Clin Schizophr Relat Psychoses
Volume 15:6, 2021
Doi:10.3371/CSRP.JMAP.010622

Clinical Schizophrenia & Related Psychoses

Research Article

Hybrid Open Access

Psychological Responses of Quarantine Due to COVID-19 Pandemic in Normal and Autistic Students-A Narrative Study

Mitra Joudi[1], Ali Reza Pezhman[2], Payam Khalafi[3] and Seyed Hamzeh Seddigh[4*]

[1]*Assistant professor, Department of psychiatry, Golestan Research Center of Psychiatry (GRCP),Golestan University of Medical Sciences, Gorgan, Iran*

[2]*M.Sc., Department of Basic Studies, Family Research Institute, Shahid Beheshti University, Tehran, Iran*

[3]*Department of Medicine, Iran University of Medical Sciences, Tehran, Iran*

[4]*Department of Psychiatry Faculty of Medicine, Hormozgan, University of Medical Sciences, Bandar Abbas, Iran*

Abstract

Background and aim: One of the effects of exposure to COVID-19 is adverse psychological and mental health, and considering that people with Autism Spectrum Disorder (ASD) have a previous background in terms of mental health deficits; therefore, the study of the COVID-19 epidemic effect on the psychological reactions of individuals with ASD is of great importance, which is the main purpose of this study.

Materials and methods: For this purpose, all studies related to the subject from 2020-2021 by systematic search in internationally available databases including Web of Science, Science Direct, Scopus, PubMed, Google Scholar, and other databases were reviewed. Finally, 21 completely relevant studies were selected to extract the considering results.

Results: The results showed that caregivers and nurses of children with autism reported more anxiety during quarantine than children without autism. The results showed that the symptoms of depression and anxiety in response to this epidemic increased for both non-autism and autism groups. However, the incidence of these symptoms was higher for individuals with ASD. In addition, individuals with ASD showed greater concern about their pets, work, medication and food, and safety/security. In general, the results of this study showed that the increase in social isolation related to the epidemic had a severe and destructive effect on the mental health and mental well-being of autistic individuals. In addition, the COVID-19 epidemic increased stress and anxiety in parents of individuals with ASD.

Conclusion: According to the study, it can be concluded that ASD patients were more stressed and more anxious before the epidemic than normal people. Furthermore, this epidemic has a higher impact on individuals' mental health with ASD than normal people. Therefore, to maintain the mental health of autistic individuals during the COVID-19 outbreak, it is necessary to provide appropriate educational programs to reduce the psychological burden of this epidemic. In addition, health officials must provide more services and counselling for ASD individuals in this period of urgency.

Keywords: Autism spectrum disorder • COVID-19 • Psychological impact • Social isolation • Mental health

Introduction

On Jan 30, 2020, the World Health Organization (WHO) announced the emergence of a new coronavirus and declared a public health emergency. On Mar 11, 2020, the WHO formally named the Coronavirus (COVID-19). The disease has been the largest outbreak since the acute outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003. It has rapidly affected governments and public health systems with the possibility of severe respiratory illness [1].

There has been a worldwide public health effort to prevent coronavirus transmission after its global spread. However, the campaign encouraged people on a large scale to distance themselves, leading to social isolation. Therefore, it can be said that creating social distance to prevent the spread of corona has a great impact on the way people live and socialize daily [2]. In addition, the epidemic itself and the resulting behaviours and daily activities have profoundly affected mental health [3,4]. Previous studies have been performed in prior epidemics such as equine influenza [5], SARS [6,7], H1N1 [8], as well as the current COVID-19 epidemic [9-15], that evidence of such epidemics harmed people's mental health.

It is important to note that although the COVID-19 epidemic affects the whole population, the adverse mental health effects of this epidemic may not be evenly distributed to all sections of society. For example, people with Autism Spectrum Disorder (ASD) may be considered one of the most vulnerable groups in this epidemic, likely affecting them more than other sections of society [16].

Autism is a common neurodevelopmental disorder with a global prevalence estimated at 0.62% or more [17]. However, the impact of this epidemic may be more substantial for people with ASD for two main reasons: The first reason is that ASD itself is associated with an increased risk of mental health problems such as mood disorders and anxiety [18,19]. The second reason is that ASD is characterized by two main aspects of the symptoms directly affected by the epidemic. On the one hand, individuals with ASD experience problems in social and communication interactions (such as problems starting or responding to social interactions, adjusting their behaviour to different social situations, and developing and maintaining relationships). On the other hand, people with autism show limited and repetitive behaviours, interests, and activities. The second domain insists on uniformity and strict procedures, which sometimes leads to severe distress in response to small changes [20].

These two main aspects of autism symptoms are directly affected by the COVID-19 epidemic. It affects both the social interactions of ASD patients and leads to extensive and continuous changes in their daily lives. Therefore, it can be said that people with autism may uniquely experience the COVID-19 epidemic. Due to this fact, based on previous studies, it has been reported that adults with ASD have more difficulty coping with stressful

***Corresponding Author:** Seyed Hamzeh Seddigh, Department of Psychiatry Faculty of Medicine, Hormozgan، University of Medical Sciences, Bandar Abbas, Iran; Email: seddigh@gmail.com*

Received date: 16 December, 2021; **Accepted date:** 30 December, 2021; **Published date:** 06 January, 2022

events than neurotypicals [21,22]. Since, in general, the level of anxiety and depression in the autistic population is high [18,19], further research is needed to determine the epidemic's impact on the mental health of people with autism. Therefore, this study aimed to investigate the effects of the COVID-19 epidemic on psychological outcomes in individuals with autism by a narrative review study.

Materials and Methods

To review and extract required results from published articles and reports related to the considered subject, a systematic search of internationally available databases, including Web of Science, Science Direct, Scopus, PubMed, and Google Scholar, was done from 2020 to 2021. Systematic review using the Mesh terms "Mental Health", "COVID-19", "ASD", "Autistic", "Patients", "Children", "Adults" and "Autistic spectrum disorder", "Social isolation", "Anxiety", "Stress", "Pandemic", "Depression", "Distress" and "Mental wellbeing" were performed. For other databases, the same mesh terms were used similarly. The references were thoroughly reviewed to ensure that no articles were missed from the study (Reference Checking). In addition, the citations from the research were also checked (Citation Tracing) to ensure that the search was complete. Based on Figure 1, the literature review, especially articles, was performed based on the PRISMA guideline [22]. In addition, unofficial reports, articles in a letter to editor format, and unpublished articles and content posted on Internet sites were removed from the list of downloaded files. Finally, the results of 21 published articles were reviewed for the present review study.

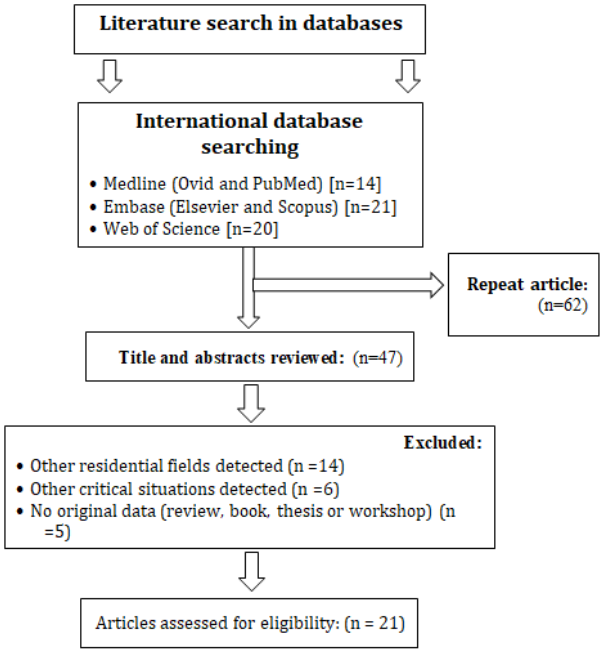

Figure 1. Flow diagram of study identification according to PRISMA.

Results and Discussion

The need for further research on COVID-19 and autism and to study the impact of people's concerns with autism during the COVID-19 epidemic is essential [23-30]. In the study of Asbury, et al. parents of school children with special educational needs and children with disabilities were interviewed to describe the impact of the COVID-19 epidemic on their child's mental health. In this study, most of the sample size was the parents of a child with autism (82%). Based on the results of this study, it was reported that these children developed anxiety/worry during this epidemic [25].

In Amorim, et al. study, caregivers and nurses of children with autism reported more anxiety during quarantine than children without autism. In addition, most caregivers in the autism group said that quarantine hurt emotion management in their children. In contrast, most parents without autism reported no or even a positive effect of quarantine on their children's emotional management [28].

According to Mutluer, et al. the COVID-19 epidemic has increased behavioural problems in children with ASD since the onset [30]. According to Colizzi, et al. pre-existing behavioural problems predict a higher risk for more severe and recurrent behavioural issues during the epidemic [31]. Based on the study of Ameis, et al. it was reported that the potential negative impact of the COVID-19 epidemic on changes in daily life routines as well as restrictions on regular services on children with ASD is quite evident [24]. A study by White, et al. which surveyed caregivers of children with ASD, reported that the COVID-19 epidemic disrupted services and treatments for individuals with autism. The National Autism Association said that 9 out of 10 people with autism are concerned about their mental health [26].

In the study of Oomen, et al. on the psychological impact of the COVID-19 epidemic on 1,044 adults with ASD in three European countries, including the United Kingdom, Belgium, and the Netherlands, the results showed that the symptoms of depression and anxiety in response to the epidemic for both the non-autism and autism groups have increased. However, the incidence of these symptoms was higher for adults with ASD. In addition, adults with ASD showed greater concern about their pets, work, food and medicine, and safety/security. People with ASD felt that although they were relieved by social stress, they experienced the loss of social contact as a problematic issue. Adults with ASD also experienced more stress due to losing their routine programs.

Based on the results of a study by Oomen, et al., In addition to the negative effects of this epidemic on ASD patients mentioned above, the positive impact of this epidemic was to make pleasant changes in adults with autism due to increased correlation and reduced sensory and social burden. Based on the study results, adults with ASD often reported cancelling guidance due to this epidemic and expressed their desire to receive more information and specific recommendations for autism [20]. In addition, increased concern about their pets in adults with autism in a study by Oomen, et al. was interesting because a previous pre-epidemic study by Dachez and Ndobo showed that some adults with autism seek to support pets as a coping strategy [32].

In a qualitative study conducted by Pellicano, et al. 144 individuals, including adults with autism (44 people), parents of children with autism (84 people) and parents of autism, and young people with autism (16 people), were interviewed about the impact of the COVID-19 epidemic on social isolation and mental health, as well as their families. This study showed that increasing social isolation and the epidemic had a severe and destructive effect on the mental health and mental well-being of autistic individuals. People with ASD complained bitterly about the loss of friends and social networking due to the epidemic. In addition, participants in this study were sometimes extremely dissatisfied due to replacing one-on-one communication in health services with online/telephone communication [1]. Other similar studies include Adams, et al. [33], Amorim, et al. [28], Asbury, et al. [25], Bal, et al. [34], Oakley, et al. [35] and White, et al. [26] have been reported that the quarantine created by the COVID-19 epidemic, has caused various psychological distress to autistic children and their parents.

The findings from the above studies show that this distress may partly be due to a lack of social interaction. According to these studies, the inability to enjoy social interactions is challenging for autistic people, even if social media and other digital technologies reduce some adverse effects. Moreover, some autistic individuals in COVID-19 appear to rapidly become much more isolated, as has been commonly documented in the general community [36,37].

It is important to note that the adverse effects of loneliness and isolation on mental and physical health in regular times have been well

established [38]. However, the findings of Pellicano, et al. show that the experience of autistic individuals during the COVID-19 epidemic (for adults, children, adolescents, and parents) was not psychologically different from the experience of non-autistic individuals. This has also been reported in Loades, et al. [39]. However, in the study by Hedley, et al. the potential effects of loneliness on depression and self-harm thoughts have been reported only in autistic adults [40]. Further research is therefore needed to identify specific ways in which autistic individuals can enhance reciprocal supportive social communication based on their circumstances in the future.

Another issue related to the COVID-19 epidemic is the negative impact on parents of children with ASD. Parents of children with ASD experience significant amounts of stress and impaired emotional well-being. As a result, parents of children with ASD may experience stress and anxiety due to the COVID-19 outbreak's adverse effects on their children's programs. A study by Ersoy, et al. aimed to compare the impact of health anxiety on the dispositional hope and the psychological well-being of mothers with autistic children and mothers with normal children in the Covid-19 epidemic in Turkey. The participants in this study are 126 mothers (60 mothers with autistic children and 66 mothers with normal children) living in Istanbul. According to this study, mothers of autistic children were more likely to experience anxiety problems than mothers of non-autistic children. In addition, according to the results of this study, mothers with autistic children were more likely to have higher levels of general anxiety and anxiety about chronic diseases than mothers with normal children. In addition, they were more likely to have lower levels of hope and mental well-being [41].

In addition, the Alhuzimi study aimed to investigate the stress and emotional well-being of parents of children with ASD in Saudi Arabia during the COVID-19 epidemic. This study selected 150 parents of children with ASD from different parts of Saudi Arabia using an online poll. The study results showed that the demographic status of children with ASD (especially age, sex, and severity of symptoms) significantly affects parental stress and emotional well-being. In addition, parents were affected by changes in the severity of ASD behaviours in children with ASD. Finally, it was found that parental stress harms parents' emotional well-being [42].

Conclusion

Based on the results of this review study, it is clear that the psychological burden of the COVID-19 epidemic on people with autism is quite evident and prominent. Therefore, these people feel the need for more accessible and affordable health care support. The results showed that the symptoms of depression and anxiety in response to this epidemic increased for both non-autism and autism groups. However, the incidence of these symptoms was higher for people with ASD. In addition, people with ASD showed greater concern about their pets, work, medication and food, and safety/security. The present study's findings show that supporting autistic individuals is vital for maintaining direct social contact during and after the epidemic. Furthermore, the results of this study showed that parental stress and the emotional well-being of parents of children with ASD were adversely affected by the COVID-19 epidemic. Based on the findings of the present study, providing various educational programs to help children with ASD as well as their parents (to modify the characteristic behaviours of children with ASD such as the ability to maintain a schedule, and prevent aggressive behaviours and also to reduce the psychological burden of type of epidemic) is recommended.

References

1. Pellicano, Elizabeth, Simon Brett, Jacquiline Den Houting and Melanie Heyworth, et al. "COVID-19, Social Isolation and the Mental Health of Autistic People and their Families: A Qualitative Study." *Autism* 21 (2021): 13623613211035936.
2. Mertens, Gaëtan, Lotte Gerritsen, Stefanie Duijndam and Elske Salemink, et al. "Fear of the Coronavirus (COVID-19): Predictors in an Online study Conducted in March 2020." *J Anxiety Disord* 74 (2020): 102258.
3. Greco, Veronica and Derek Roger. "Uncertainty, Stress, and Health." *Pers Individ Dif* 34 (2003): 1057-68.
4. Southwick, Steven M., Meena Vythilingam and Dennis S. Charney. "The Psychobiology of Depression and Resilience to Stress: Implications for Prevention and Treatment." *Annu Rev Clin Psychol* 1 (2005): 255-91.
5. Taylor, Melanie R., Kingsley E. Agho, Garry J. Stevens and Beverley Raphael. "Factors Influencing Psychological Distress during a Disease Epidemic: Data from Australia's First Outbreak of Equine Influenza." *BMC Public Health* 8 (2008): 1-13.
6. Main, Alexandra, Qing Zhou, Yue Ma and Linda J. Luecken, et al. "Relations of SARS-related Stressors and Coping to Chinese College Students' Psychological Adjustment During the 2003 Beijing SARS Epidemic." *J Couns Psychol* 58 (2011): 410-23.
7. Mihashi, Mutsuko, Yasunao Otsubo, Xin Yinjuan and Kaori Nagatomi, et al. "Predictive Factors of Psychological Disorder Development during Recovery Following SARS Outbreak." *Health Psychol* 28 (2009): 91-100.
8. Wheaton, Michael G., Jonathan S. Abramowitz, Noah C. Berman and Laura E. Fabricant, et al. "Psychological Predictors of Anxiety in Response to the H1N1 (Swine Flu) Pandemic." *Cogn Ther Res* 36 (2012): 210-8.
9. Cao, Wenjun, Ziwei Fang, Guoqiang Hou and Mei Han, et al. "The Psychological Impact of the COVID-19 Epidemic on College Students in China." *Psychiatry Res* 287 (2020): 112934.
10. Cooke, Jessica E., Rachel Eirich, Nicole Racine and Sheri Madigan. "Prevalence of Posttraumatic and General Psychological Stress during COVID-19: A rapid Review and Meta-Analysis." *Psychiatry Res* 292 (2020): 113347.
11. Gonçalves, André Pereira, Ana Carolina Zuanazzi, Ana Paula Salvador and Alexandre Jaloto, et al. "Preliminary Findings on the Associations between Mental Health Indicators and Social Isolation during the COVID-19 Pandemic." *Arch Psychiatry Psychotherapy* 22 (2020): 10-19.
12. Smith, Lee, Louis Jacob, Anita Yakkundi and Daragh McDermott, et al. "Correlates of Symptoms of Anxiety and Depression and Mental Wellbeing Associated with COVID-19: A Cross-sectional Study of UK-based Respondents." *Psychiatry Res* 291 (2020): 113138.
13. Tull, Matthew T., Keith A. Edmonds, Kayla M. Scamaldo and Julia R. Richmond, et al. "Psychological outcomes Associated with Stay-at-home Orders and the Perceived Impact of COVID-19 on Daily Life." *Psychiatry Res* 289 (2020): 113098.
14. Wang, Cuiyan, Riyu Pan, Xiaoyang Wan and Yilin Tan, et al. "Immediate Psychological Responses and Associated Factors During the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic Among the General Population in China." *Int J Environ Res Public Health* 17 (2020): 1729.
15. Zhang, Stephen X., Yifei Wang, Andreas Rauch and Feng Wei. "Unprecedented Disruption of Lives and Work: Health, Distress and Life Satisfaction of Working Adults in China One Month into the COVID-19 Outbreak." *Psychiatry Res* 288 (2020): 112958.
16. Holmes, Emily A., Rory C. O'Connor, V. Hugh Perry and Irene Tracey, et al. "Multidisciplinary Research Priorities for the COVID-19 Pandemic: A Call for Action for Mental Health Science." *Lancet Psychiatry* 7 (2020): 547-60.
17. Elsabbagh, Mayada, Gauri Divan, Yun-Joo Koh and Young Shin Kim, et al. "Global Prevalence of Autism and Other Pervasive Developmental Disorders." *Autism Res* 5 (2012): 160-79.
18. Kirsch, Alexandra C., Andrea RS Huebner, Sunil Q. Mehta and Flora R. Howie, et al. "Association of Comorbid Mood and Anxiety Disorders with Autism Spectrum Disorder." *JAMA Pediatr* 174 (2020): 63-70.
19. Lever, Anne G. and Hilde M. Geurts. "Psychiatric Co-occurring Symptoms and Disorders in Young, Middle-aged, and Older Adults with Autism Spectrum Disorder." *J Autism Dev Disord* 46 (2016): 1916-30.
20. Oomen, Danna, Annabel D. Nijhof and Jan R. Wiersema. "The Psychological Impact of the COVID-19 Pandemic on Adults with Autism: A Survey Study Across Three Countries." *Mol Autism* 12 (2021): 1-21.
21. Gillott, Alinda and P. J. Standen. "Levels of Anxiety and Sources of Stress in Adults with Autism." *J Intellect Disabil* 11 (2007): 359-70.

22. Moher, David, Alessandro Liberati, Jennifer Tetzlaff and Douglas G. Altman, et al. "Preferred Reporting Items for Systematic Reviews and Meta-analyses: The PRISMA Statement." *Int J Surg* 8 (2010): 336-41.

23. Robertson, Ashley E., Andrew C. Stanfield, Jane Watt and Fiona Barry, et al. "The Experience and Impact of Anxiety in Autistic Adults: A Thematic Analysis." *Res Autism Spectr Disord* 46 (2018): 8-18.

24. Ameis, Stephanie H., Meng-Chuan Lai, Benoit H. Mulsant and Peter Szatmari. "Coping, Fostering Resilience, and Driving Care Innovation for Autistic People and their Families During the COVID-19 Pandemic and Beyond." *Mol Autism* 11 (2020): 1-9.

25. Asbury, Kathryn, Laura Fox, Emre Deniz and Aimee Code, et al. "How is COVID-19 Affecting the Mental Health of Children with Special Educational Needs and Disabilities and their Families?." *J Autism Dev Disord* 51 (2021): 1772-80.

26. White, L. Casey, J. Kiely Law, Amy M. Daniels and Jaimie Toroney, et al. "Brief Report: Impact of COVID-19 on Individuals with ASD and their Caregivers: A Perspective from the SPARK Cohort." *J Autism Dev Disord* 51 (2021): 3766-73.

27. Eshraghi, Adrien A., Crystal Li, Michael Alessandri and Daniel S. Messinger, et al. "COVID-19: Overcoming the Challenges Faced by Individuals with Autism and their Families." *Lancet Psychiatry* 7 (2020): 481-3.

28. Amorim, Rita, Sara Catarino, Pedro Miragaia and Cristina Ferreras, et al. "The Impact of COVID-19 on Children with Autism Spectrum Disorder." *Rev Neurol* 71 (2020):285-91.

29. National Autistic Society. "Left Stranded: The Impact of Coronavirus on Autistic People and their Families in the UK." *Pears Foundation*, June 8, (2020).

30. Mutluer, Tuba, Ceymi Doenyas and Herdem Aslan Genc. "Behavioral Implications of the Covid-19 Process for Autism Spectrum Disorder, and Individuals' Comprehension of and Reactions to the Pandemic Conditions." *Front Psychiatry* 11 (2020): 561882.

31. Colizzi, Marco, Elena Sironi, Federico Antonini and Marco Luigi Ciceri, et al. "Psychosocial and Behavioral Impact of COVID-19 in Autism Spectrum Disorder: An Online Parent Survey." *Brain Sci* 10 (2020): 341.

32. Dachez, Julie and André Ndobo. "Coping Strategies of Adults with High-functioning Autism: A Qualitative Analysis." *J Adult Dev* 25 (2018): 86-95.

33. Adams, Ryan E., Shuting Zheng, Julie Lounds Taylor and Somer L. Bishop. "Ten Weeks In: COVID-19-related Distress in Adults with Autism Spectrum Disorder." *Autism* 25 (2021): 2140-5.

34. Bal, Vanessa H., Ellen Wilkinson, L. Casey White and J. Kiely Law, et al. "Early Pandemic Experiences of Autistic Adults: Predictors of Psychological Distress." *Autism Res* 14 (2021): 1209-19.

35. Oakley, Bethany, Julian Tillmann, Amber Ruigrok and Aurélie Baranger, et al. "COVID-19 Health and Social Care Access for Autistic People: European Policy Review." *BMJ Open* 11 (2021): e045341.

36. Bzdok, Danilo and Robin IM Dunbar. "The Neurobiology of Social Distance." *Trends Cogn Sci* 24 (2020): 717-33.

37. Orben, Amy, Livia Tomova and Sarah-Jayne Blakemore. "The Effects of Social Deprivation on Adolescent Development and Mental Health." *Lancet Child Adolesc Health* 4 (2020): 634-40.

38. Holt-Lunstad, Julianne, Timothy B. Smith, Mark Baker and Tyler Harris, et al. "Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-analytic Review." *Perspect Psychol Sci* 10 (2015): 227-37.

39. Loades, Maria Elizabeth, Eleanor Chatburn, Nina Higson-Sweeney and Shirley Reynolds, et al. "Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19." *J Am Acad Child Adolesc Psychiatry* 59 (2020): 1218-39.

40. Hedley, Darren, Mirko Uljarević, Mathilda Wilmot and Amanda Richdale, et al. "Understanding Depression and thoughts of Self-harm in Autism: A Potential Mechanism Involving Loneliness." *Res Autism Spectr Disord* 46 (2018): 1-7.

41. Ersoy, Kübra, Buse Altin, Burcu Bayram Sarikaya and Oya Güngörmüş Özkardaş. "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* 9 (2020): 117-26.

42. Alhuzimi, Talal. "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* 108 (2021): 103822.

How to cite this article: Joudi, Mitra, Ali Reza Pezhman, Payam Khalafi and Seyyed Hamzeh Seddiq. "Psychological Responses of Quarantine Due to COVID-19 Pandemic in Normal and Autistic Students - A Narrative Study." *Clin Schizophr Relat Psychoses* 15(2021). Doi: 10.3371/CSRP.JMAP.010622.