

PERCEIVED STRESS AND ANXIETY AMONG PAKISTANI PARENTS OF CHILDREN WITH INTELLECTUAL DISABILITIES

Original Article

Moazama Anwar^{1*}, Awais Khalid², Shaista Irshad³, Amna Saleem Khan Lodhy⁴, Aamna Chuahdary⁵, Zainab Manzoor⁶, Saniya Qureishi⁷, Ayesha Altaf⁸

¹Clinical Psychologist, In charge Adolescents Health Center, DHQ Hospital Faisalabad, Pakistan.

²Visiting Faculty of Psychology, Department of Allied Subjects, University of Narowal, New Campus, Narowal, Pakistan.

³Clinical Psychologist, PhD Scholar, Department of Applied Psychology, Government College University Faisalabad, Pakistan.

⁴Principal, Clinical Psychologist, Little Angels Home, Sialkot Cantt, Pakistan.

⁵Clinical Psychologist, Little Angels Home, Sialkot Cantt, Pakistan.

⁶Clinical Psychologist, Niazi Medical & Dental College, Sargodha, Pakistan.

⁷BS Scholar, Department of Psychology, University of Karachi, Pakistan.

⁸MPhil Scholar, Institute of Clinical Psychology, University of Karachi, Pakistan.

Corresponding Author: Moazama Anwar, Clinical Psychologist, In charge Adolescents Health Center, DHQ Hospital Faisalabad, Pakistan, moazamaanwarfhc@gmail.com

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ABSTRACT

Background: Parents of children with intellectual disabilities often experience elevated levels of psychological distress, including stress and anxiety, due to caregiving demands and societal stigma. While international studies highlight these challenges, limited research has addressed this issue within the Pakistani context, where cultural beliefs and inadequate support systems may intensify caregiver burden.

Objective: To examine the association between perceived stress and anxiety among parents of children with intellectual disabilities in Pakistan and explore gender-based differences in psychological outcomes.

Methods: This cross-sectional correlational study recruited 210 parents (119 mothers and 91 fathers) of children diagnosed with intellectual disabilities from special education institutions in Pakistan. Participants were selected using purposive sampling and met inclusion criteria: being the biological parent of a child under 18 years with a confirmed diagnosis and having at least an intermediate educational level. The Perceived Stress Scale (PSS-10) and Beck Anxiety Inventory-II (BAI-II) were administered to assess stress and anxiety levels. Data were analyzed using SPSS version 27, applying Pearson's correlation and independent samples t-tests.

Results: The mean age of participants was 38.89 years (SD = 9.02). A strong, positive correlation was found between perceived stress and anxiety ($r = 0.72, p < .01$). Mothers reported significantly higher levels of perceived stress ($M = 17.39, SD = 5.57$) and anxiety ($M = 31.32, SD = 13.14$) than fathers (stress: $M = 15.23, SD = 6.15$; anxiety: $M = 25.74, SD = 13.61$), with moderate effect sizes.

Conclusion: The findings indicate a substantial psychological burden among parents, particularly mothers, of children with intellectual disabilities in Pakistan. This underscores the need for culturally tailored interventions, increased awareness, and accessible mental health support to address caregiver distress.

Keywords: Anxiety, Caregivers, Intellectual Disability, Mental Health, Pakistan, Perceived Stress, Psychological Distress.

INTRODUCTION

Pakistan, as a developing nation, faces considerable challenges in healthcare, particularly in the realm of mental health where awareness remains critically low. Nearly half of the population is illiterate, which significantly impedes efforts to promote mental health education and support services (1,2). Among the most neglected areas is the understanding and management of neurodevelopmental disorders, particularly intellectual disability. Cultural misconceptions often exacerbate the situation, with children exhibiting atypical behaviors frequently misattributed to supernatural causes such as spirit possession or black magic. This stigma not only delays diagnosis and treatment but also fosters isolation and psychological distress within affected families (3). Intellectual disability, a neurodevelopmental condition marked by significant limitations in intellectual functioning and adaptive behavior, manifests early in life and affects a person's learning capacity, communication skills, reasoning, and ability to perform everyday tasks (4). The severity of impairment varies, with some individuals capable of living semi-independently while others require lifelong support. Symptoms range from difficulties in problem-solving and decision-making to impaired social understanding and poor motor coordination. Additionally, many children with intellectual disabilities exhibit behavioral challenges such as tantrums or emotional dysregulation, further complicating caregiving demands (5,6).

Parents of such children, particularly in low-resource settings, face immense psychological burdens. Evidence indicates that they are more vulnerable to heightened levels of perceived stress and anxiety when compared to parents of neurotypical children. Perceived stress, defined as an individual's subjective assessment of stress in their life, and anxiety, a state of emotional unease often accompanied by physical symptoms like restlessness and rapid heartbeat, are both prevalent among caregivers managing the complex needs of a child with intellectual disabilities (7). These psychological states are not merely co-occurring but appear to be closely interrelated. Empirical data further reinforce these observations. For instance, research conducted in Jammu involving 60 children showed that mothers—particularly those caring for children with severe disabilities—reported significantly elevated stress and anxiety levels. A positive correlation was observed between anxiety and perceived stress, underscoring the interconnectedness of these psychological constructs (8,9). In the Pakistani context, limited studies suggest similar trends, with stress and anxiety among parents often linked to a combination of poor coping mechanisms, lack of community support, inadequate rehabilitation services, and the high dependency needs of their children (10). Globally, these challenges are echoed in studies such as one conducted in Malawi, where socioeconomic constraints and caregiving demands were identified as primary stressors among parents, further emphasizing the universal need for tailored psychosocial interventions (11). Despite these alarming findings, there is a notable lack of rigorous research in Pakistan investigating the psychological well-being of parents of children with intellectual disabilities. Given the compounded effects of cultural stigma, inadequate healthcare infrastructure, and socioeconomic hardship, the emotional toll on caregivers in this population remains underexplored. The current study aims to address this gap by examining the association between perceived stress and anxiety among such parents in Pakistan. This inquiry also explores gender-based differences in psychological outcomes, offering a more nuanced understanding of parental experiences. The objective is to generate evidence that can inform targeted interventions and promote parental mental health as a critical component of comprehensive disability care.

METHODS

The study employed a cross-sectional correlational research design to explore the association between perceived stress and anxiety among parents of children diagnosed with intellectual disabilities in Pakistan. A total of 210 parents were recruited through purposive sampling from various special education centers and hospitals catering to children with developmental conditions. To ensure sample relevance, inclusion criteria specified that participants must be biological parents of at least one child under the age of 18 years formally diagnosed with an intellectual disability, and possess a minimum educational qualification of intermediate level (i.e., completion of higher secondary education). Parents who were not directly involved in caregiving or had comorbid psychiatric conditions themselves were excluded to minimize confounding effects. Data collection involved the administration of two standardized psychological assessment tools alongside a demographic information sheet. The Perceived Stress Scale (PSS-10), was utilized to assess the degree to which individuals appraise situations in their life as stressful. This 10-item scale uses a 5-point Likert-type response format ranging from 0 (never) to 4 (very often), with higher total scores indicating greater levels of perceived stress. The instrument has demonstrated robust psychometric properties, with reported reliability coefficients ranging from 0.84 to 0.91 (12). Anxiety levels were assessed using the Beck Anxiety Inventory – Second Edition (BAI-II), comprising 21 items scored on a 4-point scale from 0 (not at all) to 3 (severely),

reflecting the intensity of anxiety symptoms experienced over the past week. The BAI-II is widely recognized for its high reliability ($\alpha = 0.92$) and internal consistency ($\alpha = 0.89$) (13).

Participants were approached during scheduled visits to special needs institutions. After receiving institutional permission to conduct research on-site, eligible individuals were briefed on the study objectives and provided with a consent form ensuring voluntary participation, the right to withdraw at any stage, and confidentiality of their responses. Ethical approval for the study was obtained from the Departmental Research and Ethical Review Committee. Consent was obtained in writing, and data collection was carried out in quiet, private spaces within institutional settings to ensure participant comfort and data integrity. The administration of questionnaires took approximately 20 minutes per participant, and all individuals were thanked for their cooperation and time. Data were coded and analyzed using IBM SPSS Statistics for Windows, Version 27. Descriptive statistics were computed to summarize participant characteristics and scale scores. Inferential analysis included Pearson's correlation coefficient to examine the relationship between perceived stress and anxiety, and independent sample t-tests to compare mean differences between fathers and mothers on the study variables. Assumptions for parametric testing, including normality and homogeneity of variances, were assessed prior to analysis.

RESULTS

The demographic profile of the sample ($N = 210$) showed that the mean age of parents of children with intellectual disabilities was 38.89 years ($SD = 9.02$). Among the participants, 57% ($n = 119$) were mothers, while 43% ($n = 91$) were fathers. Regarding educational qualifications, 40% ($n = 83$) had completed intermediate education, 31% ($n = 66$) held bachelor's degrees, 18% ($n = 37$) had master's degrees, and 11% ($n = 24$) were PhD qualified. A correlational analysis was performed to examine the association between perceived stress and anxiety. The results indicated a statistically significant and strong positive correlation between perceived stress and anxiety scores among parents of children with intellectual disabilities ($r = .72$, $p < .01$). This suggests that an increase in perceived stress was associated with an increase in anxiety symptoms in the study population. An independent samples t-test was conducted to explore mean differences between fathers and mothers on the variables of perceived stress and anxiety. Mothers reported significantly higher levels of perceived stress ($M = 17.39$, $SD = 5.57$) compared to fathers ($M = 15.23$, $SD = 6.15$), with a moderate effect size ($t(208) = -2.66$, $p = .008$, Cohen's $d = 0.37$). Similarly, mothers scored significantly higher on anxiety ($M = 31.32$, $SD = 13.14$) compared to fathers ($M = 25.74$, $SD = 13.61$), also with a moderate effect size ($t(208) = -3.00$, $p = .003$, Cohen's $d = 0.41$). To further explore variability within the sample, subgroup analyses were conducted based on educational attainment and age brackets. Participants with lower educational qualifications (intermediate level) reported the highest levels of perceived stress ($M = 17.10$, $SD = 5.60$) and anxiety ($M = 30.75$, $SD = 13.20$), while those with PhD degrees reported the lowest stress ($M = 14.85$, $SD = 6.20$) and anxiety ($M = 26.10$, $SD = 13.00$). A similar trend was observed across age groups, where younger parents aged below 30 reported higher perceived stress ($M = 18.10$, $SD = 5.50$) and anxiety ($M = 32.50$, $SD = 13.00$), while those aged 50 and above showed the lowest levels of both stress ($M = 14.50$, $SD = 6.10$) and anxiety ($M = 25.40$, $SD = 13.00$). These trends suggest that younger and less-educated parents may be more psychologically vulnerable when caring for children with intellectual disabilities, highlighting the importance of tailored support interventions.

Table 1: Demographic Characteristics of the Participants (N=210)

Characteristics	Frequency	Percentage	Mean	Standard Deviations
Age			38.89	9.02
Parents of Children with ID				
Father	91	43		
Mother	119	57		
Qualification				
Intermediate	83	40		
Bachelor	66	31		
Master	37	18		
PhD	24	11		

Note. ID = Intellectual disabilities

Table 2: Correlational Analysis between Study Variables (N=210)

Variables	1	2
1.Percieved Stress	-	.72**
2.Anxiety		-

Note. ** $p < .01$

Table 3: Mean differences in Mothers and Fathers of Children with Intellectual Disabilities among Study Variables (N=210)

	Fathers(n=91)		Mothers(n=119)		<i>t</i> (208)	<i>P</i>	Cohen's d
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Perceived Stress	15.23	6.15	17.39	5.57	-2.66	.008	.37
Anxiety	25.74	13.61	31.32	13.14	-3.0	.003	.41

Note. *M*= Mean, *SD*= Standard Deviation

* $p < .05$

Table 4: Subgroup Analysis Table (Education Level and Age Brackets)

Category	N	Perceived Stress Mean	Perceived Stress SD	Anxiety Mean	Anxiety SD
Education Level					
Intermediate	83	17.10	5.60	30.75	13.20
Bachelor	66	16.45	6.10	29.30	13.40
Master	37	15.90	5.80	27.80	12.90
PhD	24	14.85	6.20	26.10	13.00
Age Bracket					
<30	40	18.10	5.50	32.50	13.00
30–39	65	17.20	5.90	31.00	13.20
40–49	65	16.00	6.00	28.50	13.10
50+	40	14.50	6.10	25.40	13.00

DISCUSSION

The present study investigated the association between perceived stress and anxiety among parents of children with intellectual disabilities in Pakistan, addressing a significant gap in local mental health research. The findings confirmed a strong and statistically significant positive correlation between perceived stress and anxiety, indicating that higher levels of perceived stress were associated with increased anxiety symptoms in the caregiver population. This result aligns with earlier research demonstrating the heightened psychological vulnerability of parents raising children with neurodevelopmental disorders, where mental health problems such as depression and anxiety were found to be interrelated (14). The study's context in Pakistan adds a critical dimension to this understanding, as the lack of public awareness and prevalent societal stigma surrounding developmental disabilities often exacerbate caregiver stress. In such environments, parents, especially mothers—are more likely to face blame, isolation, and minimal emotional support from their communities, intensifying their psychological burden. Additionally, the study examined gender-based differences in psychological outcomes and found that mothers reported significantly higher levels of both perceived stress and anxiety compared to fathers (15,16). These findings resonate with prior research where mothers of children with intellectual disabilities consistently reported elevated distress levels, often attributed to their role as primary caregivers. In traditional family structures common in Pakistani society, mothers are more intimately involved in daily caregiving, navigating not only the child's behavioral challenges but also household responsibilities and social expectations (17). Fathers, although financially supportive, are typically less involved in day-to-day care, which may buffer them from certain stressors. However, societal pressure and judgment directed at mothers may further reinforce internalized guilt and anxiety. The compounded impact of caregiving demands, social isolation, and minimal support likely explains the observed psychological disparities between mothers and fathers (18,19).

While the study provided valuable insights, it also carried several limitations that must be acknowledged. The cross-sectional design restricted the ability to capture temporal changes in stress and anxiety levels, thereby limiting conclusions about causality. Future research would benefit from a longitudinal framework to explore how these psychological outcomes evolve over time, particularly in response to interventions or developmental changes in the child. Moreover, the sample was modest in size and not entirely demographically balanced, with more mothers than fathers participating. This imbalance may influence the generalizability of gender-based comparisons. A more diverse and representative sample would enhance the robustness of future findings. Furthermore, the uneven distribution of education levels among participants limited the use of more rigorous statistical analyses such as ANOVA, underscoring the need for more evenly stratified sampling in future investigations. Despite these limitations, the study had notable strengths, including the use of validated psychometric tools with high reliability and the focus on a highly under-researched population in the South Asian context. It adds important empirical evidence to the literature on caregiver mental health and provides a foundation for culturally tailored psychosocial interventions.

The findings of this study carry meaningful implications for mental health policy and practice. There is a pressing need for structured interventions aimed at supporting parents of children with intellectual disabilities, including psychoeducation, skill-building workshops, and access to affordable mental health services. These interventions should not be limited to affected families but should also target broader community awareness to dismantle stigma and foster social inclusion. Parents would benefit from practical tools to manage their child's needs—such as structured routines, visual aids, and consistent behavioral strategies—as well as guidance to recognize intellectual disabilities as developmental variations rather than personal failings. Expanding access to affordable special education and therapy centers remains crucial, particularly in low-income communities where services are either unavailable or financially inaccessible (20). Public health strategies must also include mental health programs tailored to caregivers, recognizing their well-being as a pivotal factor in the overall care ecosystem for children with developmental disorders. In conclusion, the study underscores the psychological vulnerability of parents, particularly mothers, of children with intellectual disabilities in Pakistan and highlights the need for systemic, cultural, and clinical responses to support their mental health and caregiving capacities. Future research should aim to build on these findings using larger samples, longitudinal designs, and diversified analytic frameworks to inform more nuanced and sustainable interventions.

CONCLUSION

This study concluded that perceived stress and anxiety are significantly associated among parents of children with intellectual disabilities in Pakistan, with mothers experiencing notably higher levels of psychological distress compared to fathers. These findings emphasize the emotional toll of caregiving in a context where developmental disorders are poorly understood and social support is limited. By highlighting the urgent need for culturally informed mental health support and community awareness, the research contributes valuable insight into an often-overlooked population. The study underscores the importance of targeted interventions to alleviate caregiver burden and promote well-being, reinforcing the critical role of parental mental health in the broader care framework for children with intellectual disabilities.

AUTHOR CONTRIBUTION

Author	Contribution
Moazama Anwar*	Substantial Contribution to study design, analysis, acquisition of Data
	Manuscript Writing
	Has given Final Approval of the version to be published
Awais Khalid	Substantial Contribution to study design, acquisition and interpretation of Data
	Critical Review and Manuscript Writing
	Has given Final Approval of the version to be published
Shaista Irshad	Substantial Contribution to acquisition and interpretation of Data
	Has given Final Approval of the version to be published

Author	Contribution
Amna Saleem Lodhy	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Amna Chuhdary	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Zainab Manzoor	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Saniya Qureishi	Contributed to study concept and Data collection Has given Final Approval of the version to be published
Ayesha Altaf	Writing - Review & Editing, Assistance with Data Curation

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