Volume 4, Issue 1, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

"STIGMA, SOCIAL SUPPORT, AND CAREGIVER BURDEN: A PSYCHOSOCIAL ANALYSIS OF CAREGIVERS CARING FOR CHILDREN WITH NEURODEVELOPMENTAL DISORDERS"

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DOI: https://doi.org/10.5281/zenodo.18456403

Keywords

Caregiver Burden; Stigma; Social Support; Neurodevelopmental Disorders; Psychological Stress.

Article History

Received: 18 November 2025
Accepted: 18 January 2026
Published: 31 January 2026

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Abstract

This research investigated the connection between perceived stigma, social support, and the burden experienced by caregivers of children with neurodevelopmental disorders (NDDs) in Pakistan. The quantitative cross-sectional design was used to collect data on 150 caregivers who were recruited using purposive sampling of the publicly and privately owned rehabilitation centres in Faisalabad. Such standardized measures as the Parent Self-Stigma Scale (PSSS), Multidimensional Scale of Perceived Social Support (MSPSS), and Zarit Burden Interview (ZBI-12) were used. Findings suggested that there was a significant positive correlation between parent self-stigma and caregiver burden, and self-shame became the most powerful stigma-related contributor to burden. There was a significant negative correlation between perceived social support and stigma and no significant relationship between perceived social support and caregiver burden. Regression analysis revealed that parent self-stigma was also a significant predictor of caregiver burden with a significant variance of 11.7% of the burden but social support was not a significant predictor in the model. The demographic variations showed that burden was more in female caregivers and low-income families. The results highlight the significance of stigma as a crucial psychosocial factor that impacts the well-being of caregivers, as well as the necessity for culturally appropriate stigma-reduction strategies and enhanced family support networks. The paper adds context-related information to the scanty caregiving experiences literature in Pakistan.

INTRODUCTION

This study investigates the interplay between stigma, perceived social support, and caregiver burden among caregivers of children diagnosed with neurodevelopmental disorders (NDDs). By analyzing how stigma and social support influence caregiver burden, this research seeks to inform the development of targeted support frameworks aimed at enhancing caregiver well-being and resilience. The prevalence of neurodevelopmental disorders (NDDs) in the last several decades has attracted more and more attention of researchers, clinicians, and policymakers. NDDs are a diverse category of lifelong disorders that begin in the developmental phase of a child and are defined by the child having a setback in his or her personal, social, academic, or occupational behavior. These disorders are autism spectrum disorder (ASD), Attention-Deficit/ Hyperactivity Disorder (ADHD), Intellectual Disability (ID), Communication Disorders, and Specific Learning Disorders, among others (American Psychiatric

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ISSN: (e) 3007-1607 (p) 3007-1593

Association [APA], 2013). According to the World Health Organization (WHO, 2023), about 1 out of 100 children has been identified to have the autism spectrum disorder (ASD). The prevalence ranges depending on the region, and socio-economic conditions. As stated by the Centres of Disease Control and Prevention (2025), approximately 1 in 31 (3.2) children aged 8 years, were found to have ASD in 2022.These rising prevalence rates highlight not only the clinical importance of NDDs but also the extensive psychosocial impact on families, particularly primary caregivers (Hayes & Watson, 2013).

Care giving takes place in the bigger social, cultural and relational frameworks and this influences the experiences and the coping mechanisms (Gray, 2002). A social stigma towards children with developmental differences and their caregivers exists in most communities, including Pakistan, including criticism, judgment or exclusion, so they lead to emotional pain (Goffman, 1963). Social support, which includes emotional, informational, instrumental, and appraisal support by family, friends, peers, and professional networks has been established as a key protective factor. It makes people more resilient, less perceived burden, and psychologically well (Cohen & Wills, 1985; McConnell et al., 2014).

A significant psychosocial stressor among caregivers is stigma, which includes the presence of stereotypes, prejudice, discrimination, and negative self-perception among a society that undermines self-esteem and leads to emotional distress (Brohan et al., 2010; Corrigan & Watson, 2002). Caregivers may also develop vicarious stigma, which involves feeling sad, guilty, or frustrated at the expense of seeing their child being disadvantaged (Eaton et al., 2016; Moses, 2014). These dynamics can be explained with the help of theoretical frameworks: stigma theory by Goffman has identified courtesy stigma, attribution theory understand why society blames caregivers, Affiliate Stigma Model describes stigma as internalized, social identity theory explains why one feels part of a group and self concept, and family systems theory situates stigma as a family level stressor that influences communication, relationships and roles (Bowen, 1978; Mak & Cheung, 2008; Tajfel & Turner, 1979).

An important resource that plays a role in alleviating the burden of caregivers is social support. Emotional support entails empathy and assurance, instrumental support entails lessening the practical and financial load, informational support partakes of augmenting knowledge and coping, and the appraisal support boosts confidence and self-efficacy (Cohen & Wills, 1985; Thoits, 2011). It is assumed that support decreases the adverse effect of stress, while the direct-effect model is characterized by the fact that it has constant positive effect on psychological well-being (Cohen & Wills, 1985; Lakey & Orehek, 2011). The empirical data indicate that social support will decrease stress, improve mental health, and make caregivers of children with NDDs more resilient (Benson, 2012; Schiltz et al., 2022; Theule et al., 2013).

A multidimensional interaction between these factors leads to caregiver burden. The stress-process model recognizes primary sources of stress, including the care tasks, and secondary sources of stress, including role conflicts, as being regulated by the coping strategies and social support (Pearlin et al., 1990). The transactional model focuses on cognitive appraisal and coping, and it elucidates the difference in the perception of burden by caregivers who are exposed to the same demands (Lazarus and Folkman, 1984). The theory of role gives stress as role overload, role conflict, and role captivity (Hoenig & Hamilton, 1966; Zarit et al., 1980), whereas conservation of resources theory shows cumulative loss of time, energy, finances, and social support (Hobfoll, 1989). The Informal Caregiving Integrative Model unites these points of view and views caregiver burnout as the emotional depletion, depersonalization, and diminished personal achievement based on the relational and sociocultural factors (Gerain & Zech, 2019).

The relationship between stigma, social support and caregiver burden is crucial to effective intervention, policy and community planning. Stigma enhances emotional distress and can compromise caregiving potential, but social support mitigates the latter, leading to resilience and well-being. Although studies have been done on these constructs separately, little has been done to analyze the collective effect of these constructs on caregiver burden. Closing this gap can inform an all-encompassing action plan to improve

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

the psychological health of caregivers and address the quality of care received by children having NDDs.

LITERATURE REVIEW

The experience of taking care of children with neurodevelopmental disorders (NDDs) such as autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), and intellectual disabilities is a challenging endeavor that imposes enormous psychological, emotional, and physical burden on the caregivers. These problems frequently result in the escalation of the caregiver burden, which can be presented in the form of stress, depression, anxiety, and reduced quality of life (Hayes & Watson, 2013; Gabra & Hashem, 2021). These challenges are further worsened because of societal stigmatization that spawn's isolation, shame and a lack of access to social support (Corrigan & Watson, 2002; Mak & Kwok, 2010). Stigma, especially affiliate stigma has been found to be a reliable predictor of caregiver burden. The caregivers of children with ASD or ADHD tend to have a higher level of stigma, which is related to parenting stress, attitudes towards treatment, and depressive symptoms (Ma et al., 2023; Chang et al., 2020; Lin et al., 2023). Affiliate stigma is predicted by lower self-esteem and increased shame-proneness, which mediate their effects in depression, and counteracted by family functioning and family cohesion (Ting Zhou et al., 2018). Longitudinal evidence also indicates that low social support and maladaptive coping patterns at baseline are the predictors of persistent stigma in the future (Yao et al., 2025). When taken together, the findings indicate the value of interventions that aim at reducing stigma and enhancing family and psychosocial resources to safeguard mental health in caregivers.

Social support has proved to be a very important safeguard element against caregiver burden. The quality of life of caregivers and stress reduction are only made better through formal support by rehabilitation institutions (Frontiers Public Health, 2023; Rezq et al., 2025), and the same is done with informal support by family, friends, and communities (Geweniger et al., 2024). According to meta-analytic and large-scale research, social support has the negative influence on parenting stress and the positive one on parental quality of life and, in this case, the mediation is frequently provided by stress (Wang et al., 2022; Tasnim et al., 2024). Adaptive coping strategies, which include problem-oriented and support-seeking behaviors, also lead to a decrease in the burden of caregivers, but passive or emotion-oriented coping entails increased stress (Bozkurt et al., 2019).

The interplay of social support and stigma is of great importance. The evidence of mixed-method research suggests that the provision of fewer supports results in increased burden among caregivers, and in this specific case, social isolation, absence of formal services, and social judgment stand out as the main factors (Faden et al., 2023). Social support alleviates the negative influence of stigma, which is why it is essential to enhance the family-based and community-based networks (Papadopoulos et al., 2019; Hamama, 2025). Moreover, such effects are moderated by the health of the caregiver as they receive more gains with social support and less with poor health and low support (Marsack & Hopp, 2019).

Socioeconomic and demographic factors are also a determinant of caregiver burden. Higher burden is reported among single parents, lower-income or education caregivers, and those who deal with children who have more severe symptoms or other comorbidities (Van Niekerk et al., 2023; Almulla et al., 2024). According to the evidence of various cultural realities, such as China, Saudi Arabia, Ethiopia, and South Africa, the level of stigmatization and the effectiveness of the support networks are both influenced by society, access to services, and family traditions (Tesfaye and Demelash, 2025; Ma et al., 2023; Papadopoulos et al., 2019). These results underscore the importance of culturally specific interventions that can effectively decrease the stigmas and increase social support at the same time. The literature emphasizes the role of multifaceted interventions at the level of reducing stigmas, promoting social support, and improving adaptive coping skills. Families-based psychoeducation, community-based support, and specific coping-skills training have demonstrated effectiveness in enhancing the resilience and mental health of the caregivers (Bozkurt et al., 2019; Faden et al., 2023; Hamama, 2025). Formal and informal support networks all alleviate the stress, improve the

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ISSN: (e) 3007-1607 (p) 3007-1593

quality of life, and act as a buffer against the negative impact of caring demands.

In general, the parents of children with NDDs are exposed to significant psychological, emotional, and physical stress that is complicated by the stigma and lack of support. Social support, formal and informal, and adaptive coping skills and family functioning are always a protective factor that decreases the level of stress and boost the well-being of caregivers. Additional factors affecting the caregiving experience are the cultural, socioeconomic, and health-related ones that suggest the necessity of context-sensitive interventions. The stigma reduction, reinforcement of social support networks, and encouragement of adaptive coping strategies should be the key elements of the caregiver support programs.

Hypotheses of study

1. There will be a significant relationship between perceived stigma, social support and caregiver burden among caregivers of children with neurodevelopmental disorders.

2. Perceived stigma will be a significantly predictor of caregiver burden among caregivers of children with neurodevelopment disorders.

3. Social support will be a significantly predictor of caregiver burden among caregivers of children with neurodevelopment disorders.

4. There will be a significant demographic-based difference in perceived stigma, social support and caregiver burden among caregivers of children with neurodevelopmental disorder.

METHODOLOGY

Research Design

The study adopted a quantitative and cross-sectional correlational research design to investigate the relationship between perceived stigma, perceived social support, and burden in the caregivers of children with neurodevelopmental disorders (NDDs). The design was suitable in determining predictive relationships among psychosocial variables in a naturalistic setup.

Participants

A total of 150 caregivers who had children with NDDs were recruited using the purposive sampling technique in Faisalabad rehabilitation centres, special education institutions, and clinical outpatient services. The participants were mothers, fathers, and primary guardians who had direct contact in the daily care of children exhibiting ASD, ADHD, ID, or multiple developmental problems. The eligibility criteria included care takers who were above 18 years old, residing with the child and able to fill in self-report questionnaires. Caregivers with acute psychiatric conditions or mental limitations were not included. The demographics data was collected in terms of age of the caregiver, gender, education, income, relation to the child and diagnosis category of the child**.**

Instruments

Parent Self-Stigma Scale (PSSS)

The PSSS assesses affiliate stigma among caregivers in three dimensions namely: self-blame, self-shame and negative parental beliefs. The ratings are done on Likert scale where the higher the rating, the higher the self-stigma. The scale possesses high reliability and validity, and it has been reported to have an excellent internal consistency (a >.80) in the current research.

Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS (Zimet et al., 1988) determines the perceived level of social support of the family, friends, and other significant people in the respondent's life by asking about 12 questions rated on a 7-point Likert scale. The higher the score, the more perceived support is high. The psychometric characteristics have been established, and the scale demonstrated high reliability (a > .80) within this sample.

Zarit Burden Interview–Short Form (ZBI-12)

Subjective caregiver burden (emotional, social, physical strain) is measured by the ZBI- 12 (Zarit et al., 1980). The object is rated according to the 5-point Likert scale (whereby the higher the score, the higher the burden). The short version is highly reliable, and it was internally consistent in the present research (a >.80).

Frontier in Medical & Health Research

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Procedure

Participating institutions were approached to seek permission to participate and ethical approval was sought before data was collected. Clinical and educational clinical and educational setting was used to address each caregiver individually, clarify the purpose of the study, confidentiality and voluntary participation. Informed consent was taken in written form. The questionnaires were issued by paper and the participants answered them in a calm environment with the aid of reading or clarification where necessary. The mean time taken was 20-25 minutes. The completeness of the data was screened, coded and analysed by descriptive statistics, Pearson correlations and multiple regression to evaluate predictive relationships between the study variables.

Results

Table 1: Basic Demographic (N=150)

Characteristics	*Categories*	M	*SD*
Caregiver age	Minimum 20	36.76	9.083
	Maximum 65		
Childs age	Minimum 03	8.75	3.76
	Maximum 18		
		f	%
Caregiver Gender	Male	35	23.3
	Female	115	76.7
Marital Status	Single	4	2.7
	Married	138	92
	Widowed	2	1.3
	Divorced	2	1.3
	Separated	4	2.7
Education Level	No formal education	10	6.7
	Primary education	20	13.3
	Matriculation	22	14.7
	Intermediate	27	18.0
	Bachelor degree/Master degree or higher	71	47.3
Employment status	Employed	50	33.3
	Unemployed	44	29.3
	Homemaker	51	34.0
	Retired	1	0.7
	Student	4	2.7
Relationship to the child	Mother	113	75.3
	Father	30	20.0
	Sibling	2	1.3
	Grandparents/others	5	3.3
Monthly household income	0 to 30k	27	18.0
	Above 30k to 60k	46	30.7
	Above 60k to 1 lac	59	39.3
	More than 1 lac	18	12.0
Type of Neurodevelopmental disorder	Autism Spectrum Disorder	26	17.3

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	Attention Deficit Hyperactivity disorder	42	28.0
	Intellectual Disability	44	29.3
	Learning disorder/other(specify)	38	25.3
Child Gender	Male	107	71.3
	Female	43	28.7
Duration Of Caregiving	0 to 1 year	20	13.3
	More than 1 year to 3 years	23	15.3
	More than 3 years to 5 years	38	25.3
	More than 5 years	69	46.0
Residence type	Urban	78	52.0
	Rural	72	48.0

Note. f = frequency, % = percentage

The study consisted of 150 caregivers, with an average age of 36.7 years, mostly women (76.7%) and predominantly married (92%). Nearly half (47.3%) held a bachelor's or master's degree, while a considerable portion had completed intermediate (18%) or matriculation (14.7%) education. Employment status was varied, with one-third employed, one-third homemakers, and about 29% unemployed, reflecting the dual pressure of caregiving and limited work opportunities. Mothers were the primary caregivers (75.3%), followed by fathers (20%), while siblings and grandparents played only a minor role. Household income ranged widely, though most families fell within the middle-income brackets (30k–100k PKR).

Children under care had a mean age of 8.7 years, with more boys (71.3%) than girls (28.7%). Intellectual disability (29.3%) and ADHD (28%) were the most frequently reported conditions, followed by learning disorders (25.3%) and autism spectrum disorder (17.3%). Caregiving was largely long-term in nature, with nearly half of participants providing care for more than five years. The sample was balanced across residence type, with 52% living in urban and 48% in rural areas, ensuring representation of both contexts. Overall, the profile reflects a population of middle-aged, educated mothers providing sustained care to children with diverse neurodevelopmental challenges.

Table 2: Reliability and Descriptive Statistics of Study Scales (N = 150)

Scales	*K*	M	*SD*	Min	Max	α	Range		Skewness
							Potential	Actual	
Multidimensional Scale of Perceived Social Support (MSPSS)	12	4.67	0.99	2	7	0.80	6	5	-.02
Significant Others Subscale	4	5.04	1.42	2	7	0.85	6	6	-.04
Family Subscale	4	5.06	1.24	2	7	0.76	6	5	-.41
Friends Subscale	4	3.86	1.74	1	7	0.89	6	6	-.18
Zarit Caregiver Burden (12 items)	12	28.47	7.75	5	44	0.77	48	39	-.26
Parents Self Stigma Scale	11	29.41	6.50	13	42	0.62	44	29	-.30
Self-Blame	5	13.03	3.30	5	20	0.26	20	15	-.22
Self-Shame	3	8.29	2.41	3	13	0.24	12	10	.034
Bad-Parent Self Beliefs	3	8.11	2.49	3	14	0.33	12	11	-.24

Note. K = number of items; α = Cronbach's alpha; M = mean; SD = standard deviation.

Table 2 summarizes the reliability and descriptive statistics of the study scales. The results indicate

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acceptable to high internal consistency and notable variability across items, with means, standard deviations, score ranges, and skewness values suggesting generally normal distributions."

Table 3: Pearson Correlations Between Parent Self-Stigma, Perceived Social Support, and Caregiver Burden (N = 150)

Variable	1	2	3	4	5	6	7	8	9
1. Parent Self-Stigma Scale	—								
2. Self-Blame	.86**	—							
3. Self-Shame	.72**	.42**	—						
4. Bad-Parent Self-Beliefs	.77**	.50**	.35**	—					
5. Perceived Social Support Scale	–.31**	–.37**	–.18	–.13	—				
6. Significant Others Support	–.23**	–.29**	–.11	–.08	.72**	—			
7. Family Support	–.31**	–.29**	–.26**	–.16*	.66**	.46**	—		
8. Friends Support	–.14	–.20	–.07	–.05	.65**	.10	.07	—	
9.Zarit Caregiver Burden Scale	.32**	.21**	.39**	.20*	.03	.12	–.10	.00	—

Note. MSPSS = Multidimensional Scale of Perceived Social Support. *p < .05, **p < .01 (two-tailed).

Table 3 shows Pearson correlations among parent self-stigma, perceived social support, and caregiver burden. Self-stigma and its subcomponents were negatively correlated with social support and positively with caregiver burden, with most correlations reaching significance (p < .05 or p < .01)

Table 4: Multiple Regression Predicting Caregiver Burden From Parent Self-Stigma and Perceived Social Support (N = 150)

Predictor	B	SE B	β	t	p	95% CI for B
Constant	10.70	4.77	—	2.24	.026	(1.27, 20.13)
Parent Self-Stigma (PSSS Total)	0.43	0.10	.36	4.34	< .001	(0.23, 0.62)
Perceived Social Support (MSPSS Total)	1.10	0.64	.14	1.73	.086	(–0.16, 2.36)

Note. R = .342, R^2 = .117, Adjusted R^2 = .105, Dependent variable = Zarit Caregiver Burden. p < .05

Table 4 presents a multiple regression predicting caregiver burden from parent self-stigma and perceived social support. Parent self-stigma significantly predicted caregiver burden (β = .36, p < .001), whereas perceived social support was not a significant predictor (β = .14, p = .086), with the model explaining 11.7% of the variance (R^2 = .117).

Table 5: Hierarchical Multiple Regression Predicting Caregiver Burden From Demographics, Parent Self-Stigma, and Perceived Social Support (N = 146)

Predictor	B	SE B	β	t	p	95% CI for B
Model 1						
Constant	33.17	4.35	—	7.63	< .001	[24.57, 41.76]
Caregiver Age	0.02	0.07	.02	0.26	.798	[–0.13, 0.16]
Gender	1.77	1.58	.10	1.13	.262	[–1.34, 4.89]
Education Level	–0.46	0.52	–.08	–0.89	.376	[–1.49, 0.57]
Monthly Household Income	–2.07	0.74	–.25	–2.81	.006	[–3.53, –0.61]

Frontier in Medical & Health Research

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Model 2						
Constant	15.93	5.93	—	2.69	.008	[4.20, 27.65]
Caregiver Age	0.00	0.07	.00	0.02	.984	[–0.14, 0.14]
Gender	1.39	1.51	.08	0.92	.359	[–1.60, 4.38]
Education Level	–0.24	0.50	–.04	–0.49	.624	[–1.23, 0.74]
Monthly Household Income	–2.21	0.70	–.27	–3.16	.002	[–3.59, –0.83]
Perceived Social Support (MSPSS)	1.24	0.62	.16	1.99	.049	[0.01, 2.47]
Parent Self-Stigma (PSSS)	0.41	0.10	.34	4.27	< .001	[0.22, 0.59]

Note. Model 1: R = .323, R^2 = .104, Adjusted R^2 = .079, $F(4, 141) = 4.11$, p = .004., Model 2: R = .459, R^2 = .211, Adjusted R^2 = .177, $F(6, 139) = 6.20$, p < .001., ΔR^2 = .107, $\Delta F(2, 139) = 9.40$, p < .001. DV = Zarit Caregiver Burden (12-item).

Table 5 shows hierarchical multiple regression predicting caregiver burden from demographics, perceived social support, and parent self-stigma. After controlling for demographics, parent self-stigma (β = .34, p < .001) and perceived social support (β = .16, p = .049) significantly predicted caregiver burden, with the final model explaining 21.1% of the variance (R^2 = .211, ΔR^2 = .107, p < .001).

Table 6: Independent-Samples t-tests for Gender Differences in Caregiver Burden, Stigma, and Perceived Social Support (N = 150)

Variable	*Male (n = 35) M (SD)*	*Female (n = 115) M (SD)*	*df*	*t*	*p*	*Cohen's d*
Zarit Caregiver Burden	26.23 (6.63)	29.16 (7.97)	66.64	–2.18	.033	0.39
Parent Self-Stigma (PSSS)	29.50 (5.90)	29.39 (6.70)	146	0.10	.929	0.02
Perceived Social Support (MSPSS)	4.40 (1.07)	4.75 (0.97)	146	–1.83	.069	0.33

Note. *M=Mean, SD=Standard Deviation, P=Significance, f= degree of freedom, CI=Confidence Interval, p* < .05.

Table 6 presents gender differences in caregiver burden, parent self-stigma, and perceived social support. Females reported significantly higher caregiver burden than males (t = –2.18, p = .033, d = 0.39), whereas no significant gender differences were found for self-stigma or perceived social support.

Table 6.1: Descriptive Statistics for Caregiver Outcomes by Demographic Factors (Mean and Standard Deviation) (N 146)

Factor	Level	n	Zarit Burden	PSS	MSPSS
Monthly Household Income					
	0 to 30k	26	32.73 (6.76)	28.46 (7.07)	4.69 (1.22)
	Above 30k to 60k	43	29.16 (7.31)	30.65 (5.83)	4.52 (0.88)
	Above 60k to 1 Lac	59	26.46 (7.37)	29.47 (6.82)	4.64 (1.03)
	More than 1 Lac	18	25.94 (8.58)	26.94 (5.82)	5.15 (0.74)
Education Level					
	No Formal Education	10	32.00 (8.12)	30.00 (6.62)	4.76 (1.33)

Frontier in Medical & Health Research

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	Primary Education	19	28.47 (7.60)	30.79 (6.03)	4.35 (0.82)
	Matriculation	21	30.48 (7.94)	30.48 (6.09)	4.63 (1.06)
	Intermediate	25	30.44 (5.42)	30.76 (5.75)	4.56 (1.06)
	Bachelor/Master	71	26.35 (7.93)	28.00 (6.88)	4.81 (0.96)
Relationship to Child					
	Mother	110	29.84 (7.82)	29.72 (6.53)	4.62 (1.00)
	Father	29	27.50 (6.49)	28.40 (6.02)	4.78 (1.09)
	Sibling	2	28.17 (6.28)	28.67 (5.91)	4.59 (1.04)
	Grandparent/Other	5	26.00 (8.12)	27.50 (6.80)	4.81 (0.92)

Note. PSS = Parents self-stigma scale; MSPSS = Multidimensional Scale of Perceived Social Support.

Table 6.1 presents descriptive statistics for caregiver outcomes by demographic factors. Caregiver burden, parent self-stigma, and perceived social support varied across income, education level, and relationship to the child, with higher burden observed among lower-income and less-educated caregivers.

Table 6.2: Univariate Analyses of Variance for the Significant Effect of Monthly Household Income

Dependent Variable	*F*	*df*	p	Partial η^2
Zarit Burden	1.37	(3, 109)	.256	.036
Parental Self-Stigma (PSS)	1.85	(3, 109)	.142	.048
Perceived Social Support (MSPSS)	2.94	(3, 109)	**.037**	.075

Note. The critical p-value for significance with Bonferroni correction is .017.

In Table 6.2 Univariate ANOVAs showed that monthly household income had a marginal effect on perceived social support (F = 2.94, p = .037), but not on caregiver burden or parent self-stigma, failing to meet the Bonferroni-adjusted threshold (p < .017).

Table 6.3: Post Hoc Pairwise Comparisons for Perceived Social Support by Monthly Household Income

(I) Monthly Income	(J) Monthly Income	Mean Difference (I-J)	*SE*	p
More than 1 Lac	0 to 30k	0.47	0.30	.024
	Above 30k to 60k	0.64	0.28	.002
	Above 60k to 1 Lac	0.51	0.27	.009

Note. MSPSS = Multidimensional Scale of Perceived Social Support. Only statistically significant comparisons (p < .05) are displayed

Table 6.3 presents post hoc pairwise comparisons of perceived social support by monthly household income. Caregivers earning more than 1 Lac reported significantly higher support than those in all lower-income groups (p = .002–.024).

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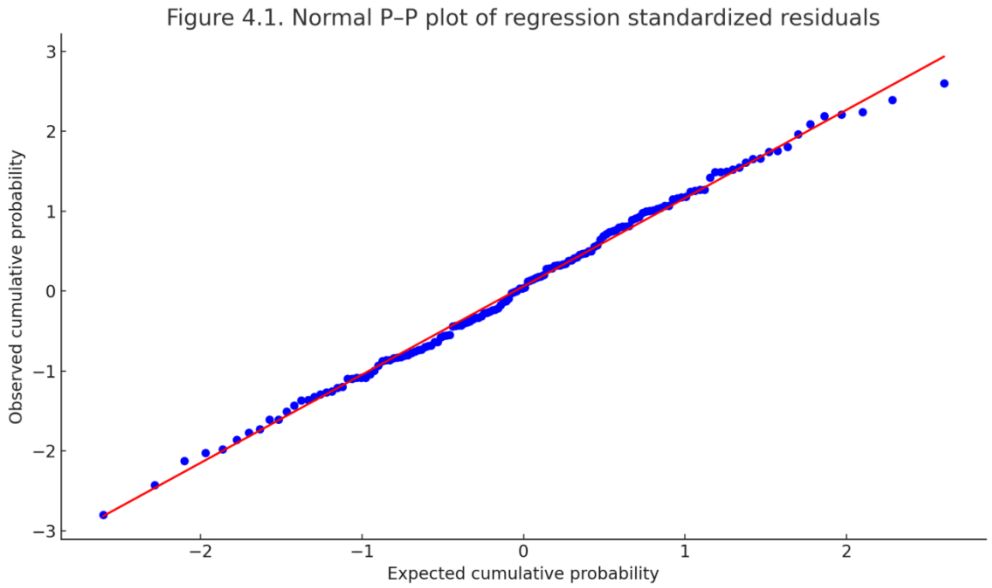


Figure 1: Normal P–P plot of regression standardized residuals for the model predicting caregiver burden.

The points closely followed the diagonal line, indicating that the residuals were approximately normally distributed and the assumption of normality was met.

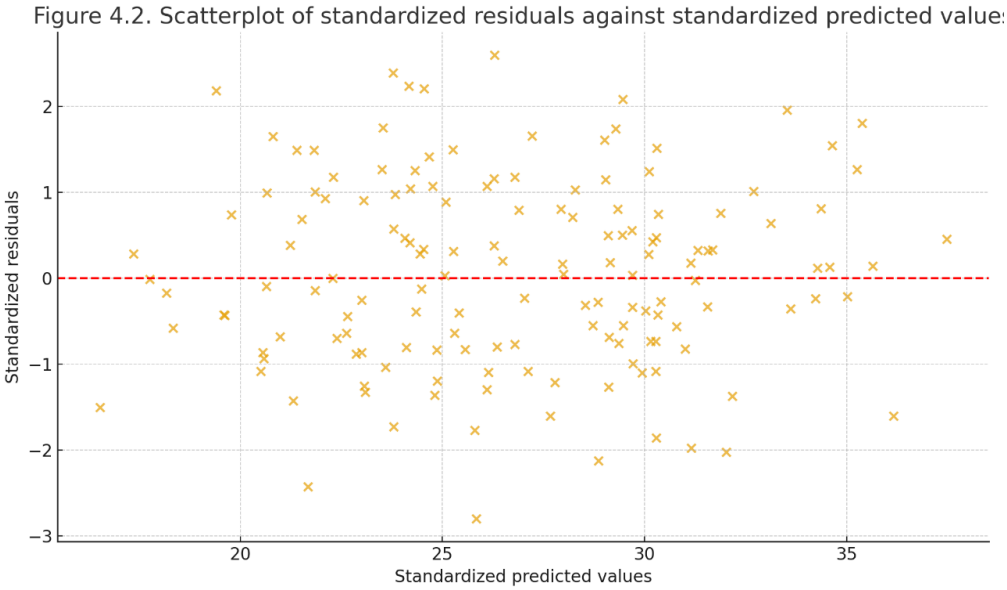


Figure 2: Scatterplot of standardized residuals against standardized predicted values for the regression model.

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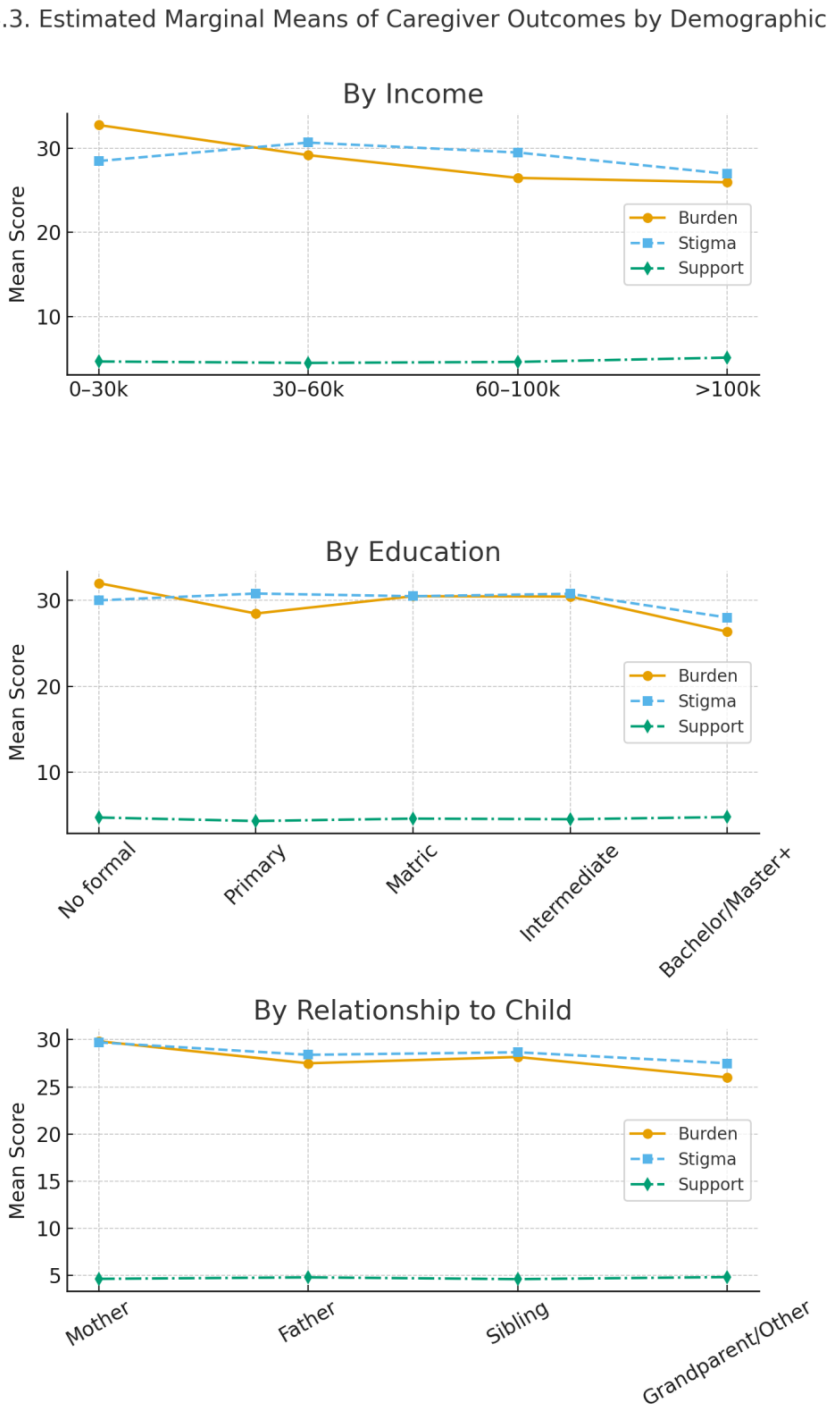


Figure 3: Estimated Marginal Means of Caregiver Burden, Parent Self-Stigma, and Perceived Social Support by Household Income, Education Level, and Relationship to the Child.

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Discussion

The current research paper has investigated the correlations between parent self-stigma, perceived social support, and burden of caregiving to children with neurodevelopmental disorders (NDDs). In line with the hypotheses, parent self-stigma was identified to be a powerful predictor of caregiver burden. Caregivers who had absorbed negative thoughts (self-blame, shame, and perceiving themselves as poor parents) had a higher probability of developing emotional and physical strains. These results support the previous research indicating that affiliate stigma is one of the primary risk factors of caregiver distress (Lin et al., 2023; Zhou et al., 2018; Almulla et al., 2024). The effective predictive power of self-shame that is present in the given study also contributes to the literature according to which emotional aspects of stigma are especially damaging to psychological well-being. Although the caregivers were reporting moderate-to-high perceived social support, social support did not significantly lower the burden on caregivers. This is an opposite of classical stress-buffering frameworks but a reflection of the collectivistic cultures where social support is usually followed with an implicit expectation of doing things, caring and social pressure (Shin et al., 2006). The role of family support in such context is not always a buffer and may in some cases support the perception of inadequacy or pressure to conform to the culturally imposed standards of caring. This trend is also reinforced by Hamama (2025) who established that the support given by the family to caregivers of children with ASD did not always lead to a decrease in stress. The variables of the study were also affected by socioeconomic factors. Perceived social support was greatly predicted by the household income, and the caregivers in higher-income households indicated that they had more access to emotional and instrumental support. This observation is similar to Fierloos et al. (2022), who demonstrated that reduced socioeconomic status is linked to reduced perceived support in parents. Access to paid help, therapy services or extended family support may be limited due to the limited financial resources of many families in Pakistan, which will impact the overall perceived support and burden. Another demographic correlate of importance was gender. The women caregivers (mainly mothers) had higher levels of burden as compared to the male caregivers. This finding reflects global caregiving trends where caring is similar to a gendered occupation: women are carrying the disproportionate emotional load and providing daily care (Purpura et al., 2021; Van Niekerk et al., 2023).

The cultural background of Pakistan is such that mothers are usually required to play the primary caregiving roles, and this aspect can cause exhaustion and emotional overload in the long run. Altogether, the results highlight that parent self-stigma is the key factor contributing to the development of caregiver burden, and social support is not sufficient to alleviate stress in the framework of the sociocultural context in Pakistan. These results emphasize the need for culturally sensitive interventions to decrease stigma, empower caregivers and access well structured support.

Psychoeducation should be reinforced, accessibility of services should be improved, and extended family systems should be included in this approach, as they can potentially alleviate emotional burden on caregivers and improve their overall health.

Limitations

There are a number of limitations that are associated with this study. To begin with, the cross-sectional design restricts the possibility of generalizing the causal relationships between parent self-stigma, social support, and caregiver burden. These variables require the use of longitudinal research to determine how each impacts on the other over time. Second, purposive sampling using institutions in Faisalabad was used to obtain the sample, which can limit the extrapolation of the results to caregivers in other parts of Pakistan. Third, only self-report measures were used in the study, and they can be biased by responses, like a social desirability bias or underreporting of stigma. Also, the study failed to distinguish between caregiving demands in terms of the nature or the extent of the NDDs, which may affect the level of burden. Lastly, the impact of culture, strong family ties, and accessibility to services were not properly studied and could be a good addition to the overall picture of caregiving.

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Recommendations

Resting on the results, a number of recommendations can be offered. Mental health workers ought to create culturally competent psychoeducation interventions that address care giver self stigma and promote emotional resiliency. Support groups, counselling, and parent skills training are some of the interventions that can assist the caregivers to better deal with stress. The policymakers are urged to increase the available rehabilitation services especially to low-income families that show reduced levels of social support. There should be awareness campaigns by community organizations and schools to eliminate the societal stigma on developmental disabilities. Further decreasing caregiver burden on strengthening of family-based support structures, enhancing access to caregiver respite services, and incorporating mental health screening of parents into NDD service centres can be adopted. Longitudinal and mixed-method designs ought to be used in the future to investigate the dynamic aspect of stigma and support in various developmental conditions.

Conclusion

The researchers claim that parent self-stigma was found to be a strong predictor of caregiver burden in caregivers of children with neurodevelopmental disorders but perceived social support did not play a protective role in the setting. The findings emphasize the significant emotional and mental burden of caregiving to caregivers, particularly in collectivistic societies where stigma issues and cultural values play a role in determining responsibilities for caregiving.

The socio-economic inequity and gender factors also another factor contributing to the experiences of caregivers, women and low-income families encounter increased difficulties. On the whole, the research indicates that specific stigma-reduction interventions, formal support, and culturally competent interventions can be used to boost caregiver health and increase the quality of life of families with children with neurodevelopmental disorders in Pakistan.

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needs *minor formatting tweaks*. Specifically:

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ISSN: (e) 3007-1607 (p) 3007-1593

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