JOURNAL OF PAKISTAN PSYCHIATRIC SOCIETY
(Reviewed Manuscript - Version of Record to Follow)

ORIGINAL ARTICLE:

ASSOCIATION OF FAMILY FUNCTIONING AND FAMILY STRUCTURE WITH CAREGIVER BURDEN AND PSYCHOLOGICAL DISTRESS AMONG PARENTS OF CHILDREN WITH ADHD

Aatir H. Rajput,[1] Summaira Channa,[2] Darya Khan,[3] Sajid Hussain Seelro,[4] Fozia Baloch,[5] Moin Ahmed Ansari.[6]

[1,2] Department of Psychiatry & Behavioral Sciences, Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro, Pakistan.
[3]Department of Psychiatry, Suleman Roshan Medical College, Tando Adam, Pakistan.
[4]Department of Neurology, Bilawal Medical College for Boys, Liaquat University of Medical & Health Sciences, (LUMHS), Jamshoro, Pakistan.
[5]Department of Pediatrics, Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro, Pakistan.
[6]Liaquat Institute of Mental Health, Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro, Pakistan.

CORRESPONDENCE: DR AATIR H. RAJPUT EMAIL: aatir@lumhs.edu.pk

Submitted: April 27, 2026
Accepted: September 30, 2026

ABSTRACT

OBJECTIVE

To determine the association of family functioning and family structure with caregiver burden and psychological distress among parents of children with ADHD.

STUDY DESIGN

Analytical cross-sectional study

PLACE & DURATION OF STUDY

Child Psychiatry Clinics, Sir CJ Institute of Psychiatry & Behavioral Sciences and Liaquat University Hospital, Hyderabad, Pakistan, from August 2024 to April 2025.

METHOD

Eighty-two parents of children with DSM-5-diagnosed ADHD were enrolled through consecutive sampling; 73 were included in the final analysis. Family functioning, caregiver burden and psychological distress were assessed using the Urdu General Functioning Scale (GFS), Zarit Burden Interview (ZBI) and Depression Anxiety Stress Scales-21 (DASS-21), respectively. Data were analysed using Pearson correlation and independent-samples t-tests, with Bonferroni correction for six comparisons ($\alpha = 0.008$).

RESULTS

Mean parent age was 36.7 ± 7.3 years; 64.4% were female and 56.2% belonged to joint families. Family dysfunction was present in 75.3%, while 53.4% reported moderate-to-severe or severe caregiver burden. Moderate-to-severe depression, anxiety and stress were reported by 56.2%, 60.3% and 53.4%, respectively. GFS scores correlated positively with caregiver burden ($r = 0.61$, $p < 0.001$) and psychological distress ($r = 0.57$, $p < 0.001$). Compared with nuclear families, joint families had higher GFS and ZBI scores (both $p < 0.001$). DASS-21 scores were also higher ($p = 0.006$), but this difference did not remain significant after correction (adjusted $p = 0.036$).

CONCLUSION

Poorer family functioning and joint family structure were associated with greater caregiver burden and psychological distress among parents of children with ADHD.

KEYWORDS

Attention Deficit Disorder with Hyperactivity; Caregiver Burden; Parents; Family Structure; Pakistan; Psychological Distress.

INTRODUCTION

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most widespread neurodevelopmental disorders. It features consistent behaviour of inattentiveness, hyperactivity, and impulsivity that adversely affect an individual's activities across academic, social and family domains.[1] It is a serious public health concern as a recent meta-analysis reports a prevalence of 7.6% among children aged 3-12 years, globally.[2]

ADHD not only affects the lives of affected children but also their families or caretakers. Family structure and dynamics are adversely affected by children with ADHD due to behavioural challenges, mental disability and hindrance in interpersonal interactions. [3,4] Family systems theory demonstrates interdependence of child behavior and family settings, with impairment in one domain affecting the other.[5] Empirical research has demonstrated that families of children diagnosed with ADHD normally face diminished communication, decreased bonding, role dysfunction, and enhanced conflicts, leading to dysfunctional family structure.[6] These impaired family dynamics have been associated with elevated ADHD symptoms, resulting in a reciprocal connection between child behaviour and family functioning.[7]

The burden on parents is a significant yet often neglected outcome of managing chronic early-onset psychiatric disorders. It contributes to mental, physical, social and financial strain faced by parents.[8] The stress level experienced by family members of children with ADHD is comparatively much higher owing to behavioural abnormalities and enhanced caregiving challenges.[9] In Pakistan, caregiver burden among families of children diagnosed with ADHD is significant, with many parents exhibiting stress, mental exhaustion, and diminished quality of life.[10]

Depression, anxiety and stress are reported to be highly prevalent among parents whose children have been diagnosed with ADHD. The chronic nature of the disease, along with academic stress, behavioral dysfunction and social challenges, leads to enhanced susceptibility among parents.[11] In Pakistan, studies of caregivers of children with neurodevelopmental disorders including but not limited to ADHD have reported elevated levels of psychological distress, particularly among mothers. This is often linked with restricted coping resources and insufficient social and emotional support.[12] These findings signify the requirement for comprehensive understanding of factors determining parental emotional health in regional settings.

Family configuration and bonding are key factors that determine both children's outcomes and parent psychological welfare. In collectivistic communities such as Pakistan, joint family system is commonly found structure that can either provide additional emotional support or contribute to mutual conflicts leading to enhanced stress levels.[13] Factors such as family size, parental education, socioeconomic status, have been suggested to influence family functioning, [13] although their specific relationship with caregiver burden in the context of ADHD requires further investigation. However, the interaction between these structural factors and psychological outcomes among parents of children with ADHD remains underexplored in Pakistan. The extent to which family functioning and family structure collectively relate to caregiving burden and psychological distress among parents of children with ADHD in Pakistan remains unclear. Therefore, the present study aimed to assess the association of family functioning and family structure with caregiver burden and psychological distress among parents of children with ADHD.

METHOD

The present study was initiated after being approved by the Institutional Review Board of the Liaquat University of Medical & Health Sciences (LUMHS) (IRB No. LUMHS/REC-369; dated: 30/07/2024). This analytical cross-sectional study was conducted at the Child Psychiatry Clinics of Sir Cowasjee Jehangir Institute of Psychiatry & Behavioral Sciences (affiliated with LUMHS), Hyderabad, Pakistan and Liaquat University Hospital, Hyderabad, from August 2024 to April 2025.

The study population comprised parents of children aged 6–13 years who had been diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) according to DSM-5 criteria, requiring the presence of at least six symptoms. A consecutive sampling technique was employed, and all eligible parents were approached for participation. Written informed consent was obtained from all participants prior to enrollment. Participation was purely voluntary and confidential, and participants could withdraw without affecting the clinical care. Child assent was not required because parent-reported data were collected.

The sample size calculation employed OpenEpi by taking a pooled ADHD prevalence of 7.6% among children aged 3–12 years, with a 95% confidence level and a 6% margin of error.[2] A sample sized as 75 was calculated, based on prevalence estimation rather than the primary association analyses. However, 82 participants were enrolled to compensate for any possible missing data. After excluding nine records with incomplete data, 73 participating parents were included ultimately. The sample size may therefore have limited the power to detect smaller associations. Parents of children with comorbid autism spectrum disorder, intellectual disability, or psychosis were excluded, and parents who did not provide consent were not enrolled.

A structured proforma was used for collection of data. Recorded information included sociodemographic features and family-related parameters such as family structure (joint or nuclear), number of family members and children, birth sequence, parental awareness level, and profession.

Family functioning, caregiver burden and psychological distress were assessed using the Urdu versions of the General Functioning Scale (GFS) of the Family Assessment Device (FAD), Zarit Burden Interview (ZBI) and Depression Anxiety Stress Scale-21 (DASS-21), respectively. All instruments were administered through face-to-face interviews while maintaining confidentiality.

General Functioning Scale (GFS): It is a 12-item subscale of the Family Assessment Device (FAD) and assesses overall healthy versus problematic family functioning. Items are rated on a four-point Likert scale (1–4), with items 1, 3, 5, 7, 9 and 11 reverse-scored. The mean score is calculated by dividing the total by 12; scores ≥2.0 indicate problematic family functioning. [14]
The validated Urdu version demonstrated good internal consistency (Cronbach's $\alpha = 0.80$), cross-language concordance, and satisfactory convergent and discriminant validity.

Zarit Burden Interview (ZBI): The 22-item ZBI assesses overall caregiver burden and was analysed as a total score rather than separate subscales. Items are rated from 0 to 4, giving a total score of 0–88; higher scores indicate greater burden. Scores of 0–20, 21–40, 41–60 and 61–88 indicate little/no, mild-to-moderate, moderate-to-severe and severe burden, respectively. The Urdu-translated ZBI has been

used in Pakistani caregivers and demonstrated good internal consistency (Cronbach's α = 0.91).[15] The ZBI was analysed as a continuous score in all inferential analyses; dichotomisation at >40 was used for descriptive purposes only.

Depression Anxiety Stress Scales-21 (DASS-21): The DASS-21 comprises three 7-item subscales assessing depression, anxiety and stress. Items are scored from 0 to 3, and each subscale score is summed and multiplied by two. Moderate-or-higher cut-offs are ≥14 for depression, ≥10 for anxiety and ≥19 for stress. The validated Urdu version demonstrated excellent overall internal consistency (Cronbach's α = 0.93), with α = 0.84 for Depression, 0.86 for Anxiety and 0.83 for Stress.[16] A total DASS-21 score (sum of the three doubled subscales; range 0–126) was used as a global index of psychological distress, consistent with prior caregiver studies; subscale scores are reported descriptively.

Data Analysis

Statistical Package for the Social Sciences (SPSS) version 27.0 was utilised for entering and analysing the data. Normality was assessed using the Shapiro–Wilk test. GFS (W = 0.92, p = 0.08), ZBI (W = 0.94, p = 0.40), and DASS-21 (W = 0.97, p = 0.15) scores did not significantly deviate from normality, so parametric tests were used. Pearson correlation was used to examine the association of GFS scores with ZBI and DASS-21 scores, and independent-samples t-tests were used to compare GFS, ZBI and DASS-21 scores between joint and nuclear families. Confidence intervals for correlation coefficients were obtained using Fisher's z transformation. As six inferential tests were performed (three correlations and three t-tests), Bonferroni correction was applied, with the corrected threshold taken as α = 0.008. All tests were two-tailed. There were no missing data for the primary variables. Statistical significance was set at p ≤ 0.05 for unadjusted analyses. For the six primary comparisons, a Bonferroni-adjusted significance threshold of α = 0.008 was applied.

RESULTS

Seventy-three parents were included in the final analysis, with a mean age of 36.7 ± 7.3 years. Their demographic and family characteristics are summarised in Table 1. Most participants were mothers. The majority were from joint families, with more than half had secondary or higher education.

TABLE 1
Demographic and Family Characteristics of Parents (N = 73).

Variable	Frequency (N)	Percentage (%)
Gender		
Male	26	35.6
Female	47	64.4
Family Structure		
Nuclear	32	43.8
Joint	41	56.2
Parental Education		
Primary or below	28	38.4
Secondary and above	45	61.6
Family Size		
≤5 Members	27	37.0
>5 Members	46	63.0
Birth Order of Child with ADHD		
First	26	35.6
Second or later	47	64.4
Parents Employment Status		
Employed	33	45.2
Unemployed	40	54.8
Type Of ADHD		
Predominantly Hyperactive/Impulsive	32	43.8
Predominantly Inattentive	13	17.8
Combined Presentation	28	38.4

Table 2 depicts the type of family functioning, caregiver burden, and psychological distress (assessed via DASS 21). Problematic family function was majorly observed. More than 50% of parents reported high (moderate-to-severe or severe) caregiver burden, and moderate-to-severe distress.

TABLE 2
Distribution of Family Functioning, Caregiver Burden and Psychological Distress (N = 73).

Variable	Category	n (%)
Family Functioning (GFS)	Healthy (< 2.0)	18 (24.7)
	Problematic (≥2.0)	55 (75.3)
	Mean GFS ± SD	2.40 ± 0.37
Caregiver Burden (ZBI)	Low burden (≤ 40)	34 (46.6)
	High burden (>40)	39 (53.4)
	Mean ZBI ± SD	40.99 ± 10.44
DASS-21	Mean DASS-21 ± SD	32.10 ± 11.53
Depression	Normal/Mild	32 (43.8)
	Moderate to Severe	41 (56.2)
Anxiety	Normal/Mild	29 (39.7)
	Moderate to Severe	44 (60.3)
Stress	Normal/Mild	34 (46.6)
	Moderate to Severe	39 (53.4)

Note: ZBI scores were dichotomized at >40 (moderate-to-severe or severe burden) and ≤40 group (no/little and mild-to-moderate burden)

Table 3 shows the correlations among family functioning, caregiver burden, and psychological distress. All correlations were positive and statistically significant, and remained significant after Bonferroni correction ($p < 0.008$). Higher GFS scores, reflecting poorer family functioning, were linked to greater caregiver burden and psychological distress. Caregiver burden was also positively associated with psychological distress.

TABLE 3
Correlation of Family Functioning with Caregiver Burden and Psychological Distress (N = 73).

Variables	Pearson's r	95% CI	p-value
GFS score and caregiver burden (ZBI)	0.61	0.44–0.74	<0.001
GFS score and psychological distress (DASS-21)	0.57	0.39–0.71	<0.001
Caregiver Burden (ZBI) and psychological distress (DASS-21)	0.53	0.34–0.68	<0.001

Note: Pearson's correlation coefficient (r) was reported with 95% confidence intervals using Fisher's z transformation. Bonferroni-adjusted p-values were calculated by multiplying the raw p-value by six. The corrected significance level was $\alpha = 0.008$. All correlations remained statistically significant after correction.

Caregivers from joint families had higher GFS, ZBI, and DASS-21 scores than those from nuclear families. The GFS and ZBI differences remained significant after Bonferroni correction. The DASS-21 difference did not remain significant after correction (adjusted p = 0.036). The groups were not matched for family size, parental education, or employment status. Therefore, these comparisons were unadjusted.

TABLE 4
COMPARISON OF FAMILY FUNCTIONING, CAREGIVER BURDEN AND PSYCHOLOGICAL DISTRESS BY FAMILY STRUCTURE

Variable	Nuclear (n=32) Mean ± SD	Joint (n=41) Mean ± SD	*t*	*df*	p-value	Cohen's d
GFS score	2.24 ± 0.33	2.52 ± 0.35	3.48	71	<0.001	0.82
ZBI score	36.5 ± 9.6	44.5 ± 9.8	3.49	71	<0.001	0.82
DASS-21 score	28.0 ± 10.2	35.3 ± 11.6	2.81	71	0.006	0.66

Note: Independent-samples t-test; Cohen's d: standardised mean difference.
Bonferroni-adjusted p = raw p × 6; the corrected threshold was α = 0.008. Statistical significance was set at p < 0.05. The GFS and ZBI comparisons remain significant after Bonferroni correction (GFS and ZBI adjusted p < 0.006); the DASS-21 comparison did not (adjusted p = 0.036).

DISCUSSION

The study findings showed that a large proportion of parents experienced family dysfunction, elevated caregiver burden, and considerable psychological distress, including depression, anxiety, and stress. The results of current study are consistent with previously published research suggesting that ADHD is associated with substantial psychosocial burden and family strain among their parents.[8]

This study highlighted a significant positive correlation between family dysfunction and caregiving burden, along with psychological distress. The findings are consistent with Family Systems Theory, which proposes that difficulties in family communication, roles, emotional responsiveness, and interpersonal relationships may be related with greater caregiver stress and psychological distress. A study on families with ADHD-diagnosed children, similarly reported maladaptive family interaction patterns associated with greater child symptoms and family stress.[17] Additionally, Gordon and Hinshaw reported an association between impaired family functioning and increased parental stress, supporting a potentially bidirectional relationship between family dynamics and caregiver psychological well-being.[18]

Parents from joint families had significantly higher family dysfunction, caregiver burden and psychological distress scores than those from nuclear families. Effect sizes were moderate-to-large. In collectivistic societies such as Pakistan, joint family systems may provide practical, financial, and emotional support through shared caregiving responsibilities; however, they may also introduce interpersonal demands, reduced autonomy, role conflicts, and differing expectations regarding childcare. Saqib Lodhi et al. reported differences in satisfaction between joint and nuclear family systems in Pakistan, suggesting that family structure may be associated with psychosocial experiences within the local sociocultural context.[19] The effect of family structure should not be viewed as inherently protective or harmful. Its impact may depend on relationship quality, sharing of caregiving responsibilities, and the level of family support available. Regional evidence also emphasizes the role of sociocultural and family factors in shaping parental experiences.[20]

Caregiver's burden was significantly connected to psychological distress. Parents with higher caregiving burden reported greater symptoms of depression, anxiety, and stress. This finding is consistent with international evidence showing that caregiver burden is closely related to poorer psychological well-being among parents of children with neurodevelopmental conditions.[21] Thomas et al. also reported significant links between parental stress, depression, and caregiving difficulties, suggesting that ongoing caregiving demands may negatively affect parental mental health.[22] Furthermore, similar studies carried out in Pakistan have reported substantial psychological stress and emotional exhaustion among parents of children with neurodevelopmental disorders, emphasizing the need for appropriate psychosocial support strategies.[23]

Moderate-to-severe psychological distress was common in the present study, with 60.3% of parents reporting anxiety and 56.2% reporting depression. These findings are broadly consistent with evidence from low- and middle-income settings where limited mental health resources and sociocultural barriers may increase parents' vulnerability.[24,25] Females constituted 64.4% of the sample. As no inferential comparison of psychological distress by parent gender was performed, no gender-specific conclusions were drawn from the present study. Previous literature has reported greater psychological distress among mothers of children with ADHD, potentially related to greater caregiving responsibilities and social expectations.[21,25]

Parental education and awareness may also influence parent experiences; however, these relationships were not sufficiently established in the present analysis to support causal or definitive conclusions. Previous research has suggested that education may facilitate awareness of the disorder, access to healthcare, and use of adaptive coping strategies.[17] Accordingly, these factors should be examined more systematically in future studies.

Given the high rates of caregiver burden and distress observed in this study, it is recommended to routinely screen parents with brief tools like the ZBI and DASS-21 during ADHD diagnosis, establish referral routes for those who screen positive, and incorporate family-centred counselling into child psychiatry services. Task-shifting of basic parental support to trained family counsellors may be feasible in resource-limited Pakistani tertiary-care settings.

This study's strengths include the use of validated Urdu versions of standardised assessment instruments, a clinically relevant sample and consideration of sociocultural differences between joint and nuclear family systems. The findings provide preliminary evidence to inform family-centred interventions and parental support strategies.

Limitations

Despite its merits, this study has some limitations. Its cross-sectional design precludes causal inference and allows the possibility of reverse causality. The single-institution setting, non-probability sampling and small sample size may limit generalisability. Self-reported information may also be subject to recall and response bias. Important clinical variables, including ADHD severity, comorbidities, illness duration and medication/treatment status, were not fully controlled in the analysis. The joint-versus-nuclear comparison was unadjusted for confounders. Since joint families tend to be larger, the differences may partly reflect household size. Multiple comparisons were addressed with Bonferroni correction.

However, this approach may have increased the risk of Type II error. In addition, only the overall General Functioning score was analysed, limiting identification of specific family-functioning domains associated with caregiver outcomes.

CONCLUSION

Poorer family functioning was associated with greater caregiver burden and psychological distress among parents of children diagnosed with ADHD. Parents from joint families also reported significantly higher burden and distress than those from nuclear families. These findings support the value of family-centred assessment and parental support. Larger multicentre longitudinal studies are required.

REFERENCES

1. Polanczyk GV, Salum GA, Sugaya LS, Caye A, Rohde LA. Annual research review: a meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. J Child Psychol Psychiatry. 2015;56(3):345–65. doi:10.1111/jcpp.12381.
2. Salari N, Ghasemi H, Abdoli N, Rahmani A, Shiri MH, Hashemian AH, et al. The global prevalence of ADHD in children and adolescents: a systematic review and meta-analysis. Ital J Pediatr. 2023;49(1):48. doi:10.1186/s13052-023-01456-1.
3. Rajput AH, Dahri S, Baloch F, Channa S, Ahmed S, Ansari MA, et al. Association between functioning and dynamics in families of children with ADHD in Pakistani context. Pak J Health Sci. 2025;6(3):205–10. doi:10.54393/pjhs.v6i3.2937.
4. Barkley RA. Attention-deficit hyperactivity disorder: a handbook for diagnosis and treatment. 4th ed. New York: Guilford Press; 2015.
5. Minuchin S. Families and family therapy. Cambridge (MA): Harvard University Press; 1974.
6. Johnston C, Mash EJ. Families of children with attention-deficit/hyperactivity disorder: review and recommendations for future research. Clin Child Fam Psychol Rev. 2001;4(3):183–207. doi:10.1023/A:1017592030434
7. Jongrakthanakij N, Prachason T, Limsuwan N, et al. From ADHD symptoms to parental stress: The roles of functional impairment, family functioning, and parental ADHD. *PLoS One*. 2026;21(1):e0341817. doi:10.1371/journal.pone.0341817
8. Cham CQ, Ibrahim N, Siau CS, Kalaman CR, Ho MC, Yahya AN, et al. Caregiver burden among caregivers of patients with mental illness: a systematic review and meta-analysis. Healthcare (Basel). 2022;10(12):2423. doi:10.3390/healthcare10122423.
9. Leitch S, Sciberras E, Post B, Gerner B, Rinehart N, Nicholson JM, et al. Experience of stress in parents of children with ADHD: a qualitative study. Int J Qual Stud Health Well-being. 2019;14(1):1690091. doi:10.1080/17482631.2019.1690091.
10. Liaquat J, Humayoun K, Naqvi SQH, Ahmed MA, Ahmed T, Laghari DK. Parental caregiver burden for children with attention deficit hyperactivity disorder at tertiary care hospital in hyderabad. J Pak Psychiatr Soc. 2023;20(01):18-21.
11. Zayed A, Husni M, Al Montasser Mahmoud M, Fakri M, Khan F, AlMaskati Y, et al. Prevalence of anxiety symptoms among caregivers of children with ADHD attending pediatric and speech therapy departments. BMC Psychol. 2025;13(1):510. doi:10.1186/s40359-025-02790-1.

12. Sheikh MH, Ashraf S, Imran N, Hussain S, Azeem MW. Psychiatric morbidity, perceived stress and ways of coping among parents of children with intellectual disability in Lahore, Pakistan. Cureus. 2018;10(2):e2200. doi:10.7759/cureus.2200.
13. Gul N, Shah A, Alvi SM, Kazmi F, Ghani N. Family system's role in the psychological well-being of the children. Khyber Med Univ J. 2017;9(1):29–32.
14. Kareem A, Khawar R, Habib S. Initial psychometric properties of General Functioning of Family Scale (Urdu version). Pak J Soc Res. 2022;4(1):53–60. doi:10.52567/pjsr.v4i1.344.
15. Saeed S, Malik MGR, Khan MH, Malik SAR, Aziz B. Care for the caregiver: an exploration of caregiver burden of children with chronic medical conditions at a tertiary care hospital in Karachi, Pakistan—a mixed-methods study. BMJ Open. 2024;14(5):e083088. doi:10.1136/bmjopen-2023-083088.
16. Aslam N, Kamal A. Translation, validation and effectiveness of Depression, Anxiety and Stress Scale (DASS-21) in assessing the psychological distress among flood-affected individuals. J Pak Psychiatr Soc. 2017;14(4):16–20.
17. Chu K, Li S, Chen Y, Wang M. Family dynamics in families with children with attention deficit hyperactivity disorder. Shanghai Arch Psychiatry. 2012;24(5):279–85. doi:10.3969/j.issn.1002-0829.2012.05.005.
18. Gordon CT, Hinshaw SP. Parenting stress as a mediator between childhood ADHD and early adult female outcomes. J Clin Child Adolesc Psychol. 2017;46(4):588–99. doi:10.1080/15374416.2015.1041595.
19. Saqib Lodhi F, Ahmed Khan A, Raza O, Uz Zaman T, Farooq U, Holakouie-Naieni K. Level of satisfaction and its predictors among joint and nuclear family systems in District Abbottabad, Pakistan. Med J Islam Repub Iran. 2019;33:59. doi:10.34171/mjiri.33.59.
20. Jaffar A, Waqar W, Hassan SMU, Ahmed A, Asim M, Zubair M. Caregiver Burden and Psychological Distress in Parents of Children with Neurodevelopmental Disorders: The Mediating Roles of Rumination and Hopelessness. *J Autism Dev Disord*. Published online November 1, 2025. doi:10.1007/s10803-025-07103-4
21. Mousavi S, Pahlavanzadeh S, Maghsoudi J. Evaluating the effect of a need-based program for caregivers on the stress, anxiety, depression, and the burden of care in families of children with attention deficit-hyperactive disorder. Iran J Nurs Midwifery Res. 2019;24(2):96–101. doi:10.4103/ijnmr.IJNMR_11_17.
22. Thomas S, Ryan NP, Byrne LK, Hendrieckx C, White V. Psychological distress among parents of children with chronic health conditions and its association with unmet supportive care needs and children's quality of life. J Pediatr Psychol. 2024;49(1):45–55. doi:10.1093/jpepsy/jsad074.
23. Khan D, Andleeb MS, Naz A, Yaqoob J, Mazhar S. Stress, depression and anxiety levels among parents of children with neurodevelopmental disorders. J Asian Dev Stud. 2025;14(3):1896–902. doi:10.62345/jads.2025.14.3.1633.
24. Si Y, Ma JLC, Zhang J. Factors influencing parenting stress among Chinese families of children with attention-deficit/hyperactivity disorder. Child Youth Serv Rev. 2020;116:105148. doi:10.1016/j.childyouth.2020.105148.
25. Maridal HK, Bjørgaas HM, Hagen K, Jonsbu E, Mahat P, Malakar S, et al. Psychological distress among caregivers of children with neurodevelopmental disorders in Nepal. Int J Environ Res Public Health. 2021;18(5):2460. doi:10.3390/ijerph18052460.

DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

FUNDING

No external funding was received for this study.

DISCLOSURE

The authors declare that there are no additional financial or non-financial disclosures relevant to this study

AUTHOR(S) CONTRIBUTION / UNDERTAKING FORM

Sr. #	Author(s) Name	Author(s) Affiliation	Contribution
1.	Aatir H. Rajput	Department of Psychiatry & Behavioral Sciences, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan.	Conceptualisation, study design, supervision, data analysis, manuscript drafting, corresponding author and final approval.
2.	Summaira Channa	Department of Psychiatry & Behavioral Sciences, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan.	Data collection, data entry, data analysis, interpretation of results, manuscript writing, and final approval.
3.	Darya Khan	Department of Psychiatry, Suleman Roshan Medical College, Tando Adam, Pakistan.	Literature review, data interpretation, manuscript drafting, and final approval.
4.	Sajid Hussain Seelro	Department of Neurology, Bilawal Medical College for Boys, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan.	Statistical analysis support, critical revision and final approval.
5.	Fozia Baloch	Department of Pediatrics, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan.	Clinical input, patient recruitment facilitation, manuscript review and final approval.
6.	Moin Ahmed Ansari	Liaquat Institute of Mental Health, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan.	Study supervision, critical revision for intellectual content, overall oversight and final approval.