


**Original article**

# The impact of COVID-19 Lockdown on Children with Autism Spectrum Disorder and their families in Tripoli, Libya

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**ABSTRACT**

**Introduction:** During COVID-19 pandemic, when social distancing becomes compulsory for all, a nation-wide school closure was implemented. The aim of this paper is to assess the impact of COVID-19 lockdown on children with ASD and their families in Tripoli, Libya.

**Materials and Methods:** We conducted face-to-face interviews with parents of children with Autism Spectrum Disorder (ASD) during the period of the outbreak between June to December 2020. The Modified Check list of Autism in Toddlers (M-CHAT) was used to evaluate patients.

**Results:** 250 children diagnosed of ASD were included. The prevalence of aggressive behaviour had increased by 47% that of loss of communication is 33%, that of poor interaction is 52% and that of anxiety among families is 27%, although rates were lower among girls. 60% of Young children aged between 5 to 10 years exhibit increased stereotyped behaviour, attachment to certain TV programs and other electronic devices (such as tablet, smartphone) more often and for longer periods of the day, temper tantrums, and crying and screaming for no obvious reasons as well as difficulty sleeping alone and frequent awakenings. 10% of children complained of psychosomatic symptoms, such as tummy pains, and diarrhoea. 16% of Adolescents had been found to have significantly higher rates of aggressive and antisocial behaviour when trying to switch them from one activity to another.

**Conclusions:** Children with existing behavioural problems and those with ASD in particular had faced additional social and educational challenges during their special education years and had experienced the most negative consequences of living in a stressful situation like home lockdown, and are therefore had been particularly hard hit. COVID-19 pandemic was a neglected medical cause of deteriorating child behaviour, and the acute and chronic effects of this pandemic on these children's health and education are among the greatest child harms of the 21st century.

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# El impacto del bloqueo de COVID-19 en los niños con trastorno del espectro autista y sus familias en Trípoli, Libia

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## RESUMEN

**Introducción:** Durante la pandemia de COVID-19, cuando el distanciamiento social se vuelve obligatorio para todos, se implementó un cierre escolar a nivel nacional. El objetivo de este documento es evaluar el impacto del encierro de COVID-19 en los niños con TEA y sus familias en Trípoli, Libia.

**Materiales y métodos:** Realizamos entrevistas cara a cara con padres de niños con trastorno del espectro autista (TEA) durante el período del brote entre junio y diciembre de 2020. Se utilizó la lista de verificación modificada de autismo en niños pequeños (M-CHAT) para evaluar a los pacientes.

**Resultados:** Se incluyeron 250 niños diagnosticados de TEA. La prevalencia de la conducta agresiva había aumentado en un 47%, la de pérdida de comunicación es de 33%, la de mala interacción es de 52% y la de ansiedad entre las familias es de 27%, aunque las tasas fueron menores entre las niñas. .60% de los niños pequeños de entre 5 y 10 años exhiben un mayor comportamiento estereotipado, apego a ciertos programas de televisión y otros dispositivos electrónicos (como tabletas, teléfonos inteligentes) con más frecuencia y durante períodos más prolongados del día, rabietas y llantos y gritos sin razones obvias, así como dificultad para dormir solo y despertares frecuentes. El 10% de los niños se quejó de síntomas psicósomáticos, como dolor de estómago y diarrea. Se ha descubierto que el 16% de los adolescentes tienen tasas significativamente más altas de comportamiento agresivo y antisocial cuando intentan cambiarlos de una actividad a otra.

**Conclusiones:** Los niños con problemas de conducta existentes y aquellos con TEA en particular se habían enfrentado a desafíos sociales y educativos adicionales durante sus años de educación especial y habían experimentado las consecuencias más negativas de vivir en una situación estresante como el encierro del hogar y, por lo tanto, se habían visto particularmente afectados. La pandemia COVID-19 fue una causa médica desatendida del deterioro del comportamiento infantil, y los efectos agudos y crónicos de esta pandemia en la salud y educación de estos niños se encuentran entre los mayores daños infantiles del siglo XXI.

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## 1. INTRODUCTION

### 1.1. COVID-19 IN LIBYA

The Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV2 or COVID-19) pandemic is the major global health crisis of our time and the greatest challenge the globe has faced since World War 2. Since its emergence in China late in 2019, the virus has spread to every continent [1]. Cases are still rising daily in Libya as well as in Africa the Americas, and Europe. Countries are battling to slow down the spread of the disease by testing and treating patients, carrying out contact tracing, limiting travel, isolating cities, cancelling large gatherings such as conference, worship places, and schools and lately countries have started mass immunization. In Libya, the effects of COVID-19 are exacerbated by the ongoing-armed conflict and the internal

security, political and economic crisis. Libya confirmed its first case of COVID-19 and started implementing a response to control the spread in mid-March 2020. In April 2021, at the time of writing of this paper, the country had registered over 162,294 COVID-19 cases and 2,737 deaths reported to WHO [2]. People in Libya live in permanent uncertainty and fear, as open political conflict continues. United Nation Development Program (UNDP) in Libya has been assisting the national and local governments and institutions to provide access to health services and tackle the virus from harming the most vulnerable [3]. During COVID-19 pandemic, when social distancing becomes compulsory for all, a nation-wide school Closure was implemented.

### 1.2. THE IMPACT

Libya is meant to be a middle-income country. The Libyan's armed conflict had serious repercussions on health services

and education. The Libyan currency is under severe pressure. Its value has already depreciated by more than 100%, said the World Bank in its latest report.

demographic data (age, sex, place of living, age of ASD diagnosis, and educational system enrolled). Using (DSM-5) and (M-CHAT), the families of 250 ASD children were

**Table 1: Parents' observed changes in child behavior during COVID-19 pandemic**

Type of behaviour	Frequency (n=250)	% of increase	Pattern
<b>Conduct problems</b>	117	47%	Hits or bites self, Temper tantrum when given command, destroy objects
<b>Stereotyped behaviour</b>	90	36%	Turns in circle, spinning objects, flaps hands,
<b>Communication</b>	108	43%	Fail to initiate conversation, Echoes words
<b>Social interaction</b>	130	52%	Withdraws and remain alone, Resist physical contact, Unaffectionate.
<b>Screen Time. More than eight hours each day</b>	152	61%	Watching TV, Using PC, Smart phones, Plying video games.
<b>Psychosomatic symptoms</b>	25	10%	Tummy pains, diarrhoea, headaches.

This North African country, once boasting one of the continent's highest per capita GDPs, is a shadow of its former self: torn apart by armed conflict and now demolished by falling oil prices and declining production. Children with existing behavioural problems and those with Autism Spectrum Disorder (ASD) in particular have faced additional social and educational challenges during COVID-19 pandemics. Families were greatly distressed about this as they noticed their child's health regress. In March 2020, schools were closed as part of the COVID-19 response, and all children, including children with ASD who were attending special school, had to start learning on-line from home. The effects are both direct on the children and indirect on the families and caregivers and are associated with immediate and probably long-term impairment. This study reports the main behavioural changes experienced by parents of children with ASD during the COVID-19 pandemic in Libya.

## 2. MATERIALS AND METHODS

We conducted a face-to-face interview with parents of children with ASD during the period of the outbreak extending from June to December 2020. The inclusion criterion was having been diagnosed with ASD according to Diagnostic and Statistical Manual 5 (DSM-5) and Modified Check list of Autism in Toddlers (M-CHAT) criteria. These patients are regularly followed up in the child neurodevelopment clinics and have up-to-date medical records of their assessments. The exclusion criteria was having a severe neurological disease, syndromic ASD or a complex genetic syndrome. After obtaining an informed consent to participate, the parents were interviewed either individually or together, depending upon their convenience, readiness and availability. The medical charts of children who were diagnosed with ASD and attended for their routine examination were retrieved. The information included

interviewed. (195 males and 55 females' ages ranged from 3-15, with an average of  $8.9 \pm 4.1$ ). There was 100% acceptance of the invitation to participate. The interview took place in the same neurodevelopment clinics where diagnosis of ASD was made and where families and their children used to attend for routine examination and follow up. The first author (AZ) carried out all interviews.

As the evaluation was subjective, parents shared their experiences, and spoke spontaneously and frankly, making the interviews valuable with content despite the fact that the interviews lasted only for 35-40 min. All interviews were conducted in Arabic. All statistical analyses were performed using SPSS (IBM, Armonk, NY). The Parents' observed changes in child behaviour during the pandemic is provided in Table 1.

## 3. RESULTS

The prevalence of aggressive behaviour had increased by 47% that of loss of communication is 43%, that of poor interaction is 52% and that of anxiety among families was 27%. 142 Young children ages 5 to 10 years exhibit increased stereotyped behaviour, attachment to certain TV programs and other electronic devices (such as tablet, smartphone) more often and for longer periods of the day, temper tantrums, and crying and screaming for no obvious reasons as well as difficulty sleeping alone and frequent awakenings. 25 children complained of psychosomatic symptoms, such as tummy pains, diarrhoea, and they demonstrate alterations in their play, which become more aggressive and destructive. 18 adolescents have been found to have significantly higher rates of aggressive and antisocial behaviour when trying to switch them from one activity to another. The interview guide consisting of the main questions is provided in Table 1.

## 4. DISCUSSION

The prevalence of ASD in Libya is probably similar to that seen in the USA and the UK [4, 5]. During COVID-19 pandemic, when social distancing becomes compulsory for all, a nation-wide school closure was implemented. Because of these measures, children with special educational needs and support were deprived from their special education provision and support and became more vulnerable population that needs maximum attention in the context of the prevention and control strategies of the COVID-19 epidemic [6, 7]. Martin et al reported that families involved in his study recounted that abrupt changes to health/social care provision and education, potentially place autistic individuals, individuals awaiting diagnostic assessment, and their families, at risk of developing or exacerbating short- and longer-term unmet needs and mental health conditions (e.g. stress, anxiety, depression) [8].

The effect of the COVID-19 can be even more worrisome in children suffering from autism spectrum disorders. Sudden changes in daily routine have after-effects and can potentiate existing symptoms, increasing the risk of emotional, behavioural and relationship complications [9]. Many autistic people do want friends and to be around other people. Some people's mental health has been damaged by not being able to see people during COVID-19. Autistic people need support in many areas of life so they can keep mixing up, socializing and meeting their friends even through difficult times, like pandemics [10]. People with mental health conditions could be more significantly influenced by the emotional responses brought on by the COVID-19 epidemic, resulting in declining or deteriorating of an already existing mental health condition because of high vulnerability to stress compared with the general population [11]. The COVID-19 pandemic has produced important challenges to society and families, with impacts on child behaviour and development, the dimension of which we do not yet fully understand [12]. During lockdown, many psychologists and therapy sessions moved online. However, while telehealth was positive for some, it proved problematic for people with ASD [13].

Children with existing behavioural problems and those with ASD in particular had faced additional social and educational challenges during their special education years and had experienced the most negative consequences of living in a stressful situation like home lockdown, and are therefore had been particularly hard hit. Having to stay indoors not only hold up progress in developing social skills, but also diminishes autonomy and self-confidence [14]. The effects are both direct on the children, indirect on the

families and caregivers. In addition, it was associated with immediate and probably long-term impairment. The direct effects of COVID-19 pandemic on these children included reduced school enrolment, high dropout rates, lower educational achievement, more social isolation, deterioration of speech and language skills that had already gained, psychological trauma, and increased aggressive behaviour that required certain medications to control it. Indirect effects are multifactorial, including unsafe living conditions as a result of the armed conflict that had been going in the country for long time, deterioration of behaviour, caregiver non-cooperation and failure to cope, displacement and closure of special schools for indefinite period of time and its effects on the child's future. However, the precise effect of any given illness on child's health was difficult to determine. As a result, most published estimates of the children's health and education effects of COVID-19 are based on media reports and official statements from governments, and WHO. Given the challenges described, it is not surprising that there are few published studies on the direct and indirect causes of morbidity among children with ASD affected by COVID-19 pandemic. Nevertheless, it became clear that the conditions created by COVID-19 (social distancing, closure of schools and amusement parks, and the deterioration of health and public health systems and stress) significantly increase the morbidity.

While TV does hold children's attention, it does not always engage their minds in active learning and social interaction. The issue of screen time was studied before and the results had provided support that early TV viewing might be associated with ASD [15]. The increase in children's screen time over the period of pandemic due to school closure has concerned parents, and professionals due to its association with negative developmental and behavioural outcomes. Determining screen time limits can be especially stressful nerve-racking for families of children with special education needs. This is because children with anxiety, (ASD), learning disabilities, or attention-deficit/hyperactivity disorder (ADHD) may already tend to use devices as a coping mechanism [16].

Although there had been no studies in which researchers lockdown, firm social distancing, and home confinement, it can be argued that the severity and chronicity of the stresses that children, and families had sustained rise to the level of toxic stress with its well-documented impact on their physical and mental health. We in Libya have noticed an increased prevalence of depression, anxiety, and aggressive behavioural and psychosomatic complaints in these children and their families; these problems were also reported in the parents of children with ASD in Saudi Arabia who had been

unfavourably impacted by COVID-19 pandemic [17]. Another study identified a high prevalence of depression and significant change in strain displayed by caregivers during the COVID-19 outbreak [18]. Recent researches have reported an increase in conflict between parents and their children, using harsh words, and physical punishment that would not normally be implemented [19]. Emerging findings note that individuals with ASD were found to be influenced from the current COVID-19 pandemic with a significant deterioration in their behaviour problems, which significantly envisaged their caregivers' anxiety [20].

Researchers had identified concerns during the COVID-19 crisis. The greatest areas of concerns were around isolation, illness and finance, and had noted many that many families had the desire to communicate the burden with which they are living [21].

Schools should be provided of the resources and training to deliver services to children with ASD in formats that can be adapted to the challenges of a pandemic [22]. The results of a study carried out by Latzer et al. revealed that the best way to benefit autistic children caught up in drastic changes in their routine lifestyle is to invest in a strong support system for their parents [23].

The child's understanding of COVID-19, COVID-19 illness in the family, low family income, and depression and anxiety symptoms in the parent increase the risk for poor mental health during the pandemic [24].

In addition, General Paediatricians caring for children with ASD had found that it is sometimes difficult to recognize the health needs of these children during the lockdown as well as the health needs of caregivers and families, let alone the difficulties to access and care for suspected positive COVID-19 cases. In fact, hospitals and other health facilities were told to provide only "emergency" medical care and, as a result, children with other health problems, including those with ASD, had had to wait until the end of the emergency period to seek help, a period that nobody knows when it will finish.

Experience had shown that the lack of strong collaboration between the health sector, education, social services and nongovernmental organizations, resulted in a more ineffective management of complex emergencies and poor health outcomes for these children.

The child's understanding of COVID-19, COVID-19 illness in the family, low family income, and depression and anxiety symptoms in the parent increase the risk for poor mental health during the pandemic [25].

Recent editorials and position papers highlight the limits of continuity and maintenance of skills acquired through applied behavioural analysis interventions and opens routes

to identify more flexible maintenance and generalization procedures in order to improve the integrity of the intervention as a whole. One study described how parent training was significant in avoiding delays in the generalization of socially significant behaviours, following the drastic interruption of the treatment in this group of children [26].

Children with behaviour problems predating the COVID-19 outbreak were found to be particularly at risk to present with more intense and more frequent disruptive behaviour. There were also reports in the conventional media that some children with special educational needs, including autism, were unable to access school due to compliance with new infection control guidelines [27].

Professionals will need to work collaboratively with each other (across sectors and services), and with autistic individuals and their families, to understand the impact of these extraordinary circumstances and develop ways that everyone can be supported more effectively [28].

The COVID-19 pandemic has further exacerbated existing healthcare inequalities for autistic people. An urgent need exists for policies and guidelines on accessibility of COVID-19 services to be updated to prevent the widespread exclusion of autistic people from services, which represents a violation of international human rights law [29].

Clinicians must incorporate distinctive political and cultural commitments into practice and look to countries that have managed COVID-19 better than others for models to simulate the strategies developed [30].

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## 5. CONCLUSIONS

For those children with ASD, COVID-19 pandemic is a neglected medical cause of deteriorating child behaviour, and the acute and chronic effects of this pandemic on these children's health and education had been among the greatest child harms of the 21st century. The negative effects of COVID-19 included a broad range of both direct and indirect effects that follow children through the life course and into adulthood. Increased incidence of parent stress, anxiety and failure to cope were associated with increased hours of screen usage in children. Our understanding of the scale of disease's effects on children with ASD, the shades of these effects and ways to diminish and treat them remain limited. It is mandatory on Paediatricians, child health care providers, public health professionals, education authorities, researchers, and policy makers to address the impact of the pandemic on children as a critical and priority issue. Children in general and those with ASD must be considered. The rigidity and inflexibility of some of these children with

autism can make these transitions particularly problematic.

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## 7. CONFLICT OF INTERESTS

The authors have no conflict of interest to declare. The authors declared that this study has received no financial support.

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