

**Autism Spectrum Disorder and COVID-19: How the transition to remote learning affected
students with ASD**

Julia Hardesty

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Dr. Kristen Savell & Professor David Luesink

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Introduction

Autism Spectrum Disorder (ASD) is a complicated neurological and developmental disorder that alters the way one communicates, socializes, and behaves (NIMH, 2021). According to a CDC surveillance study, 1 in every 44, or 2.3%, of 8-year-old children are diagnosed with ASD, with the rate of diagnoses in boys being 4.2 times higher than in girls (Maenner et al., 2021). Although ASD can be diagnosed at any age, it is most commonly diagnosed before the age of two and affects the child throughout their entire developmental and educational period, and throughout the rest of their lives. In March of 2020, the COVID-19 pandemic took over the world and forced schools to close and transition to remote learning. During the pandemic, students with ASD experienced drastic changes in their mental health, social skills, and educational progression. While schools, teachers, parents, and other providers attempted to make this transition smooth and nondisruptive for the students, the structure and integrity of special education programs crumbled at the expense of all students with ASD and other developmental disabilities. Educational opportunities for these students were diminished. Special education resources were extremely limited, and many educators had to take it upon themselves to create educational materials and use new methods of delivering this material (Hurwitz et al., 2021). Students with ASD also struggled in this new social environment of limited interaction. These students reported social isolation and limited social opportunities (Cage & McManemy, 2022). In addition, the mental health of these students declined, with both students and parents reporting feelings of loss, worry, and changes in mood (Asbury et al., 2021), and rates of anxiety and depression reaching an all-time high (WHO, 2022), especially in people diagnosed with ASD. The shift to remote learning during the COVID-19 pandemic presented unique challenges for individuals with ASD and their families. Although certain aspects of

remote learning have been helpful for some individuals with ASD, the pandemic created a significant deficit in educational, social, and mental health support for these students and their families. Through the analysis of these three main areas, I will be exploring how students with ASD were affected by the transition to remote learning in this essay. In bringing light to the difficulties that this transition has caused, teachers, administrators, and families can begin to formulate plans for repairing the students' educational experiences.

How remote learning affected education for students with ASD

Lack of Resources

Before the pandemic, students with ASD in both public and private schools had access to an abundance of resources, from special education programs, paraprofessionals, and even in-building providers for various therapies. When schools closed for in-person learning, access to these crucial resources for students with ASD was compromised (Crane et al., 2021), and the complex needs of these students were generally overlooked. Due to the challenges that students with ASD face, such as difficulty reading social cues, task orienting, and adapting to new environments, the transition to remote learning was especially difficult. Many school districts have shifted educational programming to online formats that may not be accessible to students with ASD, especially those with limited skill repertoires (Stenhoff et al., 2021). These students are expected to have difficulties remaining engaged in virtual learning when additional stimuli and tools are not used. For example, a student with ASD may have difficulty understanding a concept from a video but is able to grasp the concept when using a physical model or educational toys to demonstrate the skill or topic. Remote learning has limited these options, as many of these students do not have access to the proper educational materials that they would have in the

classroom. These students may also have difficulty maintaining focus and conversations through video chat as opposed to face-to-face communication. These virtual learning platforms, such as Zoom, WebEx, Telemedicine, etc., are only available to a smaller number of individuals with ASD, especially among families with better socioeconomic conditions and people with a less severe form of ASD (Araujo et al., 2021). Although many public school systems do have access to proper resources and programs for students with ASD, the availability of trained professionals is limited. The COVID-19 pandemic exacerbated the need for these already limited services and resources, leaving parents in desperation for intervention training and education but reliant on programs from private service providers (McDevitt et al., 2021). This leaves families who fall into a lower socioeconomic class at a severe disadvantage and restricts their access to resources that they previously had available in schools. With the reduction of individualized care and programming for these students, there has been an increase in the frequency and severity of disruptive and maladaptive behavior in students with ASD. A recent study showed that 94% of families reported an increased need for home care, and 41% of these families described more frequent and intense behavioral symptoms in their child (Araujo et al., 2021). The rapid transition to remote learning has highlighted many preexisting and newly identified barriers in the educational system when it comes to teaching students with ASD and has exacerbated the challenges and inaccessibility of resources that these students already face every day.

Challenges for Educators

Along with the struggles that students with ASD faced during the transition to remote learning, their teachers struggled as well. All educators were forced to dive headfirst into an unprecedented situation and to adapt their teaching styles to an online format, but this was

especially challenging for teachers of students with ASD. In an article from the journal *Autism*, the author states that many special educators have described the experience of adapting to online education as being extremely challenging and frustrating (Hurwitz et al., 2021). For teachers of neurotypical students, while still difficult, transitioning to online learning was a fairly streamlined process. By hosting virtual lectures or class discussions, digitizing worksheets, and exams, and utilizing online learning resources, teachers were able to create a learning environment that was not too far from in-person education. This transition was more complicated for special education professionals as adapting education for such a vulnerable population requires much more innovation and creative thinking (Hurwitz et al., 2021). As mentioned previously, students with ASD require much more specialized education plans and specific accommodations in order to get the most out of their education. In order to maintain the integrity of the special education programs and to ensure the progression of their students, teachers had to extend themselves further than ever before. Families may not have access to the resources necessary, such as sensory items, books, or stationary, to support their children's learning at home (Crane et al., 2021). In response to this, many educators, in addition to their normal teaching schedule, spent extra time and money to make sure their educational materials were effective and that their students were receiving quality education (Hurwitz et al., 2021). In order to cut down on shipping and or printing costs, some teachers, especially in more rural areas, hand delivered learning materials to students' homes (Hurwitz et al., 2021). Teaching in the classroom with these students gave educators the opportunity to make "in the moment" adaptations to lesson plans in order to support each student's individual needs; however, in using an online format, educators had to commit additional time to adapt their lessons and to prepare modified materials for each student (Stenhoff et al., 2021). Without additional pay or overtime

compensation, many teachers could see this as unnecessary and forego the extra preparation and adaptation. However, students with ASD rely on their teachers to provide structure for them and a way to learn more about the world around them. These educators have shown that they would go above and beyond to help their students succeed, even if it means making personal sacrifices.

Parents as Educators

Students with ASD often need more instruction and one-on-one teaching than neurotypical students. Since teachers could no longer provide face-to-face instruction for these students, their parents or caregivers took on a new role as educators. Many parents of students with ASD rely on day programs or in-school resources for their child to be taken care of and learn while the parent is at work. Even though most parents were still working from home during the lockdown, they also had to work with their child to make sure they got the education and structure they needed. In addition to balancing two jobs now, most parents were not properly trained to educate their children. Some challenges that parents face when delivering instruction in the home setting are lack of training, implementing interventions consistently, and struggles when using technology (Hurwitz et al., 2021). Even before the pandemic, school staff were rarely trained to work with parents, and parent education programs rarely focus on interactions between parents and schools (Crane et al., 2021). Due to the lack of communication and transfer of responsibilities, students can easily fall behind and not get the education that they need. Studies have recommended that educators teach caregivers how to provide instructional, communication, and behavioral support for their child (Stenhoff et al., 2021), and that utilizing other family members for support can help enhance the quality of education that the student is receiving. By training multiple caregivers the teaching behaviors, they can work as peer coaches

and provide immediate feedback and positive reinforcement (Stenhoff et al., 2021), therefore increasing the continuity and flow of learning and consistently reinforcing interventions. The transition to remote learning not only impacted the students but also those who were experiencing lockdown with them and watching them struggle to adapt. Parents and caregivers have extended themselves far beyond the responsibilities that they have been accustomed to and have shown immense perseverance.

How Quarantine Affected Social Skills of Students with ASD

Reduced Social Interaction

One of ASD's most prominent symptoms is difficulty with social interaction and social skills, so it is important for these students to be exposed to social situations on a daily basis. In school, students with ASD are taught how to communicate, interact with peers, and even make friends. During the COVID-19 pandemic, crucial social interaction has been limited to almost none, and students with ASD have fallen even further behind their peers in terms of social development. These children's interactions, both physical and intellectual, with their peers have reduced, which may further increase social isolation and loneliness (Kawabe et al., 2020). Although lockdown brought fewer social pressures for these individuals, many reported a negative impact of not being able to connect with other people (Cage & McManemy, 2022). Even college students with ASD felt that the decreased social interaction impacted their wellbeing. They reported feeling socially isolated, missing their friends and family, and feeling that they were unable to connect with other students in their course (Cage & McManemy, 2022). Change, especially in daily routines, is also something that people with ASD tend to struggle with. Individuals with ASD have strong preferences for routine and familiarity (Cage &

McManemy, 2022) which have been completely thrown off by the transition into quarantine. The daily routine of going to school, learning, and coming home to be with family has been completely rearranged, and that can be confusing and upsetting for someone with ASD. Parents even report an increase in destructive and violent behaviors from their children when they did not understand why their routine was changing (Asbury et al., 2021). Managing emotions and behaviors surrounding social isolation is difficult when the only true remedy is to socialize, which is not possible during quarantine. Tools such as social media communities, virtual support groups, and video chatting with friends and family are all great ways to increase social interaction for these individuals. However, the impact that the lockdown had on these students is immense and cannot be solved overnight.

Communication Barriers

During the pandemic, methods of communication that many people relied on were drastically altered or eliminated completely. Individuals with ASD will often analyze facial expressions and gestures as a tool to understand whoever they may be talking to and the meaning behind their words. The addition of wearing face masks has caused even further difficulty in communicating for these individuals. Some individuals with ASD also have trouble with auditory processing and rely on lip reading to understand others. Wearing masks eliminates this adaptation completely by reducing acoustic transmission and impairing lip reading (Araujo et al., 2020). Wearing face masks also reduces the intensity of the emotion that is being perceived and the observer's confidence in their ability to correctly identify the emotion, particularly so for those with ASD (Pazhoohi et al., 2021). Individuals with ASD also struggle with making eye contact and rely on looking at people's mouths instead. Because of this, they rely more heavily

than neurotypical people on the mouth than the eyes for gauging emotions and their intensity (Pazhoohi et al., 2021). The cumulation of these barriers creates unequal opportunities for communication for students with ASD as they cannot rely on their traditional communication adaptations. Even during virtual education, when masks may not be worn by the instructor, the interference of a screen and the potential for delayed feedback make learning much more difficult for these students. Some students with ASD may not have the capacity to understand that they are being taught through the computer and may struggle with attention and distractions in the environment. It may be difficult for teachers to grasp the students' attention and keep them engaged for an extended period of time without being physically in the same space. In addition, some students with ASD may struggle with distinguishing between school space and home space. In order to make the transition as smooth as possible, an article from the *Hammill Institute of Intellectual Disabilities* recommends that the learning area should present few distractions, provide clear physical boundaries, such as a desk or table labeled "school area," and should be primarily designated for school activities (Stenhoff et al., 2021). Other strategies, such as setting timers for short amounts of "focus time" and creating a structured schedule for these students, can help ease them into their new educational space. Students with ASD thrive on structure and benefit greatly from a schedule that they can follow each day, preferably one that mimics their previous school schedule. Even small changes, such as waking up at the same time as they would for school and eating the same breakfast, can have a huge impact on the success of their day and how well they are able to learn.

Increased Internet Usage and Limited Social Interaction

Another element of virtual learning that can be a challenge for students with ASD is limiting internet usage. Since adolescents with ASD already express obsessive or repetitive behaviors and have restricted patterns of interest and activities, they are at a higher risk of developing an internet addiction (Kawabe et al., 2020) and tend to show higher rates of internet use than their non-autistic peers. As previously mentioned, it is difficult for these students to distinguish between school space and home space, including the computer or tablet itself. Students are now spending extended periods of time on computers and other devices, and it can become confusing for them when they are told to put away the device or understand that playing games on their device is not the same as participating in school. When these students become reliant on the internet for their education, they can develop an addiction to technology. Along with the already increased risk of internet addiction in the ASD population, COVID-19-related anxiety was also associated with the severity of problematic internet use (Kawabe et al., 2020). In a Japanese study from *Frontiers in Public Health*, internet usage times in adolescents with and without ASD were measured. While internet usage in both groups increased significantly during the pandemic, the ASD group had a higher average usage time before the pandemic (Kawabe et al., 2020). With higher rates of internet use, the time that these students have to interact with their friends and family decreases, and their mental health also decreases with it, further exacerbating the effects of social isolation caused by the pandemic.

How COVID-19 Impacted the Mental and Emotional Health of Students with ASD and Their Families

High Rates of Anxiety and Depression in Children with ASD

Over the past two years, rates of anxiety and depression have skyrocketed (WHO, 2022) not only for the general population, but for those with ASD and other developmental disabilities. Children with ASD are extremely likely to show symptoms or be diagnosed with some form of an anxiety disorder. In a study from 2016, it was concluded that 41.9% of all children with ASD met the criteria necessary for diagnosis with an anxiety disorder (Vanover, 2016). This rate is even higher in lower functioning individuals. Depression rates in people with ASD, on the other hand, range from 0.9 to 10%, with the prevalence increasing in higher functioning individuals (Vanover, 2016). During the COVID-19 pandemic, individuals with ASD were put under increased levels of stress, which likely exacerbated their already present symptoms of anxiety and or depression. Both parents and children with ASD commonly reported feelings of loss, worry, and changes in moods, emotions, and behavior (Asbury et al., 2021) as a direct result of the pandemic. These changes in emotional health can be detrimental to these students and their families, causing potential problems in the future, including deficits in the emotional development of the students, and struggles of parents leading to ineffective parenting.

Lack of Understanding

As mentioned previously, rates of anxiety in children with ASD are even higher in individuals with lower levels of intellectual ability. The pandemic provided a unique and unprecedented situation for these individuals. During this time of rapid change and adaptation, carefully developed routines have been disrupted and crucial support networks have disintegrated (Asbury et al., 2021). This has been especially difficult for lower functioning children, as children with a low capacity for understanding what is happening in the world may have a harder time adjusting to the new normal (Asbury et al., 2021). These students may not

understand why they can no longer go on the school bus to school to see their teachers and classmates. They may be confused as to why people are wearing face masks in public spaces and why they have to wear one as well. Since any minor change in routine can throw off the whole day for a child with ASD, a change so massive and sudden can be detrimental to the functioning of these children. In order to help these children understand what is going on in the world, it is important to come down to their level intellectually and try to explain it in clear terms.

Professionals recommend using social stories to enhance children's understanding of changes in the world (Asbury et al., 2021). Social stories are a helpful tool that have been used for children with ASD for decades. In these stories, certain social situations are played out, and details about what typically happens in the setting and how the child should behave are emphasized (RaisingChildren, 2021). Reading and acting out these stories can be extremely helpful for the child to understand a more complex situation and learn socially appropriate behavior and responses to specific events. In order to support children with ASD during the pandemic, new and creative interventions must be identified and implemented in order to ease stress and discomfort in new situations.

Future Complications and Regression

As students with ASD move out of periods of intense isolation and back into social settings, the increased levels of anxiety and stress that they experienced during the pandemic have the potential to severely impact their development and wellbeing. Aspects of both mental and physical well-being have become worse during the pandemic, such as increased anxiety and depression (Cage & McManemy, 2022). In a recent study on college dropout and burnout in students with ASD, it was concluded that autistic students were more likely than their

neurotypical peers to have thought about dropping out and reported higher rates of burnout, anxiety, stress, and depression (Cage & McManemy, 2022). College students with ASD experience a lot of the same social and communicative issues that younger children do, but they can manifest in different ways. When these students struggle to keep up with their peers, it is common for feelings of failure to develop. Along with the academic burnout that many college students are facing in the wake of the pandemic, students with ASD often experience what is known as "autistic burnout." An article from the journal *Autism in Adulthood* defines autistic burnout as a state of incapacitation, exhaustion, and distress in every area of life and lists symptoms such as chronic exhaustion, loss of skills, and reduced tolerance to stimulus (Raymaker et al., 2020). When students with ASD experience burnout, it can be much more intense and carry the potential for detrimental consequences. With the symptoms above, it can be difficult for people with ASD to hold a job, attend school, or even participate in daily conversations. Some individuals may be so overwhelmed and exhausted with their current situation that they may fall into a depressive state or even consider suicide or other self-injurious behaviors (Raymaker et al., 2020). One individual with ASD stated, "I did not want to die; I've never wanted to die...I needed to remove myself from the environment and take myself elsewhere... But the only way I knew how to do that was to die. So, I tried" (Raymaker et al., 2020). Personal accounts and reports such as these are extremely concerning, especially for the younger population of students with ASD. Higher quality mental health support for students with ASD is clearly needed, ideally designed with and for these students (Cage & McManemy, 2022). Traditional support for non-autistic students may not be helpful enough for students with ASD, and even adapting these methods may not address the complex issues that these students face. Instead, interventions and support systems must be created from scratch using evidence-based

practices and using direct feedback from individuals with ASD. In order to provide enough support for these students during such a difficult time, we must anticipate that changes will need to occur, and previous methods must be adapted to fit the current situation.

Conclusion

The shift to remote learning and quarantine during the COVID-19 pandemic presents unique challenges for individuals with ASD and their families. Although certain aspects of remote learning have been helpful for some individuals with ASD, the pandemic created a significant deficit in educational, social, and mental health support for these students and their families. Many changes and adaptations to previous common practices will need to occur as we transition back to in-person learning. For example, parent-teacher collaboration was identified as having a strong influence on student success. It was highlighted in Hurwitz's article, "Moving forward, offering the option to hold virtual parent-teacher meetings and case conferences may facilitate access and provide continued opportunity for caregiver engagement" (Hurwitz et al., 2021). Many struggles that were identified during the pandemic highlighted shortcomings that were already present in our special education system but also brought new tools and strategies to benefit students with ASD. Families of students with ASD were found to struggle more financially due to the cost of therapies, specialty schooling or learning equipment, and a lack of health insurance coverage for ASD (ASDF, 2022). During the pandemic, more affordable, public health options were limited and forced families to seek care from private providers (McDevitt et al., 2021). This brought to light the financial issues that these families faced even before the pandemic and promoted changes to occur to resolve these inequalities. Strategies that were helpful during remote learning can continue to be helpful in the traditional learning environment,

such as having more regular, online parent consultations, and offering financial support for families in need (Crane et al., 2021). In conclusion, the COVID-19 pandemic has been an eye-opening experience both for students with ASD and their support systems, including schools. It is imperative that these students receive the support that they require in ways that work for their complex issues combined with the complexity of the world around them. Reflecting on the mental, social, and educational deficits that these students faced during the COVID-19 pandemic has opened the door to future improvements in special education systems and programs around the world.

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