HHS Public Access

Author manuscript

J Sch Health. Author manuscript; available in PMC 2023 September 19.

Published in final edited form as:

J Sch Health. 2023 May ; 93(5): 378–385. doi:10.1111/josh.13280.

Stakeholder Perspectives on the School Experiences of Students With Traumatic Brain Injury: The Effects of COVID-19 Pandemic on Service Delivery

Deanne Unruh[a] **[Research Professor]**, **Doug Gomez**[b] **[Research Associate]**, **Jody Slocumb, BA**[c] **[Senior Research Assistant II]**, **Melissa McCart**[d], **Susan Davies**[e] **[Professor & Leary Chair for Innovation in Education]**, **Juliet Haarbauer-Krupa**[f] **[Health Scientist]**, **Ann Glang**[g] **[Research Professor]**

[a]Secondary Special Education & Transition, Special Education & Clinical Services Department, University of Oregon, 212 Clinical Services Building, 5260 University of ORegon, Eugene, OR, 97403.

[b]Center on Brain Injury Research & Training, Department of Psychology, University of Oregon, Rainier Building, Suite 220, Eugene, OR, 97403.

[c]Center on Brain Injury Research & Training, Department of Psychology, University of Oregon, Rainier Building, Suite 220, Eugene, OR, 97403.

[d]Center on Brain Injury Research & Training, Department of Psychology, Research Assistant Professor, University of Oregon, Rainier Building, Suite 220, Eugene, OR, 97403.

[e]Health & Wellness, Department of Counselor Education & Human Services, University of Dayton, 300 College Park, Dayton, OH, 45469.

[f]Traumatic Brain Injury Team, Applied Sciences Branch, Division of Injury Prevention, Center for Disease Control and Prevention, 4770 Buford Highway NE\MS S106-9, Atlanta, GA, 30341.

[g]Center on Brain Injury Research & Training, Department of Psychology, University of Oregon, Rainier Building, Suite 220, Eugene, OR, 97403.

Abstract

BACKGROUND: For students with traumatic brain injury (TBI), the COVID-19 pandemic exacerbated challenges they were already experiencing at school.

METHODS: This qualitative study employed focus groups and interviews with students, parents, school, and medical personnel to explore the school experiences of students with TBI. Thematic qualitative analyses were used.

Address correspondence to: Deanne Unruh, Research Professor, (dkunruh@uoregon.edu), University of Oregon, Eugene, OR.

Human Subjects Approval Statement

This study was approved by the University of Oregon institutional review board.

Conflict of Interest

The authors have no conflicts of interest to disclose.

RESULTS: Key themes from the analysis include (a) incidence of brain injuries decreased; (b) screen time for students with TBI exacerbated symptoms; (c) COVID protocols at school made it difficult for educators to identify and provide accommodations for students with TBI; (d) COVID protocols at school could inadvertently exacerbate mental health difficulties after a TBI; and (e) COVID-related logistics increased the time between an injury and return to school or return to play.

IMPLICATIONS FOR SCHOOL HEALTH POLICY, PRACTICE, AND EQUITY: The results from this study suggest that professional development for teachers supporting students with TBI is needed, especially for online learning environments. Additionally, because mental/behavioral health concerns may arise for students with TBI in online learning environments, school health care providers can work with families to assess a student's mental health, making referrals to appropriate supports.

CONCLUSIONS: There is a significant need for professional development and school-wide infrastructure supportive of students with TBI.

Keywords

COVID-19; TBI; concussion; remote learning; school services; accommodations

In March 2020, the 2019 novel coronavirus (COVID-19) was defined as a global pandemic and subsequently altered life for children and families worldwide.[1] The United Nations reports that as of July 2020 98.6% or 1.725 billion school-aged students worldwide were affected by the pandemic.[2] Many schools in the United States implemented distance learning practices, and as time passed, school services evolved into various hybrid modalities that caused the duration and intensity of in-person learning and the levels of services and accommodations available for students with disabilities to vary greatly.[3,4] As schools adjusted to rapidly shifting schedules and instructional delivery approaches, students with disabilities faced additional challenges.[5]

For students with traumatic brain injury (TBI), the challenges caused by COVID-19 exacerbated many issues directly related to their symptoms. For example, many students with TBI experience problems with vision, become fatigued from looking at computer screens, and struggle with the virtual learning environment.[6] Challenges with organization, self-regulation, and planning, all common in students with TBI,[7] can make it difficult to function independently in a remote learning environment.

Prior to the pandemic, there were already clear gaps in school services for students with TBI.[8] Following their injury, many students with TBI need supports at school, ranging from temporary academic accommodations to longer-term formalized services (eg, special education, Section 504 plans). However, gaining access to those services can be challenging, primarily due to a lack of communication between school and health care staff[9,10] and educators' lack of awareness about brain injury and its effects on learning.[11–13]

The symptoms of traumatic brain injury that make learning in a virtual environment difficult paired with lack of educator awareness of TBI and the difficulty that teachers experienced as they shifted from in-person instruction to distance learning made providing effective

educational services for students with TBI even more challenging than during typical years.[3] A better understanding of those challenges is important for the field because school staff continue to manage the difficulties of the ongoing pandemic, and those challenges have implications for preparing professionals to support children with TBI and their families and may inform future school practices.

The purpose of this study was to explore how the initial months of COVID-19 affected schools and their service delivery to students with TBI. We conducted focus groups and interviews with stakeholders (students, parents, educators, and school and community health care professionals) in Central Oregon and Southwestern Ohio. Here we present a summary of the themes discovered by analyzing data from the focus groups and interviews.

METHODS

This study was part of a larger multi-method study examining students' experiences as they return to school after TBI.[14]

Sampling approach and recruitment.

Purposeful sampling was used to select a diverse set of participants based on demographic (eg, race/ethnicity, gender, profession, urbanicity) and circumstantial (eg, availability) variables that were important to this study.[15] We invited 8 to 12 participants to each focus group, a number recommended to ensure that each individual participant is heard while still maintaining a range of perspectives.[16,17] Interview participants who were health care providers outside of the school setting were selected based on their medical expertise and the specific settings in which they work (eg, emergency departments, pediatrics, and concussion-specific clinics). Based on recommendations for reaching saturation,[18] 12 community-based health care providers were interviewed. Participants were recruited through contacts in sports organizations, medical facilities, school districts, project advisory board members, and social media. Researcher contacts and project staff announced the research opportunity via email and using social media posts on relevant sites with permission. Each email or post explained what the research was about and provided the email of the project's research assistants.

Participants—A total of 58 participants took part in 10 focus groups (Oregon N = 27; Ohio, N = 31), and 12 participants took part in individual interviews (Oregon N = 6; Ohio, N = 6). Participants represented 4 primary groups: (a) students with TBI, (b) parents of students with TBI, (c) educators (eg, counselors, classroom teachers), and (d) health care professionals (eg, athletic trainers, school nurses, physicians, emergency room personnel). Demographic information for the participants is detailed in Table 1.

Procedure—The focus groups and interviews were conducted between November 2020 and July 2021. Prior to participating in focus groups, participants provided an electronic informed consent, including consent to record the focus group proceedings. Students and parents each received a $50 gift card as an incentive to participate in the focus group. All focus groups and interviews were held virtually over Zoom. Groups and interviews lasted approximately 1 hour and were facilitated by an experienced qualitative researcher

and graduate students who had been trained in focus group and interview facilitation. All facilitators followed a semi-structured protocol, while allowing participants to expand on new topics or raise-related topics. Protocol questions were aimed at understanding the barriers and facilitators of the return-to-school process and what effect COVID-19 had on those processes. Broad topics included (a) description of the post-pandemic instructional modalities, (b) changes to services for students with TBI that were pandemic related, and (c) and the effects of the evolving learning modalities (eg, online, hybrid) on students with TBI. The focus groups and interviews were transcribed verbatim, removing names to protect the anonymity of the participants. The facilitators took field notes on both the content and process of each focus group or interview and engaged in peer debriefing throughout.

Data Analysis—We used thematic analysis to analyze the data.[19] The researchers produced a rich description of the data, used an inductive (bottom up) coding process, and identified semantic themes using the lens of critical realism.[19,20] The qualitative researcher and the project coordinator began the analysis with a review of the transcripts and then organized the data through coding. Codes were then analyzed in relation to one another, and the researcher and project coordinator developed themes using combinations of the coded data. Those themes were then discussed with the entire research team as a form of peer debriefing[21] to better define the themes and clarify appropriate textual examples of each one. Dedoose[22] qualitative software was used to track all themes and codes. The consolidated criteria for reporting qualitative research (COREQ) was used to document the methods and findings of this analysis.[23]

RESULTS

The researchers identified 5 key themes in the focus group and interview data: (a) Incidence of brain injuries decreased during the pandemic; (b) Screen time for students with TBI exacerbated symptoms; (c) COVID safety protocols at school made it difficult for educators to identify and provide typical accommodations for students with TBI; (d) COVID safety protocols at school could inadvertently exacerbate mental health difficulties after a TBI; and (e) COVID-related logistical issues increased the time between an injury and return to school or return to play. An overarching theme that affected all students, not just those with TBI, was use of distance/remote learning. Of the 2 locations in our study, one carried on with primarily in-person school combined with some remote learning and the other used only remote learning during the study period.

Lower incidence of TBI.

Stakeholders reported a significantly lower incidence of brain injuries during the pandemic, particularly while organized sports were suspended. One pediatrician said, “I would say, I definitely have seen less concussions because kids aren’t playing sports and aren’t hanging out together as much.” Another medical provider, who was based in a concussion clinic, explained in more detail what medical providers had been noticing and provided some insight into the potential trajectory of brain injury incidence:

> Overall, we looked at our [head] trauma numbers, you know about a year ago, and even into the spring, they are drastically down from things like sports activities,

> playgrounds, falls, this sort of stuff and so because of that, overall, the volume of kids that we're seeing with brain injuries has come down. Now, I expect with vaccination now coming up, particularly in the 12 to 15 age group, you know the 16–17 year olds now have been eligible for a while, and I think with adults becoming progressively vaccinated and people getting back to some of these activities, I think we will start to see an uptick in this, but … those numbers are way down.

Screen time for students with TBI symptoms.

Stakeholders reported that the increased screen time caused by school logistical changes during the pandemic exacerbated the symptoms of TBI in students. One high school student explained that it caused previous symptoms, which had mostly remitted, to return and require further attention:

> With having to switch to online, it actually made me more aware of my symptoms. Because it was like a year, over a year ago that my last one happened. I kind of just was used to like, oh, they're probably gone or somewhat have kind of eased up and then the moment I started doing hours a day online, I realized that my focus, attention, and headaches … I started seeing my concussion doctor again just to see if there's anything I could do … So, I think in some cases with people that are dealing with concussions now, or have in the past, I think the pandemic has helped um, in a negative way, at least kind of bringing those symptoms back up and have them reoccur.

A parent explained how she noticed increased difficulties with her child's executive functioning:

> I mean, he's pretty tech savvy; I'm pretty tech savvy. And the first month of school, all I was getting was constant text messages of, "How do I fix this? I don't know where to go. It's not working right." And then when there would be tests and a test would be locked because he didn't show his face on the camera … there's all of these like little glitches that typically as adults we get frustrated with but then to have a teenager who has poor executive functioning on top of a TBI, which affects his executive functioning, has just compounded, you know?

Although some medical providers did not describe specific cases of patients who had noticed screen time exacerbating TBI symptoms, all of the medical providers explained the importance of advising patients to decrease screen time after sustaining a TBI. Those statements were typically followed by the medical providers expressing a belief that remote-learning environments are not conducive to reducing screen time.

Identifying students with TBI and providing accommodations.

Stakeholders from schools noted that the remote learning environments resulting from the pandemic created new problems in providing accommodations to students who sustained a TBI. One educator described the situation by saying, "So that's really difficult with distance learning right now … trying to figure out how to accommodate for kids with TBI when all of their learning is on a device." The primary reason stakeholders gave for increased difficulty

providing accommodations was a lack of ability to facilitate deeper relationships with students when all communications were remote. One special education teacher described it as not being able to know a student well enough to notice a difference in functioning:

> And so, if you've got a student who has had a concussion or even a traumatic brain injury during the course of the school year, you know, unless that student alerts the school or the parents alert the school, there's no way that we would even know because you're not in contact with the kiddo enough to even go, "whoa, something's really different," or, you know, or you just might see a drop off in engagement.

A parent explained that because of the new COVID protocols, students at her child's school transferred frequently between subjects and teachers, which added to the difficulty of receiving accommodations:

> But more often, he was not on the radar. And the 1 teacher who I guess, you know, because they're switching subjects. They're switching like every six weeks, they're doing six-week little terms and rotations in their classes. So, this was a new teacher that term. And so, I don't know if it just kind of got forgotten. But it was, it was like, "You guys are on it. This is awesome." And then it was, "Oh, bummer."

COVID pandemic and mental health.

Many stakeholders described how COVID safety protocols in schools exacerbated the mental health concerns brought on by TBI. A parent described her daughter's experience:

> Our oldest daughter was never like this; prior to her concussion she was very optimistic, very outgoing, very positive. But since the concussion, she's definitely lost that about herself. She's lost her ability to do her sports period. We have not regained that because of the loss of motor functioning. And then when you add the pandemic on there and the fact that she hasn't been able to see her friends and see her cousins and see her family added to that stress. And she had the choice to do the online school but chose to do the distance learning, simply because it has interaction.

Educators also noticed a significant effect on the mental health of their students with TBI:

> But this fall, I've noticed a huge decline in his mental health. He is irritable, he's lonely, so lonely. Because on top of his social emotional stuff, he also has some awkward social skills and so we work on that with him but when you don't have kids to work on that with him with, you know … I don't think the world understands the effect on kiddos in general, but especially kids that are struggling with concussion, TBI, um, mental health. It's really taking its toll.

Although the majority of stakeholders described how students' experiencing a TBI's mental health was affected negatively by COVID safety protocols, 1 medical provider did explain a scenario that she had noticed in which a student showed improvement in their mental health as a result of remote participation in school:

> I've talked with some students who had a history of social anxiety or they were having issues with bullying at school or test taking anxiety, and the transition to more of an online format has been a lot less stressful for them. And consequently, they feel like they're having fewer symptoms, and they feel like their academic performance has improved because they're not dealing with some of those other triggers.

Increased time for return-to-school/play processes.

Another phenomenon addressed by stakeholders was an increase in the time required for students to return to school/play. Stakeholders such as this medical provider explained how the lack of ability for students to have in-school contact with other medical providers led to fewer appointments and opportunities to follow up in his clinic:

> I think some of the other obstacles have been trying to keep that good flow of follow up in the clinic. So, when a student is in school, one of the things that we notice is that between the athletic trainers and all of the other points of contact throughout their day, if a student is failing to thrive during their concussion recovery, there are lots of pivotal people who tend to reach out to the parents, reach out to the student, reach out to us, and say, "Hey I think this person needs to be reevaluated." And one of the things that I've seen with COVID is that it's more difficult sometimes to have those consistent follow ups. And some of it is that people have been understandably cautious about coming into medical offices and really going anywhere … but I have noticed that from time to time, there will be longer intervals between when we check in with people.

DISCUSSION

The purpose of this study was to use a series of focus groups and semi-structured interviews to explore the perceived effects of COVID-19 pandemic on school services for students with TBI who resided in parts of Oregon and Ohio. The results provide a glimpse into the varied perspectives and shared experiences across stakeholder groups with the school supports provided during the first 18 months of the pandemic. Our findings are consistent with other COVID studies that identified difficulties experienced by children and youth with disabilities, their families, and educators as a result of the changes in school services during the pandemic.[3] Many children with disabilities have learning difficulties that require accommodations and specially designed instruction that were difficult for educators to provide via distance learning.[3]

Challenges for Students With TBI During the COVID Pandemic

The findings from this study suggest that COVID-19 safety mitigation measures might have been particularly challenging for students who experienced a TBI during the pandemic. Students with TBI reported in our study that remote learning often worsened their symptoms. The effects of screen time coupled with absences due to TBI-related symptoms and covid safety mitigation measures (eg, distance/remote learning) decreased some students' ability to access online instruction. The changing logistics of remote learning from day to day was particularly difficult for students with executive functioning impairments.

Even before the pandemic, students with TBI experienced difficulties accessing appropriate support services.[24,25] Our findings suggest that the COVID-19 pandemic made the provision of services for students with TBI even more challenging. In an online learning environment, teachers found it difficult to identify the behaviors associated with brain injury. Without observing a student in the classroom environment and having regular interactions, teachers found it difficult to know whether the student's focus, engagement, and overall well-being were changing. This was compounded by absences and inconsistent schedules due to quarantines. In an online learning environment, it is critical for school health care providers to communicate with teachers about students who might have experienced a TBI to identify whether students are struggling and provide training in the types of accommodations that could support those students.

When a student was found to have experienced a TBI, educators reported challenges in providing adequate accommodations and monitoring the efficacy of those accommodations.[26] This could be due, in part, to teachers themselves feeling overwhelmed by the pandemic and the new expectations surrounding online learning.[27] It may be more difficult to gauge whether a child is becoming fatigued during an online lesson compared to when a child is in the classroom. Learning via an online platform can be more emotionally and cognitively draining than learning in person[28,29]; thus, 1 logical online accommodation is to allow the student to attend class with their camera off so they can lie down. Teachers could then follow up with the student via email or a chat to see whether they have questions about the lesson and inquire about their symptoms. A common accommodation for students with TBI is a flexible attendance schedule, which could be adapted for online learning by allowing the student to join class for part of the day or during specific intervals (eg, attend in the afternoon or during math and language arts). Furthermore, because attention, concentration, and memory difficulties can hinder organization and self-sufficiency, more frequent contact between the teacher and caregiver can help the student maintain engagement.

The social isolation of the remote learning environment might also increase the risk for mental health issues; both families and students reported increased mental health challenges during the pandemic.[30] Social connection is an important component of brain injury rehabilitation and recovery.[31] School health care personnel can engage families in educational sessions and provide resources to help them recognize when their child is feeling isolated or struggling emotionally and respond with social and emotional support strategies. For example, the parent and child might generate a list of activities (eg, call a friend, take a walk with a sibling, play an interactive online game on a parent-approved platform) and have the child select one or more each day during times they feel bored or lonely.

Respondents noted that lower numbers of brain injuries were reported in both medical and school settings during the pandemic. Given the challenges of identifying a TBI in the remote environment, it is unclear whether fewer injuries occurred, if lower numbers of students were identified by health care providers, or if there was less communication between health care providers and school staff about students' injuries. Remote learning continues to be part of the educational landscape,[32] and it will be essential to develop identification methods

that take those challenges into account. For example, instead of calling an attendance line to report the reason for a student's absence from school, there could be an online portal through which parents could report a medical event that might affect their child's performance or warrant accommodation in remote learning. That portal could include a HIPAA-compliant place to upload recommendations from a health care provider and share progress monitoring data.

School personnel also reported that return to play and learning for most students with a TBI was extended during the pandemic. Because of absences and modified school schedules, school-based health care providers were unable to regularly check in with students. School-based health care staff typically monitor students' health status, academic progress, and socioemotional needs post-injury, recommending follow-up with primary care providers as needed. However, during the pandemic, students were often not seen consistently by community-based practitioners. Health care personnel in both school and community settings might need to develop alternative approaches for monitoring a student's symptoms to ensure optimal care.

Limitations

This study has several limitations. Because the sample consisted of participants from only 2 states, it might not be generalizable to all schools and students with brain injuries during the COVID-19 pandemic. States have varying return-to-school guidelines, and schools and school districts used a range of policies and procedures to support students with TBI. Second, aside from 1 younger student, data were collected from public middle and high school students and might not reflect elementary student experiences in schools during the pandemic. Third, focus group participation is voluntary; individuals who participated might have different experiences than those who chose not to participate. These results provide preliminary information about the educational experiences of students with TBI during the pandemic.

IMPLICATIONS FOR RESEARCH

Schools might adapt to a new normal post-pandemic, and additional research would help to explore whether these themes are maintained or shift with evolving school practices. Future research could also examine the long-term effects that the pandemic has had on students with brain injuries. Although all students lost instructional time, which has detrimental effects, this was particularly difficult for students with disabilities.[33] And more research could elucidate the outcomes of students with TBI, particularly those who sustained TBIs during the COVID-19 pandemic. For those who recovered within a few months, the effects might be minimal, such as needing to make up lost work. For others, the effects could be more significant.

Future research might also examine the effects of the COVID-19 pandemic on students with TBI from other states and countries, as well as college students with brain injuries. A more in-depth examination of any positive effects from remote participation in school for students with TBI might also be warranted. The flexible schedule and reduction of social pressure

that comes with a remote learning environment might, when managed appropriately, help with symptom reduction.

Conclusions

This study explored the perspectives of students, educators, and parents regarding the school experiences of students with TBI during the COVID-19 pandemic. The lessons learned can influence how educational services—both in person and remote—could be designed to better support students with TBI in the future. For this shift to occur, there is a significant need for professional development in TBI as well as for the development of communication pathways, monitoring protocol and other infrastructure supportive of students with brain injury.

Acknowledgments

This study is supported by the Centers for Disease Control &Prevention (CDC), grant number RFA-CE-19-003, Evaluation of Return to School Programs for Traumatic Brain Injury. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

REFERENCES

1. World Health Organization Regional Office for Europe. Coronavirus disease (COVID-19) pandemic. Available at: https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/novel-coronavirus-2019-ncov
2. Policy brief: Education during COVID-19 and beyond (United Nations); 2020.
3. Averett KH. Remote learning, COVID-19, and children with disabilities. AERA Open. 2021;7(1):1–12. 10.1177/23328584211058471.
4. Gross B, Opalka A. Too many schools leave learning to chance during the pandemic. Center on Reinventing Public Education. Available at: https://files.eric.ed.gov/fulltext/ED605576.pdf
5. Gudmundsdottir GB, Hathaway DM. “We always make it work”: Teachers’ agency in the time of crisis. J Technol Teach Educ. 2020;28(2):239–250.
6. Flores MA, Gago M. Teacher education in times of COVID-19 pandemic in Portugal: national, institutional and pedagogical responses. J Educ Teach. 2020;46(4):507–516. 10.1080/02607476.2020.1799709.
7. Coreno A, Ciccia AH. Supporting students with TBI: a clinically focused tutorial for speech-language pathologists. Semin Speech Lang. 2020;41(2):161–169. 10.1055/s-0040-1701684. [PubMed: 32155651]
8. Centers for Disease Control and Prevention. Report to Congress: The Management of Traumatic Brain Injury in Children. Atlanta, GA: National Center for Injury Prevention and Control; Division of Unintentional Injury Prevention; 2018.
9. Glang A, Todis B, Thomas CW, Hood D, Bedell G, Cockrell J. Return to school following childhood TBI: who gets services? NeuroRehabilitation. 2008;23(6):477–486. [PubMed: 19127001]
10. Haarbauer-Krupa J, Ciccia A, Dodd J, et al. Service delivery in the healthcare and educational systems for children following traumatic brain injury: gaps in care. J Head Trauma Rehabil. 2017;32:367–377. 10.1097/htr.0000000000000287. [PubMed: 28060211]
11. Davies SC, Fox EE, Glang A, Ettel D, Thomas C. Traumatic brain injury and teacher training: a gap in educator preparation. Phys Disabil. 2013;32(1):55–65.
12. Ernst WJ, Gallo AB, Sellers AL, et al. Knowledge of traumatic brain injury among educators. Exceptionality. 2016;24(2): 123–136.
13. Kahn LG, Linden MA, McKinlay A, Gomez D, Glang A. An international perspective on educators’ perceptions of children with traumatic brain injury. NeuroRehabilitation. 2018;42(3):299–309. 10.3233/nre-172380. [PubMed: 29660961]

14. Evaluation of return to school programs for traumatic brain injury [Cooperative Agreement # 1 U01CE003163-01-00] Centers for Disease Control and Prevention; 2019.
15. Patton M Qualitative Research and Evaluation Methods. 4th ed. Thousand Oaks, CA: SAGE; 2015.
16. Krueger RA, Casey MA. Focus Groups: A Practical Guide for Applied Research. 4th ed. Thousand Oaks, CA: SagePublications; 2009.
17. Morgan DL. Focus Groups as Qualitative Research, Vol. 16. Thousand Oaks, CA: Sage Publications; 1988.
18. Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. Field Methods. 2006;18(1):59–82.
19. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101. 10.1191/1478088706qp063oa.
20. Rohleder P, Lyons AC, eds. Qualitative Research in Clinical and Health Psychology. Basingstoke, UK: Palgrave Macmillan; 2015.
21. Brantlinger E, Jimenez R, Klingner J, Pugach M, Richardson V. Qualitative studies in special education. Except Child. 2005;71(2):195–207. 10.1177/001440290507100205.
22. Dedoose. Web application for managing, analyzing, and presenting qualitative and mixed method research data internet. Los Angeles, CA: SocioCultural Research Consultants; 2019.
23. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International J Qual Health Care. 2007;19(6):349–357. 10.1093/intqhc/mzm042.
24. Dettmer J, Ettel D, Glang A, McAvoy K. Building statewide infrastructure for effective educational services for students with TBI: promising practices and recommendations. J Head Trauma Rehabil. 2014;29(3):224–232. [PubMed: 23982791]
25. Gioia GA, Glang AE, Hooper SR, Brown BE. Building statewide infrastructure for the academic support of students with mild traumatic brain injury. J Head Trauma Rehabil. 2016;31(6):397–406. 10.1097/htr.0000000000000205. [PubMed: 26709582]
26. Lund EM, Gabrielli J. The role of pediatric psychologists in mitigating disability-specific barriers among youth during the COVID-19 pandemic. Clin Pract Pediatr Psychol. 2021;9(1): 12–23.
27. Kretchmar K 'You just do it:'A snapshot of teaching during a pandemic. Teach Educ. 2021:1–16. 10.1080/10476210.2021.1988922.
28. Global Education Monitoring. How is the coronavirus affecting learners with disabilities? 2020.
29. Peper E, Wilson V, Martin M, Rosegard E, Harvey R. Avoid zoom fatigue, be present and learn. NeuroRegulation. 2021;8(1):47–56.
30. Asbury K, Fox L, Deniz E, Code A, Toseeb U. How is COVID-19 affecting the mental health of children with special educational needs and disabilities and their families? J Autism Dev Disord. 2021;51(5):1772–1780. [PubMed: 32737668]
31. Di Battista A, Godfrey C, Soo C, Catroppa C, Anderson V. Does what we measure matter? Quality-of-life defined by adolescents with brain injury. Brain Inj. 2015;29(5):573–582. 10.3109/02699052.2014.989905. [PubMed: 25642580]
32. Crompton H, Burke D, Jordan K, Wilson SW. Learning with technology during emergencies: a systematic review of K-12 education. Br J Educ Technol. 2021;52(4):1554–1575. 10.1111/bjet.13114.
33. Constantino JN, Sahin M, Piven J, Rodgers R, Tschida J. The impact of COVID-19 on individuals with intellectual and developmental disabilities: clinical and scientific priorities. Am J Psychiatry. 2020;177(11):1091–1093. [PubMed: 32854530]

Table 1.

Stakeholder Demographic Characteristics by Location

	N (%)	
Stakeholder Demographic Category	**Oregon (N = 33)**	**Ohio (N = 37)**
Gender		
Male	7 (21%)	8 (22%)
Female	25 (76%)	29 (78%)
Nonbinary	1 (3%)	0 (0%)
Ethnicity		
Hispanic	0 (0%)	1 (3%)
Non-Hispanic	32 (97%)	36 (97%)
Unknown	1 (3%)	0 (0%)
Race		
White	19 (58%)	27 (73%)
Mixed race	2 (6%)	0 (0%)
Asian	1 (3%)	1 (3%)
African American	1 (3%)	0 (0%)
Unknown	10 (30%)	9 (24%)
Parent	N=5	N=9
Mother	5 (100%)	9 (100%)
Educator role	N=7	N=7
General education teacher	3 (43%)	5 (71%)
Special education teacher	2 (29%)	0 (0%)
School psychologist or counselor	2 (29%)	0 (0%)
Administrator	0 (0%)	1 (14%)
Speech language pathologist	0 (0%)	1 (14%)
School health care professional	N=6	N=6
Athletic trainer	4 (67%)	1 (17%)
School nurse	2 (33%)	5 (83%)
Community medical provider	N=6	N=6
Pediatrician	2 (33%)	1 (17%)
Emergency room physician	1 (17%)	1 (17%)
Hospital-based physician	0 (0%)	1 (17%)
Other	3 (50%)	3 (50%)
Student age range	N=9	N=9
7–11	1 (11%)	0 (0%)
12–17	5 (56%)	6 (67%)
18+	3 (33%)	3 (33%)