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NARRATIVE REVIEW

COVID-19's Impact on the Mental and Psychological Health of People with Autism: A Narrative Review

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ABSTRACT

The restrictions on the coronavirus disease (COVID-19) have had a significant emotional impact on the general population and could lead to high levels of psychological distress. Individuals with autism spectrum disorder (ASD) may be more vulnerable in this widespread because of persistent difficulties in social interaction and communication as well as constrained and repetitive patterns of behavior. The goal of this study is to review studies that assess how COVID-19 affects autistic people's psychological and mental health. This study is a narrative review. The subjects included in these studies consisted of individuals with autism, their parents, families and caregivers. The findings revealed that responses to the pandemic varied, with some autistic persons displaying improvements and others demonstrating deterioration in mental health. Variables like biological vulnerability, isolation, and loss of social support, adjustments to household roles and dynamics, and family conflicts all related to reductions in mental health.

Keywords: Autistic Spectrum Disorder, COVID-19, Mental Health, Psychology.

INTRODUCTION

The World Health Organization (WHO) formally proclaimed the COVID-19 virus a global pandemic on March 11, 2020.[1] A massive and prompt public health campaign was launched to stop the virus's further spread as a result of its global dissemination.[2] This campaign promoted widespread behavioral changes, such as social withdrawal and estrangement, which have a significant impact on how we interact with one another and conduct our daily lives. This unusual epidemic adds considerable uncertainty and increased levels of peril to the myriad daily life adjustments (such as studying/working from home, losing activities such as in-store shopping, going out, meeting and real-world social interaction) that we had to quickly adapt to (e.g., worrying about loved ones or yourself contracting the virus.[3] Our mental health may be impacted by both the pandemic itself and the urged behavior change because uncertainty is a cognitive and psychological stressor.[4,5] Importantly, while the COVID-19 epidemic affects society as a whole, its detrimental consequences on mental health may not be felt equally by everyone. People with autism spectrum disorder (ASD; hereafter referred to as "autism") may be seen as one of the vulnerable groups that are more likely to be adversely affected.[6,7] Leo Kanner originally identified autism as a disease in children with social interaction issues and heightened sensitivity to environmental changes in 1943.[8] A neurodevelopmental disorder called ASD is characterized by difficulties in social interaction and communication, as well as constrained and repetitive patterns of behavior and interests.[9-11] With an estimated global frequency of 0.62% or higher,[12] autism is a common neurodevelopmental condition.[13] Due to two main factors, the impact of the pandemic may be greater on people with autism: First, autism is linked to a higher risk of mental health issues, such as a higher likelihood of co-occurring mental health illnesses such as mood and anxiety disorders.[14,15] Furthermore, the pandemic has had a direct impact on two key symptom areas that define autism. A person with autism may have trouble initiating or reacting to social contacts, adapting their conduct to fit different social circumstances, or forming and maintaining relationships, to name just a few social interaction and

communication challenges. However, those who have autism exhibit repetitive and constrained behavior, interests, and hobbies. Given the reality that people with autism have more trouble adapting with unpleasant occasions and anxiety and depression are generally higher in them, there is a requirement for investigate to discover the effect of the spread on the mental wellbeing of people with autism.[16,17]

Moreover, families with ASD children may be more susceptible to anxiety and mental abnormalities during quarantine since change in routine is sometimes a difficult adjustment for children with ASD.[18, 19] More in-depth knowledge about the psychological and mental effects of COVID-19 on autistic individuals, their families, and caregivers is required. Reviewing articles that have looked into the many psychological effects of the COVID-19 on individuals with autism, their family, and caregivers is the purpose of this study.

METHODS

Search Strategy: The search strategy was based on Population Intervention Comparison Outcome (PICO), (Table1) which included all studies written in English published from 2020 to August 2022. The search was performed in PubMed, Science Direct, Scopus, and ISI web of knowledge databases by using the following keywords: ("COVID-19" OR "Coronavirus") AND ("autism" OR "autistic" OR "autism spectrum disorder") AND ("parent" OR "family" OR "Caregiver") AND ("mental health" OR "Psychosocial Factors" OR "anxiety" OR "stress" OR "depression").

We manually searched bibliographies of articles included in the review, the references of other study reviews that match our inclusion criteria, and citation searches of our eligible articles in Web of Science and Google Scholar. After completing all database searches, the citations were compiled and entered into the Endnote 20 bibliography manager, where duplicate citations were removed. Two reviewers independently read the titles and screened the abstracts of potentially relevant studies. They removed irrelevant studies and obtained the full paper if the abstract did not provide sufficient data to determine eligibility for inclusion in the review.

According to inclusion criteria two reviewers independently categorized these studies as "relevant", "irrelevant", or "possibly relevant". In the case of disagreements, they were resolved by referring to a third review author. The procedure of the study selection has shown in Figure 1. Finally, 21 articles were selected from the final evaluation.

Eligibility Criteria: We included studies that they met the following criteria: 1) were peer-reviewed article published in English, and 2) examined psychological and mental impact of COVID-19 on people with autism and their families and caregiver. Exclusion criteria were (1) articles written in languages other than English, (2) participants whose primary diagnosis was other disabilities such as neuropathy and neurological disorders, and psychological problems and (3) examined other symptoms of people with autism.

RESULTS

Considering the inclusion and exclusion criteria, 21 articles remained and were included within the review.

The subjects included in these studies consisted of individuals with autism, their parents, families and caregivers. The total number of participants in the 21 studies in this review is 10219 subjects. Among the 21 studies included in this review, according to table 2, the minimum sample size was 31, and the maximum was 1044.[20-21] Most of the participants are predominantly women (60.09%). The participants in the eligible studies had a mean age of 40.29 years (parents and caregivers) and 10.6 years (children).

The study design of most papers includes survey study, cross-sectional design, mixed methods design, case study, longitudinal study, pre-post design, qualitative study, and empirical research.[20-37] There are other studies in which the design of studies has not been reported or is not available.

According to certain studies, people with autism and their caregivers and parent's mental health have declined, and psychological stress has grown during the COVID-19 era. These individuals are believed to experience higher levels of stress, depression, anger, and irritability than average persons.[20-27,30-34,36-40] Other 5 investigations revealed various results, in contrast to these findings. They suggested that during the lockdown, psychopathological issues in this population decreased.[21,28,29,35,38]

DISCUSSION

This review developed to discuss the impact of COVID-19 on the mental health and psychological well-being of individuals with autism, their family, and caregivers. In this review, studies indicated that COVID-19 decrees autism's mental health and increases stress, depression, anger, and irritability and behavioral problems in these people. [20, 21, 23, 31, 33, 36, 38, 40] Anxiety and depression may be a part of the clinical phenotype of

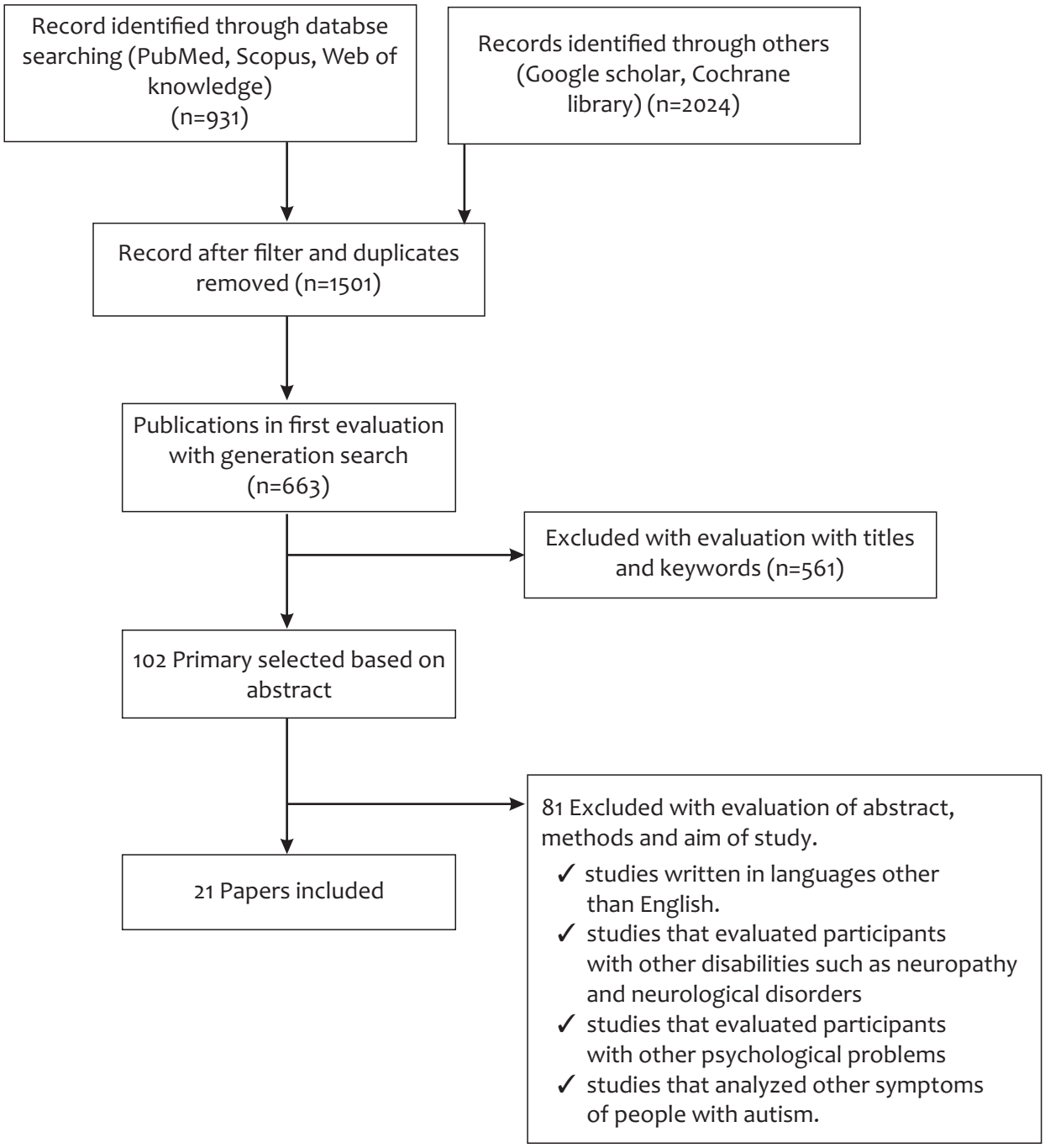

Figure1: The flow diagram of the study selection process

Table 1. Selected keywords using the PICO method

P: Population	I: Intervention	C: Comparison	O: Outcome
Autism Spectrum Disorder	COVID-19	–	Mental Health
Autistic	Coronavirus		Psychosocial Factors
Autism			Anxiety
Caregivers of autism			Stress
Family of People with Autism			Depression

PICO: Population Intervention Comparison Outcome

Table 2: Major Characteristic of the Included Studies

First Author (Year) [Ref]	Sample Size	Objective of Study	The Population Studies	Results
		COVID-19 outbreak	ASD	problems during the lockdown and higher levels of parental stress.
Martinez et al/2021[20]	31	Evaluation of the impact of Coronavirus on the emotional state	People with ASD	During confinement, people with ASD have been found to exhibit greater levels of aggression, irritability, hyperactivity and impulsivity, inattentiveness, and anxiety, among other symptoms.
Corbett et al/2021[34]	61	Investigating of the effect of the COVID-19 pandemic on psychological factor	Youth with autism and their parents	Adults who care for children with ASD reported feeling more anxious and stress levels were higher among adults of children with ASD.
Lugo-Marín et al. /2021[35]	72	Evaluation of the impact of COVID-19 pandemic on the mental health	People with ASD and their caregivers	The main findings indicated that psychopathological issues decreased in this population during lockdown, with the young adults with ASD showing greater improvements. However, after the lockdown began, caregivers reported feeling more stressed.
Spain et al/2021[23]	37	Investigating of the impact of COVID-19 on psychological factor	Autistic individuals and their families	Autism individuals and their families experienced increased stress, anxiety, and sadness.
Manning et al/2021[24]	459	Evaluation of the psychological factor during COVID-19 crisis	Autistic individuals and their caregivers	Behavioral problems increased in person with ASD and level of stress increased in caregivers.
Alhuzimi et al/2021[39]	150	Investigating of the effect of Coronavirus on mental health	Parents of autistic individuals	During the COVID-19 epidemic, parents' mental health scores declined and their stress levels rose.
Khan et al/2021[29]	58	Investigating of the psychological impact of COVID-19 pandemic	Autistic individuals and their caregivers	During COVID-19, this study found that autistic people exhibited less aggression, although caregiver stress increased.

Table 2: Major Characteristic of the Included Studies (Cont..)

First Author (Year) [Ref]	Sample Size	Objective of Study	The Population Studies	Results
Nistico et al/2022[38]	45	Evaluation of the effect of COVID-19 on the psychiatric symptoms	Individuals with autism spectrum disorders	During COVID-19, people with autism displayed higher levels of tension, anxiety, and sadness. However, they also stated that they felt more relaxed during the lockdown subjectively.
Friesen et al/2022[27]	616	Evaluation of the impact of COVID-19 on the mental health	Caregivers of autistic individuals	The majority of caregivers reported experiencing high levels of stress and anxiety as a result of COVID-19.
Pellicano et al/2022[36]	144	Investigate of the effect of Coronavirus on the mental health	Autistic people	During the COVID-19 pandemic, autistic children reported losing their social lives and feeling more stressed.
Meral et al/2022[32]	32	Evaluation of the impacts of the COVID-19 pandemic on psychological factor	Parents of children with ASD	The results suggested that parents were distressed by the COVID-19.
Fusar-Poli et al/2022[28]	141	Evaluation of the Psychological impact of the Coronavirus	Caregivers of autistic people	This study did not support the idea that lockdowns have a greater negative psychological effect on those who care for autistic people.
Bundy et al/2022[33]	133	Evaluation of the impact of COVID-19 on the mental health	Autistic adults	This research revealed that the autistic adults' mental health significantly declined.
Stankovic et al/2022[40]	85	Evaluation of the challenges during the COVID-19 pandemic	Parents of autistic children	The findings demonstrated that autistic people' behavioral problems were exacerbated.
Oomen et al/ 2021[21]	1044	Investigating the psychological impact of Coronavirus	Adults with autism	According to the study, autism individuals' symptoms of anxiety and depression worsened as a result of the epidemic. However, an improved feeling of community and lessened sensory and social overload were comforting changes that persons with autism experienced.
Levante et al/2021[22]	53	Evaluation of the psychological impact of	Families of children with	Autism-related families reported more behavioral

Table 2: Major Characteristic of the Included Studies (Cont..)

First Author (Year) [Ref]	Sample Size	Objective of Study	The Population Studies	Results
Kalb et al/2021[30]	3035	Evaluation of the effect of Coronavirus on psychological distress	Parents of children with ASD	Parents of children with ASD reported higher levels of overall psychological distress or feelings of panic.
Amorim et al/2020[31]	99	Evaluation of the psychological effect of COVID-19 outbreak	Children with ASD	During the time that schools were closed, children with ASD exhibited mostly behavioral changes, but the majority of children in the control group mostly maintained their previous behavior. Parents noted more behavioral alterations in children with ASD, and all of the children's caregivers displayed higher levels of anxiety.
Colizzi et al/2020[25]	527	Investigating of the effect of Coronavirus on psychological factor	Autistic people and their caregivers	Families experience difficulty during COVID-19. Most caregivers reported greater pressure than typical difficulties.
Ersoy ET AL/2020[37]	126	Evaluation of the psychological well-being of COVID-19 pandemic	Mothers of children with ASD	Mothers of autistic children have been found to have higher levels of anxiety and lower levels of predisposed hope and psychological well-being than mothers of children without autism.
Jeste et al/2020[26]	800	Investigating of the impact of Coronavirus on psychological health	Children with ASD	The stress of caring for children increased, which negatively impacted both their physical and psychological health.

COVID: Coronavirus Disease, ASD: Autism Spectrum Disorder

ASDs themselves, rather than the expression of a distinct comorbid psychiatric disorder. Some autistic people may find COVID-19 lockdown particularly challenging due to psycho-social variables, according to studies. These included the core traits of autism (such as difficulties with social communication and coping with uncertainty and change), specific neuropsychological traits (such as rigid thinking and information generalization), executive functioning deficits, emotion dysregulation, and co-occurring mental health conditions. Additionally, findings show that these characteristics may be exacerbated (in participants' opinions) by a lack of routine or activity, insufficient or contradictory information (such as that regarding social estrangement), and service interruptions or withdrawals. Environmental factors and stressful events, such as a lack of social support, may also play a significant role in the development of psychiatric symptoms. Studies have shown that many adults with autism lost some, if not all, of the support they received

prior to the pandemic due to an overburdened healthcare system and social distancing laws. These findings are especially concerning because individuals with autism typically experience higher levels of anxiety and sadness. Therefore, it is not surprising that during the COVID-19 epidemic, a sample of people with ASDs showed greater incidence of psychiatric symptoms. As a coping mechanism against particular internal or external suffering, repeated activity is a behavioral and emotional manifestation in people with ASD. During the term in confinement, the severity of this repetitive conduct worsened.

There are some outcomes that contradict these studies, though.[21,28,29,35,38] According to these studies, autistic people experienced less psychopathology and hostility during the lockdown. Given that many autistic people prefer a pattern, it is possible that their routine is ultimately maintained more by staying at home than going out. This may explain the odd reduction or lack of change in aggressiveness levels. Regarding the social segregation measures imposed by authorities, who entailed a definite decline in social interactions, people with ASD reported feeling subjectively more comfortable during the lockdown period than they had before. These results are fascinating, since it appears that people with ASD gain some sort of benefit from the lockdown, such as feeling more relaxed with the social distancing. This finding may be explained by some inherent clinical characteristics of ASDs itself, such as the challenges with social contact and the sense that they are perceived as being different from the majority of other individuals.

In addition, some studies demonstrated that there is already a high risk of stress and poor emotional wellness for parents of children with ASD, and it is clear that the limits and recommendations put in place by the governments during the COVID-19 pandemic have further increased that risk. In other words, parents asserted that they most missed social life, especially accidental encounters, and reported feeling disoriented by the loss of daily routines as a result of the COVID-19 restrictions.[23, 25, 30, 32, 37, 39] Another explanation is that working parents were concerned about the financial and security repercussions of losing their jobs. Additionally, the closure of therapeutic and educational programs for their children was cited by all participants as the most detrimental factor. Also, according to study findings, mothers of autistic children are more affected by health anxiety than other family members or other caregivers in terms of psychological wellbeing.[37] Because they are more likely to have health anxiety and worry about developing chronic diseases, and they also have a propensity to experience less psychological wellbeing and dispositional hope. The majority of caregivers also were found to have poor levels of resilient coping, which may raise their risk of developing mental health issues.[24,26,27,34] Because behavioral issues are prevalent in children with ASD, most caregivers had more difficulty than usual planning their children's activities while they were confined. Consequently, these persons experienced more stress. But contrary to these studies, some findings showed the positive impacts of lockdown on parents and caregivers of children with autism.[28,32] It is related to staying at home, spending more time with other family members, and particularly engaging with children with ASD, without discounting the pandemic's possible negative effects. Because parents had the chance to precisely track their children's progress in important areas including social and individual development. Moreover, during the quarantine, parents, particularly fathers, had the opportunity to connect with their child more and practice speaking with them. In addition, self-isolation and social withdrawal have decreased these children' anxiety levels, making the home environment more relaxed for the entire family. Furthermore, it is possible that the comfort in interpersonal connections was followed by a drop in social demands and, as a result, social anxiety. In turn, this might have lessened the burden on caregivers by balancing the distress brought on by changes to the daily routine.

Our findings give important insights into how individuals with autism can be affected and emphasize on the importance of mitigating further mental health problems during the ongoing COVID-19 pandemic and possible future public health crises. Foremost, the majority of individuals with autism and their caregivers find it important that they themselves are being consulted for the development of COVID-19 pandemic tips and tools. We therefore recommend collaborations with individuals with autism and their caregivers in endeavors aimed at supporting them during the COVID-19 pandemic. In addition, ensuring continued, affordable, and accessible support at this time should be of the utmost priority. This is especially important given the negative impact of the pandemic on the mental health of the majority of autistic people. In order to create a more inclusive society, we should learn from these positive experiences that emerged during the COVID-19 pandemic. The limitation of this review is that it is restricted to English papers. In addition, most of the articles included in this review varied in quality and the findings ought to be deciphered with caution.

CONCLUSION

In conclusion, the findings revealed that responses to the pandemic varied, with some autistic persons displaying improvements and others demonstrating deterioration in mental health. The pandemic appeared to affect autistic adults in a positive and negative way. For instance, sometimes a component was advantageous to one person but detrimental to another. Variables like biological vulnerability, isolation, and loss of social support, adjustments to household roles and dynamics, and family conflicts all related to reductions in mental health. Participants felt overwhelmed and experienced subsequent impairments in mental health as a result of having less time and space to self-regulate, interruptions to routines, and sensory stimuli during lockdown. However, in lockdown, many autistic individuals appreciated the chance to explore their passions, which benefited their wellbeing. Lockdown has occasionally been useful in rearranging the environment to better suit the preferences of autistic people. It was clear that the reduction in in-person social demands and the resulting respite from social pressures helped many people feel less anxious and removed the guilt they had previously felt for avoiding social situations.

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REFERENCES

1. WHO Director-General's opening remarks at the media briefing on COVID-19—11 March, 2020. Available at: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020
2. Mheidly N, Fares J. Leveraging media and health communication strategies to overcome the COVID-19 infodemic. J Public Health Policy 2020; 41:410-20. doi:10.1057/s41271-020-00247-w
3. Mertens G, Gerritsen L, Duijndam S, Salemink E, Engelhard IM. Fear of the coronavirus (COVID-19): Predictors in an online study conducted in March 2020. J Anxiety Disord 2020; 74:102258. doi:10.1016/j.janxdis.2020.102258
4. Dubey S, Biswas P, Ghosh R, Chatterjee S, Dubey MJ, Chatterjee S, et al. Psychosocial impact of COVID-19. Diabetes Metab Syndr 2020; 14:779-88. doi:10.1016/j.dsx.2020.05.035
5. Moreno C, Wykes T, Galderisi S, Nordentoft M, Crossley N, Jones N, et al. How mental health care should change as a consequence of the COVID-19 pandemic. Lancet Psychiatry 2020; 7:813-24. doi:10.1016/S2215-0366(20)30307-2
6. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. Lancet Psychiatry 2020; 7:547-60. doi:10.1016/S2215-0366(20)30168-1
7. Vasa RA, Singh V, Holingue C, Kalb LG, Jang Y, Keefer A. Psychiatric problems during the COVID-19 pandemic in children with autism spectrum disorder. Autism Res 2021; 14:2113-9. doi:10.1002/aur.2574
8. Kanner L. Autistic disturbances of affective contact. Nervous Child 1943; 2:217-50.
9. Scandurra V, Emberti Gialloreti L, Barbanera F, Scordo MR, Pierini A, Canitano R. Neurodevelopmental disorders and adaptive functions: a study of children with autism spectrum disorders (ASD) and/or attention deficit and hyperactivity disorder (ADHD). Front Psychiatry 2019; 10:673. doi:10.3389/fpsyt.2019.00673
10. Senouci M, Obeidat H, Ghaouti R. Autism Spectrum as a communication disorder: A case study. Afr Edu Res J 2021; 9:687-95.
11. Quinones-Camacho LE, Fishburn FA, Belardi K, Williams DL, Huppert TJ, Perlman SB. Dysfunction in interpersonal neural synchronization as a mechanism for social impairment in autism spectrum disorder. Autism Res 2021; 14:1585-96. doi:10.1002/aur.2513
12. Elsabbagh M, Divan G, Koh YJ, Kim YS, Kauchali S, Marcin C, et al. Global prevalence of autism and other pervasive developmental disorders. Autism Res. 2012; 5:160-79. doi:10.1002/aur.239
13. Gamsiz ED, Sciarra LN, Maguire AM, Pescosolid MF, van Dyck LI, Morrow EM. Discovery of rare mutations in autism: elucidating neurodevelopmental mechanisms. Neurotherapeutics 2015; 12:553-71. doi:10.1007/s13311-015-0363-9
14. Kirsch AC, Huebner AR, Mehta SQ, Howie FR, Weaver A L, Myers SM, et al. Association of comorbid mood and anxiety disorders with autism spectrum disorder. JAMA Pediatr 2020; 174:63-70. doi:10.1001/jamapediatrics.2019.4368
15. Lever AG, Geurts HM. Psychiatric co-occurring symptoms and disorders in young, middle-aged, and older adults with autism spectrum disorder. J Autism Dev Disord 2016; 46:1916-30. doi:10.1007/s10803-016-2722-8
16. Kanner L, Rodriguez A, Ashenden B. How far can autistic children go in matters of social adaptation? J Autism Child Schizophr 1972; 2:9-33. doi:10.1007/BF01537624
17. Mayes SD, Calhoun SL, Murray MJ, Zahid J. Variables associated with anxiety and depression in children with autism. J Dev Phys Disabil 2011; 23:325-37.
18. Sanchack KE, Thomas CA. Autism spectrum disorder: Primary care principles. Am fam Physician 2016; 94:972-9.
19. Baumer N, Spence SJ. Evaluation and management of

the child with autism spectrum disorder. Continuum (Minneap Minn) 2018; 24:248-75. doi:10.1212/CON.0000000000000578

20. Martínez-Gonzalez AE, Moreno-Amador B, Piqueras JA. Differences in emotional state and autistic symptoms before and during confinement due to the COVID-19 pandemic. Res Dev Disabil 2021; 116:104038. doi:10.1016/j.ridd.2021.104038
21. Oomen D, Nijhof AD, Wiersema JR. The psychological impact of the COVID-19 pandemic on adults with autism: a survey study across three countries. Mol Autism 2021; 12:21. doi:10.1186/s13229-021-00424-y
22. Levante A, Petrocchi S, Bianco F, Castelli I, Colombi C, Keller R, et al. Psychological impact of COVID-19 outbreak on families of children with autism spectrum disorder and typically developing peers: An online survey. Brain Sci 2021; 11:808. doi:10.3390/brainsci11060808
23. Spain D, Mason D, Capp SJ, Stoppelbein L, White SW, Happe F. "This may be a really good opportunity to make the world a more autism friendly place": Professionals' perspectives on the effects of COVID-19 on autistic individuals. Res Autism Spectr Disord 2021;83:101747. doi:10.1016/j.rasd.2021
24. Manning J, Billian J, Matson J, Allen C, Soares N. Perceptions of families of individuals with autism spectrum disorder during the COVID-19 crisis. J Autism Dev Disord 2021; 51:2920-8. doi:10.1007/s10803-020-04760-5
25. Colizzi M, Sironi E, Antonini F, Ciceri ML, Bovo C, Zocante L. Psychosocial and behavioral impact of COVID-19 in autism spectrum disorder: an online parent survey. Brain Sci 2020; 10:341. doi:10.3390/brainsci10060341
26. Jeste S, Hyde C, Distfano C, Halladay A, Ray S, Porath M, et al. Changes in access to educational and healthcare services for individuals with intellectual and developmental disabilities during COVID-19 restrictions. J Intellect Disabil Res 2020; 64: 825-33. doi:10.1111/jir.12776
27. Friesen KA, Weiss JA, Howe SJ, Kerns CM, McMorris CA. Mental Health and Resilient Coping in Caregivers of Autistic Individuals during the COVID-19 Pandemic: Findings from the Families Facing COVID Study. J Autism Dev Disord 2022; 52:3027-37. doi:10.1007/s10803-021-05177-4
28. Fusar-Poli L, Martinez M, Surace T, Meo V, Patania F, Avanzato C, et al. The Psychological Impact of the COVID-19 Lockdown: A Comparison between Caregivers of Autistic and Non-Autistic Individuals in Italy. Brain Sci 2022; 12:116. doi:10.3390/brainsci12010116
29. Khan YS, Khan AW, El Tahir M, Hammoudeh S, Al Shamlawi M, Alabdulla M. The impact of COVID-19 pandemic social restrictions on individuals with autism spectrum disorder and their caregivers in the Stateof Qatar: A cross-sectional study. Res Dev Disabil 2021; 119:104090. doi:10.1016/j.ridd.2021.104090
30. Kalb LG, Badillo-Goicoechea E, Holingue C, Riehm KE, Thrul J, Stuart EA, et al. Psychological distress among caregivers raising a child with autism spectrum disorder during the COVID-19 pandemic. Autism Res 2021; 14:2183-8. doi:10.1002/aur.2589
31. Amorim R, Catarino S, Miragaia P, Ferreras C, Viana V, Guardiano M. The impact of COVID-19 on children with autism spectrum disorder. Rev Neurol 2020; 71:285-91. doi: 10.33588/rn.7108.2020381
32. Meral BF. Parental views of families of children with autism spectrum disorder and developmental disorders during the COVID-19 pandemic J Autism Dev Disord 2022; 52:1712-4. doi:10.1007/s10803-021-05070-0
33. Bundy R, Mandy W, Crane L, Belcher H, Bourne L, Brede J, et al. The impact of early stages of COVID-19 on the mental health of autistic adults in the United Kingdom: A longitudinal mixed-methods study. Autism 2022; 26:1765-82. doi:10.1177/13623613211065543
34. Corbett BA, Muscatello RA, Klemencic ME, Schwartzman JM. The impact of COVID-19 on stress, anxiety, and coping in youth with and without autism and their parents. Autism Res 2021; 14:1496-511. doi:10.1002/aur.2521
35. Lugo-Marin J, Gisbert-Gustemps L, Setien-Ramos I, Espanol-Martín G, Ibañez-Jimenez P, Forner-Puntonet M, et al. COVID-19 pandemic effects in people with Autism Spectrum Disorder and their caregivers: Evaluation of social distancing and lockdown impact on mental health and general status. Res Autism Spectr Disord 2021; 83:101757. doi:10.1016/j.rasd.2021.101757
36. Pellicano E, Brett S, den Houting J, Heyworth M, Magiati I, Steward R, et al. COVID-19, social isolation and the mental health of autistic people and their families: A qualitative study. Autism 2022; 26:914-27. doi:10.1177/13623613211035936
37. Ersoy K, Altin B, Sarikaya BB, Özkardaş OG. The comparison of impact of health anxiety on dispositional hope and psychological well-being of mothers who have children diagnosed with autism and mothers who have normal children, in Covid-19 pandemic. Soc Sci Res J 2020; 9:117-26.
38. Nistico V, Gambini O, Pizzi L, Faggioli R, Priori A, Demartini B. A paradoxical psychological impact of COVID-19 among a sample of Italian adults with High Functioning Autism Spectrum Disorder. J Clin Neurosci 2022; 95:27-30. doi:10.1016/j.jocn.2021.11.026
39. Alhuzimi T. Stress and emotional wellbeing of parents due to change in routine for children with Autism Spectrum Disorder (ASD) at home during COVID-19 pandemic in Saudi Arabia. Res Dev Disabil 2021; 108:103822. doi:10.1016/j.ridd.2020.103822
40. Stankovic M, Stojanovic A, Jelena S, Stankovic M, Shih A, Stankovic S. The Serbian experience of challenges of parenting children with autism spectrum disorders during the COVID-19 pandemic and the state of emergency with lockdown. Eur Child Adolesc Psychiatry 2022; 31:693-8. doi:10.1007/s00787-021-01917-0