

COVID-19 PANDEMIC: ANALYSIS OF BEHAVIORAL AND CLINICAL CHANGES IN CHILDREN WITH AUTISM SPECTRUM DISORDER

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Abstract: Introduction: The emergence of the new coronavirus, SARS-CoV-2, spread in a pandemic way, which led Brazilian states and municipalities to adopt social distancing measures as a strategy to reduce the number of cases and help control the disease. These measures reach different population strata and territories, which triggers an increase in the levels of psychological stress in the general population, especially in the child population with pre-existing mental disorders, such as those with autism spectrum disorder (ASD). ASD carriers are characterized by persistent deficits in verbal and non-verbal communication, in social interaction, in addition to difficulties in various domains of development and adaptive functions. Thus, in view of the above, the present cross-sectional study aims to relate and investigate the behavioral and clinical changes of children with autism spectrum disorder during the COVID-19 pandemic in the year 2020/2021.

Goal: To point out the impact of the COVID-19 pandemic on the behavioral and clinical changes of Brazilian children on the autistic spectrum during the period from August 2020 to March 2021, as well as to relate the use of psychotropic medications, the main demands of parents and/or guardians and the socioeconomic profile.

Methods: This is a cross-sectional study that collected data from 221 guardians of Brazilian children with autism spectrum disorder whose families were contacted remotely, due to the conditions at the time, through support communities on Facebook®, mainly the “Comunidade Pró-Autismo”, which contained the largest number of members among which were analyzed. The inclusion criterion was age between 1-12 years and the exclusion criterion was age less than 1 and greater than 12 years. Furthermore, parents and/or guardians could answer the questionnaire only once per child. Data were obtained through 31 questions sent

via Google Forms®, composing a questionnaire that was previously evaluated by experts and accepted by the Ethics Committee on Research with Human Beings with CAAE code 44793221.3.0000.5373.

Results: The study reported that there was an increase of 14.2% of children using psychotropic medication at the time of social isolation. Regarding the signs and symptoms evaluated in the periods prior to and during the pandemic, as well as auxiliary therapies, there was a reduction in their levels, with emphasis on: difficulty communicating (56.8%) and difficulty understanding information (38.2%). Furthermore, it was observed that the main demands requested varied based on the family’s socioeconomic profile according to the ABEP Classification (CCEB 2019- PNADC 2018).

Conclusions: The present study demonstrated that during the pandemic, the increase in the dose of psychotropic medication occurred to stabilize the symptoms in view of the impossibility of carrying out face-to-face therapies and consultations, the latter of which contributed to the reduction of diagnoses. Isolation may have contributed to the reduction of clinical and behavioral changes characteristic of autism spectrum disorder (ASD).

Keywords: Autistic Spectrum Disorder; COVID-19; Signs and symptoms; behavioral symptoms

INTRODUCTION

Autistic Spectrum Disorder (ASD) in children interferes with the formation of fundamental skills for quality of life. Difficulties in social interactions, impaired communication, withholding activities, interests, and stereotyped behavior patterns are clinical attributes of this disorder 1.

Based on the standards of the American Psychological Association in 2013, ASD was

categorized by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as a change in neurological development, necessarily present from childhood, and which presents itself through deficits in the field sociocommunicative and behavioral. These particularities contribute to the child's social isolation, a fact that contributes to the impairment of communicative skills. 2.

According to data from the Center for Disease Control and Prevention, there is currently one case of autism for every 110 people, so it is possible to estimate that Brazil has about two million autistic people. 3. And for people with ASD, changes are complex and the adaptation process can be more difficult, causing the individual to experience stress, anxiety and confusion 4,5. That said, it is clear that these aspects are accentuated in view of the restrictive measures adopted during the coronavirus pandemic in 2020/2021. Therefore, it is of notorious importance to analyze the biopsychosocial aspects, mainly, of autistic children in the face of the spread of the new coronavirus 6.

On 02/03/2022, the country declared a Public Health Emergency of National Importance 7. Given that this disease emerged as a health problem that still did not have a vaccine as an effective preventive measure or proven effective pharmacological treatment 8. In view of the above, non-pharmacological measures such as social isolation began to be adopted as a way to face the pandemic, acting as a strategy to control the spread of the virus.

Considering the above, and with the current context, it is evident the need to elaborate a work that explores the facet of the pandemic that questions how children with autism spectrum disorder are doing, historically left aside, especially in this period. moment in which the concern is all focused on elements such as the investigation of the pathophysiology of this new disease and

drugs/vaccines that control its dissemination and the impact on the health of the population in general. It is known that children with ASD are affected differently, but it is not yet known how much, in what way or what these alterations are. If they are restricted to the sphere of clinical, behavioral or medication aspects, or if it is a sum of all these areas. Thus, this study seeks to elucidate such changes, and find in the literature what is already known and what is yet to be discovered, because even if the pandemic ends, some changes may last.

GOAL

Point out the impact of the COVID-19 pandemic on the behavioral and clinical changes of Brazilian children on the autistic spectrum during the period from August 2020 to March 2021, as well as relate to the use of psychotropic medications, the main demands of parents and/or guardians and to the socioeconomic profile.

METHODS

This is a cross-sectional study that aims to analyze transformations from clinical to behavioral in children (1-12 years old) with ASD who experienced social isolation during the COVID-19 pandemic in August 2020-March 2021, with the age the inclusion and exclusion criteria.

Data collection took place through an online questionnaire, via Google Forms® with families of autistic children, through Facebook®, after approval by the Ethics Committee in Research with Human Beings under protocol code CAAE 44793221.3.0000.5373, the project was carried out by signing the Informed Consent Term and the Confidentiality Term.

The questionnaire used contained 31 questions, divided into six blocks, with 220 families agreeing to respond and 1 refusing. Thus, the first block consists of 3 questions that aim to indicate the profile of the parents

and/or guardians who will respond to the applied Google Forms. The questions include age, the classification of their relationship with the observed child and the amount of time they spend with the child throughout the day during the Pandemic.

The second block is formed by 10 questions to know the general profile of the child, including: age, gender, how long has the diagnosis of ASD been presented, the type of service used for their treatment, whether they performed any therapeutic activity before the pandemic, if it takes place during the pandemic and, if so, what modality (face-to-face or remote) and if psychotropic medication is used and what are the general characteristics of the use of this drug treatment.

The third block is characterized by 8 questions that identify the evolution of the clinical and biopsychosocial profile of the child. In this approach, we sought to identify the appearance of the main symptoms and comorbidities based on the DSM-5, as well as the aggravation of pre-existing ones. In this regard, aspects such as intellectual impairment, structural language disorder, deficit in expressive and/or receptive communication, difficulty in understanding the abstract, aggressive behavior or self-harm, irritability, sleep disturbance, anguish, stress and motor impairment were analyzed. In addition, they were asked about the emergence of new diagnoses of diseases and/or disorders such as diabetes, hypertension, depression, epilepsy, gastrointestinal disorders, anxiety, attention deficit hyperactive disorder (ADHD), obsessive compulsive disorder (OCD), since which are characteristics that are frequently present in ASD⁹. Regarding this block, it used as criteria the increase in medication dosage, behavioral regression, worsening in the results of the values in exams, increase in convulsive crises and other manifestations of worsening in the clinical repercussion seen

by those responsible. Finally, the state of the child's mental health was related to some improvement and worsening factors.

The fourth block contains four dichotomous questions that address the interpersonal relationships developed by the child in their living environment. The first question addresses the existence of siblings of the child with ASD. In addition, it is asked if the child maintained and/or maintains contact with the academic network during the Pandemic. Finally, aiming at the child's relationship with the parents, it is also questioned whether this was harmed and whether those responsible suffered any deterioration in their mental health due to the current context.

The fifth block includes the questionnaire for applying the Brazil economic classification criterion (CCEB 2019)¹⁰ to identify the socioeconomic conditions of the families of children with ASD. The analysis will be based on a points system according to variables, the head of household's level of education and access to public services. This topic of analysis aims to observe the relationship between the dimension of the impacts promoted by the pandemic among different economic realities and, consequently, different levels of access to aid and support in health. In addition, they are asked about possible changes in family income during the pandemic.

The last block consists of an objective multiple-choice question, which aims to identify care demands that parents and/or guardians would like to receive during the confinement period in order to promote greater stability for the child with ASD. This includes some measures such as home and hospital medical support, pharmacological support and community support.

For analysis, the relative frequencies of the variables and categories surveyed were described, as well as the chi-square, McNemar and Fischer's exact tests using the STATA and

SPSS 17.0 software. $P < 0.05$ was considered significant.

RESULTS

Initially, he was questioned about the use of psychotropic medication. Figure 1 shows an increase of 14.2% in children using psychotropic medication during the pandemic. Among those using medication, most increased the dose of the psychotropic drug. Furthermore, a significant portion started treatment with medication during the pandemic.

Regarding the data collected regarding the signs and symptoms of the children evaluated between the periods before and during the pandemic, contrary to the expectations of the researchers, there was a decline in the levels of occurrence. Highlighting mainly: difficulty communicating (56.8%), difficulty understanding information (38.2%), irritability (18.6%), sleep disturbance (26.4%), changes in eating (12.2%), as shown in Figure 2.

Regarding the clinical changes analyzed in the period between before and during the pandemic, the main findings include a reduction in the diagnoses of Anxiety, ADHD, Structural Language Disorder and Sleep Disorder, with an increase in the number of no diseases and/or disorders. diagnosed, based on Figure 3.

However, regarding the therapies attended during the pandemic, it can be seen in Figure 4 that there was a significant decrease in the percentage of children who attended Psychologist, Speech Therapist, Equine Therapy, Occupational Therapy and Neurologist.

With regard to the analysis of family income, in this study, almost 60% of parents and/or guardians had a drop-in income during the pandemic, in addition to the majority being classified between classes

B2 (R\$ 5,641.64) and C1 (R\$ \$3,085.48) according to the ABEP Classification (CCEB 2019-PNADC 2018). It can be seen that in table 1 the groups of income change show a significant difference in relation to receiving technological information, hospital medical support and others. It is also observed that in families where income has decreased or increased, there is a higher percentage of responses with "receiving technological information" without specifying which ones, than in the group with unchanged income. The group with an increase in income has a higher percentage of cases requiring hospital medical support, followed by the group with a decrease in income and with unchanged income.

In addition to income, it is noted that the group aged ≥ 5 years has a significantly higher percentage of cases in need of increased school support when compared to the group aged < 5 years, as shown in table 2.

DISCUSSION

With the changes caused by the COVID-19 pandemic, more than half of the children were under treatment with some psychotropic medication, a fact that is in line with what has been seen in the literature, since the most recent research has shown a worsening of mental health during the COVID-19 pandemic when other pre-event periods are taken into consideration 11.

Increasing the dose of medication can be seen as a possible prevention adopted at the beginning of the pandemic, a time of intense changes in routine, to reduce or stabilize future signs and symptoms. Thus, despite the reduction in family income, the treatment of children remained a priority. The questionnaire did not specify the medications, which is a perceived limitation after obtaining the results.

In agreement with this theory, the data

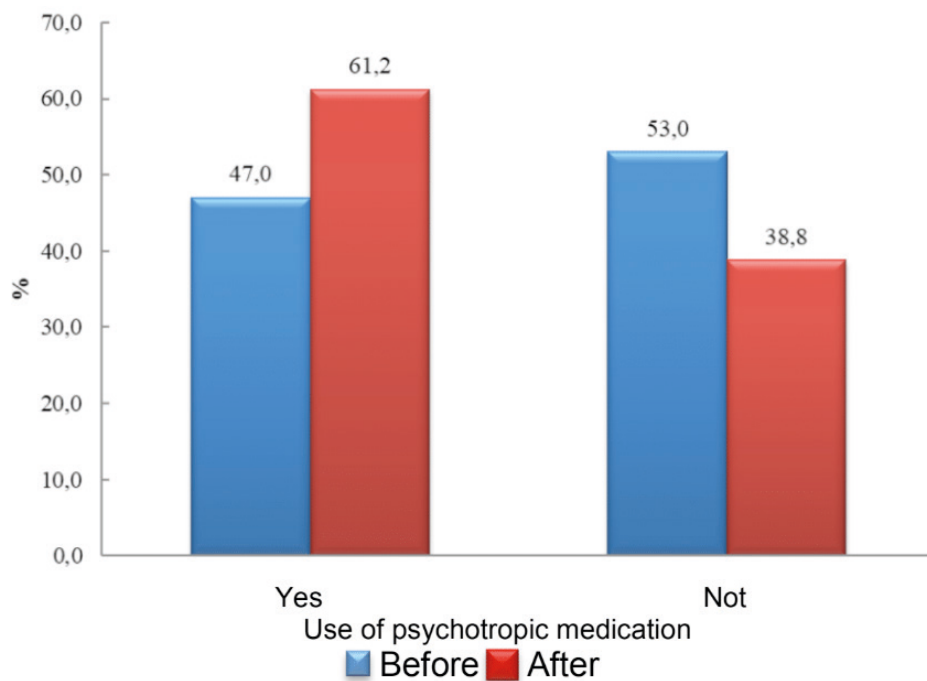


Figure 1. Percentages of psychotropic medication use before and during the pandemic.

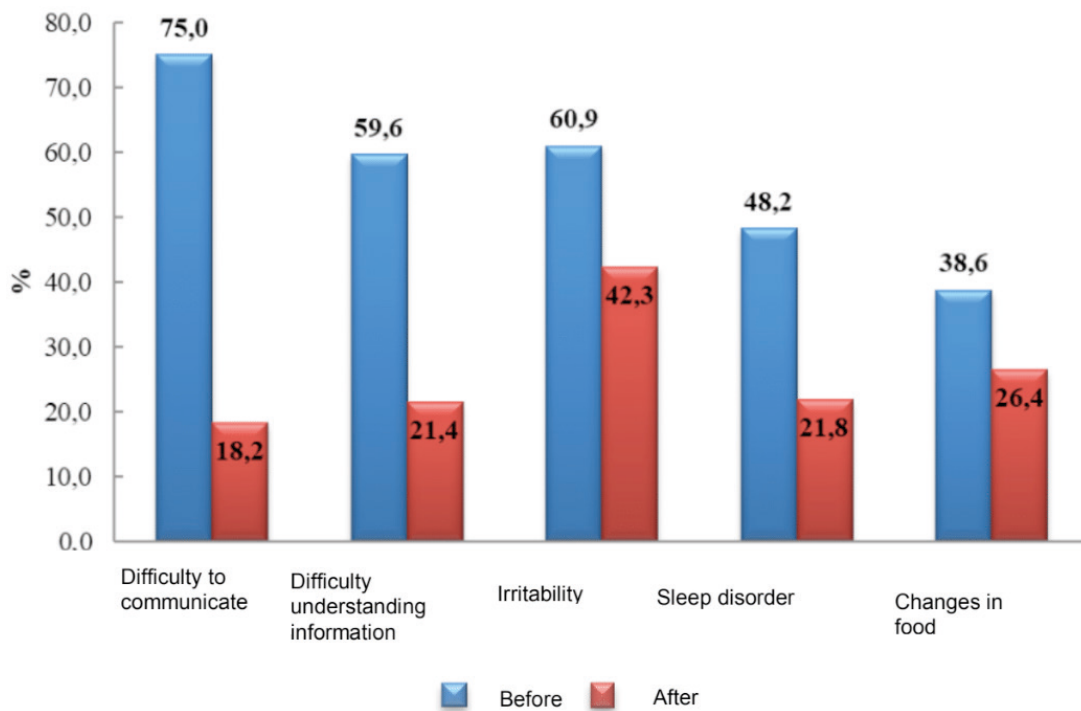


Figure 2. Percentages of signs and symptoms that showed significant change between moments before and during the pandemic.

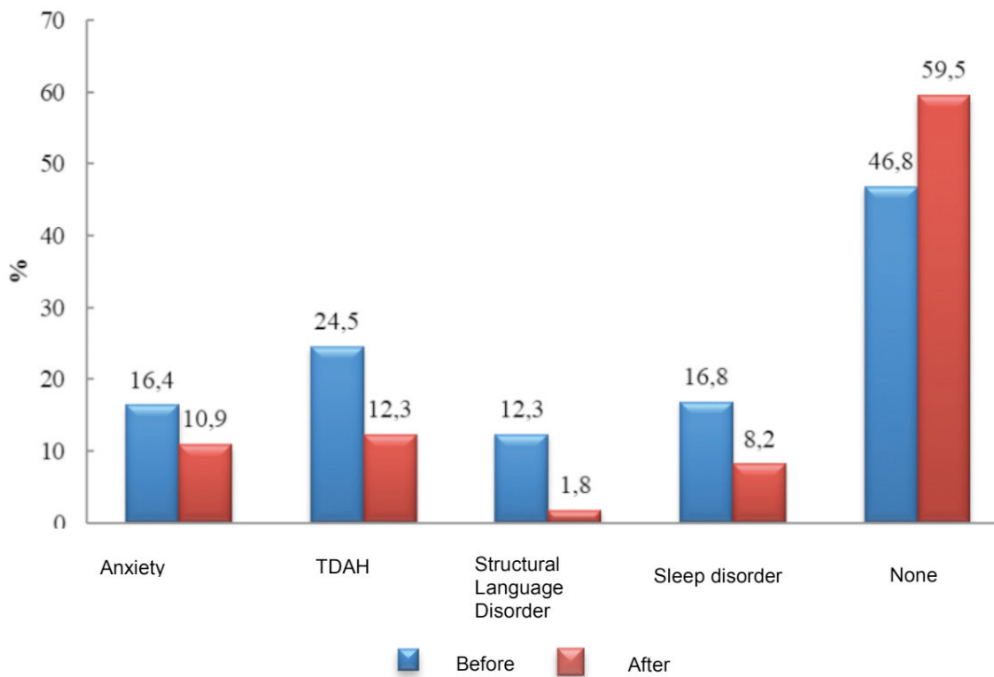


Figure 3. Diseases and/or Disorders that showed significant change between moments before and during the pandemic.

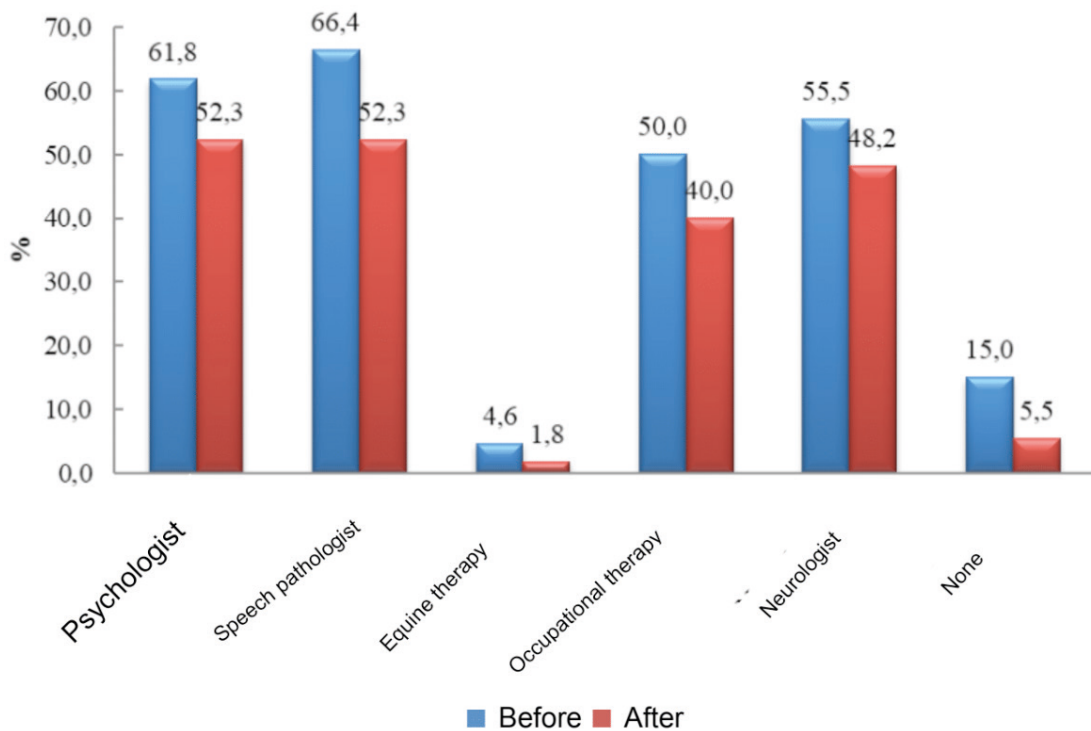


Figure 4. Percentage of therapies and/or professionals that showed a significant decrease between moments before and during the pandemic.

Support	Income change			p*
	Decreased	Unchanged	Increased	
Increased school support	73(55,7)	32(43,8)	9(60,0)	0,216
Home medical support	57(43,5)	21(28,7)	8(53,3)	0,061
Community support	22(16,8)	9(12,3)	3(20,0)	0,619
Receive technological information	38(29,0)	10(13,7)	3(20,0)	0,044
Easing quarantine restrictions	17(13,0)	7(9,7)	2(13,3)	0,761
Spiritual and religious reflections	23(17,6)	11(15,1)	2(13,3)	0,850
Hospital medical support	35(26,7)	6(8,2)	6(40,0)	0,002
Pharmacological support	26(19,9)	6(8,2)	3(20,0)	0,086
Others	8(6,1)	14(19,2)	2(13,3)	0,016

Table 1. Absolute and relative frequencies of the support variables to be received during the Pandemic, according to the income change group

(*) descriptive level of probability of the chi-square test

Support	Age		p*
	<5 years	>=5 years	
Increased school support	42(44,2)	72(58,1)	0,042
Home medical support	39(41,1)	47(37,9)	0,636
Community support	14(14,7)	20(16,1)	0,778
Receive technological information	26(27,4)	25(20,2)	0,211
Easing quarantine restrictions	10(10,5)	16(12,9)	0,590
Spiritual and religious reflection	16(16,8)	20(16,1)	0,888
Hospital medical support	26(27,4)	21(16,9)	0,062
Pharmacological support	16(16,8)	19(15,3)	0,761
Others	10(10,5)	14(11,3)	0,858

Table 2. Absolute and relative frequencies of support variables to receive during the Pandemic, according to the child's age group

(*) descriptive probability level of the chi-square test

collected in the research referring to the signs and symptoms of the children evaluated between the periods before and during the pandemic showed a decline in the levels of occurrence. Highlighting mainly: difficulty communicating, difficulty understanding information, irritability, sleep disturbance, changes in diet, stress, resistance to change and lack of interest in daily activities.

Still referring to this situation, recent research carried out in Brazil along similar lines to the work in question, likewise featured reports of improved behavior on the part of children with ASD during the pandemic and studies explain that this scenario would also be related with the fact that isolation provides an environment that accepts a more individualized programming and therefore reduces the child's anxiety; there is a decrease in distractions; such individuals will be exposed to fewer conflicts; less sensory stimuli; they spend more time with their family and develop more calm activities 12.

Despite the contribution mentioned above, it is known that the restrictions affected the day-to-day and caused abrupt and sudden changes in routine, such as the closure of schools 11, factor that can be felt by children, especially those who were the target of this research: those with autism spectrum disorder.

The available literature also points to the fact that the scenario of the COVID-19 pandemic contributed to making it difficult for patients to contact health services, especially in primary care, a fact that may have been due to the population's fear of exposure. the risk of contamination by the coronavirus 13. As a result, the population adopted the attitude of only seeking the health service for emergency care, not least because in many cases there was regulation of the activities of the health centers, in order to avoid crowds, and the child development and care services to mental health in the UBS were suspended, and for the

latter the activity of renewing psychotropic prescriptions was maintained 13,14, which is related to the reduction of clinical signs presented in the research together with the reduction of their diagnosis resulting from the scenario in question 15.

Given the diagnosis of autism, therapeutic interventions are more efficient when treated early; however, the observation of abnormal behaviors may be impaired at the beginning of the manifestation of the disorder^{16 16}, although the first features may appear early 17.

As ASD is a disorder that is also linked to language delay, poor speech comprehension, use of literal language, echolalia, and little or no intention of socialization, it is noted that the role of the speech therapist in the language development process of the TEA is fundamental, as it is one of the areas that will cover one of the most important commitments. Thus, the decrease in attendance in this professional area can be a major obstacle, especially in the long term, reinforcing the need to continue such studies at later times. 1. Actions that stand out in improving the quality of life of autistic people include: early diagnosis; multidisciplinary approach involving speech therapist, psychologist, neurologist, psychiatrist, geneticist and specialized educators; together with guidance from parents and/or guardians.

It is also verified that in families where income has decreased or increased, there is a higher percentage of responses referring to demands related to receiving technological information than in the group with unchanged income. This is due to the transition from classes to distance mode, in which parents had to fulfill the roles of teachers, academic support and behavioral specialist to help their children to fulfill their school assignments. Thus, the lack of academic services made coexistence and adaptation to the situation

even more challenging¹⁸. And such a scenario reflects the request of parents and/or guardians also for greater school support among the demands that could promote greater stability for the autistic child during the pandemic, especially in relation to older children.

CONCLUSIONS

The present study demonstrated that social isolation impacted children's lives. This fact is seen by the increase in the dose of psychotropic medication and demands according to the socioeconomic and biopsychosocial profile of the child and parents and/or guardians during the pandemic, which occurred with a view to stabilizing the symptoms in view of the impossibility of carrying out face-to-face therapies and consultations, being

that the latter contributed to the reduction of diagnoses. More than that, isolation, surprisingly, contributed to the reduction of clinical and behavioral changes characteristic of ASD.

However, it is important to emphasize that at the time of this study, the pandemic situation was still out of control. Therefore, this research is not able to fully contemplate all the clinical and behavioral changes in children with ASD. Therefore, new studies and approaches to the subject are needed in the future.

THANKS

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REFERENCES

1. Zilbovicius, Mônica, Meresse, Isabelle e Boddaert, Nathalie. Autismo: neuroimagem. *Brazilian Journal of Psychiatry*. 2006, v. 28, suppl 1.
2. Nunes DR de P, Azevedo MQO de, Schmidt C. Inclusão educacional de pessoas com Autismo no Brasil: uma revisão da literatura. *Rev. Educ. Espec.* 2013;26(47):557-72.
3. Christensen DL, Baio J, Van Naarden Braun K, Bilder D, Charles J, Constantino JN, Daniels J, Durkin MS, Fitzgerald RT, Kurzius-Spencer M, Lee LC, Pettygrove S, Robinson C, Schulz E, Wells C, Wingate MS, Zahorodny W, Yeargin-Allsopp M; Centers for Disease Control and Prevention (CDC). Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years--Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2012. *MMWR Surveill Summ.* 2016 Apr 1;65(3):1-23.
4. Rocha Brito A, Santoro Almeida R, Crenzel G, Mendonça Alves AS, Cabral Lima R, Dunshee de Abranches C. Autismo e os novos desafios impostos pela pandemia da COVID-19. *Rev Ped SOPERJ*; 2020.
5. Colizzi M, Sironi E, Antonini F, Ciceri ML, Bovo C, Zoccante L. Psychosocial and Behavioral Impact of COVID-19 in Autism Spectrum Disorder: An Online Parent Survey. *Brain Sci.* 2020 Jun 3;10(6):341.
6. Cheng ZJ, Shan J. 2019 Novel coronavirus: where we are and what we know. *Infection.* 2020 Apr;48(2):155-163.
7. Ministério da Saúde. Declara Emergência em Saúde Pública de importância Nacional em decorrência da Infecção Humana pelo novo Coronavírus. Fev 3, 2020. Available. from:
https://bvsmms.saude.gov.br/bvs/saudelegis/gm/2020/prt0188_04_02_2020.html. Acessado em 12 de Setembro de 2021.
8. Goodman JL, Borio L. Finding Effective Treatments for COVID-19: Scientific Integrity and Public Confidence in a Time of Crisis. *JAMA.* 2020 May 19;323(19):1899-1900.

9. American Psychiatric Association. Seção II: Critérios Diagnósticos e Códigos - Transtornos do Neurodesenvolvimento. In: Manual Diagnóstico e Estatístico de Transtornos Mentais: DSM-5. Estados Unidos: Artmed; 2014. p. 50–8..
10. Associação Brasileira de Empresas de Pesquisa. Critério de Classificação Econômica Brasil [Internet]. ABEP. 2019. Available from: https://www.abep.org/criterioBr/01_cceb_2019.pdf. Acessado em 08 de Julho de 2021
11. Farina B, Massullo C, De Rossi E, Carbone GA, Serraino R, Imperatori C. Psychotropic medications sales during COVID-19 outbreak in Italy changed according to the pandemic phases and related lockdowns. *Public Health*. 2021 Dez; 201:75-77.
12. Amaral DG, Vries PJ. COVID-19 and Autism Research: Perspectives from Around the Globe. *Autism Research*. 2020 Jun;13(6):844–69.
13. Souza Oliveira BV, De Alencar Neta RL, Gadelha do Nascimento IM, Silva Oliveira G, Silva Fonseca Moreira de Medeiros RL, Do Nascimento Andrade Feitosa A. Impacto da pandemia do COVID-19 sob o cuidado na atenção primária à saúde: percepção de enfermeiros. *SaudColetiv (Barueri)*,2021;11(COVID):7057-72.
14. Lopes GVB, Costa KFL. Impactos e desdobramentos da pandemia da COVID-19 na Atenção Básica: um relato de experiência. *Revista Saúde em Redes (ISSN 24464813)*.2020; v. 6, Supl. 2.
15. Leong C, Katz LY, Bolton JM, Enns MW, Delaney J, Tan Q, Sareen J. Psychotropic Drug Use in Children and Adolescents Before and During the COVID-19 Pandemic. *JAMA Pediatr*. 2022 Mar 1;176(3):318-320.
16. Araújo Vilhena D, de Cássia Duarte Leite R, Adjuto Teixeira I, Maria Vieira Pinheiro Â. AVALIAÇÃO INTERDISCIPLINAR DO TRANSTORNO DO ESPECTRO DO AUTISMO E COMORBIDADES: CASO DE UM DIAGNÓSTICO TARDIO. *Universidade Presbiteriana Mackenzie*. 2015;15(1):1-11.
17. Rocha, Carla Cecília et al. O perfil da população infantil com suspeita de diagnóstico de transtorno do espectro autista atendida por um Centro Especializado em Reabilitação de uma cidade do Sul do Brasil. *Physis: Revista de Saúde Coletiva*. 2019, v. 29, n. 04
18. Lemos, Emellyne Lima de Medeiros Dias, Salomão, Nádia Maria Ribeiro e Agripino-Ramos, Cibele Shirley Inclusão de crianças autistas: um estudo sobre interações sociais no contexto escolar. *Revista Brasileira de Educação Especial*. 2014, v. 20, n. 1.

***QUESTIONNAIRE APPLIED AT WORK:**

QUESTIONNAIRE FOR PARENTS AND/OR GUARDIANS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

PROFILE OF PARENTS AND/OR GUARDIANS

1-What is your relationship with the child?

- Father/Mother
- Brother/Sister
- Uncle aunt
- Grandfather/grandmother
- Caregiver
- Other

2-How long do you spend with the child throughout the day during the pandemic?

- Less than four hours
- Four to eight hours
- More than eight hours

3-How old are you?

- Less than 20 years old
- Between 20 and 40 years old
- Between 40 and 60 years old
- Over 60 years old

CHILD PROFILE

4-What is the child's date of birth? (insert the option to select the numbers)

5-What is the gender of the child?

- Feminine
- Masculine
- I prefer not to inform

6-How long ago was the child diagnosed with ASD by a doctor?

- Less than 3 years
- More than 3 years

7-In which service does the child receive medical care?

- CAPS
- UBS
- Outpatient service
- Private network or agreement
- None

- Other

8-Which therapies and/or professionals did the child attend before the Pandemic?

- Psychology
- Psychiatry
- Speech Therapy
- music therapy
- Riding Therapy
- Physiotherapy
- Occupational therapy
- Psychopedagogy
- Neurologist
- Others
- None

9-Which therapies and/or professionals did the child attend or attended during the Pandemic?

- Psychology
- Psychiatry
- Speech Therapy
- music therapy
- Equatotherapy
- Physiotherapy
- Occupational therapy
- Psychopedagogy
- Neurologist
- Others
- None because he no longer performed therapy
- Is away

10-If you attended therapy and/or a professional during the pandemic, what type of treatment did you use?

- Presential
- Remote (Mobile, tablet, computer, etc.)
- Both
- If you have not attended, check this alternative

11-Before the pandemic, did the child use psychotropic medication (with prescription retention)?

- Yes
- Not

12-During the pandemic, was there a change in the use of psychotropic medication (with prescription retention)?

- Increase

- Decrease
- Replacement
- Suspension
- There was beginning of the use of psychotropic medication
- There was no change

13- During the pandemic, did the child carry out school activities at a distance?

- Yes
- Not

CLINICAL AND BIOPSYCHOSOCIAL PROFILE

14- In the **period prior to the pandemic**, which listed **signs and symptoms** did the child present?

- Difficulty communicating
- Difficulty understanding information
- Aggressive or self-mutilating behaviors
- Irritability
- Sleep disorder
- Changes in food
- Anguish
- Stress
- Difficulty moving
- Loss of control of intimate activities in public such as: Defecating, urinating and masturbating, etc.
- Headache
- Compulsive behaviors
- Resistance to change (fear and insecurity of new adaptations)
- Lack of interest in daily activities
- Others
- None

15- **during the pandemic**, which one or which of these signs and **Have existing symptoms worsened?** Answer based on increased drug dosage, behavioral regression, worsening test results, increased seizures, etc.

- Difficulty communicating
- Difficulty understanding information
- Aggressive or self-injurious behaviors
- Irritability
- Sleep disorder
- Changes in food
- Anguish
- Stress
- Difficulty moving
- Loss of control of intimate activities in public such as: defecating, urinating and

masturbating, etc.

- Headache
- Compulsive behaviors
- Resistance to change (fear, insecurity to new adaptations)
- Lack of interest in daily activities
- Others
- None

16-During the pandemic, which of these signs and **symptoms arose?**

- Difficulty communicating
- Difficulty understanding information
- Aggressive or self-mutilating behavior
- Irritability
- Sleep disorder
- Changes in food
- Anguish
- Stress
- Difficulty moving
- Loss of control of activities of an intimate nature in public such as: defecating, urinating and masturbating, etc.
- Headache
- Compulsive behaviors
- Resistance to change (fear, insecurity to new adaptations)
- Disinterest in activities you normally did before quarantine
- Others
- None

17- The child has already gone diagnosed with any of these **diseases and/or disorders before the pandemic?**

- Diabetes
- Hypertension
- Depression
- Gastrointestinal disorders
- Anxiety
- Epilepsy
- ADHD (Attention Deficit Hyperactive Disorder)
- OCD (Obsessive Compulsive Disorder)
- ODD (Oppositional Defiant Disorder)
- DCD (Developmental Coordination Disorder)
- Structural language disorder
- Associated genetic syndrome (Down, Turner Klinefelter and etc.)
- Sleep disorders
- Others
- None of the previous

18- any of these **diseases and/or disorders** if **aggravated** in the child **during the pandemic**?
Answer based on increased drug dosage, behavioral regression, worsening test results, increased seizures, etc.

- Diabetes
- Hypertension
- Depression
- Gastrointestinal disorders
- Anxiety
- Epilepsy
- ADHD (Attention Deficit Hyperactive Disorder)
- OCD (Obsessive Compulsive Disorder)
- ODD (Oppositional Defiant Disorder)
- DCD (Developmental Coordination Disorder)
- Structural language disorder
- Associated genetic syndrome (Down, Turner, Klinefelter, etc.)
- Sleep disorders
- Others
- There was no aggravation of any diagnosed disease

19- Were any of these **diseases and/or disorders** **diagnosed during the pandemic**?

- Diabetes
- Hypertension
- Depression
- Gastrointestinal disorders
- Anxiety
- Epilepsy
- ADHD (Attention Deficit Hyperactive Disorder)
- OCD (Obsessive Compulsive Disorder)
- ODD (Oppositional Defiant Disorder)
- DCD (Developmental Coordination Disorder)
- Structural language disorder
- Associated genetic syndrome (Down, Turner, Klinefelter, etc.)
- Sleep disorders
- Others
- There was no diagnosis of any disease

20- Which of these options provide sense of **well-being** the child **during the Pandemic**?

- Games
- Television
- Some different type of food
- Music
- Esport
- Read

- Medication
- Others
- I do not observe any stimulus that causes discomfort

21- Which of these options provide sense of **malaise** the child **during the Pandemic**?

- Everyday sounds (cars, household equipment, conversations, barking)
- Follow pandemic recommendations (use a mask, gel alcohol, stay at home...)
- Remote activities (EAD classes, virtual therapies)
- Family disagreements
- Tedium
- Information overload about the pandemic
- Others
- I do not observe any stimulus that causes discomfort

INTERPERSONAL RELATIONS

22-Does the child with ASD have a sister/brother?

- Yes
- Not

23- Does the child with ASD keep in touch with someone from the educational institution (outside school hours) during the isolation adopted during the pandemic?

- Yes
- Not

24-Was there any worsening in the relationship between parents and/or guardians with individuals with ASD during the isolation adopted during the pandemic? (decreased communication, greater family intrigues,...)

- Yes
- Not

25-Did those responsible for the child experience any deterioration (stress, anxiety, depression, etc.) in their mental health?

- Yes
- Not

SOCIOECONOMIC CONDITIONS (ABEP)

26-Was there a change in family income during the pandemic?

- Increase in income
- Drop in income
- There was no change

Application of the Brazil Economic Classification Criterion (CCEB)

27 –

						AMOUNT I HAVE
COMFORT ITEMS		I DON'T HAVE	1	2	3	4 or +
Number of passenger cars exclusively for private use						
Number of monthly employees, considering only those who work at least five days a week						
Number of washing machines, excluding washboards						
Number of bathrooms						
DVD, including any device that reads DVD and excluding car DVD						
Quantity of refrigerators						
Number of independent freezers or part of the duplex refrigerator						
Number of microcomputers, considering desktop computers, laptops, notebooks and excluding tablets, palmtops or smartphones						
Quantity of dishwasher						
Number of microwave ovens						
Number of motorcycles, excluding used ones						

Exclusively for professional use						
Number of clothes dryer machines, considering wash and dry						

28-

Does the water used in this household come from?	
1	General distribution network
2	Well or spring
3	Another way

29-

Considering the stretch of street where you live, would you say that the street is:	
1	Asphalted/Paved
2	Earth/Gravel

30-

Current nomenclature	Previous nomenclature
Illiterate/Elementary School I Incomplete	Illiterate/Incomplete Primary
Elementary I Complete / Elementary II incomplete	Complete Primary / Incomplete Gym
Complete Elementary / Incomplete High School	High School Completed/Collegiate Incomplete
High school complete/High school incomplete	High School Completed/Superior Incomplete
Graduated	Higher education

DEMAND FROM PARENTS AND/OR RESPONSIBLE GUARDIANS

31- What would you like to receive during this period of confinement in order to promote greater stability for the child?

- Receive technological information
- Home medical support
- Hospital medical support
- Ease of quarantine restrictions
- Increased school support
- Spiritual and religious reflections
- Pharmacological support
- Community support
- I don't know
- Anything
- Others