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Brief Report

Online support information for students with disabilities in colleges and universities during the COVID-19 pandemic

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Abstract

Background: The COVID-19 pandemic necessitated a rapid shift to remote instruction. This may have caused particular challenges for students with disabilities.

Objective: We aimed to describe the availability of remote instruction and counseling resources on the disability/accessibility websites of colleges and universities in the greater New York City area. At the time this study was conducted, this region was the global COVID-19 epicenter.

Methods: All colleges/universities in the New York City metropolitan area were identified using Petersen’s online search guide. Descriptive information (institution’s name, size, and location) was recorded. The disability/accessibility pages of websites were located and examined for remote instructional resources for both educators and for students, a way to make an appointment with the counseling center (phone number and/or email address), and a link to the counseling center. Descriptive statistics were recorded (percentages of small, medium, large size institutions, mean, median, range and standard deviations of enrollments, and number and percentage of institutions that provided online accessibility resources) and one-sided Chi square tests were conducted to test the relationship between school size and the availability of resources.

Results: 17% of the colleges/universities had no link to disability/accessibility services on their websites. Of the remaining 127 institutions, few made the aforementioned resources available on the disability/accessibility page. The most prevalent resource observed was providing students with remote instruction assistance. The association between school size and the aforementioned resources was not statistically significant.

Conclusion: Making information available to students with disabilities is a fundamental part of accessibility in higher education. Doing so is all the more necessary given the challenges wrought by the COVID-19 pandemic, challenges which are likely to continue for years to come.

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Introduction

On the last day of 2019, the World Health Organization (WHO) learned of a ‘viral pneumonia’ spreading in the Wuhan, China. Currently, the United States leads the world in terms of both the number of COVID-19 cases and deaths. Although the scientific community is still at a relatively early point in its understanding, risk factors for adverse outcomes appear to be advanced age and underlying medical conditions. Given the lack of either a cure or an effective treatment, interventions to curb the spread of COVID-19 have included social distancing, mask wearing, restrictions on travel, and shelter in place directives.

Before such measures were either recommended or required by state governors, some colleges and universities began to shut down in-person classes in early March 2020, moving instruction and all possible operations to a remote format. Nearly all of higher education would follow in the weeks to come. Though clearly warranted by the alarming increases in case counts, the sudden pivot left campus communities scrambling to adjust, particularly those...
without online instruction experience. Regarding student adaptation to the remote delivery, undoubtedly some sub-populations of students struggled more than others. Beyond students from lower socioeconomic status backgrounds, one population of students that may have faced particular challenges related to the quick shift to fully online teaching is students with disabilities (SWD). Disabilities may involve any one or more medical, psychological, physical, sensory, or cognitive impairments and manifest as challenges in various aspects of functioning and daily life, such as learning, problem-solving, depression, interpersonal relationships, communication skills, adjustment to new situations, anger management, substance use, and other impairments. People with disabilities (PWD) are a highly diverse population, with different accessibility needs. Institutions of higher education are required by federal civil rights laws to ensure that students with disabilities (SWD) are afforded equal access to, participation in, and benefits of education as their able-bodied and neurotypical peers. Depending on the type of disability, SWD may require supports such as note-takers, recording of lectures, additional test taking time and/or extended deadlines for projects, adapted projects/student work, different types of assessments, specific classroom seating arrangements, disability-specific tutoring, communication aids, etc. Primary and secondary education students are covered by the Individuals with Disabilities Education Act (IDEA), whose purview ends with high school graduation. The accommodations granted by IDEA do not transfer to tertiary education. College/university students with disabilities are covered by the Americans with Disabilities Act (ADA) under Section II (public colleges/universities) and Section III (private colleges/universities) as well as Section 504 of the Rehabilitation Act if a college/university receives federal funding. Under these laws, colleges/universities may not discriminate against students with disabilities and must provide reasonable and timely modifications or accommodations for individuals with documented need. Furthermore, institutions of higher education are required under the ADA and Section 504 to have assistive/adaptive technology in place. This might include such hardware and software as speech recognition programs, screen readers, sip and puff devices, and braille printers.

Despite the legal right to accommodations, college/university SWD continue to face barriers in higher education. Relatedly, institutions of higher education have struggled to meet the mental health needs of their student population. An Associated Press review of university counseling services published in late November of 2019 found that student demand for mental health services has far outpaced delivery capacity: College/university students needing non-acute care routinely wait weeks and counseling center staff are overwhelmed by caseloads far beyond industry accrediting group recommendations.

Young people with disabilities generally fare better when their routines and supportive environments are maintained, and that includes educational settings. However, the shift to remote delivery necessitated by the coronavirus pandemic disrupted regular campus operations, and initial reports suggest that disability/accessibility accommodations were hindered. Preliminary data also suggests that college or university students with cognitive and learning disabilities struggled to adapt to the new format of course delivery and the new expectations therein.

Colleges and universities are uniquely capable of providing coherent and accurate information and guidance to their communities and to the public. Therefore, this exploratory assessment aimed at describing the resources available to SWD on the disability/accessibility pages of college/university websites. More specifically, our purpose was to determine if the minimum educational and counseling resources were available to college/university students with disabilities and their instructors in the New York City (NYC) metropolitan region which, at the time the study was conducted, was the global epicenter of COVID-19.

**Methods**

Using Peterson’s, a widely known comprehensive online college/university search guide, we identified all colleges/universities in the NYC metropolitan area. The NYC metropolitan area was defined by specific counties in three states: New York, New Jersey, and Connecticut, which surround NYC. To be included in the study, a college/university needed to have an identifiable, functioning website.

For each of the websites of the colleges/universities, we recorded the following descriptive information: Name of the institution, enrollment number, and the institution’s location. Then, we searched the website of each college/university to locate their disability/accessibility webpage. The disability/accessibility pages were found using the search tool on each of the websites’ main page. If the college had a specific webpage for their disability/accessibility program, we recorded the link to the program. If the college/university did not feature such a webpage, ‘none’ was recorded.

We then examined the disability/accessibility pages of those institutions which had them to determine if they contained specific information (Table 1):

- a. link(s) to instructional resources for students who transitioned online, remote instruction,
- b. link(s) to instructional resources for faculty members who transitioned to online, remote instruction,
- c. a way to make an appointment with the counseling center (at a minimum, an email address or phone number), and
- d. a link to the counseling center.

Each component was recorded with either a ‘yes’ or a ‘no.’ Overall, we collected data from the websites of 153 colleges/universities in the tri-state region. Of this total, 26 contained no link to disability/accessibility services. We thus eliminated these schools’ websites from the overall analysis. Thus, the results consider the remaining 127 (83%) websites.

We considered colleges/universities to be small-sized if they had enrollments of ≤5000 students, to be medium-sized if their enrollments were between 5000 and 10,000 students, and finally to be large-sized if they had student enrollment >10,000. To determine whether or not location and enrollment size statistically affected the presence of these resources, we ran independent one-sided Chi-squared tests ($\alpha = 0.05$). Descriptive statistics for the data were also recorded. All data analyses were done on Microsoft Excel.

Our university exempts studies which involve no human subjects from review by the Institutional Review Board.

**Results**

Of the 127 schools included in the analysis, 80 (63%) were based in New York, 32 (25%) in New Jersey, and 15 (12%) in Connecticut. Across all of the schools considered, 63 (roughly 50%) qualified as small in size, 40 (31.5%) as medium-sized, and 24 (18.9%) were considered large-sized. The average student enrollment for all 127 schools was approximately 6494 and ranged from 53 to 36,039 students. The standard deviation was 6248 and the median

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a Of course, many students face multiple forms of marginalization and therefore may have faced multiple barriers to learning once remote teaching was instituted by colleges and universities.
enrollment was 4491. School size categories were loosely determined by these statistics. Tables 1 and 2 both list the aforementioned resources considered. In Table 1, the percentage of sites including these resources is shown by school size. Table 2 provides these percentages broken down by school location.

The most prevalent resource observed was providing students with assistance during remote instruction times; Almost 20% of the 127 school websites analyzed had this resource available. Additionally, this resource was most common to appear on large-school sites (33.33%). On the other hand, only about 4% of the 127 schools provided students with the option to make appointments with the counseling center by email or by phone; this was the resource least likely to be found. Only 2.5% of medium-sized schools allowed for remote appointment making, the least among the three school sizes. None of the Chi-squared tests returned statistically significant results for school size and location.

**Discussion**

Surprisingly, providing links to disability/accessibility services on college/university websites in the NYC metropolitan region is not universal. Of the 127 tri-state institutions which had such links, the majority did not provide key information on coping with the challenges wrought by COVID-19 on their disability/accessibility pages. Specifically, few institutions have links to the counseling center or a way to make an appointment by email or over the phone on the disability/accessibility page. In addition, links for students and faculty regarding remote instruction on the disability/accessibility pages were sparse. Larger schools tended make instruction resources available on the disability/accessibility pages at higher rate compared to smaller schools. However, as noted previously, the association between school size and the predetermined disability/accessibility resources was not statistically significant.

Making information readily available, including on a college/university’s website, is a fundamental part of making higher education accessible to SWD. Students with disabilities may experience challenges adjusting to life in a college/university due to a variety of both internal and external barriers. All of the above may be exacerbated in the uncharted territory of a global pandemic and easy access to services may be vital, not only to the educational outcomes of SWD, but also to health and wellness outcomes.

Considering that Americans in general experienced a rise in anxiety and depression due to the upending of daily life and economic stability caused by the pandemic, it is probable that this was the case for college/university students with psychological impairments as well. In sum, though the pandemic caused substantial stress and massive disruptions for individuals the world around, the pandemic may have resulted in particular challenges and barriers for students with certain forms of disability.

The United States is still in the midst of the first wave of the pandemic and thus there is a dearth of information on the educational and health impacts of shifting to a remote format for American college/university students in general, and SWD in particular. Longitudinal studies are needed to investigate such topics. What seems probable at this juncture, however, is that having accessible online resources on remote learning and teaching as well as health and wellness may help reduce anxiety and stress among SWD and their educators, may promote trust in the institution of higher education, possibly enhance adherence to newly implemented instructional practices, and therefore, may enhance learning and safety.

The current COVID-19 crisis has repeatedly been referred to by commentators and politicians alike as “unprecedented times.” Such a framing, though perhaps overused at this point, is apt in that the world has not seen a pandemic of this magnitude for over a century. What COVID-19 has made plain, however, is that the outcomes and impacts of unprecedented infectious, contagious disease are fundamentally connected to and magnified by inequalities during “precedented times.” The last few months have been replete with journalistic and scientific reports documenting that marginalized populations have faced the most severe adverse consequences of this pandemic, in large part due to disparities in healthcare, housing, employment, and incarceration.

It has been well documented that during disasters, such as hurricanes Katrina, Irene, and Sandy, PWD (as well as other marginalized populations) were disproportionately impacted because of the co-occurrence of impairment, inequities in the social determinants of health, and the failure of local, state, and federal agencies to adequately consider accessibility needs in disaster planning. Racial justice policy advocate Adrien Weibgen notes that in Alexander v. Choate the court found that discrimination against PWD is often not the result of direct, purposeful hatred and bigotry. Rather, it stems from “benign neglect” related to thoughtlessness and indifference. Weibgen makes the case that even that exclusion which occurs by “benign neglect” involves a choice to value some lives more than others and therefore it is the lens through which we must understand the disproportionate impact of disasters on PWD.

**Table 1**

| Resource                                                                 | Small Schools (n = 63) | Medium Schools (n = 40) | Large Schools (n = 24) | All Sizes (n = 127) |
|-------------------------------------------------------------------------|------------------------|------------------------|------------------------|--------------------|
| Contains a link to the counseling center                                 | 4.8%                   | 7.5%                   | 4.3%                   | 5.5%               |
| Contains resources for students during remote instruction times (links, where to go for help, etc.) | 14.3%                  | 20.0%                  | 33.3%                  | 19.7%              |
| Contains resources for faculty during remote instruction times          | 6.4%                   | 5.0%                   | 16.7%                  | 7.9%               |
| Contains a way to make an appointment (online or phone)                  | 4.8%                   | 2.5%                   | 4.2%                   | 3.9%               |

**Table 2**

| Resource                                                                 | NY Schools (n = 80) | CT Schools (n = 15) | NJ Schools (n = 32) | All Locations (n = 127) |
|-------------------------------------------------------------------------|---------------------|---------------------|---------------------|-------------------------|
| Contains a link to the counseling center                                 | 5.0%                | 6.7%                | 6.3%                | 5.5%                    |
| Contains resources for students during remote instruction times (links, where to go for help, etc.) | 16.3%               | 13.3%               | 31.3%               | 19.7%                   |
| Contains resources for faculty during remote instruction times          | 6.3%                | 0.0%                | 15.6%               | 7.9%                    |
| Contains a way to make an appointment (online or phone)                  | 1.3%                | 6.7%                | 9.4%                | 3.9%                    |
Though it would be an overreach to equate potential educational, health, and wellness barriers faced by college/university SWD due to the lack of accessible information on remote instruction and counseling to the disproportionate adverse impacts that disasters have had on PWD, we suggest it is reasonable to see them as related. Certainly college/university administrators, faculty, and staff, including those who work in accessibility/disability offices, are highly devoted to their students and to meeting accessibility needs. The pivot necessitated by the coronavirus pandemic was swift and disorienting for all. Nevertheless, barriers to equitable education continue to be part of the “backdrop of daily life” for SWD.

The limitations of this study include the cross-sectional design in which data was collected at a single point in time. As such, the results are not generalizable and do not necessarily represent the measures taken at later points or in other geographic locations. In addition, the data collection methods do not account for the fact that messages to SWD may have been communicated directly or in ways that did not involve the university webpages. Nevertheless, this study reveals what a student searching for information might experience. Finally, only one researcher reviewed the webpages. However, any questions regarding data collection were discussed by members of the research team.

Conclusion and recommendations

Top public health officials have warned of probable recurrences of COVID-19, potentially for years to come. Even with more lead time, such a reemergence, especially if combined with a seasonal flu epidemic, could be catastrophic and would certainly result in a rapid return to entirely online teaching for those colleges/universities which have not made the commitment to do so already. We are concerned that in such a scenario, the accessibility needs of SWD may be overlooked. The placement of visible and accessible links to online resources on COVID-19 on the accessibility/disability webpages of colleges/universities is fairly straightforward and moreover important to implement. It is our recommendation that clear links to remote instruction resources and counseling services be placed in the disability/accessibility pages of all institutions of higher education. Such resources facilitate access to accommodation resources for students who may have a vital need of them, as well as useful information for the faculty teaching students with disabilities. We would further suggest that higher education administrators provide pedagogical trainings for faculty both on remote instruction and on making remote instruction accessible to SWD. The failure to provide such resources for SWD and faculty alike constitutes a failure of equity and justice in higher education.

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No funding was received for this investigation.

Ethics

As this work has not involved human subjects it did not necessitate review by the Institutional Review Board of our university.

Declaration of competing interest

The authors have no relevant financial or non-financial interests to disclose that could inappropriately influence this work.

References

1. World Health Organization. Timeline of WHO’s response to COVID-19. Retrieved June 30, 2020 from https://www.who.int/news-room/detail/29-06-2020-covid-timeline; 2020.
2. New York Times. Coronavirus map: tracking the global outbreak. Retrieved August 17, 2020, from https://www.nytimes.com/interactive/2020/world/coronavirus-maps.html; 2020.
3. Centers for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19): people who are at increased risk for severe illness. Retrieved June 30, 2020, from https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-increased-risk.html;DeliveryName=USCDC_2067-DM13413; 2020.
4. Smalley M. Higher education responses to coronavirus (COVID-19). In: National Conference of State Legislatures; 2020. Retrieved June 30, 2020 from https://www.ncsl.org/research/education/higher-education-responses-to-coronavirus-covid-19.aspx.
5. Sviluga S, Anderson N. Amherst College switches to online learning, as universities nationally scramble to respond to covid-19 outbreak. Washington Post. Retrieved June 30, 2020 from https://www.washingtonpost.com/education/2020/03/09/princeton-requires-lectures-lectures-go-online-only-temporary-move-amid-covid-19-outbreak/; 2020.
6. Lee K. Coronavirus: universities are shifting classes online—but it’s not as easy as it sounds. The Conversation. Retrieved June 30, 2020 from https://theconversation.com/coronavirus-universities-are-shifting-classes-online-but-its-not-as-easy-as-it-sounds-130330; 2020.
7. McMurtie B. Students without Laptops, Instructors without Internet: How Struggling Colleges Move Online during Covid-19. The Chronicle of Higher Education; 2020. Retrieved June 30, 2020 from https://www.chronicle.com/article/Students-Without-Laptops/248436; 2020.
8. Casey N. College Made Them Feel Equal. The Virus Exposed How Inequal Their Lives Are. New York Times; 2020. Retrieved June 30, 2020 from https://www.nytimes.com/2020/04/04/us/politics/coronavirus-zoom-college-classes.html.
9. Centers for Disease Control and Prevention. Disability and health promotion: disability and health overview. Retrieved June 30, 2020 from https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html.
10. Thomas SB. College students and disability law. J Spec Educ. 2000;33(4): 248–257. https://doi.org/10.1177/002246690003300408.
11. Eches S, Ochoa T. Students with disabilities: transitioning from high school to higher education. Am Second Educ. 2005;33(3):6–20.
12. U.S. Department of Education Office of Civil Rights. Protecting students with disabilities: frequently asked questions about Section 504 and the education of children with disabilities. Retrieved June 30, 2020 from https://www2.ed.gov/about/offices/list/ocr/504faq.html.
13. Fuller M, Healey M, Bradley A, Hall T. Barriers to learning: a systematic study of the experience of disabled students in one university. Stud High Educ. 2018;43(3):303–318. https://doi.org/10.1080/03080597.2018.148116872.
14. Hong BSS. Qualitative analysis of the barriers college students with disabilities experience in higher education. J Coll Student Dev. 2015;56(3):209–226. https://doi.org/10.1353/ccd.2015.0032.
15. Binkley C, Fenn L. Colleges Struggle with Soaring Student Demand for Counseling. AP News; 2019. Retrieved June 30, 2020 from https://apnews.com/article/25905a53c528454ba0848dc958fe3c2.
16. Maciver D, Hunter C, Adamson A, Grayson Z, Forsyth K, McLeod I. Supporting successful inclusive practices for learners with disabilities in high schools: a multisite, mixed method collective case study. Disabil Rehabil. 2018;40(14): 1708–1717. https://doi.org/10.1080/09638288.2017.130658.
17. Custodio J. Disabled Students Already Faced Learning Barriers. Then Coronavirus Forced an Abrupt Shift to Online Classes. The Chronicle of Higher Education; 2020. Retrieved June 30, 2020 from https://www.chronicle.com/article/Disabled-Students-Already/248444; 2020.
18. Courtenay K, Perera B. COVID-19 and people with intellectual disability: impacts of a pandemic. Br J Psychol Med. 2020;37(3):231–236. https://doi.org/10.1017/ipm.2020.45.
19. Courtenay K. Covid-19: challenges for people with intellectual disability. The BLF. 2020;369;1605. https://doi.org/10.1136/bmj.m1605.
20. Turk MA, McDermott S. The Mid-19 pandemic and people with disability. Disability Health J. 2020;13(3):100944. https://doi.org/10.1016/j.dhjo.2020.100944.
21. Peterson’s guide (n.d.). Retrieved June 30, 2020 from: Peterson’s Guide https://www.petersons.com; 2020.
22. New York City Planning (n.d). New York: a city of neighborhoods. Retrieved June 30, 2020 from https://www1.nyc.gov/site/planning/data-maps/city-neighborhoods.html.
23. Disability Rights Texas. College students with disabilities face unique challenges during COVID-19 crisis. Retrieved June 30, 2020 from https://www.disabilityrightstx.org/en/press_release/college-students-with-disabilities-face-unique-challenges-during-covid-19-crisis/; 2020.

*See the resources available at the New York University Center for Disability Studies and The National Center for College Students with Disabilities (NCCSD) as models.
24. Miller J. COVID-19-fueld Anxiety and Depression Peaked in Early April, Then Declined. USC News; 2020. Retrieved June 30, 2020 from https://news.usc.edu/1711124/anxiety-depression-covid-15-mental-distress-usc-survey.

25. Centers for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19): coping with stress. Retrieved June 30, 2020 from https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html.

26. De Cremer D. What COVID-19 teaches us about the importance of trust at work. Knowledge @ Wharton. Retrieved June 30, 2020 from https://knowledge.wharton.upenn.edu/article/covid-19-teaches-us-importance-trust-work/; 2020.

27. Yancy CW. COVID-19 and african Americans. J Am Med Assoc. 2020;323(19):1891–1892. https://doi.org/10.1001/jama.2020.6548.

28. Bambino D, Tai G, Shah A, Doubeni CA, Sia IG, Wieland ML. The disproportionate impact of COVID-19 on racial and ethnic minorities in the United States. Clin Infect Dis. 2020. https://doi.org/10.1093/cid/ciaa815. ciaa815.

29. The New York Times. 43% of U.S. coronavirus deaths are linked to nursing homes. Retrieved June 30, 2020 from https://www.nytimes.com/interactive/2020/us/coronavirus-nursing-homes.html; 2020.

30. United States Bureau of Labor Statistics. Labor force statistics from the current population survey. Retrieved June 30, 2020 from https://www.bls.gov/cps/cpsaat18.htm; 2019.

31. Williams T, Griesbach R. San Quintin Prison Was Free of the Virus. One Decision Fueled an Outbreak. The New York Times; 2020. Retrieved June 30, 2020 from https://www.nytimes.com/2020/06/30/us/san-quentin-prison-coronavirus.html?searchResultPosition=4.

32. Krahn GL, Klein Walker D, Correa-De-Araujo R. Persons with disabilities as an unrecognized health disparity population. Am J Publ Health. 2015;105: S198–S206. https://doi.org/10.2105/AJPH.2014.302182.

33. Hensel WF, Wolf LE. Playing God: the legality of plans denying scarce resources to people with disabilities in public health emergencies. Fla Law Rev. 2011;63:720–775. As cited in Weibgen, A.A. (2015). The right to be rescued. The Yale Law Journal, 124(7): 2406-2469.

34. Weibgen AA. The right to be rescued. Yale Law J. 2015;124(7):2406–2469.

35. New York University Center for Disability Studies. Disability justice and COVID-19 resources; 2020. Retrieved June 30, 2020 from https://disabilitystudies.nyu.edu/covid-19/.

36. The National Center for College Students with Disabilities (n.d.). Coronavirus-COVID-19 & college students with disabilities. Retrieved June 30, 2020 from http://www.nccsdisability.org/coronavirus-covid-19.html.