5. I am concerned because I am unsure how to maintain appropriate social distance (staying 6 feet apart from others) in public as I do not know how close others are to me. (n=907, M=3.56, SD=1.37)
6. I am concerned that I do not have an accessible thermometer to check my temperature. (n=920, M=3.56, SD=1.43)
7. I am concerned because I do not want to ask someone to take my temperature and potentially expose them to COVID-19. (n=828, M=3.52, SD=1.38)
8. I am concerned that I will not be able to maintain my eye care regimen (e.g., eye drops, injections, eye pressure checks, eye care appointments) during the COVID-19 pandemic. (n=586, M=3.46, SD=1.33)
9. I am concerned that if I need care due to COVID-19, I will be denied access to care, such as a ventilator, because of my visual impairment. (n=968, M=3.41, SD=1.37)
10. I am concerned that I will not get the care I need if I get COVID-19 because of my other disabilities or underlying health conditions. (n=756, M=3.35, SD=1.35)
11. I am concerned that I am not able to get to the pharmacy to get needed healthcare supplies/prescriptions. (n= 926, M=3.31, SD=1.30)
12. I am concerned that I do not have someone to care for my family members if I have to go to work and a family member is ill. (n=433, M=2.96, SD=1.35)
13. I am concerned I am not able to get to the pharmacy to request accessible labeling of medications. (n=748, M=2.94, SD=1.27)

¹⁰ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

14. I am concerned about having access to information about how I can keep myself safe during the COVID-19 pandemic. (n=964, M=2.80, SD=1.28)
15. I am concerned I am not able to meet with the pharmacist to review medication instructions. (n=856, M= 2.77, SD=1.22)
16. I am concerned about my ability to adequately clean surfaces, such as kitchen counters, door knobs, or light switches. (n=946, M=2.73, SD=1.40)
17. I am concerned that I do not have access to health insurance. (n=544, M=2.12, SD=1.19)

Participants were asked to rate their level of agreement with the statement: “I am concerned about touching things in public such as elevator panels, self-serve kiosks, or restroom doors to check signage.”

Of the participants who rated this statement more females (59%) than males (24%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (38%) among the three age categories. Participants with a congenital vision loss (49%) had greater concern than those with a childhood vision loss (13%) or vision loss during adulthood (22%). This statement was of higher concern to those who were blind (54%) compared with those with low vision (30%). There was no difference in the level of concern for participants by presence of an additional disability.

Participants were asked to rate their level of agreement with the statement: “I am concerned because I am unsure how to maintain appropriate social distance (staying 6 feet apart from others) in public, as I do not know how close others are to me.”

Of the participants who rated this statement more females (45%) than males (18%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (25%) among the three age categories. Participants with a congenital vision loss (39%) had greater concern than those with a childhood vision loss (9%) or vision loss during adulthood (14%). This statement was of higher concern to those who were blind (45%) compared with those with low vision (18%). There was a higher level of concern for participants who did have an additional disability (33%) compared with those who did not have an additional disability (30%).

When comparing the quantitative and qualitative data about healthcare topics, there is some discrepancy of what appears to concern many of the participants. Though the concern statement with the highest mean focused on touching things in public, comments about this concern were infrequent in the open-ended questions compared with other topics. Comments on topics participants most frequently provided focused on access to or perceived challenges they anticipated accessing COVID-19–related healthcare, necessary accommodations during a hospital stay, and the difficulties of maintaining social distance.

ACCESS TO HEALTHCARE

Access to healthcare is a broad topic that includes ensuring one can obtain prescription and non-prescription medications and supplies, medical care related to COVID-19 or non-COVID-related medical issues, and COVID-19 testing.

Participants were asked to rate their level of agreement with the statement: “I am concerned about getting access to accurate and current information about those who may be infected in my area.”

Of the participants who rated this statement more females (41%) than males (20%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (27%) among the three age categories. Participants with a congenital vision loss (36%) had greater concern than those with a childhood vision loss (10%) or vision loss during adulthood (16%). This statement was of higher concern to those who were blind (39%) compared with those with low vision (21%). There was a higher level of concern for participants who did have an additional disability (32%) compared with those who did not have an additional disability (29%).



MEDICATION AND HEALTHCARE SUPPLIES

Many of the participants reported that they were able to get their medication or needed supplies through delivery services. In some instances, they were already using these services so there was no transition, whereas other participants discussed the need to investigate how to initiate at-home delivery. For some participants, being able to independently manage their own healthcare needs was hindered by websites and apps that lacked accessibility.

“Even though I can have medications delivered, there is an ongoing problem with my ability to complete the process for doing this because of apparent issues with the app. Trying to contact support has resulted in long wait times, and inability of support to resolve the issue, though they claim the problem is resolved.” —*Congenitally VI White female, aged 45–54, with no additional disabilities*

There were participants who had reason to go to the pharmacy. With the compounded challenges of transportation and social-distancing requirements, their ability to get their needs met was often hindered. Specifically, one systemic yet preexisting problem was related to the labels on the medication bottles. Some participants reported the labels of their medications were not accessible, whereas other participants were successful with requesting ScripTalk¹¹ labels. Some pharmacists provided customers with large print or braille labels on their medications. A few participants indicated they were not aware of accessible options for reading medication labels.

“I take one medication that is a controlled substance for sleep. It has to be picked up from the pharmacy. I asked if there was any way it could be delivered since I am totally blind. They said I could come to the drive-through. I’m not sure what car they think I will drive.” —*Congenitally VI White female, aged 65 to 74 years, with additional disabilities*

¹¹ <https://www.scriptability.com/>

Many participants shared their concerns about accessible thermometers, specifically thermometers that do not rely on vision to be used. As a result of COVID-19, there were participants who could not find a thermometer to purchase, could not locate batteries for a thermometer they had as they often do not use standard batteries, had the thermometer break, or found that the thermometer was not accurate.

“It is very frustrating not to have a talking thermometer. I have tried ordering one from multiple sources and being told that they are not in stock or they are very expensive.” —*Congenitally VI White female, aged 55 to 64 years, with no additional disabilities*



MEDICAL CARE NOT RELATED TO COVID-19

In spite of stay-at-home orders and, for some, self-quarantine, participants had healthcare needs that in “normal” times would necessitate visits to healthcare providers for a routine check-up, surgery, cancer treatment, and other procedures. During April 2020, healthcare providers were focused on seeing patients only on an emergency basis. Thus, telehealth services were utilized more frequently by healthcare providers. Telehealth services allow a patient to use Internet access or a telephone to connect with a provider. Thirty percent (n=294) of 988 participants reported meeting with their healthcare provider using telehealth and 59 (21%) of 285 participants reported the telehealth platform was not accessible. The variability in telehealth systems is evident in the comments participants shared.

“The telehealth visits are wonderful for sharing information. I’m very glad we have telehealth.” —*Congenitally VI White female, aged 25 to 34 years, with additional disabilities*



“My doctor’s office uses the app Healio. It is not very user-friendly for people who have to use a screen reader. I cannot send the doctor a message by myself, for instance. I would like to see changes made to the telehealth apps that need to be used by people with blindness and visual impairments.” —*Congenitally VI White female, aged 35 to 44 years, with additional disabilities*

One area of healthcare that was especially alarming for some participants was not having access to eye care professionals. Some participants with low vision expressed concerns that they would lose additional vision as a result of the COVID-19 pandemic.

“My eye appointment (which I feel is critical) has been postponed until further notice. In the meantime, my eyesight continues to get worse.” —*Adult-onset VI White female, aged 35 to 44 years, with additional disabilities*

ACCESS TO COVID-19 TESTING

There were numerous participants who were concerned about their community only having testing options that were “drive through” for those who suspected they had COVID-19.

“I live in [suburb of a major metropolitan city in the northeast]. I called one of the county numbers identified to ask how a blind person could get to a testing location or if someone could come to the home. The person said they did not know and gave me no additional referral to who might be able to help.” —*Adult-onset VI nonbinary, aged 55 to 64 years, with additional disabilities*

ACCESS TO HEALTHCARE IF ONE HAS COVID-19

In spring 2020, there were daily news stories discussing access to ventilators for those with COVID-19. A few participants questioned why or whether disability would be a consideration of healthcare workers when making decisions about who did and did not get care.

Participants were asked to rate their level of agreement with the statement: “I am concerned that if I am hospitalized with COVID-19 that I will not be allowed to have a caregiver with me who would normally assist me with accessibility issues in a hospital setting.”

Of the participants who rated this statement more females (40%) than males (20%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (26%) among the three age categories. Participants with a congenital vision loss (33%) had greater concern than those with a childhood vision loss (11%) or vision loss during adulthood (18%). This statement was of higher concern to those who were blind (39%) compared with those with low vision (22%). There was a higher level of concern for participants who did have an additional disability (33%) compared with those who did not have an additional disability (29%).

There were numerous participants who reflected on societal views of disability and how COVID-19 was raising their concerns. The systemic challenge of people with disabilities being marginalized by many in the general public is not new. However, as resources are in short supply, it is not surprising that some participants raised this concern.

“My concern runs deep relative to persons with disabilities being dismissed, disregarded, and or discarded as persons [who] lack in value when determining the level of attention/care to be given in health settings during the COVID-19 pandemic, especially when having to decide who receives use of limited resources.” —Congenitally VI Black or African American male, aged 45 to 54 years, with additional disabilities

Another concern of participants regarding potential hospitalization with COVID-19 was not having someone at the hospital with them who could assist as needed and advocate on their behalf.

“Without someone to assist me and advocate for me, I’d feel like I was fighting the virus and a system that doesn’t want me.” —Congenitally VI Hispanic female, aged 18 to 24 years, with additional disabilities

A systemic and pre-existing issue for those with visual impairments is that most of the material provided by healthcare providers is not accessible to them. Thus, the ability to read prescription labels, pre-surgery instructions, and directions is problematic. Participants anticipated that this lack of accessibility coupled with lack of staff availability and crowded hospitals would potentially decrease their care.

“We need accessible healthcare mobile apps and websites. We need technology to represent graphical information in a format we can understand.” —Congenitally VI White male, aged 45 to 54 years, with no additional disabilities

Participants were asked to rate their level of agreement with the statement: “I am concerned that I will not be able to care for someone living with me who contracts the COVID-19 virus.” Of the participants who rated this statement more females (40%) than males (21%) expressed they agreed or strongly agreed, and those 55 years and older had the highest concern (26%) among the three age categories. Participants with a congenital vision loss (34%) had greater concern than those with a childhood vision loss (9%) or vision loss during adulthood (17%). This statement was of higher concern to those who were blind (40%) compared with those with low vision (19%). There was a higher level of concern for participants who did have an additional disability (32%) compared with those who did not have an additional disability (29%).

RECOMMENDATIONS

Survey participants reported concerns about healthcare access during the COVID-19 pandemic that were both related to health practices to control the virus and derived from pre-existing systemic issues. Leaders developing response procedures for any emergency need to consider all populations, including those with disabilities, gender orientation, ethnic backgrounds, economic status, etc.

- Those with visual impairments and others who do not have access to a vehicle, must have more than one way to access a testing site. Alternative options may include in-home testing or communities providing safe transportation to get to a testing site.
- Hospitals, doctor's offices, and other healthcare facilities must recognize that people with visual impairments may need someone to accompany them who can visually interpret the environment when necessary, advocate on their behalf, and provide alternatives when information is not accessible. Federal law requires hospitals and state agencies to modify policies to ensure patients with disabilities can safely access the in-person supports needed to benefit from medical care during the COVID-19 pandemic.¹²
- Healthcare providers should make written information accessible to patients who are visually impaired by providing electronic, braille, and large print options. Should alternative options be unavailable, then it is the responsibility of medical staff to review the material with the patient to ensure equivalent access.
- Designers of telehealth tools should ensure they are accessible to all users who are visually impaired. Electronic health records, secure video platforms, and other telehealth systems should meet the highest accessibility and usability standards.

“[T]here is no definite answer for those needing to test, yet cannot drive to a testing site. Providers and the lawmakers seem to assume everyone drives, and are not addressing this question.” —Congenitally VI White female, aged 65 to 74 years, with no additional disabilities

¹² 45 CFR §92.202 Provides for effective communication for people with disabilities. 45 CFR §92.202 requires covered entities to provide reasonable accommodations unless the accommodation results in fundamental alteration to the program or activity. Nondiscrimination on the Basis of Race, Color, National Origin, Sex, Age, or Disability in Health Programs or Activities, 45 CFR §92 (2020).

- Medical providers using telehealth can designate workers who can meet with patients who are visually impaired prior to their visit to ensure that time with the healthcare provider is used efficiently. Clearly labeled buttons within apps or websites, directions on how to position the device's camera, and an accessible platform for messaging, note taking, and reviewing test results are essential.
- Medical providers may need to allocate additional time to assist patients who are visually impaired with properly aligning the camera on their device and taking advantage of other features available through telehealth platforms.
- Companies that produce accessible thermometers and other medical equipment need to ensure that they are accessible, reliable, easy to use, standardized, and widely available.
- Prescription labels and directions need to be available in accessible format to allow the patient independent access. ScripTalk¹³, large print, or braille labels are options that are low cost and can be used to ensure those with visual impairments can independently manage their medications.



¹³ <https://www.scriptability.com/>

ACCESS TO FOOD, MEALS, AND SUPPLIES

“My fear is mostly that there will not be any food in the stores. Because of my disability and having to use services, I won’t have access to just pop by the store and grab some toilet paper or apples or whatever. I can’t do that anymore, so when services like Instacart, Shipt, and even Amazon Prime are booked solid for over a week, that can make you very terrified when you can’t even get those services [to deliver].” —*Female, aged 25 to 34 years, who did not provide any other demographic information*



At the beginning of the COVID-19 pandemic, Americans found themselves having to adjust the ways in which they obtained food, meals, and supplies. The presence of a visual impairment and, in some cases, additional disabilities presented study participants with challenges that for some produced a lot of anxiety. Finding solutions to their challenges necessitated a lot of energy on the part of some participants, whereas others felt their options were limited or nonexistent. Some participants had family, friends, volunteers, or hired assistants who did the shopping, meal preparation, and/or pick-ups for them.

Participants were asked to select all the ways they did their grocery shopping prior to the COVID-19 pandemic. The top three ways participants chose were shopping with a family member or friend ($n=1,228$), ordering online through companies that deliver, such as Amazon ($n=942$), and using local online delivery services such as Instacart or those offered from grocery stores ($n=750$).

Of the 1,921 participants, 931 (51%) had concerns about access to food, meals, and supplies due to COVID-19 and answered questions about this topic, 131 (8%) had concerns about this topic but did not choose to answer questions, and 731 (41%) did not have concerns about access to food, meals, and supplies.

Participants provided their level of agreement to eight concern statements.¹⁴

1. I am concerned because when I have tried to use an online shopping service, no delivery slots are available and/or the items I want are out of stock. ($n=802$, $M=4.34$, $SD=.926$)
2. I am concerned that because of my visual impairment that I will have difficulty with the application process for SNAP (food stamps). ($n=336$, $M=3.34$, $SD=1.31$)
3. I am concerned that because of losing my job or having my hours reduced, I will not be able to afford the food and necessary supplies I need. ($n=296$, $M=3.27$, $SD=1.27$)
4. I am concerned because my child's school has set up a location for me to come to pick up free meals, but I lack transportation to go to the location. ($n=126$, $M=3.10$, $SD=1.37$)
5. I am concerned because the person who assisted me with meal preparation prior to the COVID-19 pandemic is no longer able to assist me. ($n=237$, $M=2.94$, $SD=1.30$)

¹⁴ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

6. I am concerned because prior to the COVID-19 pandemic I, or a member(s) of my family, received food assistance (e.g., Meals-on-Wheels, free school lunches) that is no longer available or has been reduced. (n=255, M=2.84, SD=1.36)
7. I am concerned that I do not have enough basic skills to do my own meal preparation and/or housekeeping if I am quarantined for several weeks. (n=642, M=2.31, SD=1.37)
8. I am concerned that I am not able to use online shopping services that deliver because I do not have the technology and/or skills to use the services. (n=736, M=2.19, SD=1.31)

ORDERING THROUGH AN APP OR WEBSITE

Participants were asked to rate their level of agreement with the statement: “I am concerned because when I have tried to use an online shopping service, no delivery slots are available and/or the items I want are out of stock.” Of the participants who rated this statement more females (59%) than males (25%) expressed they agreed or strongly agreed. Participants with a congenital vision loss (54%) had greater concern than those with a childhood vision loss (12%) or vision loss during adulthood (18%). This statement was of higher concern to those who were blind (58%) compared with those with low vision (27%). There was a higher level of concern for participants who did not have an additional disability (48%) compared with those who did have an additional disability (36%).

Many participants shared their experiences related to ordering groceries and/or supplies online whether through an app or website. Prior to the COVID-19 pandemic, a few participants had not used apps or websites to place online orders or set up deliveries.

“I did not previously use apps for grocery service delivery, so I had to learn quickly with support from a sighted friend. I now use Instacart regularly on my iPhone with VoiceOver successfully.” —Congenitally VI White male, aged 25 to 34 years, with additional disabilities

Some participants expressed frustration with lack of accessibility of the apps and websites used to place orders. Many participants found it challenging to get a delivery slot through companies including national online companies such as Amazon or Shipt, national retailers such as Walmart and Kroger, or local companies such as the neighborhood pharmacy.

“I mainly have been using Peapod because I can get much lower prices than in [major city] stores. I do not know if I have missed an occasional available [delivery time] slot. ... There is no way to find out quickly, but I have looked through three weeks of days and not found anything.” —*Childhood-onset VI nonbinary, aged 55 to 64 years, with additional disabilities*

There were some participants who shared that they were on a fixed income and/or used government assistance, such as SNAP or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Most online delivery services will not allow customers to make purchases with these funds. One participant spoke about the challenges faced when trying to gather and upload all the information necessary to apply for SNAP funds and how the website was not accessible.

“I have a lot of food stamps that I can’t use because there is no way to use them with any delivery service. I would like fresh food and any disinfectant supplies, but I can’t get these things.” —*Congenitally VI White, other gender identity, aged 25 to 34 years, with additional disabilities*

Participants were asked to rate their level of agreement with the statement: “I am concerned that because of my visual impairment that I will have difficulty with the application process for SNAP (food stamps).”

Of the participants who rated this statement more females (29%) than males (20%) expressed they agreed or strongly agreed, and those 35–54 years had the highest concern (20%) among the three age categories. Participants with a congenital vision loss (27%) had greater concern than those with a childhood vision loss (6%) or vision loss during adulthood (16%). This statement was of higher concern to those who were blind (29%) compared with those with low vision (17%). There was a higher level of concern for participants who did not have an additional disability (26%) compared with those who did have an additional disability (22%).

GETTING ORDERED ITEMS

Without transportation, there were participants who either could not take advantage of curbside pickup or had to arrange for someone to get their groceries or supplies. Stores, restaurants, banks, and other businesses cannot assume that everyone has a vehicle.

Other participants talked about the challenges of receiving deliveries at home. For those who lived in a secured building, there were issues with drivers not being able to get into the building. Some participants with additional disabilities and/or those who were older commented about the physical energy needed to carry in groceries, disinfect them, and put them away.



SHOPPING IN STORES

Though many participants reported they did not go shopping themselves, others shared their experiences when they did shop.

“My greatest concern nowadays is having to most likely use assistance in the store. I am low vision, and I am concerned about bringing items too close to my face to read them. Going forward, I will seek assistance and always travel with my white cane.” —*Congenitally VI Black or African American female, aged 65 to 74 years, with no additional disabilities*

A few participants expressed concern for their physical safety while shopping. There were a few participants concerned about their ability to maintain a 6-foot social distance, and that not social distancing would be misinterpreted by others at the store. There was variability in how comfortable participants were in asking for assistance from a store employee.

“My concern is that if I am out shopping due to panic buying, I may get injured or pushed aside if someone sees an item they want and wants to get past me. I am often slower than other shoppers. Also, I no longer feel comfortable picking up items to look at them closer to find what I’m looking for, so I am relying more on employee assistance.” —*Congenitally VI Black or African American female, aged 35 to 44 years, with no additional disabilities*

FOOD INSECURITY

Food insecurity was experienced by some participants and others were concerned that if they or a member of the household were to lose their job, additional challenges would occur with obtaining food. For some participants on limited incomes, the rise in food prices forced them to make hard choices between paying bills and the purchase of food and supplies.

“You have to buy a little more than usual, because of the delays. Prices have gone up, and if you live only on Social Security income month to month (like I do), it is very hard. Also, some of the mainland (USA) Internet suppliers, do not ship to Puerto Rico, or the shipments are limited to certain items only.” —*Adult-onset VI Hispanic female, aged 75+ years, with additional disabilities*

BUSINESSES WITH DRIVE-THROUGH SERVICE ONLY

Due to COVID-19, some stores, restaurants, banks, or other businesses had little to no indoor access. Many participants spoke to the challenge that drive-through-only options placed on them and their independence. In some instances, participants were able to successfully walk up to a drive-through; but in other cases, they were not permitted to access the business without a vehicle.

“[L]ots of businesses are drive-through only, which excludes me. I admit I have walked through a drive-through because I had no other choice, but even walk-up windows are closed. I do not want to ask friends to help me, as they are worried about their own health and safety.” —*Adult-onset VI White male, aged 35 to 44 years, with no additional disabilities*

RELYING ON OTHERS TO SHOP FOR YOU

As a result of the COVID-19 pandemic, there were participants who were not leaving their home to shop, but were instead having others shop for them. In a few instances the shopper was an individual they hired, but in most cases, the shopper was a family member or friend. Some participants expressed frustration that there were items they could not get, and they felt as though they had lost some independence because they were no longer shopping for themselves.

FOOD ACCESS AND PREPARATION

Few participants had concerns about their ability to prepare meals for themselves or others in their household. Those who did express a concern tended to be over age 55 years.

“Since I have become severely disabled and weaker and out of practice, I am not sure I could actually prepare meals, and have very limited ability to clean. I have limited experience with online shopping and some sites aren’t very accessible.” —*Congenitally VI white female, aged 55 to 64 years, with additional disabilities*

With people experiencing layoffs, furloughs, and other changes in their lives, some participants found themselves in need of food assistance. As was the case with drive-through COVID-19 test sites, curbside pick-up at stores, and drive-throughs at restaurants and banks, accessing programs that provide food and meals was problematic for some participants as these programs were set up for drive-through pickup only.

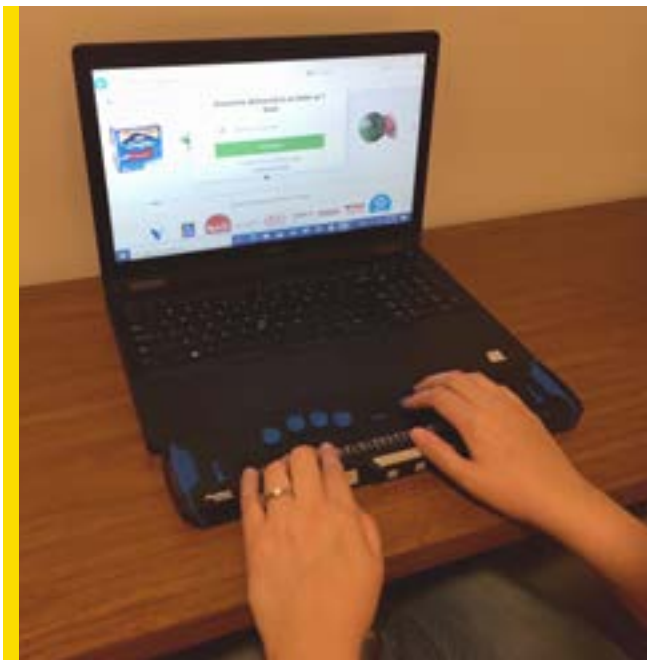
“Because of [the] shortage of food in grocery stores, food is being made available to seniors once a week. However, I cannot get it because they cannot deliver it to me and I have no one to pick it up for me.” —*Child-onset VI Black or African American female, aged 55 to 64 years, with no additional disabilities*

A few participants were having food delivered to them, which demonstrates how those in a community can work together to meet the needs of citizens who do not drive.

RECOMMENDATIONS

Grocery stores, pharmacies, and other essential retailers have been forced to find ways to protect both their employees and customers during the COVID-19 pandemic. While many of the practices instituted were necessary for disease control, survey participants identified that these changes made accessing food and supplies more difficult. Implementing the recommendations below would facilitate easier access to food and supplies for people who are visually impaired and allow businesses to avoid discriminating against people with vision loss as health and safety policies become part of the “new normal.”

- Employees must follow the requirements of the Americans with Disabilities Act (ADA) and make “reasonable modifications” to normal business practices when necessary to accommodate people who have disabilities. As a best practice, businesses should provide disability-specific training to employees to ensure that people with disabilities are served appropriately.
- Store management may want to provide specific hours for those who are seniors and those with disabilities to shop. This can enable employees to provide needed assistance to customers when stores are less crowded.
- Businesses may consider providing visual interpreting services, such as Aira or Be My Eyes, to their customers at no or lower cost. This will allow customers to shop independently with sighted assistance through the service.
- Businesses should provide alternative options to “drive-through only” pick-up so that customers without a vehicle can access pick-up by walking-up.
- Those organizing food banks, school meals, or other supply pick-ups for the community must develop and implement a coordinated plan to ensure that alternative considerations are made for people who cannot drive-through.



- Transportation providers can assist those who cannot drive-through or do curbside pick-up by providing delivery to individuals' homes as long as expanding delivery does not reduce the available transportation options.
- Home health companies, consumer organizations, policymakers, and others must work together so those who need in-home support for independent living tasks (e.g., food preparation, someone to shop with them) have access to a trained worker who will follow safety protocols and wear appropriate personal protective equipment.
- Online purchasing with SNAP benefits should be extended to every U.S. state and territory, and eligible retailers should be expanded. Policies that expand access to SNAP, WIC, and other nutritional benefits should be made permanent to provide these critical benefits beyond the pandemic as well.¹⁵
- Delivery service personnel must notify customers when they have arrived and are making a delivery. Placing items on a porch, for example, without notifying the customer leads to goods not being found or being stolen.
- Apps such as Instacart, Amazon, and Peapod need to be clearly laid out for those using screen reader technology. Developers of apps should consider accessibility from the beginning. For example, they can provide the option to list items in a cart in table format, have a search feature to find the next available slot, and ensure the layout of components is logical. Developing apps that are high contrast, have clear fonts, and no text over images improves usability for anyone who is visually accessing the app.
- Companies that provide delivery should consider adding features to their apps and websites that make them more usable for those with vision loss. Helpful features may include notification that the delivery will soon be arriving or has been completed, and the location of the delivered items.

“I can’t say enough that there needs to be some sort of service for anyone who has proof of disability in national or local emergency situations to get access to groceries and medical needs. And public transit should be nationally mandated as ESSENTIAL!” —*Congenitally VI White female, aged 25–34 years, with additional disabilities*

¹⁵ See <https://www.fns.usda.gov/news-item/usda-026820>

EMPLOYMENT

“Because of working remotely,
I’m using [Microsoft] Teams extensively,
and have begun to use Slack.
If anything, all the other tech I’ve
used has allowed me to carry on a
somewhat normal life.” —*Congenitally VI*
Hispanic male, aged 35 to 44 years,
with no additional disabilities



There were 1,801 participants who reported their employment status with 523 (29%) participants employed full time and 182 (10%) employed part time when completing the survey. As a result of workplace closures or layoffs due to the COVID-19 pandemic, there were 57 (3%) participants who were employed full time and 102 (6%) employed part time prior to the pandemic who were now unemployed.

Of the 718 employed participants, 338 (47%) had concerns about employment due to COVID-19 and answered questions, 46 (6%) had concerns about this topic but did not choose to answer questions, and 334 (47%) did not have any concerns about employment.

Most of the participants who reported they were employed noted that the shift to working at home had some effect on their work, including those related to accommodations provided by the employer, accessibility, training, and productivity.

ACCOMMODATIONS, ACCESSIBILITY, AND PRODUCTIVITY

Of 252 participants, 63 (25%) requested accommodations that would allow them to be more productive working at home, whereas 189 (75%) did not make any requests. Some requests were granted; other accommodations were not.

“[I was n]ot able to bring my large screen monitor home and not able to use my employer’s ZoomText license from home. [I h]ad to purchase both.”—*Congenitally VI White male, aged 55 to 64 years, with additional disabilities*

“My employer instituted work at home prior to state requirements, [and] permitted extended leave for people who are ill or are a caregiver. [These were] excellent, reasonable accommodations, including accessible online software and other virtual tools.”—*Child-onset VI Multiracial female, aged 55 to 64 years, with additional disabilities*

Of 253 participants, there were 96 (38%) who reported experiencing an accessibility problem with at least one of the technology tools needed to do their job, whereas 157 (62%) did not report any accessibility issues.

“I use Microsoft Teams, Skype for Business, and WebEx for meetings throughout the day. They all have accessibility problems that range from irritating to serious barriers. In addition, I struggle to hear audio from both my screen reader and my colleagues on the video conference.” —*Child-onset VI White male, aged 45 to 54 years, with no additional disabilities*

There were 56 (22%) of 253 participants who reported they were not able to access technology at home that was essential for their ability to do their job, and 197 (78%) who had access to all needed technology.

“I could not bring [home] my desktop Windows computer with the JAWS screen reader. ... I use a Mac laptop for my personal use, and it has slowed down my ability to get everything done. ... VoiceOver screen reader works on the Mac but takes twice as long as it does with JAWS. This is because the Mac with VoiceOver uses two-handed commands and has a different layout than my work Windows computer. —*Congenitally VI White female, aged 25–34 years, with no additional disabilities*

Some participants reported that their visual impairment affected their productivity. For those participants with low vision, visual fatigue was a factor leading to reduced productivity.

“Everything takes longer and is harder to do on my tablet and my slow Wi-Fi. My eyes wear out much faster.” —*Congenitally VI White female, aged 35 to 44 years, with additional disabilities*

Participants were asked to rate their level of agreement with the statement: “I am concerned that I will lose my job because there are work tasks, I am having difficulty/no longer able to perform.” Of the participants who rated this statement more females (12%) than males (7%) expressed they agreed or strongly agreed, and those 35–54 years had the highest concern (9%) among the three age categories. Participants with a congenital vision loss (9%) had greater concern than those with a childhood vision loss (3%) or vision loss during adulthood (6%). This statement was of higher concern to those with low vision (9%) compared with those who were blind (8%). There was a slightly higher level of concern for participants who did not have an additional disability (10%) compared with those who did have an additional disability (9%).

TRAINING TO USE SOFTWARE

With the shift to working from home, many Americans found themselves having to use new technology tools. For 173 (69%) of 251 participants no training was provided on how to use new technology tools their employer introduced, whereas 78 (31%) participants were provided with training. To learn how to use the new technology tools, most participants taught themselves (n=32), took part in employer training (n=14), or received instruction from another employee (n=10). Other participants used an app or sought assistance from a family member or another person with a visual impairment. Not surprisingly, some participants reported accessibility issues with the training provided by employers.

“The training (live and recorded online) would be accessible if there was audio description for the layout of the application, navigation through areas of the application, verbal explanation of what is being done on the screen and if key stroke equivalents are also available. Stating ‘click here’ or ‘see what I just did’ are useless comments for a person who cannot see what is being done on the screen.” —Congenitally VI White female, aged 55–54, with no additional disabilities

Participants were given the following two statements.¹⁶ The training I received to use new technology tools my employer introduced was accessible to me (n=76, M=3.70, SD=1.26). I am concerned that I will lose my job because there are work tasks I am having difficulty/no longer able to perform (n=300, M=2.35, SD=1.20)

RETURNING TO THE WORKSITE

A few participants shared concerns about making the shift from working at home back to the worksite. Some factors that are unique to employees with visual impairments that might affect the transition include the need to find safe and available transportation to get to the worksite, the need to maintain social distance, and the potential change in working relationships with other employees who may no longer be comfortable with providing sighted assistance.

“I am concerned my employer will expect me to be back at work before it will be safe for me to be there. I have to ride public door-to-door transit, where people are often sneezing and coughing without covering their mouths.” —*Congenitally VI Multiracial female, aged 55 to 64 years, with additional disabilities*

UNEMPLOYMENT AND FUTURE EMPLOYMENT

There were 154 participants who reported on unemployment. Fifty (33%) participants who were laid off from their part-time or full-time jobs were considering applying for unemployment, 37 (24%) had applied to collect unemployment, and 10 (6%) were already collecting unemployment. Fifty-seven (37%) participants were not planning to apply for unemployment.

Of 158 participants, there were 127 (80%) who anticipated they would seek employment after the pandemic ended, whereas 20 (13%) were unsure if they would seek employment, and 11 (7%) did not believe they would seek employment. One participant did not provide a response.

¹⁶ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

“My job requires me to sign a new contract every year. My skill set is strongest in working with my students and specific to working at my place of employment. I feel that working from home, my skills will not be as sharp, and I am worried that this will cause my employer to not consider offering me a new contract for next year.” —*Congenitally VI Hispanic female, aged 25 to 34 years, with no additional disabilities*

RECOMMENDATIONS

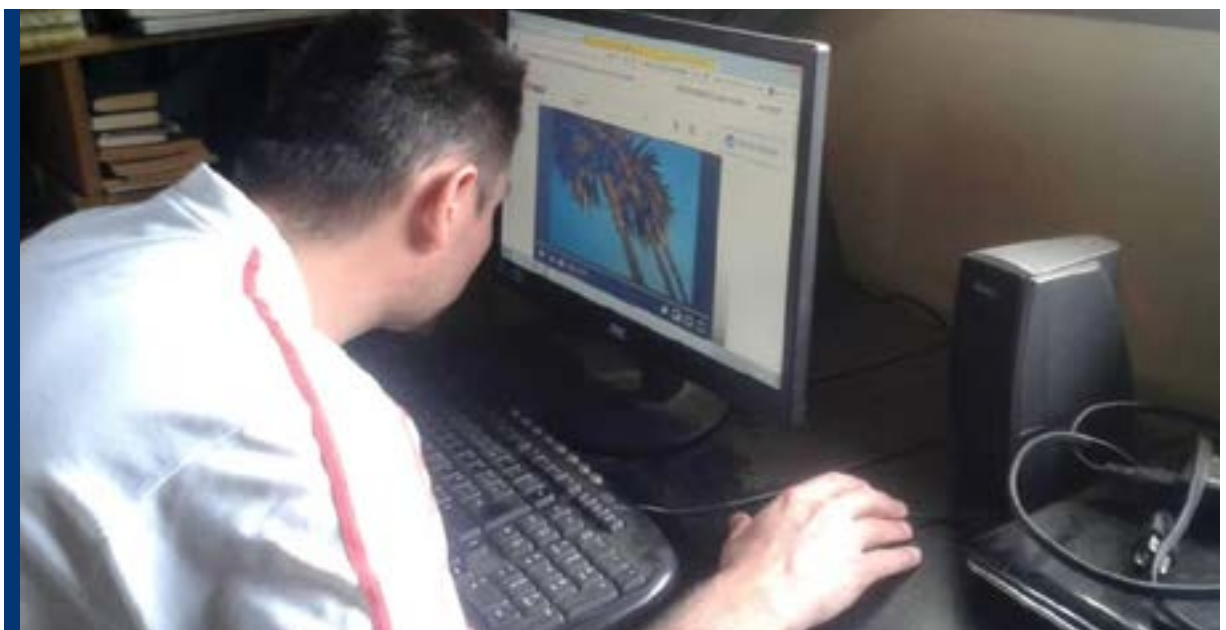
“[We need to make] sure that job search sites such as Indeed and Glass Door are accessible and understand that individuals that are blind may use their sites to search for jobs.” —*Adult-onset VI Black or African American female, aged 55 to 64 years, with additional disabilities*

Many of the employment concerns that participants identified highlighted issues with the need for accommodations, access to technology, and best practices for remote training and meetings. Employers have a responsibility to ensure that their practices do not create barriers for employment or advancement.¹⁷

- Job matching, recruitment, and application platforms must be fully accessible and usable to people who are visually impaired, so that those applying for jobs have full access to employment opportunities.
- Web-conferencing software, such as Microsoft Teams, Zoom and WebEx, must ensure that users, both attendees and presenters, have access to the full array of features in these products. By labeling all buttons and providing key commands to all features, including in-program features such as increasing font size in the chat window, manufacturers can ensure all individuals can use their platforms. Additionally, platforms should incorporate usability practices, such as ensuring that screen reader software does not interfere with communication through the video or audio service.

¹⁷ See <https://disabilityin.org/resource/covid-19-response-accessible-tools-and-content/>

- Technology training for education and employment needs to be accessible. Developing a text-based version of training videos that clearly outlines steps for users, including short-cut keys for those using screen reader technology and a description of where to find icons, buttons, and other visual aspects of the tool for those with low vision, will allow greater ease of use and higher productivity. Presenters should be aware that not all attendees will access the tools in the same way and should provide alternative access methods.
- Employers should make available support desk tools for company products, including support from the product manufacturer. Workplace technology developers should incorporate a commitment to accessibility into each product, including accessibility support and training.
- Employers should ensure that employees have access to comparable accommodations whether working from home or in the office, including checking in with staff receiving accommodations prior to a shift in work location. Employers may need to consider additional or new accommodations when requiring new work practices or locations and may consider work from home as an accommodation for challenges beyond the employee's control.
- When procuring new technologies, employers should consider both the customer-facing and employee-facing accessibility features and usability.
- Employers should establish accessible virtual meeting policies that may include providing accessible materials to attendees in advance, use of captioning or interpreters where appropriate, nonvisual communication techniques, and having individuals identify themselves before speaking.



YOUR EDUCATION

“My concerns are that accessibility is being put to the side yet again when crisis happens. There is no concern for how I and others will access [online] platforms and work. I will be able to finish my online coursework, but it is a huge challenge.” —*Congenitally VI Hispanic female, aged 25 to 34 years, with no additional disabilities*



Of 314 participants, 186 (59%) had concerns about their education due to COVID-19 and answered questions about this topic, 32 (10%) had concerns about this topic but did not choose to answer questions, and 96 (31%) did not have concerns about their education.

On March 1, 2020, there were 68 participants who reported attending rehabilitation training programs. Sixty-six of the 68 participants reported how current instruction was being delivered. Twenty-three (35%) participants reported the rehabilitation center/agency had discontinued center-based classes, 15 (23%) reported they were no longer receiving in-home instruction, and 10 (15%) reported attending classes online. There were 43 participants attending a four-year college and 27 attending graduate school. The students were asked how they were completing coursework, with the option to select more than one choice. Forty-seven were attending classes virtually, four had classes discontinued by the institution, and two chose not to attend classes. The 138 participants had the opportunity to provide their level of agreement to two concern statements.¹⁸

1. The training I received to use new tools my school introduced was accessible to me. (n=6, M=3.83, SD=1.47)
2. I am concerned that I will not complete the class, semester, quarter, and/or program due to my visual impairment and the COVID-19 pandemic. (n=116, M=3.01, SD=1.34)

EFFECT OF MOVING INSTRUCTION ONLINE

For both postsecondary education and rehabilitation students, two-thirds (n=82, 66%) of 158 participants reported their school introduced new technology tools to facilitate students accessing curriculum from home, and 34% (n=42) reported their school had not introduced new technology. When asked about the accessibility of new tools, only 40% (n=33) of the participants reported the new technologies were accessible to them and 60% (n=49) reported they were not. There were five participants (16%) who reported receiving training in how to use new technologies that had been introduced.

¹⁸ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

“I am concerned about the increased use of Google products such as Docs and Sheets, which are not fully accessible with JAWS. I am concerned about take-home tests with time limits, and whether my school will adjust the time limits to comply with my accommodations.” —Congenitally VI White female, aged 25 to 34 years, with no additional disabilities

Online courses necessitate many hours of screen time. Those with low vision expressed alarm at the level of visual fatigue this can cause. A few participants shared specific concerns related to visual access issues, including content that was difficult to see, online discussion boards that were poorly organized and difficult to follow, and poor contrast between font color and background.

As a result of the move to online education, there were some participants who developed their own methods for accessing online content. For others, the content of the class did not lend itself to online access due to the participant's visual impairment and, in some cases, additional disabilities.

“I could not finish my [American Sign Language] class because I am deafblind and on Zoom it was hard for me to see the [signing]. My American Politics and Government class went onto Zoom also. I get onto Zoom and Facebook Messenger so my interpreter can voice what they are saying in Zoom.” —*Congenitally VI White female, aged 25 to 34 years, with additional disabilities*

ACCOMMODATIONS AND INSTRUCTION IN COLLEGE CLASSES

Some participants who used accommodations for classes, including braille materials, tactile graphics, sighted assistance, or alternative testing arrangements, did not have access to these accommodations once their classes moved online. Thus, their ability to access and learn the material was negatively affected.

“I am taking an organic chemistry class. Prior to the pandemic, disability services were providing tactile materials for the class. We cannot figure out a safe way to deliver large amounts of material, so I have to take an incomplete in the class and continue it in the summer.” —*Congenitally VI White female, aged 18 to 24 years, with no additional disabilities*

Students who could not access needed accommodations worried about completing their classes and/or their ability to finish their degree program on schedule.

The quick shift from in-person to online instruction affected instructors as well as students. A few students shared their thoughts about how their instructors adapted and how their instructor's treatment of those with visual impairments changed.

“I think my professor will be understanding, but I do not like what strains this junk is doing to everyone, not just me. I think that they will pass me no matter what I do, and that makes me sad for some reason.” —*Congenitally VI White female, aged 25 to 34 years, with no additional disabilities*

DOG GUIDE AND REHABILITATION TRAINING

A few participants acknowledged that when they would be able to return to onsite training was not known at the time they took the survey. During this time of uncertainty, staff from some schools and agencies were reaching out to students.

“[I w]as just starting O&M training to learn the new neighborhood and area I had moved to in January, but all that route training has been put on hold until the sheltering in place has lifted. Concerned that it will just take that much longer to learn this new area and will delay my ability to independently make it to and from work when I’m allowed to go back into the office.” —*Adult-onset VI White male, aged 35 to 44 years, with no additional disabilities*

For the 68 participants attending dog guide and/or rehabilitation training, the COVID-19 pandemic interfered with their programs. Ultimately, this interference resulted in their plans changing and/or their ability to develop greater independence being sidetracked.

RECOMMENDATIONS

“My determination will get me through as it always does.” —*Child-onset VI Black or African American male, aged 35 to 44 years, with no additional disabilities*

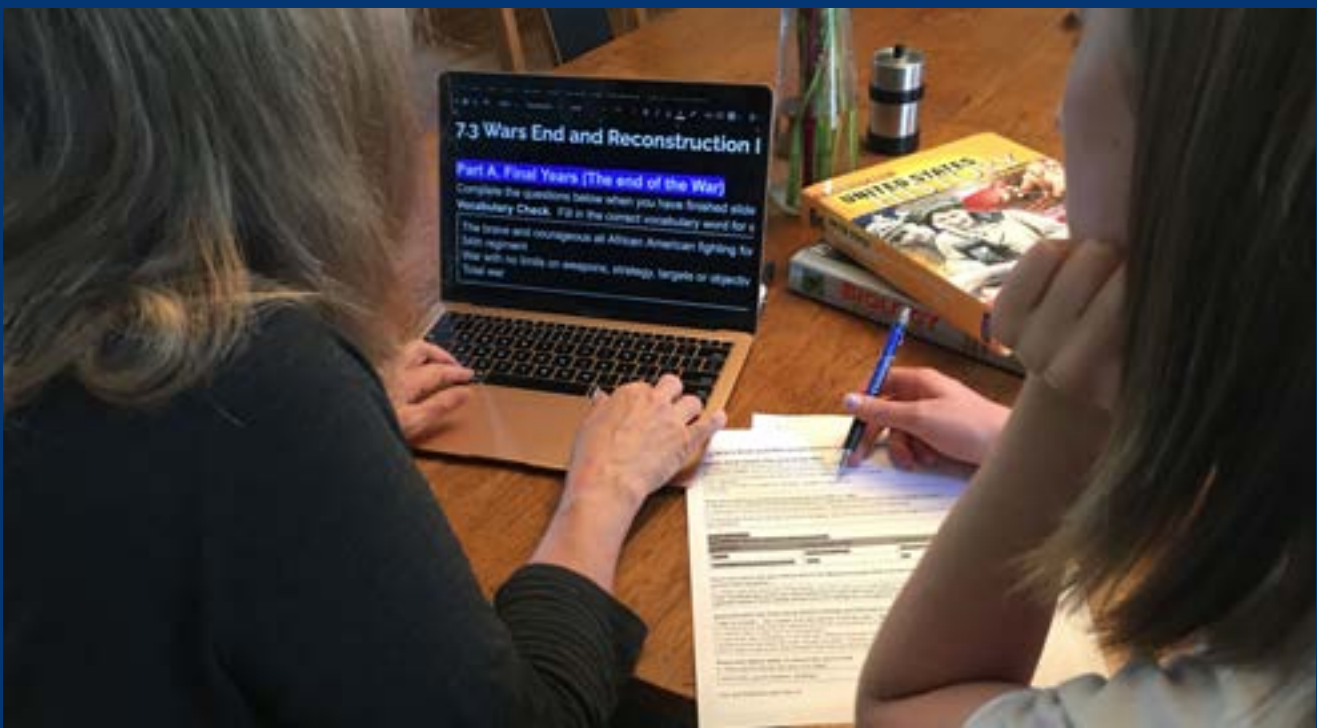
Many of the tools that were used by participants' educational institutions proved to have accessibility issues or insufficient training for students and instructors with visual impairments to fully take advantage of the learning management tools, educational applications, and online platforms. Educational institutions have an obligation to ensure that all platforms procured for instruction are accessible during the procurement process.

- Educational institutions must take proactive steps to evaluate accessibility of learning tools prior to purchase to ensure that students with visual impairments and instructors are able to use all features of the learning tools used by those who are sighted.
- Disability resource offices should strengthen protocols for ensuring that students with visual impairments taking classes remotely have a plan for obtaining the appropriate accommodations, accessible materials, and course access. Instructors with visual impairments need the same accommodations in order to teach their classes effectively.
- Educational institutions should provide accessibility training and support to instructors to ensure they create equitable learning experiences for students with and without disabilities.
- Educational institutions should create a culture of accessibility that encourages and equips instructors to provide nonjudgmental and ready access to students with disabilities. Instructors can place their focus on evaluating the quality of student work, rather than when work was completed.
- Training in the use of technology tools for education and employment needs to be accessible. Developing a text-based version of training videos that clearly outlines steps for users, including short-cut keys for those using screen reader software, and that provides the location of icons, buttons, and other visual aspects of the tool for those with low vision, will allow greater ease of use and higher productivity.

EXPERIENCES SUPPORTING CHILDREN IN K–12 EDUCATION

“I wish my concerns were only about how will I structure my children’s education and not whether or not it will be accessible. To me, anytime a new app, website, or technology becomes the norm for work, personal life, or for my children’s education, I have an anxiety over accessibility issues. Technology has helped to level the playing field, but it’s still a little bumpy.”

—*Congenitally VI White female, aged 25 to 34 years, with no additional disabilities*



Of 283 participants supporting a K-12 student's education, 113 (47%) had concerns about their child's education due to COVID-19 and answered questions about this topic, 21 (9%) had concerns about this topic but did not choose to answer questions, and 107 (44%) did not have concerns about their child's education.

Two participants were already homeschooling their child prior to the COVID-19 pandemic. Participants were asked the ways their child accessed instruction once school buildings were closed due to the COVID-19 pandemic. Ninety-six parents/guardians reported that their child was participating in online learning, and 47 shared their child was given packets of material, either by someone picking them up, receiving them via email, or downloading them from a website. Twelve participants decided to homeschool their child with a self-selected curriculum because of the COVID-19 pandemic.

Participants provided their level of agreement to two concern statements.¹⁹

1. I am concerned that my child is not accessing online learning as successfully as classmates due to my visual impairment and the COVID-19 pandemic.
(n=82, M=3.32, SD=1.51)
2. The training I received to assist my child to use new tools introduced by my child's school was accessible to me (n=7, M=3.00, SD=1.00)

FAMILIARITY AND ACCESSIBILITY OF TECHNOLOGY TOOLS

Seventy-seven (86%) of 89 participants reported their child's school introduced new technology tools to facilitate students accessing curricula from home (e.g., web-conferencing products, productivity tools, collaboration tools). Thirteen (14%) of the parents/guardians reported that there were no new technology tools introduced. More participants (n=53, 60%) reported the new technology tools were not accessible to them compared with 36 (40%) who reported the new tools were accessible. Ninety percent (n=80) of 89 participants received no training in how to use the new technology tools, whereas 9 (10%) participants did receive training.

For those participants who reported a lack of access to tools such as Zoom and Google Hangouts (used for web conferencing), Google productivity tools (such as Docs and Sheets), and learning management systems, the reasons given varied. Many participants indicated that the tools were not accessible with screen reader software.

¹⁹ The mean (M) is derived by averaging the participants' ratings, strongly disagree (1) to strongly agree (5). The larger the standard deviation (SD) the greater the spread from the mean of the participants' ratings.

“I am lucky that I have kids with vision, because Google Classroom has lots of access problems.” —*Childhood-onset VI Hispanic female, aged 35 to 44 years with no additional disabilities*

Some participants spoke to the challenges of the communication tools used by many teachers. Issues included apps that were not fully accessible, documents that were images and could not be read by screen reader software, and material that was difficult to see for those with low vision.

“Whenever I use ClassDojo via my phone, it is completely inaccessible. I am unable to access messages, comments, or anything else my child’s teacher left for the parents to read. When accessing ClassDojo via my laptop, it is somewhat accessible. However, there are many buttons that are unlabeled, and it is hard to decipher how to maneuver from one posting to the next.” —*Child-onset VI Asian female, aged 35 to 44 years, with no additional disabilities*

Issues with hardware were problematic for a few participants. In addition, restrictions placed on devices by schools limited participants’ access to accessibility features.

“My daughter came home with a Chromebook that was not accessible to me. She also has a school-issued iPad as per her IEP [Individualized Education Program], however, because of the restrictions that the district imparted, she was not able to access assignments, turn them in, etc., she has a textbook that is not large print, emails and packets to print and we do not have print capabilities, and they blocked the accessibility features on her Chrome extensions.” —*Adult-onset VI White female, aged 55 to 64 years, with additional disabilities*

ASSISTING CHILDREN WITH SCHOOLWORK

Not all children are independent in their ability to access and complete their online schoolwork. This means that parents/guardians/grandparents are taking on the role of teacher as they support their child's access and engagement in education.

The presence of a visual impairment, coupled with the format of material teachers provided, interfered with some participants' ability to support their child.

“Teachers are uploading the majority of the work as pictures of worksheets, screenshots, or even handwritten material. My child has dyslexia and uses assistive technology to read. So, neither of us can access about 80% of the information.” —*Congenitally VI White female, aged 35 to 44 years, with additional disabilities*

A few participants shared how they were approaching technology tools that were not accessible to them.

“For other Google software, I’ve been finding YouTube videos to help me understand how to do something. Then I have my sighted daughter tell me what is on screen, so we can figure it out together. ... [W]e are learning together.” —*Congenitally VI White female, aged 45 to 54 years, with no additional disabilities*

As a result of access issues, there were a few participants who found themselves in a position where they were unable to provide their child with support in the same way as adults who are sighted.

“[Because of my visual disability, I am] not sure if my child is getting the same feedback as to the assignments from me as the other kids are from their parents. In addition, some of the assignments are more difficult for me to assist with because I cannot see.” —*Congenitally VI Multiracial female, aged 35 to 44 years, with additional disabilities*

EMOTIONAL EFFECT ON ADULTS AND CHILDREN

Some participants expressed their concerns that because they were visually impaired, they were potentially impeding their child’s education.

“I am slowing down their daily learning and they are frustrated when I don’t see what they see or what they are talking about. It is causing friction between us. [I] looked into tutoring, but it is too expensive.” —*Adult-onset VI female, aged 45 to 54 years, with no additional disabilities*

Other participants recognized that it was important to keep a balance in their child’s life.

“My priority at this point is keeping my daughter healthy and feeling safe. I am concerned about her education, but it is important to me that she remains emotionally stable and comes out of this without a feeling of being traumatized. Education has always been a struggle for her, so we are focusing on gratitude and kindness. The rest will fall into place when we meet again as a team.” —*Adult-onset VI White female, aged 45 to 54 years, with additional disabilities*

RECOMMENDATIONS

Many participants expressed frustration with the digital accessibility of their child's remote learning environment. Inaccessibility in the digital classroom is likely to negatively impact both students with visual impairments and children whose parents are visually impaired.

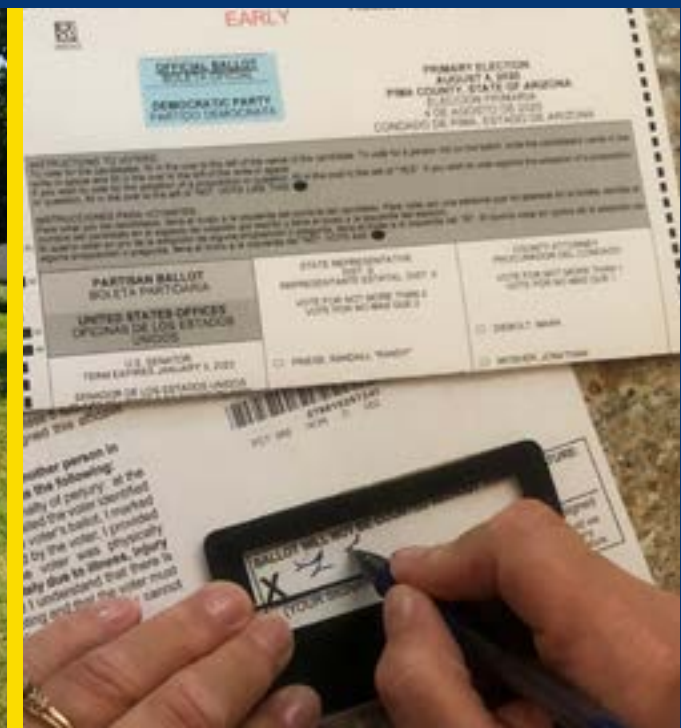
Additional educational recommendations will be included with the complementary *Access and Engagement Survey* report. That study examined how COVID-19 has affected the education of students with visual impairments in the United States and Canada.²⁰

- School districts must procure, develop, and offer accessible apps, websites, and technology that provide equal access to visually impaired and sighted users. Access to accessibility features should be allowed under the school district's security and permissions settings on school-provided devices. Accessibility benefits not only students with disabilities, but also parents and other family members with disabilities who are responsible for assisting their child with their educational needs.
- In designing materials for student use, consideration must be given by school staff to providing an accessible version of pictorial materials including scanned documents. Administrators should ensure that all teachers have access to the tools needed to provide accessible formats, especially if teachers are also working remotely.
- School staff cannot assume that all families have access to online communication and learning management tools. Therefore, they must provide information delivered through these tools in alternative formats including sending home print materials, making electronic copies accessible with screen reader software, and making audio recordings that can be accessed by calling a designated telephone number. States, districts, and schools should provide technology and broadband access where necessary to facilitate distance learning.
- When circumstances, such as the COVID-19 pandemic, necessitate that family members take on teaching responsibilities, there must be communication between school staff and families. Any challenges with access to information must be addressed and a system developed that ensures the child has access to the same instruction, learning materials, and teacher feedback as sighted classmates.
- Any accommodations that a child receives in the classroom through an Individualized Education Program (IEP) or 504 Plan should follow the child home, or alternative accommodations to equivalent classroom access should be provided.

²⁰ See <https://www.afb.org/research-and-initiatives/education/access-engagement-survey>

VOTING

“I believe electronic voting is extremely necessary and wise. We are living in the 21st century; we have the available technology to make voting easy, simple, straightforward, and, most importantly, accessible to all whether or not they’re able to get to some physical location to vote.” —*Congenitally VI White other gender, aged 18 to 24 years, with additional disabilities*



The study sample had a high rate of voter registration, with 1,625 (91%) of 1,790 participants reporting they were registered voters and 165 (9%) indicating they were not. Of the 1,614 participants who reported how they typically vote, 665 (41%) went to a polling location and voted with an accessible ballot-marking system; 445 (28%) voted by mail; 287 (18%) went to a polling location and voted with assistance from a family member, friend, or other individual; 152 (9%) went to a polling location and voted with no assistance; and 65 (4%) typically did not vote.

When asked about voting or caucusing for the 2020 U.S. primaries, 631 (43%) of 1,461 participants indicated that prior to the COVID-19 pandemic, they had voted or caucused, 375 (26%) did not vote or were already planning not to vote or caucus, 273 (19%) reported their state had postponed voting or caucusing due to the COVID-19 pandemic, 111 (7%) reported their state had moved to a mail-in ballot only, and 71 (5%) reported that although they had planned to go the polls in person, because of the COVID-19 pandemic, they completed a mail-in ballot.

VOTING AND ACCESSIBILITY

The participants were asked if they had an accessible way to mark their ballot, such as an accessible online delivery system. There were 616 (39%) of 1,565 participants who were unsure if they had an accessible system, 444 (28%) who had an accessible system, 355 (23%) who reported they did not have an accessible system, and 150 (10%) who chose that the question was not applicable to them. It is concerning that just over 25% of participants knew whether they had an accessible system for voting. Although approximately 1 of 10 participants who responded to the polling questions reported they had voted without assistance, there is still a discrepancy that indicates there may be adults with visual impairments who could benefit from an accessible voting system but are unsure if one is available.



At a physical polling location, there is no guarantee of accessibility. It is imperative that all voters have access to the physical space and the ballot. There were a few participants who shared their experience having difficulty obtaining physical access at the polling location.

“[In a southwestern state] I voted in the primaries, but the polling place did not have a ramp, and though they offered to bring the portable voting booth out, they would only do that if you parked your car in the designated spot. Since we got dropped off by Lyft, we did not have a car. So, two citizens from the voting line outside had to help lift my wheelchair up the curb.” —*Congenitally VI White male, aged 65 to 74, with additional disabilities*

Other participants discussed their experiences and difficulties with accessing the ballot at a polling location.

“The poll volunteers and managers at my typical polling station almost always have trouble getting the accessible voting interface to work. It takes a lot of time to try to figure it out, but ... typically they eventually get it to work. The time for that interface to transpire is unacceptable and, in this environment, it’s not healthy. I voted in the primary on March 3, when the coronavirus concerns were really ramping up. The poll workers had troubles with the machines and had me switch locations a few times. Eventually, we gave up, and I had to have my wife assist me to vote. The entire thing inappropriately extended our exposure to a risky environment while my civil liberties were being transgressed.” —*Adult-onset VI White male, aged 55 to 64 years, with no additional disabilities*

There are states that are considering or have moved to offering mail-in-ballots. For those with visual impairments, mail-in-ballots can present a challenge if the ballots are not accessible or if the individual cannot access or complete the ballot. This lack of access will require sighted assistance to vote, which precludes one's ability to vote independently and privately.

“My state has the option of going in person or mail-in ballot. I will not go in person due to COVID, and I do not have the help needed at home to fill out the mail-in ballot.” —Congenitally VI Hispanic female, aged 25 to 34 years, with no additional disabilities

RECOMMENDATIONS

Many participants in this study were registered voters and had experience voting prior to COVID-19. Some participants had familiarity with accessible voting options, whereas others were not aware if there were options they could use. Mail-in-voting was a concern to some participants who didn't have a private way to access and mark their ballot.

- Accessibility when voting is paramount. Voters need options that allow them to access and return their ballots independently and privately, at the polls or at home.
- At the polls, accessible voting machines must be functioning and cleaned between use and operated by someone who is familiar with the accessibility features of the machine. The poll worker must be able to provide instruction in the machine's use. Training for poll workers and ready accessibility is particularly important if poll workers are in short supply due the COVID-19 pandemic.
- When voting takes place at a polling location, communities must plan for transportation for those who need a ride in order to vote.
- Remote voting options must be secure, accessible, usable, and widely available. Planning for electronic and remote voting procedures must ensure that security provisions do not disenfranchise voters with disabilities.
- Polling places must meet their legal obligations to be fully accessible, and practices for providing alternative assistance, such as curbside voting, must not be dependent on a voter having a vehicle when at a polling station.
- All additional voting operations must also be accessible, including registration, requesting and checking the status of mail-in ballots, and identifying polling places and changes in voting procedures as a result of the health emergency.

FINAL THOUGHTS

The Flatten Inaccessibility survey sought to gather data to answer the question:

How has the COVID-19 pandemic affected the lives of adults with vision loss in the United States?



The 1,921 individuals who shared their experiences provide a snapshot that can serve as a roadmap for companies, consumer organizations, policymakers, those with vision loss, and others as we evaluate the effect of this pandemic on those with vision loss. More importantly, we can use lessons learned from these data to address both systemic issues and new issues that have emerged as a result of the pandemic. It is imperative that additional research be conducted to add to the wealth of information shared in this report. Longitudinal data will enable us to have a deeper understanding of the long-term effect of the COVID-19 pandemic on those who are blind or have low vision. Additionally, further research will allow us to address the challenges Americans who are visually impaired encounter with technology, healthcare, transportation, access to meals, food, and supplies, employment, education, and voting. As Helen Keller once said, “Alone we can do so little; together we can do so much.”



Thanks to the generosity of our funders, AFB is able to share this research report in print and accessible digital formats free of charge as a public service.

For more information on this report and for tables related to key concern statements, please visit afb.org/FlattenInaccessibility.

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Expanding possibilities for people with vision loss

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