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A Pediatrician's Guide to Working with Children on the Autism Spectrum in Coronavirus Disease 2019 and Beyond: Retrospect and Prospect



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Keywords

- Autism • COVID-19 • Pandemic • Health • Services • Vulnerable • Adapt • Resilience

Key points

- The COVID-19 pandemic is an unprecedented event with observable consequences and devastating effects on autistic children and families, highlighting and broadening disparities in the care.
- Abrupt reduction in services and access to care during the pandemic compromised physical and mental health and led to missed intervention opportunities at critical times.
- However, many autistic children and providers demonstrated resilience in adapting to these challenges.

INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic is an unprecedented event with observable consequences and devastating effects on children and families.

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This global occurrence highlighted and broadened gaps and disparities in the care of children with developmental disabilities, while simultaneously catalyzing innovation. Initially not seen as direct victims of the disease, children are inherently vulnerable to the impacts of COVID-19, resulting in increased stress, anxiety, isolation, and health challenges. The impact is further amplified in autistic children and children with other neurodevelopmental considerations. These children are uniquely vulnerable due to communication impairments, comorbid medical disorders, poor adaptability, and reliance on therapeutic interventions. Abrupt reduction in services and access to care during the pandemic led to compromised physical and mental health and missed opportunities for intervention at critical times, which may have profound consequences further down the road [1]. There are, however, bright spots in this story, because many autistic children demonstrated resilience in their abilities to adapt to these challenges. It is important to examine the effects that the pandemic triggered, address deficiencies, and recognize new opportunities to improve systems of care to prepare for unforeseen futures. This review outlines the impacts of the first year and a half of the pandemic on autistic children and provides tools for professionals, recognizing the ever-evolving nature of the situation (Fig. 1).

CAVEATS ABOUT THE STATE OF THE SCIENCE

This article reviews findings from the available published scientific literature, combined with clinical experience from the trenches during the first year and a half of the COVID-19 pandemic to generate comprehensive recommendations for practitioners serving autistic individuals and their families during



Fig. 1. The multidimensional impact of COVID-19 on autistic children. ACE, adverse childhood event.

times of crisis. It is important to note that the research literature at this time is incomplete, evolving, and has significant gaps in key areas. Generating ways of examining these groups through creative and nontraditional means is an important public health priority within this field, and as a result, many of the available studies oftentimes involved smaller and narrower sample sizes. Clinical experience as medical and mental health providers at a university-based medical institution supplemented the available literature to provide a thorough summary and meaningful recommendations on this topic.

MEDICAL CARE

Early in the pandemic, most children did not seem to become severely ill from COVID-19 compared with adults [2], although the COVID-19 landscape is ever-changing with the emergence of new variants. However, analysis during the pandemic found that autistic children without comorbidities were hospitalized at much higher rates than other children, and even more so if they had autism with comorbid intellectual disability [3]. Comparatively, autistic children were hospitalized at higher rates than children with other medical problems including obesity and heart failure [3]. Hospitalizations of autistic children with COVID-19 were also longer than their neurotypical peers with increased risk of mortality [3,4].

These higher risks in the autistic population are likely multifactorial, including decreased ability to wear masks and convey symptoms and communication barriers limiting the ability to follow safety directions [4]. More severely impaired autistic individuals often live in group homes, placing them at greater risk for rapid viral spread [5]. Before the pandemic, autistic children were found to have poor cooperation and noncompliance in inpatient settings [6]. The use of insensitive techniques in pediatrics can inadvertently increase behavioral outbursts and complicate the ability to provide life-saving treatments, necessitating the use of chemical or physical restraints, which can further exacerbate aggressive behaviors [7]. Although some health care workers are receiving formal training on aggression and challenging behavior management, this is not yet standard of care and more research working with the pediatric autistic population, specifically, is needed [7–9]. Given these multi-tiered risk factors, autistic children must be recognized as a high-risk population for COVID-19.

During the initial part of the pandemic, the autistic community voiced fears of “health care rationing,” an example of which is prioritizing a neurotypical patient over a patient with a neurodevelopmental disorder should only one ventilator be available [10]. Many US states and several European countries issued crisis care guidelines at the pandemic’s peak, raising community concerns for exclusion of care in specific adult populations, such as individuals with disabilities and the elderly [11,12]. Such policies must receive critical evaluation, especially given the aforementioned heightened risk for hospitalization and death of the autistic population so that autistic patients are treated fairly and ethically.

Owing to scientific innovation and collaboration, at the time of this article, the US Food and Drug Administration (FDA) authorized 3 vaccines against COVID-19 [13]. Before the pandemic, autistic children were vaccinated at lower rates than neurotypical children [14]. Studies published after the pandemic's onset found that reasons for vaccine hesitancy in parents of autistic children included beliefs that vaccines led to autism and developmental plateaus [15,16].

However, a large study of autistic adults found higher rates of COVID-19 vaccination compared with age-matched controls, while acknowledging varying vaccine practices across countries and populations [17]. This higher rate could be due to many factors including parental oversight of autistic individuals and concern for more severe COVID-19 illness. A small study found no increased COVID-19 vaccine side effects, such as fever or fatigue, in autistic patients compared with nonautistic patients [18]. These data support favorable trends in combating the pandemic in autistic individuals, and providers should continue to refer to FDA recommendations regarding updates on vaccination age cutoffs and booster doses to best protect autistic patients.

Autistic children should be considered a high-risk population for medical complications of COVID-19, due to factors predisposing them to infections and difficulties with inpatient hospitalizations. Given these risks, standardized interventions to address behaviors complicating hospital stays should be investigated and implemented even beyond the pandemic. Policies in times of crises must be critically evaluated for ethical care of a neurodiverse population. Although vaccination has historically been a contentious subject in the autistic community, efforts to prioritize COVID-19 vaccination in autistic patients should be encouraged.

TELEHEALTH

Owing to physical distancing measures and parental fears, a steep drop in pediatric well-child and sick visits was observed during the pandemic and telehealth quickly became an important mode of patient interaction [19]; this required providers to overcome technological barriers to access, insurance repayment logistics, and concerns regarding HIPAA compliance. Sometimes providers enjoyed this method of interaction, as telehealth offered a window into patients' home environments, offering unique insight into care previously unavailable [20].

Some families even preferred telehealth appointments, with parents not wanting to miss time from work and minimizing transportation barriers [21].

However, there were drawbacks to this modality of patient care with technology utilization challenges and loss of personal perspectives with telemedicine [22]. Providers experienced discomfort with diagnostic reliability, due to lack of in-person physical examinations, lack of play observations, and difficulties in screening for mental health disorders over telehealth calls. Despite increased use of telemedicine, a developmental-behavioral study of preschoolers found that most medication initiations and changes still took place in the in-person setting [23]. These findings suggest ongoing telehealth should

continue to remain an option, but that a hybrid model is the best compromise between convenience and comprehensive care.

The COVID-19 pandemic forced a dramatic shift toward telehealth models. Both providers and families found satisfaction and even benefit from telehealth appointments; however, in-person visits are still important for medication changes, severe behavioral concerns, families with technology limitations, and to verify certain therapeutic modalities.

AUTISM SCREENING AND DIAGNOSIS

With the drop in in-person pediatric visits during the early days of the pandemic, opportunities were missed for timely developmental screenings. It is accepted that for some children, autism can be reliably diagnosed by experienced clinicians by 14 months of age or earlier, and that children younger than 5 years show tremendous benefit from earlier intervention [24]. The early US data on autism identification during the pandemic highlights a multitiered challenge: decreased referral rates, increased wait times for evaluation, and decreased number of children receiving early intervention (EI) services, although there were notable gaps in the data available at this time [25,26].

Given these challenges, several groups developed new and modified existing approaches in autism screening and assessments. Typically, broadband level 1 screening tests, like the Modified Checklist for Autism in Toddlers, Revised, with Follow-Up (M-CHAT-R/F), are first line in identifying toddlers at risk for autism by screening all patients in primary care, compared with level 2 tools that rely on trained clinician's observations using a structured, play-based model and are typically given when a toddler is identified as at risk [27,28].

Although the specificity and sensitivity of level 1 screening tests are high in low-risk settings, a study before the pandemic found that combining level 1 screeners and level 2 screeners, such as the STAT (Screening Tool for Autism in Toddlers and Young Children), improved specificity and could streamline referrals and decrease wait times for diagnostic evaluations [29]. Research to validate these tools are ongoing, but preliminary data are very positive [30].

Furthermore, virtual validated tools could potentially be used to identify high-risk children for EI, enabling them to begin services in a timelier manner. Limited data currently exist to support this approach. However, if data from the pandemic can demonstrate strong psychometric properties and these methods are accepted by insurers, the COVID-19 pandemic may serve as a catalyst to use alternate virtual assessment tools, such as the SORF (Systematic Observation of Red Flags of Autism Spectrum Disorder) [31], TELE-ASD-PEDS [32], or the BOSA (Brief Observation of Symptoms of Autism) [33], which are opening the door for further diagnostic access. Use of these tools would afford earlier access to care and service to underresourced and rural communities, improving patient outcomes and health equity.

During the COVID pandemic, screening for and referrals for formal assessment of autism decreased. There has been limited access to evaluations and EI in some parts of the country; this created opportunities for using innovative multitiered screeners for earlier autism

identification and developing new virtual assessment tools that are hoped to improve patient outcomes and lessen health disparities.

SERVICES

COVID-19 pandemic restrictions greatly reduced the delivery of critical therapeutic interventions needed by the autistic community [34]. Autistic children often receive various treatment interventions, which can include applied behavior analysis (ABA), speech therapy, occupational therapy, physical therapy, and cognitive behavioral therapy (CBT) [35]. These therapies are typically delivered in one-to-one in-person settings, either in the home or in clinics. These children can also receive interventions through their school districts, as outlined in their Individualized Education Programs (IEPs). Therapists work closely with families to address tailored goals, which can include building social, adaptive, and communication skills and coping with sensory and behavioral challenges. Families rely on their therapy teams to help them navigate challenges and set their children up for successful outcomes.

When the pandemic struck, delivery of many vital therapy services came to an immediate halt and families lost their support networks. Concurrently, therapists faced unprecedented practice regulations, restrictions, and closures [36], and one survey of ABA therapists reported decreased productivity and job insecurity [37]. Restructuring efforts to provide virtual services were deployed. Providing therapies via telehealth is not a new concept, as the World Federation of Occupational Therapists and Confederation for Physical Therapy has encouraged their providers for many years to offer telehealth programs [38,39]. During the pandemic's peak, therapy providers implemented nuanced decision-making models that considered the risks and benefits of restarting in-person therapies versus transitioning to teletherapies [40]. During this time of mass transition, many challenges with the virtual modality of therapy delivery arose including Internet connection issues, Web literacy gaps, and difficulties following therapists' instructions remotely [41]. In one study from the SPARK/Simmons Foundation community dataset of more than 97,000 autistic individuals, the benefits of teletherapy were perceived to be low and impacted by the lack of interactive play, peer-to-peer interactions, and reinforcers, which are hard to deliver remotely [42]. For many families, there was appropriate fear that the disruption in services would lead to a regression in skills and ultimately impact prognosis.

Despite these challenges, the rise of teletherapies in many settings is exciting given its potential to make therapies more accessible by decreasing time and costs related to travel. In one intervention model, in which virtual parental support and rehabilitation was provided, parents reported increased child growth and development and increased feelings of self-relevance, engagement, perceived support, and recognition [43]. Helpful parenting tips have emerged, including scheduling regular online consultations with therapy providers, maintaining online therapy, creating structured daily schedules and reinforcement systems, and scheduling daily child-appropriate activities [43].

As service providers explored optimal best practices when offering telehealth options, several virtual tools emerged. The acronym “VIRTUAL” was developed to highlight important domains needed to deliver effective teletherapy: Visual, Information, Relationships, Technology, Unique, Access, and Legal [44]. Innovative parent coaching programs that include counseling and support have also emerged. One program focused on teaching parents to implement simple token reward systems that were positively reinforcing for all [45]. Within CBT models, therapists adopted creative solutions to several challenges posed by the virtual session format, including expanding their virtual rapport-building activities, implementing virtual visual aids/handouts, and navigating distractions [46]. Noted advantages to virtual CBT sessions included some children engaging more from the comfort of their home, sharing aspects of their physical environment, and more flexibility in scheduling sessions [46]. The COVID-19 pandemic prompted both families and service providers to become creative in the ways autistic children receive services when in-person options are not possible.

Vital therapy services for autistic children came to an immediate halt due to the COVID-19 pandemic, leaving families isolated and fearful. Virtual therapies were implemented, but not all patients were able to participate. Although virtual programs were expanded, special consideration was made to continue one-to-one therapies for some autistic children where virtual therapies were unrealistic. The COVID-19 crisis opened the door for opportunities to increase accessibility to services through virtual options that can be used even beyond the pandemic.

EDUCATION

To reduce the spread of COVID-19, schools closed globally in early 2020. Every US state closed its schools in mid-March 2020, and a US study found significant decreases in incidence of and mortality from COVID-19 in states where in-person schools remained closed [47]. Stay-at-home orders, which included school and nonessential business closures, were associated with decreased incidence of COVID-19 infections [48]. However, a study of schools that resumed in-person classes in fall 2020 found that the vast majority of students and staff members who contracted COVID-19 during the school year acquired their infections from exposures outside of school [49]. This finding suggests that interventions that fall short of school closures, such as canceling large gatherings, physical distancing, and masking, may have more effectively prevented COVID-19 spread than school closures. Although school closure focused on preventing deaths and avoiding overwhelming hospitals due to COVID-19 cases, models have demonstrated that the mass school closures will lead to higher years of life lost due to downstream impacts of educational losses than the estimated years of life saved from COVID-19 infections [50,51]. With the rise of new COVID-19 variants and lack of approved COVID-19 vaccines for younger children at this time, the risk of these factors must be weighed.

As the lockdown phase of the pandemic progressed, the US Department of Education released statements regarding providing special education and

evaluations during times of physical distancing [52]. Meanwhile, it became clear that distance learning jeopardized the upholding of the Individuals with Disabilities Education Act (IDEA) and providing Free and Appropriate Public Education (FAPE). Around the world, children's special education was discontinued during the pandemic [53]. As most schools transitioned online, the impact of distance learning on autistic children was varied and complex. A study exploring the core pandemic experiences of parents of autistic children found that families lacked tools to provide education at home, feared downstream implications of distance learning, and lamented the loss of attention that their children previously received in-person [54]. Behaviors such as noncompliance, inflexibility, and tantrums worsened with distance learning [55]. The Core Experiences Study demonstrated higher educational losses in students learning in virtual environments compared with peers learning in person [56], and more isolation and decreased physical activity [57]. Contrasted with these findings, some children benefited from the distance learning environment, became more relaxed while learning at home, developed independence, and built better relationships with their parents [58–60]. Although some parents reported preference for virtual learning, this type of education likely failed to meet children's socialization needs. Clinical experience found that in some cases, distance learning was so preferred that there was real fear and anxiety about returning to in-person learning. However, the options for home-charter schools and medical home programs would not adequately support the needs of children with higher support needs because neither program typically offers sufficient special education support.

These findings prompt many questions regarding the future of education for autistic children. If some parents have preference for and data support that students fare better with distance learning during the pandemic, is IDEA obligated to continue facilitating this option? What emerging lessons can be harnessed to provide the best education to autistic children? How will the education system catch up on the backlogs of IEPs? How will students be provided the opportunity to make up for what they lost, especially those in special education and those attending underserved schools? Although early studies are only beginning to highlight the educational impact of COVID-19 on students, time and future studies are needed to fully grasp the impact of the pandemic on education, especially the education of autistic children.

In the autistic population, many children struggled with virtual learning during the pandemic, with limited or completely halted education and worsening of behaviors at home, whereas some benefited in many ways from distance learning at home. Further studies are needed to assess the full degree of impact on autistic children. Many more studies so far have been conducted of the neurotypical population, showing greater negative impacts of distance learning related to social determinants of health, and models showing higher years of life lost due to school closures than years of life saved by halting in-person education. The experience thus far has frankly led to more questions than answers about what is best educationally for autistic children moving forward, questions that should guide innovative thinking for education system structuring so that it can most benefit autistic children.

MENTAL HEALTH

Autistic children are at greater risk to psychological challenges during the COVID-19 pandemic than their neurotypical peers due to the nature of autism, which demands consistency and is highly associated with comorbid anxiety, depression, and attention-deficit/hyperactivity disorder. One study found increased aggression, behavioral outbursts, and regression more in the autistic population than in other children with neurodevelopmental considerations during the restrictions [55]. Anxiety and depression were highest among those with prepandemic psychiatric conditions, those who were younger, and those with fewer emotional contacts [55,61]. These effects were worse earlier in the pandemic and compounded by limited access to educational services [53,55]. When compared with neurotypical groups, there was a clear pattern that disrupted schedules and services were more problematic for autistic children compared with neurotypical subjects [61]. However, there were benefits found in some studies, wherein autistic adults reported enjoying isolation with reduced sensory and social overload [61].

Examining the utilization of the mental health emergency care system during the pandemic demonstrated an increase in mental health acuity, including increased suicide attempts [62,63]. Immediately after stay-at-home orders were enacted, the number of pediatric emergency department (ED) visits dropped, but over the next several months, whereas ED visits remained low, the proportion of ED visits for mental health crises increased dramatically, most notably in patients older than 12 years [63,64]. Patients with mental health conditions presented more severely during the COVID-19 pandemic and more frequently required admission to the hospital [65]. Unfortunately, in clinical experience, children were boarded in the ED for hours to days because inpatient psychiatric facilities were overwhelmed with patients due to the increase in acute mental health needs from COVID-19 [66].

With the reality of increased mental health needs during the pandemic, it is important to understand factors that aid in resilience. Having strong family function prepandemic and contact with the school system even indirectly were found to be protective [55,67]. In autistic adults' telehealth check-ins, telehealth with a therapist, journaling, maintaining a schedule, walking/exercise, and keeping in touch with family via phone/chat were critically important in coping during times of physical distancing [68]. Families reported that social stories, providing breaks, telehealth, hobbies, cooking, and virtual connections were helpful as well. These findings underscore the importance of targeting emotional regulation, continued services, social connection, and creating routine among the chaos. Understanding factors that support resilience are critical in offering tools moving forward.

The growing literature suggests that the mental health of children declined during the COVID-19 pandemic, more significantly so in autistic children and those with pre-COVID-19 behavioral concerns. However, autistic individuals without service disruptions, with schedules, and with ongoing social support fared better. As this population reintegrates and the state of normalcy returns, providers should also watch for a spike in behaviors, because this will create another change in routines, new social demands, and sensory inputs.

FAMILY RELATIONSHIPS

The COVID-19 pandemic presented many challenges to the families of autistic children. Schools are an important influence in children's lives because many autistic children receive services in the school setting, thrive in a structured and organized classroom, and benefit from the opportunities in school to socialize with peers [69,70]. The loss of in-person education significantly disrupted the lives of autistic children, and in many cases placed more pressure and stress on families to make up for these losses. More time spent in restricted spaces at home with fewer resources, such as being limited to the same toys, can exacerbate children's restricted interests, thus worsening autism symptoms and challenging family dynamics. Parents had difficulties setting limits on play and screen time, leading to more conflict in parent-child relationships [71]. Parents of autistic children are already at heightened risk for mental health problems such as stress, depression, and anxiety, which was likely exacerbated during the pandemic, due to decreased access to respite care and increased demands in the home environment [72]. Emerging data during the pandemic found that children were at increased risk for abuse in the home in the setting of parental job loss [73]. The mental health of parents and children were linked during COVID-19, so when parents struggled, children were more likely to struggle, and vice versa [74].

Despite these challenges, some families saw benefits in certain domains for their children that improved family dynamics. For example, some children experienced less stress due to the decreased social demands and decreased academic pressures of distance learning [60,75]. However, this was less likely to be the case for families in which their child had behavioral or learning difficulties. Half of the parents in one small study reported their children being happier and calmer during quarantine [76]. Not having to endure battles over homework completion, for instance, during the first 6 months of homeschooling, reduced parent and child stress levels and conflict. During the pandemic and the period of remote learning, children were allowed to honor their rhythms of sleep/wake cycles, eating, and physical activity in a way that was more individually beneficial rather than having to meet the needs of an entire student body, which could reduce overall stress load in the home.

Disrupted routines and changes presented opportunities for innovation in families with autistic children during the pandemic. Families that were able to implement routines in the home environment, adequately limit children's exposure to screens or restricted interests, continue to expose their children to social environments, and reduce challenges that children face in the in-person school environment, such as teasing, bullying, and academic stressors, may have created an optimal home life for autistic children.

CONSIDERATION OF FURTHER EXACERBATIONS FROM DISPARITIES AND ADVERSE CHILDHOOD EVENTS

It is important to consider how the disparities that many autistic children experience may have exacerbated the negative impacts the pandemic had on them. Before the COVID-19 crisis, families of autistic children and children with

developmental disabilities were at higher risk for food insecurity [77]. One study reported worsening of behaviors during the pandemic in autistic children from lower-income families and families who were food insecure [78]. During the pandemic, minority populations were found to have increased rates of food insecurity compared with nonminorities [79,80]. Consideration of these multiple factors is important because the pandemic likely created a situation of potentially compounding effects and multiple vulnerabilities for autistic children and their families.

The educational crisis during the COVID-19 pandemic exacerbated already present disparities in learning opportunities for children. Less participation in virtual learning activities was found in students in poverty [81] and students in rural communities [82]. Families with monetary means were able to provide innovative solutions to educate their children during times of school closures, such as paying out of pocket for educated adults to lead “pods” of students in a neighborhood [83]. Meanwhile a digital divide and worsening achievement gaps became apparent for students from low-income families who experienced limited access to digital equipment and Internet [84]. The implications of these findings for autistic children must be considered, especially given the additional challenges they faced with distance learning as mentioned previously.

These considerations are important due to the strong relationship between autism diagnosis and a higher number of adverse childhood events (ACEs) [85]. ACEs are a set of 10 potentially traumatic events occurring in childhood that have been linked to health problems in adulthood [86]; this is likely due to the families of autistic children being particularly vulnerable to financial difficulties, parental divorce/separation, and household mental illness/substance abuse. In addition to delayed diagnosis, the average age of entry into autism services was delayed in patients with higher ACE scores [87]. Given these baseline statistics, the COVID-19 pandemic has likely compounded these disparities further and has placed autistic children at higher risk for negative outcomes, although no study on this has been published at this time.

Families of autistic children have faced compounding vulnerabilities during the pandemic. The challenges of distance learning led parents to unique and discriminatory ways of coping, often serving only those with greater economic means and exacerbating already present educational disparities. It will be important for health care professionals to offer support and resources to families and to screen for ACEs and for further research to be conducted regarding these topics.

THE PEDIATRICIAN’S TOOLBOX FOR AUTISM CARE IN CORONAVIRUS DISEASE 2019 AND BEYOND

For the general pediatrician, it is important to understand the complex impact of the COVID-19 pandemic on autistic patients and their families, recognizing that every family experienced challenges and possibly even found some pleasant surprises along the way. During office visits physically or virtually,

families should be asked open endedly about their experiences and check-in on their well-being. In addition, families should be helped to navigate challenges faced with their child's education and service interventions. The expansion of the use of telemedicine brings new opportunities for innovative ways to screen and diagnose patients and decrease wait times.

Advocacy for children and challenging of potentially unethical policies will be needed to lessen disparities and provide care with equity.

During the pandemic, several online services were augmented or created to provide information about autism and tips for care. Many intervention programs were adapted and are now available as caregiver-delivered programs, increasing caregivers' abilities to support their children over the long-term. Webinars and resources were created to help parents encourage prosocial behaviors at home, including Baby Navigator, Autism Speaks, Triad Family First, and Help is in Your Hands (Fig. 2). These services are hoped to outlive COVID-19 pandemic as useful educational tools for parents and a bridge to services.

When autistic children and their families are exposed to unforeseen circumstances, such as the COVID-19 pandemic, pediatricians can help in many ways as a primary point of contact for these families during difficult times. Fig. 2 is the Pediatrician's Toolbox for care of the autistic child based on the early findings and needs that have come to light during the COVID-19 crisis. Through all the darkness of this pandemic there is hope and possibility for improvement in care for autistic patients.

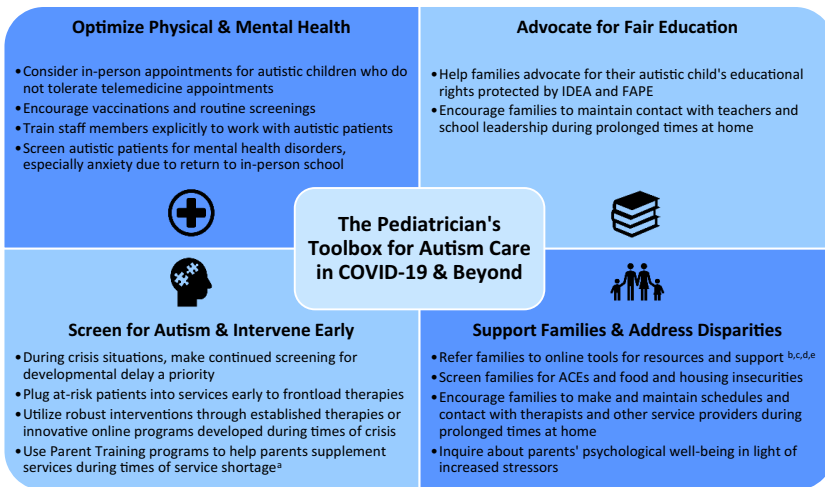


Fig. 2. A pediatrician's toolbox for autism care in coronavirus disease 2019 and beyond. Web tools: ^a*Autism Speaks Parent Training*: <https://www.autismspeaks.org/covid-19-information-and-resources-families#ParentTraining>; ^b*Baby Navigator*: babynavigator.com; ^c*Autism Speaks*: autismspeaks.org; ^d*TRIAD Families First Program*: vk.vumc.org/vk/triad/fam/; ^e*The AAP Parenting Website*: <https://www.healthychildren.org/English/Pages/default.aspx>.

DISCLOSURE

The authors have nothing to disclose.

CLINICS CARE POINTS

- This paper reviewed the available literature up until the time of submission, which was incomplete and developing, and notably most available studies involved small sample sizes
- Autistic children with COVID-19 were hospitalized more frequently and for longer periods than their neurotypical peers
- COVID-19 vaccination in autistic patients should be encouraged given their higher risk for more severe illness
- The pandemic forced a dramatic shift toward telehealth models, and while both providers and families found benefit in telehealth appointments, in-person visits are still important for medication changes, severe behavioral concerns and families with technology limitation
- The COVID-19 pandemic led to a fall in screening for and referrals for formal assessment of autism, simultaneously creating opportunities for utilizing multi-tiered screeners for earlier autism identification and the development of virtual assessment tools
- Therapy services for autistic children came to a halt due to the COVID-19 pandemic, and while virtual therapies were implemented, not all patients were able to participate
- In the autistic population, while many children struggled with virtual learning during the pandemic, with limited or completely halted education and worsening of behaviors at home, some benefited in many ways from distance learning at home; further studies are needed to assess the full degree of impact of virtual learning on autistic children
- The challenges of distance learning led parents to unique ways of coping, often serving only those with greater economic means and exacerbating already present disparities
- Utilization of routines and reduction of challenges that autistic children face in the in-person school environment, such as bullying and social stressors, may have created an optimal home life for autistic children during the pandemic
- When autistic children and their families are exposed to unforeseen circumstances, such as the COVID-19 pandemic, pediatricians can help as the primary point of contact for these families during difficult times, including pointing them to online resources and engaging in advocacy

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