

# A Comparative Study on Depressive Disorders among the Mothers of Children with and without Autism Spectrum Disorder

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## ABSTRACT

Among many other neuro-developmental disorders, autism-spectrum disorder (ASD) is one of the major lifelong neurological disability which has a very significant impact on the life of parents. Mothers of the children having ASD suffer from many severe psychiatric conditions which includes anxiety, feeling of social isolation, social anxiety, low esteem, and depression.

**Aim:** The present study was designed to compare the incidence of depressive disorders particularly depression in the mothers who have children suffering from ASD with the mothers of the healthy children.

**Place and Duration:** Study was conducted at Saidu Group of Teaching hospital Swat and Khatak Medical center Peshawar including OPDs & Private clinics of the authors for duration one year from 1<sup>st</sup> November 2019 to 31<sup>st</sup> October 2020.

**Methods:** It is a descriptive analysis design used in data collection from the population of depressed mothers with ASD children and depressed mothers with physically and mentally healthy children at the outpatient department (OPD) of psychiatry. The total sample comprising of one hundred and fifty (N=160) that included eighty (n=80) mothers of ASD and eighty (n=80) healthy children. Purposive/Convenient sampling method was used in data collection. Mothers with ASD children were grouped in Group A while mothers of healthy children were grouped in Group B. Beck Depression Inventory (BDI) scale was used for assessment of Depression among the two groups. The subjects who scored points up to 10 or more were examined further for their mental state according to the DSM 5 criteria.

**Results:** According to the obtained results, 31 (41.3%) mothers of ASD children showed signs of depression while only 12 (16.0%) mothers of healthy children had depression. It was also observed that the rate of developing depressive disorder was quite higher in the mothers who had children suffering from ASD as compared to the mothers who had normal healthy children ( $p < 0.001$ ).

**Conclusion:** With the obtained results, it can be concluded that the ration of developing depression is very high and statistically significant in mother who have children suffering from a mental health condition particularly ASD.

**Key words:** Autism-spectrum disorder, Depression, Social anxiety.

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## INTRODUCTION

One of the most complex and severe neurodevelopmental condition is autism spectrum disorder (ASD). The patients suffering from this disease are not able to maintain proper social interaction and lacks social communication by causing disturbances in normal functions including stammering, repetitive, restricted, stereotypic patterns in routine behavior<sup>1-2</sup>. The children start displaying the symptoms of ASD before the age of 3 years. ASD was prevalent enough to affect 5.2 child's out of every 10,000 children, as reported in many epidemiological studies<sup>3,5,6</sup>. Recent studies present that in USA, there is at least 1 kid suffering from ASD in around 50 schools, and as described in DSM, the frequency of DSM is 1% in the population across the globe. The children which are suffering from ASD have a high dependence on their mothers for the fulfillment of their emotional and physical needs on their mothers. Also, a lot of ASD suffered children need extensive care, and extra attention for their educational, health care and behavioral services from their mothers which normally mothers cannot access, and even if these are accessible extra parental time, effort and resources are

required for facilitation<sup>4</sup>. These are the reasons due to which the mothers of the children suffering from ASD have a high risk of developing some kind of mental health disorder particularly depression. It is presumable that this increase in the number of cases of depression among these mothers is due to huge amount of stress and troubles which occur during the brought up of the children suffering from such conditions<sup>5-6</sup>. In comparison with the parents of the children who have other diseases, the parents of theses ASD children worry more about the future of their children which results in copious amount of parental stress which is a direct consequence of developing depressive disorders. 5 Parents who have children with ASD have to go through a different kind of stressor everyday which can be very extremely challenging for them<sup>7</sup>. This stress results in developing psychological disorder, troublesome married life, low self-confidence in the society, heightened negativity because of increased negative emotions such as fear, resentment, and anger. They also face helplessness from the society<sup>8</sup>. Many contributing factors responsible of parental stress of ASD suffering children include socially unacceptable behaviors towards such children, behavioral

symptoms, hurdles in understanding and comprehending the problems, and lack of the proper professional support<sup>9-10</sup>. When the stress levels and depression of parents of autistic children was evaluated and compared with the depression levels of the parents of normal healthy children, it was found that parents of ASD children have high anxiety, depression and stress related disorders which have some very serious and grave adverse effects on the family and marital life of the two parents<sup>11</sup>. Recently, in Pakistan there has been an increased awareness about autism but still the information related to this disorder is very limited. Similarly, we have very little information of the psychological disorders developed in the mothers who have ASD affected children. Therefore, the main idea behind conducting this study is to assess the existence of depression among the mothers of ASD children which is compared with the mothers of the children who are healthy. This study would be very helpful in conducting the psychological evaluation of such mothers so that they can have their psychotherapy as soon as possible.

## MATERIALS AND METHODS

It is a descriptive analysis which was conducted in the psychiatric department of Saidu Group of Teaching hospital Swat and Khatak Medical center Peshawar including OPDs & Private clinics of the authors for one-year duration from 1<sup>st</sup> November 2019 to 31<sup>st</sup> October 2020. Non-Probability

sampling method was used to select 80 mothers of autistic children according to the exclusion and inclusion criteria and were placed in group A. Group B was also formed by selecting other 80 mothers of normally developed children according to the same sampling technique. A standardized and reliable Pre-designed semi-structured questionnaire was used to conduct interviews from the mothers of each group. Beck Depression Inventory (BDI) scale was used for assessment of Depression among the two groups. Mental state was examined according to the DSM 5 criteria was conducted for the subjects who scored 10 or more points than 10. Interview was carried out during a single state procedure. It was made sure that the study designed fulfilling all the ethical rules. The data was analyzed using SPSS 21.00. Chi-Square test, Fisher's exact test and unpaired t-test were accomplished. Results with the probability value ( $p < 0.05$ ) was measured as statistically significant.

## RESULTS

From the results it was observed that the age range of the mothers in group A varies from nineteen to forty-seven (19 to 47) years with the average age of 29.69 ( $\pm 5.77$ ) years while the age of the mothers of group B varies from twenty to forty-seven (20 to 47) with the average age of 30.15 ( $\pm 5.61$ ) years. It was found that average age was similar in both groups ( $t = -0.509$ ;  $p < 0.60$ ) (Table 1).

Table-I shows the participants distribution of age (n=160)

Age in years	Study group		p-value
	Group-A (n=80) Frequency (%)	Group-B (n=80) Frequency (%)	
Up to 20	3 (3.8)	2 (2.5)	* $p < 0.987$
21-30	46 (57.5)	48 (60.0)	
31-40	27 (33.8)	26 (32.5)	
41-50	4 (5.0)	4 (5.0)	
Mean	29.69 ( $\pm 5.77$ )	30.15 ( $\pm 5.61$ )	$\dagger p < 0.60$

It was found that the socio-economic status of the two groups was statistically very different ( $\chi^2 = 8.542$ ;  $p = 0.014$ ).

Table-II shows respondents distribution rendering to socio-demographic variables (n=160)

Socio-demographic variables	Study group		p-value
	Group-A (n=80) Frequency (%)	Group-B (n=80) Frequency (%)	
Religion Muslim others	69 (86.3), 11 (13.8)	71 (88.8) 9 (11.3)	* $p < 0.797$
Socioeconomic status Higher Middle Lower	7 (8.8), 41 (51.3) 32 (40.0)	7 (8.8), 57 (71.3) 16 (20.0)	
Social background Urban Rural	39 (48.8) 41 (51.3)	41 (51.3) 39 (48.8)	* $p = 0.880$

The difference between the religious and social background of the two groups was not statistically significant (0.024;  $p = 0.880$ ) (Table 2), while the difference between the education and occupation of the respondents of two groups was statistically very significant ( $p = 0.003$  and  $p = 0.004$  respectively) (Table 3 and Table 4).

Table-III shows participants division conferring to the profession (n=160)

Occupation	Study group		p-value
	Group-A (n=80) Frequency (%)	Group-B (n=80) Frequency (%)	
Service	9 (11.3)	25 (31.3)	* $p < 0.004$
Business	4 (5.0)	0 (0.0)	
Housewife	64 (80.0)	55 (68.8)	
Day labor	3 (3.8)	0 (0.0)	
Total	80 (100.0)	80 (100.0)	

Table-IV shows participants division rendering to the educational status (n=160)

Educational status	Study group		p-value
	Group-A (n=80) Frequency (%)	Group-B (n=80) Frequency (%)	
Illiterate	11 (13.8)	18 (22.5)	*p<0.005
Primary	22 (27.5)	23 (28.8)	
SSC	21 (26.3)	3 (3.8)	
HSC	13 (16.3)	12 (15.0)	
Graduate	9 (11.3)	17 (21.3)	
Postgraduate	4 (5.0)	7 (8.8)	
Total	80 (100.0)	80 (100.0)	

Around 56.3% mothers in group A had 1 to 2 children while 67.5% mother of group B had one to two children, and thus the variance among the 2 groups was not very much significant ( $p=0.071$ ) (Table 5).

Table-V Distribution of mothers according to number of children (n=160)

Educational status	Study group		p-value
	Group-A (n=80) Frequency (%)	Group-B (n=80) Frequency (%)	
1 to 2	45 (56.3)	54 (67.5)	*p<0.071
3 to 4	27 (33.8)	14 (17.5)	
5 or more	8 (10.0)	12 (15.0)	
Total	80 (100.0)	80 (100.0)	

Among mothers of the group A 73 (91.25%) had one autistic child, and 7 mothers (8.75%) had two autistic children. The age of these autistic children varies from seventeen months to fourteen years with an average of  $5.93 \pm 3.31$  years (Table-VI).

Table-VI shows participants distribution rendering to the ASD children age (n=80)

Age of ASD children	Years
Standard deviation	$\pm 3.31$
Mean age	5.93
A range	17 months to 14 years

The difference between positive BDI score of the mothers with affected children than the mothers of the healthy children was quite significant ( $p < 0.001$ ). Around 33 (41.25%) respondents of group A had depression, and 14 participants (17.25%) from group B were positive for depression. The difference between the two groups was significantly very high ( $z=11.769$ ;  $p=0.001$ ).

Table 7: Depressive disorders among participants

Depressive disorders	
Group A	33 (41.25%)
Group B	14 (17.25%)
Major depressive Disorders	
Group A	22 (27.5%)
Group B	11 (13.75%)

It was observed that 22 (27.5%) mothers were suffering from major depressive in group A while around 11 (13.75%) mothers of group B had major depressive disorder. The result between the two was statistically very significant ( $p=0.020$ ). It was found that the persistent depressive disorder was positive in 13 (16.25%) mothers of group A and 5 (6.25%) mothers of group B, and here also the difference was statistically significant between the two ( $p=0.033$ ).

## DISCUSSION

The children who suffer from ASD never suffer alone, rather; their parent also suffers with them. The parents who have the kid with ASD goes through some serious and unique challenges during the course of their lives. They suffer from poor life quality, stress, pessimism, and some serious psychological distress as compared to the parents who have normal healthy children as their children<sup>12</sup>. People often associate autism with parental stress and burden. It has been observed that the mothers who have autistic children greatly suffer from depressive disorders as compared to the mothers who have the children which are intellectually disable (ID) without having autism or with the mothers of the perfectly healthy children. In our study, no statistically significant difference was found between the religion of the participants belonging to both the groups. A study carried out by Dave et al (2017), demonstrated that the primary religion of the caregivers of the children who

were intellectually disable was Hinduism in 81% cases while only 19% were Muslims<sup>13-14</sup>. The possible explanation for this finding was that the study by Dave was carried out in India where Hindus are in majority while this present study is conducted in a country where Muslims are dominant. The socio-economic status of the two groups was significantly different ( $p=0.014$ ), the reason of this could be that Pakistan is an under-developed country and the major population of this country lives below the poverty line and the people normally depends on availing the health facilities provided by the government<sup>15-16</sup>. The occupational difference between the two groups was significantly different ( $p=0.003$ ). It has already been established by many previous studies that the working mothers who have disabled children develop less stress related disorders as compared to the unemployed mothers, and employment do serve as a buffer in the depressive disorder of mother. The mothers who are employed have the chance to go out and

release their stress outside their homes, also they have a chance to outgrow themselves professionally which often gives them a sense of achievement and makes them happy as compared to the unemployed mothers<sup>17-18</sup>. When we conducted our clinical evaluation of the employed and unemployed mothers, it was found that the employed mothers are capable of adjusting more in comparison of the unemployed ones<sup>19-21</sup>. The variance among the two groups in terms of the social background was not very much significant. The reason of this could be that the majority of people in Pakistan belong to the rural areas who avail the government health facilities. In the present study, the age of children suffering from ASD ranged from 17 months to 14 years.

## CONCLUSION

Mothers having the autistic children are often ignored and very rarely go through the psychiatric evaluation. It is however necessary to analyze the depressive disorders and their careful management is required. Society along with the relatives should be aware about the mental health status of such mothers and proper mental health consultancy must be provided to them.

## REFERENCES

- Megreya AM, Al-Attiyah AA, Moustafa AA, Hassanein EE. Cognitive emotion regulation strategies, anxiety, and depression in mothers of children with or without neurodevelopmental disorders. *Research in Autism Spectrum Disorders*. 2020 Aug 1;76:101600.
- Jahan S, Araf K, Gozal D, Griffiths MD, Mamun MA. Depression and suicidal behaviors among Bangladeshi mothers of children with Autistic Spectrum Disorder: a comparative study. *Asian journal of psychiatry*. 2020 Feb 27.
- Rea HM, Factor RS, Swain DM, Scarpa A. The Association of the Broader Autism Phenotype with Emotion-Related Behaviors in Mothers of Children With and Without Autism Spectrum Traits. *Journal of autism and developmental disorders*. 2019 Mar;49(3):950-9.
- Naheed A, Islam MS, Hossain SW, Ahmed HU, Uddin MJ, Tofail F, Hamadani JD, Hussain AE, Munir K. Burden of major depressive disorder and quality of life among mothers of children with autism spectrum disorder in urban bangladesh. *Autism Research*. 2020 Feb;13(2):284-97.
- Ekas NV, Tidman L, Timmons L. Religiosity/spirituality and mental health outcomes in mothers of children with autism spectrum disorder: the mediating role of positive thinking. *Journal of autism and developmental disorders*. 2019 Nov;49(11):4547-58.
- Huang XQ, Zhang H, Chen S. Neuropsychiatric symptoms, parenting stress and social support in Chinese mothers of children with autism spectrum disorder. *Current medical science*. 2019 Apr;39(2):291-7.
- Schnabel A, Youssef GJ, Hallford DJ, Hartley EJ, McGillivray JA, Stewart M, Forbes D, Austin DW. Psychopathology in parents of children with autism spectrum disorder: A systematic review and meta-analysis of prevalence. *Autism*. 2020 Jan;24(1):26-40.
- AITourah AJ, Al Ansari AM, Jahrami HA. Depression, Anxiety and Stress among Mothers of Children with Autism Spectrum Disorder. *Bahrain Medical Bulletin*. 2020 Jun;42(2).
- Schnabel A, Hallford DJ, Stewart M, McGillivray JA, Forbes D, Austin DW. An Initial Examination of Post-Traumatic Stress Disorder in Mothers of Children with Autism Spectrum Disorder: Challenging Child Behaviors as Criterion A Traumatic Stressors. *Autism Research*. 2020 Sep;13(9):1527-36.
- Öz B, Yüksel T, Nasiroğlu S. Depression-Anxiety Symptoms and Stigma Perception in Mothers of Children with Autism Spectrum Disorder. *Archives of Neuropsychiatry*. 2020 Mar;57(1):50.
- Ward T. Examining Depression Symptoms, Parental Stress, and Dispositional Mindfulness in Mothers of Children with Autism Spectrum Disorder.
- Selvakumar N, Panicker AS. Stress and coping styles in mothers of children with autism spectrum disorder. *Indian Journal of Psychological Medicine*. 2020 May;42(3):225-32.
- Romero-Acosta K, Marbán-Castro E, Arroyo K, Arrieta G, Mattar S. Perceptions and Emotional State of Mothers of Children with and without Microcephaly after the Zika Virus Epidemic in Rural Caribbean Colombia. *Behavioral Sciences*. 2020 Oct;10(10):147.
- Soke GN, Maenner M, Windham G, Moody E, Kaczaniuk J, DiGiuseppi C, Schieve LA. Association between breastfeeding initiation and duration and autism spectrum disorder in preschool children enrolled in the study to explore early development. *Autism Research*. 2019 May;12(5):816-29.
- Ekas NV, Kouros CD. A Pilot Study of Responses to Interparental Conflict in Children with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*. 2020 Nov 20:1-1.
- Lecavalier L, McCracken CE, Aman MG, McDougle CJ, McCracken JT, Tierney E, Smith T, Johnson C, King B, Handen B, Swiezy NB. An exploration of concomitant psychiatric disorders in children with autism spectrum disorder. *Comprehensive psychiatry*. 2019 Jan 1;88:57-64.
- Waddington H, McLay L, Woods L, Whitehouse AJ. Child and family characteristics associated with sleep disturbance in children with autism spectrum disorder. *Journal of autism and developmental disorders*. 2020 Nov;50(11):4121-32.
- Al-Ansari AM, Janahi MI, AITourah AJ, Jahrami HA, Rajab MB. Self-reported psychological disorders among the mothers of children with an autism spectrum disorder, type 1 diabetes mellitus, and typically developed children.
- Carmassi C, Corsi M, Bertelloni CA, Pedrinelli V, Massimetti G, Peroni DG, Bonuccelli A, Orsini A, Dell'Osso L. Post-traumatic stress and major depressive disorders in parent caregivers of children with a chronic disorder. *Psychiatry research*. 2019 Sep 1;279:195-200.
- Hartley M, Dorstyn D, Due C. Mindfulness for children and adults with autism spectrum disorder and their caregivers: A meta-analysis. *Journal of autism and developmental disorders*. 2019 Oct;49(10):4306-19.
- Martin CA, Sciberras E, Papadopoulos N, Engel L, Hiscock H, Williams K, Howlin P, McGillivray J, Rinehart NJ. Associations Between Child Sleep Problem Severity and Maternal Well-Being in Children with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*. 2020 Oct 8:1-1.