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Original Research Article

Prevalence and Associated Factors of Stress, Anxiety, and Depression among Parents of Children with Autism Spectrum Disorder

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Abstract: *Parents of children with autism spectrum disorder (ASD) experience unique psychological challenges due to the chronic nature of the condition, placing them at a higher risk of stress, anxiety, and depression. Understanding these patterns is essential for early mental health interventions and family support programs.* ***Objective:*** *To determine the pattern and burden of stress, anxiety, and depression among parents of children with autism spectrum disorder and their associated factors at a tertiary care hospital. Study Design: Prospective descriptive study. Place and duration of study: The Children's Hospital and Institute of Child Health, Multan, from September 20245 to February 2025. Methodology: Parents of children with autism spectrum disorder (n = 96) were recruited in this study using a non-probability consecutive sampling technique. These study participants were screened for stress, anxiety, and depression using the Depression, Anxiety, and Stress Scale (DASS-21).* ***Results:*** *Of these 96 study participants, 32.3 %(n=31) were male respondents, while 67.7 % (n=65) were female respondents. The mean age of these respondents was 33.70 ± 6.22 years, ranging from 24 to 47 years. The majority of respondents were from urban areas (62.5%), with a middle-income background in 60.4% (n=58), and 56.3% (n=42) were literate. Most of the respondents were homemakers (59.4%; n=57), the joint family system was noted in 69.8% (n=67), and 3.1% (n=3) were divorced. Stress was noted in 61.5 % (n=59), anxiety in 47.9 % (n=46), and depression in 45.8 % (n=44) respondents in our study.* ***Conclusion:*** *A very high burden of stress, anxiety, and depression was noted among parents of children with autism spectrum disorder in our study. Stress was significantly associated with residential status, socioeconomic status, occupation, family system, and literacy. Anxiety was significantly associated with age, residential status, and literacy, while depression was significantly associated with age and marital status.*

Keywords: Anxiety, autism spectrum disorder, depression, parents, stress

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Introduction

Autism Spectrum Disorder (ASD) is a prevalent neurodevelopmental condition that affects approximately 1 in 100 children worldwide and is frequently diagnosed in boys than in girls (1,2). ASD is a complex disorder with a significant genetic basis, influenced by various environmental factors. Its pathogenesis involves intricate interactions among genetic, neurobiological, and environmental factors, and ongoing research aims to understand these mechanisms (3) further. The prevalence of ASD varies significantly across different regions and countries, with higher rates often found in developed nations (4,5). Children with ASD often show differences in brain structure and connectivity, involving an increase in the volumes of the brain in early childhood and atypical patterns of cortical development (6–8).

There is a strong genetic component to ASD, and Certain genetic syndromes are associated with an increased risk of ASD, such as Fragile X syndrome. Prenatal exposure to specific environmental factors, such as maternal infections, certain medications (e.g., valproate), and advanced parental age, birth complications (like low birth weight and prematurity) are also considered potential risk factors (9, 10).

Children with autism often need constant and intensive support, particularly with communication, social skills, and daily tasks. This continuous caregiving can lead to persistent stress for parents. Parents of these children usually experience considerable stress, anxiety, and depression due to the unique challenges involved in raising a child with autism spectrum disorder (ASD). Parents may feel isolated due to a lack of understanding and support from family, friends, and the wider community, which can intensify feelings of stress and anxiety (11,12).

Some studies suggest that divorce rates may be higher among parents of children with ASD, though findings are mixed, and other factors, such as pre-existing marital issues, also contribute. Despite the challenges, many parents develop effective coping strategies, such as seeking social support, engaging in self-care, and participating in support groups. Some parents may turn to maladaptive coping mechanisms, like denial, avoidance, or substance use, which can worsen their psychological distress.

Access to mental health services, such as counseling and therapy, is essential for parents of children with ASD. Professional support can help them manage stress, anxiety, and depression.

Parents of children with ASD often face significant psychological challenges, including chronic stress, anxiety, depression, and social isolation. The demands of caregiving, coupled with concerns about their child's future, can take a toll on their mental health. However, with appropriate support — such as mental health services, social connections, and effective coping strategies — parents can navigate these challenges, build resilience, and find ways to thrive despite the difficulties they encounter.

The financial burden of therapies, medical treatments, and specialized education can be substantial, creating financial stress, especially if one parent has to reduce work hours or leave their job to provide care. Worries about their child's future, including issues related to independence, employment, and social connections, can lead to anxiety and depression. Parents with strong support systems, including family, friends, and autism support groups, often experience lower levels of stress and anxiety. Access to mental health services, such as counseling or therapy, can assist parents in managing their stress, anxiety, and depression.

Methodology

This descriptive study was conducted at The Children's Hospital and Institute of the Child Health, Multan, from September 20245 to February 2025, after obtaining approval from the hospital's Ethical Committee (Letter No. 1538 dated 15-08-2024). Parents of children with autism spectrum disorder (n = 96) were recruited in this study using a nonprobability, consecutive sampling technique, after obtaining informed consent from each study participant. Sample size was calculated using 53.7% (anticipated frequency of depression among parents of ASD 13) with a margin of error of 10%, using the Epi-Info software from the CDC. Parents of children previously diagnosed with ASD (either father or mother) aged more than 20 years were included. Parents with a previous history of mental illness before the Diagnosis of ASD, parents having chronic illnesses like chronic liver disease, chronic kidney disease, and hypothyroidism were excluded from our study. These study participants who gave their consent were screened for stress, anxiety, and depression using the Depression, Anxiety, and Stress Scale (DASS-21). All data were entered and analyzed using SPSS version 25 for both numerical and categorical data.

Results

Of these 96 study participants, 32.3 %(n=31) were male respondents, while 67.7 % (n=65) were female respondents. The mean age of these respondents was 33.70 ± 6.22 years, ranging from 24 years to 47 years. For males, the mean age was 36.55 ± 6.04 years, compared with 32.34 ± 5.87 years for female respondents (P = 0.002). 70.8 % (n = 68) were aged 35 years or less. The majority of respondents were from urban areas (62.5%; n=60), had a middle-income social background (60.4%; n=58), and were literate (56.3%; n=42). Most of the respondents were homemakers (59.4%; n=57), a joint family system was noted in 69.8% (n=67), and 3.1% (n=3) were divorced. Stress was noted in 61.5 % (n=59), anxiety in 47.9 % (n=46), and depression in 45.8 % (n=44) in these parents.

Table No. 1: Associated factors of stress (n=96)

Study Variables	Stress		P value
	Yes	No	
Gender			
Male (n= 31)	23	08	0.077
Female (n=65)	36	29	
Age groups			
Up to 35Years (n= 68)	46	22	0.052
> 35 Years (n=28)	13	15	
Residential status			
Rural (n= 36)	13	23	0.001
Urban (n=60)	46	14	
Social Background			
Low Income (n=38)	15	23	0.001
Middle Income (n=58)	44	14	
Occupation			
Housewife (n=57)	33	24	0.014
Laborer (n=08)	05	03	
Office worker (n=18)	08	10	
Self-business (n=13)	13	00	
Literacy			
Illiterate (n=42)	15	27	0.002
Literate (n=54)	44	10	
Family System			
Joint (n=67)	35	32	0.025
Nuclear (n=29)	24	05	
Marital status			
Married (n=93)	56	37	0.163
Divorced (n = 03)	03	00	

Table No. 2: Associated factors of anxiety. (n=96)

Study Variables	Stress		P value
	Yes	**No**	
Gender			
Male (n= 31)	15	16	0.949
Female (n=65)	31	34	
Age groups			
Up to 35Years (n= 68)	28	40	0.039
> 35Years (n=28)	18	10	
Residential status			
Rural (n= 36)	10	26	0.002
Urban (n=60)	34	24	
Social Background			
Low Income (n=38)	20	18	0.454
Middle Income (n=58)	26	32	

Occupation			
Housewife (n=57)	28	29	0.737
Laborer (n=08)	05	03	
Office worker (n=18)	08	10	
Self-business (n=13)	05	08	
Literacy			
Illiterate (n=42)	15	27	0.035
Literate (n=54)	31	23	
Family System			
Joint (n=67)	30	37	0.349
Nuclear (n=29)	16	13	
Marital status			
Married (n=93)	43	50	0.067
Divorced (n = 03)	03	00	

Table No. 3: Associated factors of depression. (n=96)

Study Variables	**Stress**		**P value**
	Yes	**No**	
Gender			
Male (n= 31)	15	16	0.729
Female (n=65)	29	36	
Age groups			
Up to 35Years (n= 68)	21	47	0.001
> 35Years (n=28)	23	05	
Residential status			
Rural (n= 36)	15	21	0.526
Urban (n=60)	29	31	
Social Background			
Low Income (n=38)	20	18	0.279
Middle Income (n=58)	24	34	
Occupation			
Housewife (n=57)	26	31	0.754
Laborer (n=08)	05	03	
Office worker (n=18)	08	10	
Self business (n=13)	05	08	
Literacy			
Illiterate (n=42)	21	21	0.470
Literate (n=54)	23	31	
Family System			
Joint (n=67)	31	36	0.896
Nuclear (n=29)	13	16	
Marital status			
Married (n=93)	41	52	0.056
Divorced (n = 03)	03	00	

Discussion

Autism Spectrum Disorder (ASD) is a developmental condition that varies significantly across regions and countries, which may be due to variations in diagnostic practices, awareness, and healthcare access. The growing prevalence of ASD has significant implications for healthcare, education, and social services. There is a rising demand for specialized services to support individuals with ASD and their families. Reliable epidemiological data on ASD are often limited, particularly in low- and middle-income countries where diagnostic services may be less accessible (14).

Parents of children with Autism Spectrum Disorder (ASD) often encounter various psychological challenges due to the complexities and demands of raising a child with special needs. Parents of children with ASD frequently experience high levels of stress. Managing the child's challenging behaviors, communication difficulties, and the demands of coordinating care and therapies can be overwhelming. Uncertainty about the child's future, concerns about their development, and the complexities of navigating healthcare and educational systems often lead to heightened anxiety.

Research indicates that parents of children with ASD are at a higher risk for depression compared to parents of typically developing children due to feelings of helplessness, social isolation, and the emotional toll of caregiving. The stress of raising a child with ASD can strain marital relationships, leading to conflicts over caregiving responsibilities, differences in coping strategies, and reduced time for the relationship (15).

Of these 96 study participants, 32.3 %(n=31) were male respondents, while 67.7 % (n=65) were female respondents. Alibekova et al (13). Kazakhstan has also reported that 89.9 % study participants were mothers of ASD children with ASD, similar to our results. Almansour et al. (16). In Saudi Arabia, it has been reported that 68 % study participants were mothers of ASD children with ASD. A Vietnamese study conducted by Ha et al (17). has also reported that 16.1% of respondents were fathers, versus 83.9% were mothers. A Brazilian study conducted by Ponde et al. 18 also reported that 85.5% of respondents were females. Demsar et al. (19) have also reported that 57.4 % study participants were mothers of

ASD children with ASD, similar to our results. Al - Farsi et al (20). Oman has also reported 52.6 % female study participants in the parents of children with ASD, similar to our results.

The mean age of these respondents was 33.70 ± 6.22 years, ranging from 24 years to 47 years. For males, the mean age was 36.55 ± 6.04 years, compared with 32.34 ± 5.87 years for female respondents (P = 0.002). 70.8 % (n = 68) were aged 35 years or less. Alibekova et al (13). Kazakhstan has also reported a mean age of 35.69 ± 6.51 years for the study participants, similar to our results. Almansour et al. (16). Saudi Arabia has reported 78 % study parents of ASD children were aged up to 35 years, similar to our results. A Vietnamese study conducted by Ha et al (17). Has also reported a 38.71 ± 6.12 years mean age of the parents of ASD children, similar to our results. A Brazilian study conducted by Ponde et al (18). It has also been reported that 79.9% of respondents were aged less than 50 years, similar to our study results. Demsar et al. (19) have also reported a 38 ± 6.53 years mean age of the parents of ASD children, similar to our results. Al - Farsi et al (20). Oman has also reported a 39.7 ± 4.2 years mean age of the study participants in the parents of children with ASD, similar to our results.

The majority of respondents (62.5%; n=60) were from urban areas, 60.4% (n=58) had a middle-income background, and 56.3% (n=42) were literate. Alibekova et al (13). Kazakhstan has also reported that 62.5 % study participants were from middle-income families, similar to our results. However, the literacy rate in their study was almost 100%, whereas ours was lower. These findings are consistent with those of Almansour et al. (16) and a Vietnamese study by Ha et al. (17), which reported a 100% literacy rate, indicating a low literacy rate in our population. A Brazilian study conducted by Ponde et al (18). Has also reported that 76.6 % respondents were from urban areas and literate, similar to our study results. Demsar et al. (19) have also reported findings similar to ours.

Most of the respondents were homemakers (59.4%; n=57), the joint family system was noted in 69.8% (n=67), and 3.1% (n=3) were divorced. A Brazilian study conducted by Ponde et al (18). Has also reported similar results, with 78.1 % respondents being married. Demsar et al. (19). The study also reported that 16.7% of participants were divorced, a Figure similar to ours. Al-Farsi et al. (20) from Oman also reported a 57.5 % employment rate among parents of ASD children, similar to our results. Another Saudi Arabian study conducted by Bilal et al [21] has also reported 2 % divorce rate in parents of ASD children, similar to our results.

Stress was noted in 61.5 % (n=59), anxiety in 47.9 % (n=46), and depression in 45.8 % (n=44). Alibekova et al (13). Kazakhstan has also reported 53.7 % depression, 53 % anxiety, and 61 % stress among study participants, similar to our results. Almansour et al [16] from Saudi Arabia have also reported a significant association of psychiatric problems among parents of children with ASD (P=0.002), similar to our results. A Vietnamese study conducted by Ha et al [17] has also reported high stress levels among parents with an ASD child as compared with the control group, similar to our results. A Brazilian study conducted by Ponde et al (18). Has also reported 58 % depression and 44.4 % anxiety among parents of ASD children, similar to our study results. Demsar et al [19] have also reported high proportions of psychological disorders and depression being more prevalent among mothers of ASD children, similar to our results. Al - Farsi et al (20). Oman has also reported 58.8 % stress, 56.2% anxiety, and 57.0 % depression in ASD children's parents, similar to our results. Another Saudi Arabian study conducted by Bilal et al (21). Has also reported a significant association (P = 0.010 for stress, P = 0.037 for depression, and P = 0.014 for anxiety, respectively) with mental health issues of parents of ASD children as compared with controls.

Conclusion

A very high burden of stress, anxiety, and depression was noted among parents of children with autism spectrum disorder in our study. Stress was significantly associated with residential status, socioeconomic status, occupation, family system, and literacy. Anxiety was significantly associated with age, residential status, and literacy, while depression was significantly associated with age and marital status.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-24)

Consent for publication

Approved

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Conflict of interest

The authors declared no conflicts of interest.

Author Contribution

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Manuscript drafting, Study Design,
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Review of Literature, Data entry, Data analysis, and drafting an article.
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Conception of Study, Development of Research Methodology Design,
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Study Design, manuscript review, and critical input.
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All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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