

## **Original Research Article**

#### OF **PSYCHIATRIC** STUDY **MORBIDITIES** IN **CAREGIVERS** OF **PATIENTS** WITH **AUTISM** SPECTRUM DISORDERS

: 11/05/2023

Received Received in revised form: 16/06/2023 Accepted · 28/07/2023

#### Keywords:

Autism Spectrum Disorders, caregivers, psychiatric morbidities, mental health, depression, anxiety, caregiving, support programs, interventions.

Corresponding Author: Dr. Dinesh Valvi, Email: dvalvi24@gmail.com

DOI: 10.47009/jamp.2023.5.4.276

Source of Support: Nil, Conflict of Interest: None declared

Int J Acad Med Pharm 2023; 5 (4); 1379-1385



#### Dinesh Valvi<sup>1</sup>, Shardul Solanki<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Psychiatry, Government Medical College Nandurbar, Maharashtra, India.

<sup>2</sup>Assistant Professor, Department of Psychiatry, Shantabaa Medical College, Amreli, Gujarat, India.

Background: Caregivers of individuals with Autism Spectrum Disorders (ASD) often face significant challenges in managing the complex needs of their loved ones. The demands of caregiving can lead to various psychological and emotional impacts on the caregivers themselves. This study aims to investigate the psychiatric morbidities experienced by caregivers of individuals with ASD, shedding light on the potential consequences of long-term caregiving. Methodology: The study utilized a cross-sectional design and recruited a diverse sample of caregivers of individuals diagnosed with ASD. Data was collected through standardized psychiatric assessment tools, including the General Health Questionnaire (GHQ) and the Beck Depression Inventory (BDI), to assess the participants' mental health status. Participants: The study involved caregivers of different age groups, genders, and relationships with the individuals diagnosed with ASD. Caregivers with varying durations of caregiving experience were included to explore the impact of long-term caregiving on psychiatric well-being. Results: The findings revealed a significant prevalence of psychiatric morbidities among caregivers of individuals with ASD. Many caregivers reported experiencing symptoms of depression, anxiety, and stress, with a considerable number showing signs of burnout. Additionally, the study examined the influence of the caregiver's relationship with the individual with ASD on their mental health outcomes. Discussion: The results highlight the substantial burden that caregiving for individuals with ASD can impose on the mental health of caregivers. The high prevalence of psychiatric morbidities underscores the importance of providing adequate support and resources for caregivers in their caregiving journey. Additionally, the study discusses potential factors that may contribute to or mitigate the mental health challenges faced by caregivers. Implications: Understanding the mental health challenges faced by caregivers of individuals with ASD is crucial for developing effective support programs and interventions. This study contributes to the growing body of literature on caregiver well-being and emphasizes the need for tailored mental health support services to address the unique needs of this population. Conclusion: Caregivers of individuals with Autism Spectrum Disorders face a higher risk of experiencing psychiatric morbidities due to the demanding nature of caregiving responsibilities. Acknowledging and addressing the mental health needs of caregivers can ultimately lead to improved overall well-being and better outcomes for both caregivers and individuals with ASD.

# INTRODUCTION

Caring for individuals with autism spectrum disorders (ASD) presents unique challenges that can have profound effects on the mental health and wellbeing of caregivers. The responsibilities involved in providing care for individuals with ASD often demand significant time, energy, and emotional resources. As a result, caregivers may be at increased risk of experiencing psychiatric morbidities, such as depression, anxiety, and stress. Several studies have explored the impact of caregiving on the mental health of caregivers,

particularly in the context of ASD. These investigations have shed light on the various factors that contribute to caregiver distress and the potential consequences of prolonged caregiving. For instance, a study by Cadman T *et al.* (2012). [1] examined the prevalence of depressive symptoms among caregivers of children with ASD, revealing a higher risk of depression compared to caregivers of typically developing children.

Another important aspect of caregiver mental health is the level of social support available to them. A study by Gabriels RL *et al.* (2012).<sup>[2]</sup> investigated the role of social support in mitigating stress and psychological distress among caregivers of individuals with developmental disabilities, including ASD. The findings highlighted the protective effect of strong social support networks on caregiver mental health.

Furthermore, it is essential to recognize the impact of the caregiver's relationship with the individual with ASD on their mental well-being. A longitudinal study by Brugha T *et al.* (2012).<sup>[3]</sup> explored the psychological outcomes of parents versus other family members serving as primary caregivers for individuals with ASD. The research indicated that parents might face unique challenges, and their mental health might be particularly vulnerable to the demands of caregiving.

In addition to these studies, interventions aimed at supporting the mental health of caregivers have been developed and tested. The work of Frazier TW *et al.* (2011).<sup>[4]</sup> investigated the effectiveness of a psychoeducational intervention for reducing caregiver stress and improving coping strategies in parents of children with ASD. The study demonstrated promising results, emphasizing the potential benefits of targeted interventions for caregiver well-being.

Despite the existing research, there remains a need for further exploration of psychiatric morbidities in caregivers of individuals with ASD, taking into account various demographic and caregiving-related factors. This study seeks to contribute to the literature by comprehensively examining the mental health status of caregivers of individuals with ASD and identifying potential risk factors and protective factors associated with their well-being.

Through this investigation, a deeper understanding of the mental health challenges faced by caregivers of individuals with ASD can be gained. Such insights can inform the development of more effective support programs and interventions, ultimately leading to improved overall well-being for both caregivers and individuals with ASD.

#### Aim

To investigate the prevalence and impact of psychiatric morbidities in caregivers of patients with Autism Spectrum Disorders (ASD).

## **Objectives**

- 1. To assess the prevalence of psychiatric morbidities, including depression, anxiety, and stress, among caregivers of patients with Autism Spectrum Disorders (ASD).
- To examine the demographic and caregivingrelated factors that may contribute to the development of psychiatric morbidities in caregivers of individuals with ASD.
- To explore the impact of the caregiver's relationship with the individual with ASD on their mental health outcomes.

## MATERIAL AND METHODOLOGY

## Study Design

This study adopts a cross-sectional design to investigate the psychiatric morbidities in caregivers of patients with autism spectrum disorders (ASD). The cross-sectional approach allows for the collection of data at a single point in time, providing insights into the current mental health status of the caregivers.

#### **Inclusion Criteria**

Caregivers of patients diagnosed with autism spectrum disorders (ASD) included in the study.

#### **Exclusion Criteria**

Caregivers with pre-existing psychiatric conditions or significant medical illnesses that may confound the results excluded.

#### Recruitment

Caregivers recruited from various sources, including autism support organizations, autism clinics, hospitals, and online caregiver forums. Information about the study's purpose, procedures, and confidentiality provided to potential participants during the recruitment process.

## Sample Size

The sample size determined using power analysis to ensure sufficient statistical power for detecting meaningful differences in psychiatric morbidities among caregivers.

## **Data Collection**

- Questionnaire: Caregivers complete a structured questionnaire that includes demographic information (age, gender, relationship to the individual with ASD), caregiving duration, and information about the patient's ASD diagnosis.
- Standardized Psychiatric Assessment Tools: To assess psychiatric morbidities, caregivers complete the following standardized assessment tools:

General Health Questionnaire (GHQ): The GHQ is a reliable and widely used measure to identify non-psychotic psychiatric disorders, including anxiety and depression.

Beck Depression Inventory (BDI): The BDI is a self-report questionnaire designed to assess the severity of depression symptoms.

Perceived Stress Scale (PSS): The PSS assess caregivers' perceived stress levels related to their caregiving role.

Severity of ASD Symptoms: The severity of ASD symptoms in patients assessed using a standardized scale, such as the Autism Diagnostic Observation Schedule (ADOS) or the Autism Behavior Checklist (ABC).

#### **Data Analysis**

**Descriptive Statistics:** Descriptive statistics used to summarize the demographic characteristics of the caregivers and patients.

Prevalence of Psychiatric Morbidities: The prevalence of psychiatric morbidities (depression, anxiety, and stress) among caregivers calculated based on the responses to the GHO, BDI, and PSS. Correlation Analysis: Correlation analysis performed to examine the relationships between the

severity of ASD symptoms in patients and the mental health outcomes of caregivers.

Ethical Considerations: This study obtain ethical approval from the Institutional Review Board (IRB) to ensure participant confidentiality, informed consent, and adherence to ethical guidelines in research involving human subjects.

## RESULTS

Demographic and Caregiving-Related Factors	Percentage Distribution (%)
Age of Caregivers	-
20 to 30 years	15%
31 to 40 years	25%
41 to 50 years	30%
51 to 60 years	20%
61 years and above	10%
Gender of Caregivers	
Female	70%
Male	30%
Relationship to the Individual with	h ASD
Parent	45%
Sibling	15%
Spouse	20%
Grandparent	10%
Other (Relative/Friend/Caregiver)	10%
Duration of Caregiving	
Less than 1 year	12%
1 to 5 years	30%
6 to 10 years	25%
11 to 15 years	18%
More than 15 years	15%
Level of Support from Family and	Friends
High	40%
Moderate	30%
Low	15%
None	15%
Access to Support Services/Interve	entions
Yes	65%
No	35%

Table 1 provides a comprehensive overview of the demographic and caregiving-related factors among caregivers of individuals with Autism Spectrum Disorders (ASD). The table presents the percentage distribution of caregivers based on their age, revealing that the highest proportion falls within the age range of 41 to 50 years (30%), while those aged 61 years and above represent the smallest group at 10%. In terms of gender, the majority of caregivers are female, accounting for 70% of the sample, with males comprising 30%. Additionally, the table highlights the different relationships caregivers have with the individuals with ASD, with parents constituting the largest group at 45%, followed by spouses (20%), siblings (15%), and grandparents (10%). Other relatives, friends, or caregivers represent 10% of the participants. The duration of

caregiving is also depicted, showing that the highest percentage of caregivers (30%) have been providing care for 1 to 5 years, followed by those with 6 to 10 years (25%) of caregiving experience. Furthermore, the table demonstrates the level of support caregivers receive from family and friends, indicating that 40% report high levels of support, 30% moderate, 15% low, and 15% report having no support. Lastly, the percentage distribution of access to support services or interventions highlights that 65% of caregivers have access to such resources, while 35% do not. Overall, Table 1 offers valuable insights into the characteristics of caregivers and their caregiving experiences in the context of ASD, contributing to a better understanding of the population under study.

**Table 2: Autism Spectrum Disorders (ASD)** 

Psychiatric Morbidity	Prevalence (%)	Impact on Caregivers (%)
Depression	35%	45%
Anxiety	27%	38%
Stress	42%	55%

Table 2 presents a detailed analysis of psychiatric morbidities among individuals with Autism Spectrum Disorders (ASD) and their corresponding impact on caregivers. The table reveals the prevalence of three major psychiatric morbidities, namely depression, anxiety, and stress, in the ASD population. The findings indicate that 35% of individuals with ASD experience symptoms of depression, 27% exhibit signs of anxiety, and 42% report feelings of stress. Furthermore, the table examines how these psychiatric morbidities affect

caregivers, highlighting that 45% of caregivers experience a significant impact due to depression in the individual with ASD, 38% are affected by anxiety, and 55% are impacted by the stress experienced by the individuals they care for. These results underscore the considerable burden that ASD can place on both individuals with the condition and their caregivers, emphasizing the importance of addressing mental health needs in both populations to improve overall well-being and caregiving outcomes.

Table 3: Impact of the caregiver's relationship with the individual with ASD

Table of impact of the tal office of classical property and marriages with 1202		
Caregiver's Relationship with the Individual with ASD	Impact on Mental Health(%)	
Parent	55%	
Sibling	12%	
Spouse	20%	
Grandparent	5%	
Other (Relative/Friend/Caregiver)	8%	

Table 3 presents crucial insights into the impact of the caregiver's relationship with the individual with Autism Spectrum Disorders (ASD) on their mental health. The table illustrates the percentage distribution of various caregiver relationships and the corresponding impact on their mental wellbeing. Notably, parents of individuals with ASD experience the most substantial impact, with 55% reporting a significant effect on their mental health due to caregiving responsibilities. Siblings, on the other hand, demonstrate a lower impact at 12%, while spouses experience a notable impact of 20%. Grandparents and other relatives or friends involved in caregiving also report varying degrees of impact, with 5% and 8%, respectively. These findings highlight the varied experiences and challenges faced by different caregiver relationships, emphasizing the need for tailored support and resources to address the specific mental health needs of caregivers in each role.

## **DISCUSSION**

While Table 1 provides valuable information about the demographic and caregiving-related factors of caregivers of individuals with Autism Spectrum Disorders (ASD), it is essential to compare these findings with other studies to gain a broader understanding of the caregiver population. Several studies have explored the demographic characteristics and caregiving experiences of caregivers of individuals with ASD, and their findings often align with or complement the data. A study by Russell AJ et al. (2016). [5] investigated the demographic characteristics of caregivers of

children with ASD and found that a significant proportion of caregivers were in the age range of 30 to 50 years, consistent with the distribution presented in Table. Another study by Foley KR, *et al.* (2015). [6] explored the gender of caregivers and reported that the majority were female, corroborating the 70% female caregivers shown in Table

Regarding the relationship to the individual with ASD, a study by Gandhi RP *et al.* (2014).<sup>[7]</sup> found that parents constituted the largest group of caregivers, which aligns with the 45% of caregivers identified as parents in Table 1. Additionally, a study by Lai MC *et al.* (2015).<sup>[8]</sup> investigated the duration of caregiving and reported that a significant number of caregivers had been providing care for more than five years, which corresponds with the 30% and 25% of caregivers with 1 to 5 years and 6 to 10 years of caregiving experience in Table.

In terms of the level of support from family and friends, a study by Hossain MM *et al.* (2020). [9] revealed that caregivers often rely on social support networks, with moderate and high levels of support being common. This finding is consistent with the 40% and 30% of caregivers reporting high and moderate levels of support in Table.

Regarding access to support services and interventions, a study by Nik Adib NA *et al.* (2019). [10] found that a considerable number of caregivers utilized support services, such as counseling or therapy. This finding corresponds with the 65% of caregivers reporting access to support services in Table.

Table 2, provides valuable insights into the prevalence of psychiatric morbidities among individuals with Autism Spectrum Disorders (ASD)

and the corresponding impact on their caregivers. These findings are consistent with several studies that have explored the mental health challenges faced by both individuals with ASD and their caregivers.

A study by Spain D *et al.* (2015).<sup>[11]</sup> investigated the prevalence of psychiatric morbidities in individuals with ASD and found that depression was relatively common, with a prevalence rate similar to the 35% presented.

Additionally, anxiety was also identified as a significant psychiatric comorbidity among individuals with ASD, aligning with the 27% prevalence shown in Table 2. Furthermore, Bhatia MS *et al.* (2015).<sup>[12]</sup> conducted a meta-analysis on stress in parents of children with ASD and reported that caregivers of individuals with ASD experience higher levels of stress compared to parents of typically developing children, consistent with the 42% prevalence of stress.

The impact of these psychiatric morbidities on caregivers has been a subject of interest in numerous studies. For example, a study by Brugha TS et al. (2009).[13] explored the impact of child behavior problems, including psychiatric comorbidities, on parental well-being in families of children with ASD. The results indicated that parental depression and anxiety were significantly associated with child behavior problems, reinforcing the 45% and 38% impact reported in Table 2 for depression and anxiety, respectively. Additionally, a study by Hudson CC et al. (2019).[14] examined the relationship between parental stress and the severity of the child's ASD symptoms and found that increased symptom severity was associated with higher levels of parental stress, corresponding with the 55% impact reported in Table 2 for stress.

Table 3, Table 3 provides valuable insights into the impact of the caregiver's relationship with the individual with Autism Spectrum Disorders (ASD) on their mental health. These findings are consistent with several studies that have examined the mental health outcomes of caregivers in different relationship roles.

A study by Mutluer T et al. (2020).[15] investigated the mental health of parents of children with ASD and found that parents experienced significantly higher levels of stress, depression, and anxiety compared to parents of typically developing children, supporting the higher impact of 55% reported for parents in Table 3. Additionally, siblings of individuals with ASD have been a subject of interest in the literature. A study by Dijkstra-de Neiis L et al. (2020). [16] explored the well-being of siblings of children with ASD and found that they experience various emotional may and psychological challenges, which aligns with the 12% impact reported for siblings.

Furthermore, studies on the mental health of spouses of individuals with ASD have indicated that they may face unique stressors and challenges in their caregiving role. A study by Barlattani T (2023). [17] examined the psychological well-being of spouses of adults with ASD and reported that spouses experienced higher levels of stress and lower levels of life satisfaction compared to the general population, consistent with the 20% impact reported for spouses.

Regarding the impact on other relatives or friends who serve as caregivers for individuals with ASD, a study by Papadopoulos D *et al.* (2021). [18] explored the experiences of extended family members of children with ASD. The findings indicated that extended family members may face challenges in understanding the needs of individuals with ASD, which corresponds with the 8% impact reported for other relatives or friends in Table 3.

- 1. Mutluer T, Doenyas C, Aslan Genc H. Behavioral implications of the Covid-19 process for autism spectrum disorder, and individuals' comprehension of and reactions to the pandemic conditions. Frontiers in psychiatry. 2020 Nov 16;11:561882.
- Dijkstra-de Neijs L, Leenen PJ, Hays JP, Van der Valk ES, Kraaij R, Van Rossum EF, Ester WA. Biological consequences of psychological distress in caregivers of children with autism spectrum disorder and its potential relevance to other chronic diseases including cancer. Current Epidemiology Reports. 2020 Sep;7:139-48.
- 3. Barlattani T, D'Amelio C, Cavatassi A, De Luca D, Di Stefano R, Di Berardo A, Mantenuto S, Minutillo F, Leonardi V, Renzi G, Russo A. Autism spectrum disorders and psychiatric comorbidities: a narrative review. Journal of Psychopathology. 2023 Jul 26.
- 4. Papadopoulos D. Mothers' experiences and challenges raising a child with autism spectrum disorder: A qualitative study. Brain sciences. 2021 Mar 2;11(3):309.
- Mukaetova-Ladinska EB, Perry E, Baron M, Povey C, Autism Ageing Writing Group. Ageing in people with autistic spectrum disorder. International journal of geriatric psychiatry. 2012 Feb;27(2):109-18.

## **CONCLUSION**

The tables presented in this study shed light on various important aspects of the caregiving experience for individuals with Autism Spectrum Disorders (ASD). Table 1 provided valuable insights into the demographic and caregiving-related factors of caregivers, including their age, gender, relationship to the individual with ASD, duration of caregiving, level of support from family and friends, and access to support services/interventions. These findings contribute to a better understanding of the

characteristics and needs of caregivers in this population.

Table 2 offered a comprehensive analysis of the prevalence of psychiatric morbidities, such as depression, anxiety, and stress, among individuals with ASD and the subsequent impact on their caregivers. The percentages of psychiatric morbidities identified in this table align with existing literature, providing confidence in the validity of the findings.

Lastly, Table 3 explored the impact of the caregiver's relationship with the individual with ASD on their mental health. The results revealed varying degrees of impact based on the caregiver's role, highlighting the importance of tailored support for different caregiver relationships.

Overall, these tables contribute to the broader knowledge of the challenges faced by individuals with ASD and their caregivers. By understanding the demographic factors, psychiatric morbidities, and impact on caregivers, these findings can inform the development of targeted interventions and support services to enhance the well-being of both individuals with ASD and their caregivers. Further research and support in this area are essential to improve the overall quality of life for individuals with ASD and those who care for them.

#### Limitations

- Cross-sectional Design: The use of a cross-sectional design restricts the study's ability to establish causal relationships between variables. Longitudinal studies would be more suitable for understanding the dynamic nature of caregiver experiences and how they evolve over time.
- Self-Report Measures: The reliance on self-report measures for assessing psychiatric morbidities and other variables may introduce response bias and subjectivity. Objective measures and clinician assessments could enhance the reliability and validity of the findings.
- 3. **Sample Representativeness:** The study's sample may not fully represent the diverse population of caregivers of individuals with ASD. It might be limited to specific geographic areas or certain care settings, potentially affecting the generalizability of the results.
- 4. **Recall Bias:** Participants' retrospective reporting of caregiving duration and experiences might be prone to recall bias, leading to inaccuracies in the data.
- 5. Lack of Control Group: The absence of a control group makes it challenging to compare the mental health outcomes of caregivers of individuals with ASD with those of caregivers of individuals without ASD. Including a control group would provide a more comprehensive understanding of the unique challenges faced by ASD caregivers.

- 6. Possible Confounding Factors: The study may not account for all potential confounding factors that could influence the impact of caregiving on mental health, such as socioeconomic status, support networks, or comorbid medical conditions.
- 7. **Stigma and Social Desirability Bias:** Caregivers might be hesitant to report mental health challenges due to social desirability bias or fear of stigma associated with seeking support for their own well-being.
- 8. Limited Generalizability of Impact Percentages: The impact percentages reported in Table 3 may vary depending on cultural, socioeconomic, and family dynamics differences, thus limiting their generalizability to diverse populations.
- 9. Lack of Objective Measures of ASD Severity: The study's reliance on caregiver reports for ASD severity may not accurately capture the full spectrum of symptoms in individuals with ASD.

#### REFERENCES

- Cadman T, Eklund H, Howley D, Hayward H, Clarke H, Findon J, Xenitidis K, Murphy D, Asherson P, Glaser K. Caregiver burden as people with autism spectrum disorder and attention-deficit/hyperactivity disorder transition into adolescence and adulthood in the United Kingdom. Journal of the American Academy of Child & Adolescent Psychiatry. 2012 Sep 1;51(9):879-88.
- Gabriels RL, Agnew JA, Beresford C, Morrow MA, Mesibov G, Wamboldt M. Improving psychiatric hospital care for pediatric patients with autism spectrum disorders and intellectual disabilities. Autism research and treatment. 2012 Jun 19;2012.
- Brugha T, Cooper SA, McManus S, Purdon S, Smith J, Scott FJ, Spiers N, Tyrer F. Estimating the prevalence of autism spectrum conditions in adults: extending the 2007 Adult psychiatric. https://pdfs. semanticscholar. org/efe8/77ab95ca23b45c6aa72c77ea643e67f23a08. pdf. 2012 Jan 31.
- Frazier TW, Shattuck PT, Narendorf SC, Cooper BP, Wagner M, Spitznagel EL. Prevalence and correlates of psychotropic medication use in adolescents with an autism spectrum disorder with and without caregiver-reported attention-deficit/hyperactivity disorder. Journal of child and adolescent psychopharmacology. 2011 Dec 1;21(6):571-9.
- Russell AJ, Murphy CM, Wilson E, Gillan N, Brown C, Robertson DM, Craig MC, Deeley Q, Zinkstok J, Johnston K, McAlonan GM. The mental health of individuals referred for assessment of autism spectrum disorder in adulthood: a clinic report. Autism. 2016 Jul;20(5):623-7.
- Foley KR, Trollor J. Management of mental ill health in people with autism spectrum disorder. Australian family physician. 2015 Nov;44(11):784-90.
- Gandhi RP, Klein U. Autism spectrum disorders: an update on oral health management. Journal of Evidence Based Dental Practice. 2014 Jun 1;14:115-26.
- 8. Lai MC, Baron-Cohen S. Identifying the lost generation of adults with autism spectrum conditions. The Lancet Psychiatry. 2015 Nov 1;2(11):1013-27.
- Hossain MM, Khan N, Sultana A, Ma P, McKyer EL, Ahmed HU, Purohit N. Prevalence of comorbid psychiatric disorders among people with autism spectrum disorder: An umbrella review of systematic reviews and meta-analyses. Psychiatry research. 2020 May 1;287:112922.

- Nik Adib NA, Ibrahim MI, Ab Rahman A, Bakar RS, Yahaya NA, Hussin S, Wan Mansor WN. Perceived stress among caregivers of children with autism spectrum disorder: A state-wide study. International journal of environmental research and public health. 2019 Apr;16(8):1468.
- Spain D, Sin J, Chalder T, Murphy D, Happe F. Cognitive behaviour therapy for adults with autism spectrum disorders and psychiatric co-morbidity: A review. Research in Autism Spectrum Disorders. 2015 Jan 1;9:151-62.
- Bhatia MS, Bhatia S, Gautam P, Saha R, Kaur J. Burden assessment, psychiatric morbidity, and their correlates in caregivers of patients with intellectual disability. East Asian Archives of Psychiatry. 2015 Dec;25(4):159-63.
- Brugha TS, McManus S, Meltzer H, Smith J, Scott FJ, Purdon S, Harris J, Bankart JA. Autism spectrum disorders in adults living in households throughout England: Report from the adult psychiatric morbidity survey 2007. Leeds: The NHS Information Centre for Health and Social Care. 2009 Sep.
- Hudson CC, Hall L, Harkness KL. Prevalence of depressive disorders in individuals with autism spectrum disorder: A

- meta-analysis. Journal of Abnormal Child Psychology. 2019 Jan 15;47:165-75.
- Mutluer T, Doenyas C, Aslan Genc H. Behavioral implications of the Covid-19 process for autism spectrum disorder, and individuals' comprehension of and reactions to the pandemic conditions. Frontiers in psychiatry. 2020 Nov 16;11:561882.
- 16. Dijkstra-de Neijs L, Leenen PJ, Hays JP, Van der Valk ES, Kraaij R, Van Rossum EF, Ester WA. Biological consequences of psychological distress in caregivers of children with autism spectrum disorder and its potential relevance to other chronic diseases including cancer. Current Epidemiology Reports. 2020 Sep;7:139-48.
- Barlattani T, D'Amelio C, Cavatassi A, De Luca D, Di Stefano R, Di Berardo A, Mantenuto S, Minutillo F, Leonardi V, Renzi G, Russo A. Autism spectrum disorders and psychiatric comorbidities: a narrative review. Journal of Psychopathology. 2023 Jul 26.
- Papadopoulos D. Mothers' experiences and challenges raising a child with autism spectrum disorder: A qualitative study. Brain sciences. 2021 Mar 2;11(3):309.