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INDIGENOUS DEVELOPMENT AND VALIDATION OF SOCIAL STRESSORS SCALE FOR CAREGIVERS OF INTELLECTUALLY DISABLED CHILDREN

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ABSTRACT

Caregivers of children with intellectual disability (ID) in Pakistan encounter social stressors (discrimination, blame, criticism, and financial strain) that existing Western stress measures do not adequately capture. The present study developed and validated an indigenous, Urdu-language Social Stressors Scale (SSS) for caregivers of children with ID. Item generation drew on semi-structured interviews with six mothers, yielding a 56-item pool. Eight subject experts established content validity (I-CVI range = .75 to 1.00; S-CVI = .80), and a pilot study (N = 50) refined the pool to 42 items. Exploratory factor analysis (N = 250; KMO = .805; Bartlett's $\chi^2(780) = 5877.71$, $p < .001$) retained 39 items loading on five factors (social discrimination, financial/family stressors, social blaming, social criticism, and social avoidance), explaining 53.44 % of the variance. Confirmatory factor analysis on an independent sample (N = 250) supported a respecified two-factor, 19-item model comprising social discrimination and financial/family stressors, $\chi^2(146) = 593.6$, $p < .001$, RMSEA = .106, GFI = CFI = TLI ≈ .80. Reliability was strong ($\alpha = .87$ for the total scale; $\alpha = .85$ for each subscale). Convergent validity was supported by significant positive correlations among subscale and total scores ($r = .38$ to $.61$, $p < .01$); divergent validity was supported by a non-significant correlation with generalized self-efficacy ($r = -.12$, $p > .05$). The SSS is a reliable, culturally grounded screening tool for caregiver social stress, although model fit indicates that further refinement is warranted before wide-scale use.

Keywords:

social stressors, caregivers, intellectual disability, scale development, factor analysis, Pakistan

INTRODUCTION

Mothers of children with intellectual disability (ID) in Pakistan carry caregiving demands compounded by social stigma, financial strain, and disrupted family life. Caregiver stress reflects caregivers' belief that caregiving has harmed their finances, health, and social life; commonly cited stressors include social isolation, behavioral difficulties in the child, and family disruption (Faramarzi & Bavali, 2017). Families that cannot adapt to a special-needs child's demands often experience sadness, anger, and reduced self-esteem (Ann, 2010), while societal responses, including stigma, reduced income, and lost work opportunities, compound this burden (Baker, 2016).

Unlike the day-to-day physical demands of caregiving, social stressors originate outside the caregiving relationship itself. They arise in the interaction between the family and the wider community, in the classroom gate, the extended-family gathering, the marketplace, and the workplace, wherever a caregiver's identity as "mother (or father) of a child with a disability" becomes visible to others. This distinction matters because interventions aimed at reducing the practical burden of caregiving (for example, respite care or skills training) do little to address stress that originates in how caregivers are perceived, judged, or excluded by their social environment.

Social stressors specific to this population include social criticism, avoidance, labeling, bullying, and family/financial strain. Parents are often blamed or judged for their child's condition, socially avoided, and financially stretched by therapy and specialized schooling costs. In Pakistan specifically, women who serve as primary caregivers frequently report denial, shame, and grief responses, with limited institutional or community support (National Institutes of Health [NIH], 2018). A substantial body of caregiving research treats stress as a largely intrapsychic phenomenon: the caregiver's appraisal of the child's behavioral demands, developmental delays, or medical needs. Bronfenbrenner's ecological perspective on human development, though it was originally developed for the study of children rather than caregivers, offers a useful lens here: a caregiver's wellbeing is shaped not only by the immediate caregiving relationship (the microsystem) but by interactions with schools, extended family, and neighbors (the mesosystem), and by broader cultural attitudes toward disability (the macrosystem). This reframing has direct implications for measurement. If social stress is treated merely as a subscale of a broader parenting-stress inventory, it is often represented by only a handful of items, embedded among items assessing child-related and parent-related domains. International research consistently documents elevated stress among caregivers of children with special needs. Bedewy (2021) developed a 24-item caregiver stress scale in Egypt (α = .86, four factors), demonstrating that even within the broader Middle Eastern and North African region, caregiver stress could be meaningfully decomposed into distinct empirical factors rather than treated as a single undifferentiated construct. Ramachandran et al. (2020) found that virtually no caregiver in their Indian sample was stress-free, with stress linked to family type, gender, and economic status, a finding that underscores how deeply embedded caregiver stress is in the surrounding family and economic structure rather than being solely a function of the child's diagnosis or severity of impairment. Aldosari and Pufpaff (2014) found that mothers in Saudi Arabia reported higher stress than fathers, attributed to the primary-caregiver role and cultural constraints that position mothers as principally responsible for children's daily care and, by extension, for their outcomes. Khamis (2007) linked caregiver stress to smaller social networks, driven partly by guilt and shame, suggesting a self-reinforcing cycle in which stigma leads caregivers to withdraw from social contact, which in turn removes a key buffer against stress.

Indigenous Pakistani literature on this topic is comparatively sparse. Approximately 371,833 children in Pakistan are registered with disabilities (National Database and Registration Authority [NADRA], 2020, as cited in Shaukat, 2022), a figure that is itself likely to understate true prevalence given underdiagnosis and underreporting, particularly in rural areas with limited access to developmental assessment services. Families commonly pass through emotional stages of denial, anger, bargaining, and eventual acceptance (Kandel & Merrick, 2005).

The rationale for the present study is threefold. First, from a measurement standpoint, a construct that is culturally specific in its content, as social stress related to disability appears to be, requires a measure developed from within that culture, rather than translated or adapted from an instrument developed elsewhere, if it is to achieve adequate content validity. Second, from a clinical standpoint, practitioners working with caregivers of children with ID in Pakistan currently lack a brief, psychometrically sound screening tool that isolates social stress from other sources of caregiving burden, which limits their ability to identify caregivers who might benefit specifically from social-support or advocacy-based

interventions rather than, for example, behavioral parent training alone. Third, from a policy standpoint, an indigenous measure generates locally interpretable, aggregable data that can inform the design of family-support programs, anti-stigma campaigns, and financial-assistance schemes targeted at the specific stressors that Pakistani caregivers report, rather than relying on assumptions imported from other cultural contexts.

Research Objectives

The objectives of the present study were as follows:

RO1. To develop an indigenous social stressors scale for caregivers of children with intellectual disability.

RO2. To determine the psychometric characteristics of the indigenous social stressors scale.

Method

A sequential, mixed-methods scale-development design was adopted, consistent with recommended best practice for indigenous instrument construction (DeVellis, 2016). The objectives of the present study were achieved across four phases. In Phase I, an item pool was generated from qualitative interviews and content validity was established through expert rating. In Phase II, a pilot study was carried out to remove ambiguous or redundant items and to refine the item pool prior to large-scale administration. In Phase III, exploratory factor analysis (EFA) was run on the piloted items to identify the underlying factor structure of the construct. In Phase IV, confirmatory factor analysis (CFA) was run on an independent sample to confirm the factor structure obtained from the EFA, alongside tests of convergent and divergent validity. Using independent samples at the EFA and CFA stages, rather than splitting a single sample, was intended to provide a more stringent test of the stability of the emergent factor structure.

Phase I: Generation of Item Pool and Pilot Study

Step I: Generation of Item Pool

An interpretative phenomenological design was used for item generation, on the reasoning that a locally grounded understanding of social stress could only be obtained by beginning with caregivers' own accounts rather than with a predetermined theoretical framework. A purposive sample of six mothers (age range 21–40 years) of children with ID was recruited from special-education centers in Lahore. Purposive sampling was used to ensure that participants had direct, ongoing caregiving experience and were able to articulate that experience verbally. Semi-structured interviews, comprising open-ended, key, and closed-ended questions, continued until data saturation was reached, that is, until additional interviews ceased to yield substantively new categories of social stress. Interview transcripts were coded into candidate items, producing a pool of 56 items in Urdu, the first language of the overwhelming majority of prospective respondents and the language considered most likely to elicit accurate, emotionally resonant self-report.

Step II: Item Content Validity Through Expert Rating

Face validity was assessed by 10 psychologists, seven of whom confirmed that the tool measured social stress, providing an initial, broad indication that the item pool was conceptually on target before the more rigorous content-validity stage. Content validity was then established by eight subject experts (two PhD clinical psychologists, two MS clinical psychologists, two special educators, and two language experts), who rated all 56 items on a four-point relevance/clarity scale. Including special educators and language experts alongside clinical psychologists was intended to ensure that items were evaluated not only for psychological relevance but also for ecological validity in special-education settings and for linguistic clarity in Urdu. An item-level content validity index (I-CVI) of .78 or above was used as the retention threshold, following established guidance for content validity indexing (Lynn, 1986), and the scale-level content validity index (S-CVI), calculated as the average I-CVI across all retained items, was .80, above the generally recommended minimum of .70 for newly developed scales.

Table 1 Ratings of Experts, Number of Agreements and I-CVI for the Scale

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	No. of Agreement	I-CVI
1	4	4	4	4	4	3	4	3	8	1
2	3	4	3	3	4	3	3	4	8	1
3	4	3	4	4	4	4	4	3	8	1
4	3	4	3	3	4	3	3	4	8	1
5	4	3	4	4	4	4	4	3	8	1
6	3	4	3	4	4	3	3	4	8	1
7	3	4	3	3	4	3	3	4	8	1
8	4	3	4	4	4	4	4	3	8	1
9	3	4	3	4	3	2	4	3	6	.75
10	3	4	3	3	4	3	3	4	8	1
11	4	3	4	4	4	4	4	3	8	1
12	3	4	3	4	3	2	4	3	6	.75
13	3	4	3	3	4	3	3	4	8	1
14	4	3	4	4	3	4	4	3	8	1
15	3	4	3	4	3	2	4	3	6	.75
16	4	3	4	4	3	4	4	3	8	1
17	3	4	2	4	4	4	3	4	6	.75
18	3	4	2	4	4	4	3	4	8	1
19	4	3	4	4	3	4	4	3	8	1
20	2	3	4	2	3	4	2	4	6	.75
21	3	2	4	3	4	2	3	3	6	.75
22	2	4	3	2	3	4	3	2	6	.75
23	4	3	4	4	3	4	4	3	8	1
24	4	3	4	4	3	4	4	3	8	1
25	4	3	4	4	3	4	4	3	8	1
26	2	3	4	2	3	4	2	4	6	.75
27	4	3	4	4	3	4	4	3	8	1
28	3	4	3	4	3	2	4	3	6	.75
29	4	3	4	4	3	4	4	3	8	1
30	3	4	3	4	3	2	4	3	6	.75
31	4	3	4	4	4	3	4	4	8	1
32	4	3	4	4	3	4	4	3	8	1
33	4	3	4	4	3	4	4	3	8	1
34	4	3	4	4	4	3	4	4	8	1
35	3	4	3	4	3	2	4	3	6	.75
36	3	4	3	4	3	2	4	3	6	.75
37	3	4	3	4	3	4	3	4	8	1
38	3	4	3	4	3	2	4	3	6	.75
39	3	4	3	4	3	2	3	3	6	.75
40	3	4	3	4	3	2	4	3	6	.75
41	4	3	4	4	4	3	3	4	8	1
42	3	4	3	4	3	2	4	3	6	.75
43	4	3	4	4	4	3	4	4	8	1
44	3	4	3	4	3	2	4	3	6	.75

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45	4	3	4	4	4	3	4	4	8	.75
46	4	3	4	4	3	4	4	4	6	.75
47	4	3	4	4	4	3	4	3	8	1
48	4	3	4	4	4	3	4	4	6	.75
49	4	3	4	4	4	3	3	3	8	1
50	4	3	4	4	3	4	4	4	8	1
51	4	3	4	3	4	3	4	4	8	1
52	4	3	4	4	4	3	4	4	8	1
53	4	3	4	4	3	4	4	4	8	1
54	3	4	3	4	3	2	4	3	6	.75
55	4	3	4	4	4	3	4	4	8	1
56	4	3	4	4	3	4	4	4	8	1

Note: N= 8 professional experts specializing in the field of clinical psychology.

Step III: Pilot Study

A purposive sample of 50 caregivers (age range 21–40 years) from Lahore was administered the initial 42-item form using a five-point Likert response format (1 = strongly disagree to 5 = strongly agree). The pilot stage served three functions: identifying items that respondents found ambiguous or difficult to interpret, checking for redundancy among conceptually overlapping items, and providing a preliminary check of item-level distributional properties before the larger EFA and CFA administrations. The Kolmogorov–Smirnov test was used to check item normality, following the recommendation of Hair et al. (2006), since markedly non-normal items can distort factor-analytic solutions derived from Pearson correlation matrices. Feedback from pilot participants, together with the normality screening, informed the reduction of the item pool prior to the EFA stage.

Phase II: Factor structure and internal consistency of the scale

The primary objective of this study was to assess the factorial validity of the indigenous Social Stressors Scale among caregivers of children with intellectual disabilities within the context of Pakistan. A purposive sample of 250 participants was carefully selected from Lahore city. This sample included both parents, who served as the primary caregivers for their children.

Table 2 Frequencies and Percentages of Demographic Variable of Participants (N= 250)

Variable Categories	*F*	%
Family system		
Nuclesr	103	41.2
Joint	147	58.8
Residential Area		
Urban	126	50.4
Rural	124	49.6
Birth Order of ID Child		
Elder Chlid	106	42.4
Middle Child	111	44.4
Youngest Child	33	13.2

Variable Categories	*F*	%
Age of ID Child (years)		
4-8	75	29.9
9-13	98	39.0
14-18	78	31.0

Note: N=250, f=Frequency, %=percentage

Exploratory Factor Analysis

A purposive sample of 250 primary caregivers (mothers and fathers) was recruited from special-education institutions in Lahore after institutional approval and informed consent. KMO and Bartlett's tests assessed sampling adequacy. PCA with varimax rotation was conducted on 39 items, with factor retention based on eigenvalues >1 and scree-plot inspection. Participants represented diverse urban/rural, family, socioeconomic, and child age backgrounds, supporting the applicability of the factor structure across different family contexts, although the sample was limited to Lahore.

Table 3 Rotated Factor Loadings For Indigenous Social Stressors Scale For caregivers Of Intellectual Disabled Children

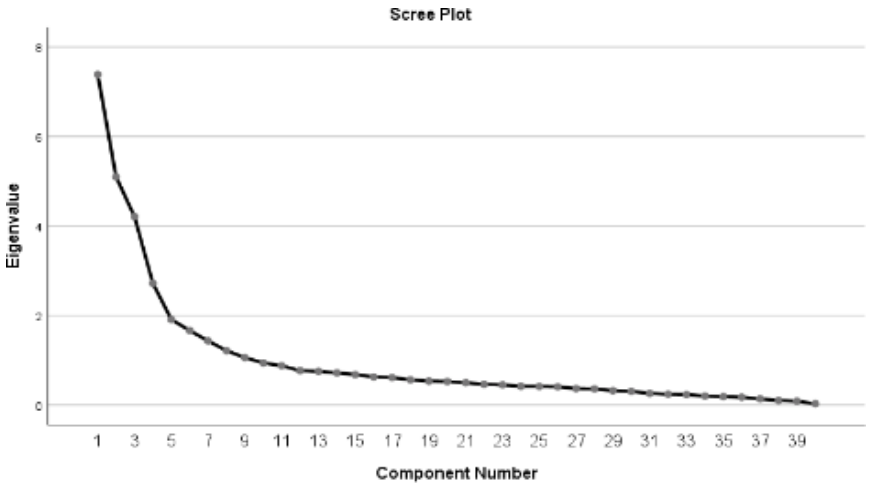
		Factors loading				
		1	2	3	4	5
	Factor 1: social discrimination					
31	Avoid meeting	**.765**	.135	.111	.044	.068
34	Reject acceptance	**.751**	.082	.189	-.099	-.028
32	Priority of others mothers	**.748**	.004	.048	.034	.143
33	Look down	**.743**	.120	.092	.008	.079
30	Other children move forward	**.620**	-.083	-.049	.064	.503
36	Test from ALLAH	**.563**	.190	-.103	-.017	-.028
37	Considered as a feminine defect	**.558**	.122	.056	-.002	-.009
39	Taunt on you	**.515**	.342	-.095	.141	.038
38	Financial struggle	**.476**	.198	.008	-.013	.036
	Factor 2: Financial/ family stressors					
50	Meeting expenses of non-academic activities	.120	**.776**	.097	-.107	-.098
48	Financial difficulties in basic needs	.108	**.775**	.096	-.085	-.93
47	Spend money	.089	**.731**	.076	-.051	-.050
49	Arrange special teacher	.164	**.684**	.067	-.086	-.151
46	Spend on medication	.082	**.672**	-.010	-.016	-.020
45	Arrange special things	-.010	**.619**	.007	.063	.139
41	Other children ignored	.060	**.617**	-.140	.145	.118
42	Sibling's relationship deteriorates	.150	**.611**	-.118	.216	.064
43	Affect other children	.003	**.577**	-.013	.165	.11
44	Spend more time affect other	.155	**.537**	.001	.123	-.007

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40	Neglecting family members	.381	**.489**	-.114	.131	.123
	Factor 3: Social blaming					
15	People give angry look	-.092	-.012	**.758**	.097	.077
13	Bad Accusation	.076	-.11	**.751**	.238	.100
12	Forbid their children	-.033	.018	**.747**	.147	.097
10	Family refused to help	.035	.006	**.677**	.201	-.006
11	Children are mischievous	.125	-.031	**.667**	.107	.013
19	Say unbearable things to you	.149	.048	**.654**	.127	-.022
7	Avoid inviting in weddings	-.030	.025	**.609**	-.083	.485
9	Less likely to interact	-.042	-.068	**.587**	.050	.366
	People make fun	.066	.061	**.530**	-.012	.007
	Factor 4: social criticism					
4	Criticized for having disabled child	-.033	.072	.157	**.902**	-.007
3	Lower status than others	.041	.104	.190	**.873**	.006
1	Feel inferior to others	.010	.098	.174	**.876**	-.023
2	Considered a feminine defect	.013	.121	.204	**.883**	.029
	Factor 5: social avoidance					
21	People sympathize you	**.443**	.019	.063	.069	**.662**
26	People mock you	-.032	.030	.127	-.054	**.652**
20	People hate you	-.034	.081	.351	-.057	**.640**
24	Blamed for such disabled child	**.459**	.062	-.063	.003	**.616**
27	Considered as rejected person	**.517**	-.060	.058	.146	**.603**
29	Considered as rejected person	**.514**	-.033	.047	.033	**.536**

Note. N=250. the extraction method was principal method with varimax rotation. Factor loading above .40 are in bold.

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The scree plot indicates factor solution with a clear break after 5th component. Keeping in view the factor loading and theoretical relevance, only 5 well-defined factors were retained, which accounts the 53.44 % of total variance.

Table 4 List Of Factors, Items And Percentage Of Variance Accounted By five Factors

Factors	Factor label	Items	% of variance
1	Social discrimination	31, 32, 34, 33, 30, 37, 36, 39, 38	12.66%
2	Financial/family stressors	40, 41, 42, 43, 44, 45, 46, 57, 48, 49, 50	25.13%
3	Social blaming	15, 14, 13, 12, 10, 11, 19, 17, 09	36.44%
4	Social criticism	4,2,3,1	45.47%
5	Social avoidance	26, 21, 20, 24, 27, 29	53.44%

Phase III: Confirmatory Factor Analysis

An initial CFA on the 39-item scale (N=250) showed poor fit: χ 2 (578)=2257, CFI=.546, GFI=.66, and RMSEA=.066. The CFI fell significantly short of the standard .90 threshold. Model Refinement Using modification indices, 19 problematic items were removed:

- Deleted for high covariance: Items 11, 13, 23, and 24
- Deleted for high regression weights: Items 12, 15, 16, 17, 19, and 21

Revised Model Fit Retaining 19 items improved the fit substantially: χ 2 (146)=593.6, p<.001, χ 2 /df=4.07, RMSEA=.106, and GFI=CFI=TLI=.80. Based on Bollen (1989), fit indices of .80 are considered acceptable, confirming the construct validity and dimensionality of the revised Social Stressors Scale for caregivers of children with intellectual disabilities.

Table 5 List Of Factors, Items And Percentage Of Variance Accounted final model of indigenous Social Stressors Scale for caregivers of intellectual disabled children.

Factors	Factor label	Items	% of variance
1	Social discrimination	30, 31, 32, 33, 34, 36, 37, 38, 39	12.66%
2	Financial/family stressors	40, 41, 42, 43, 44, 45, 46, 48, 49, 50	25.13%

Figure 1

Measurement of final model of indigenous Social Stressors Scale for caregivers of intellectual disabled children. Figure I illustrates the results of the analysis for the two-factor structure of the indigenous Social Stressors Scale designed for caregivers of children with intellectual disabilities. The findings provide compelling evidence for the differentiation of these two subscales and the items that load onto them. The factor loadings of the items consistently meet or exceed the minimum threshold of .40, affirming their significance in contributingto each respective Subscale.

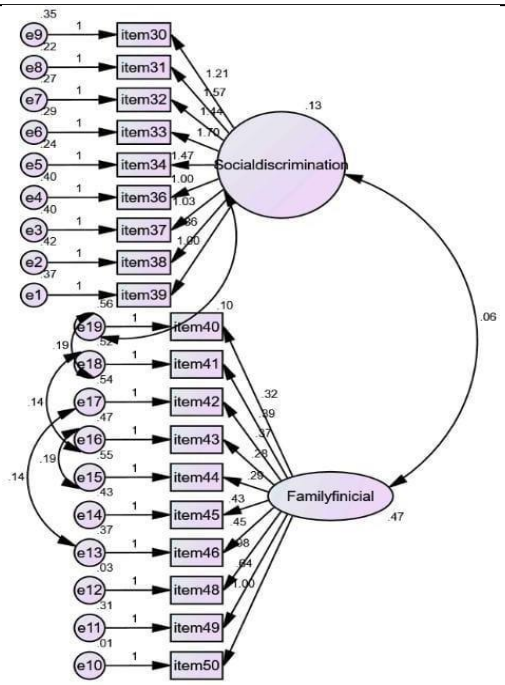


Table 6 Model Fit Indices Of CfA For Indigenous Social Stressors Scale For Caregivers Of Intellectual Disabled Children

Models	χ2.	df	NFI	AGFI	CFI	RMSEA
.106	593.6	146	.80	.83	.82	.072

Table 6 indicates (chi-square= 593.6(df=146); p= .000; chi square/df=4.065 ;RMSEA= .072 ; NFI= .776 ;CFI= .80). In this study, AGFI, CFI,NFI is .80 these values presumably indicating acceptable for these indices (Bollen, 1989, Cudeck, 1993).

Ethical Considerations

Prior to data collection, institutional approval and written informed consent were obtained from all participants. Participants were briefed on the study's purpose, assured of voluntary participation and the right to withdraw at any time without penalty, and guaranteed total confidentiality through anonymized, aggregate data reporting.

Results

Results are presented in the order in which the analyses were conducted: sample characteristics, descriptive statistics and reliability, the exploratory factor structure, the confirmatory factor analysis and model respecification, and finally convergent and divergent validity.

Table 7 Psychometric Properteis for Scale

Scale	M	SD	Range	Chronbach α
Social Stressor Scale	80.64	5.97	4-76	.87
Social Discrimination	37.98	4.4	4-36	.85
Family & Finacial Stressors	42.65	4.8	4-40	.85

Note. M= mean; SD= Standard Deviation; α= reliability

Table 7 presents the psychometric properties and descriptive statistics for the Social Stressor Scale and its subscales. The overall scale demonstrated strong internal consistency (α=.87,M=80.64,SD=5.97), while both subscales—Social Discrimination (α=.85,M=37.98,SD=4.4) and Family & Financial Stressors (α=.85,M=42.65,SD=4.8)—also exhibited high internal reliability. These results confirm that the scale and its subscales are psychometrically sound and reliable.

Table 8 Correlation Matrix Of Subscales Of Social Stressors Scale For Caregivers Of Intellectual Disabled Children

variables	1	2	3
Social stressors scale	-	.38**	.55**
Social Discrimination		-	.61**
Family & Finacial Stressors			-

*Note: p**<0.01*

Table 8 displays the Cronbach's alpha coefficients for the scale's subscales, which fall within the range of .85 to .87. Moreover, the analysis involving Pearson's product-moment correlation coefficients reveals a noteworthy and positive association among the various subscales of the Social Stressors Scale (r= .38**, r= .55**, r=.61**, p <0.01)

Table 9 Correlation Matrix Of Subscales Of Social Stressors Scale For Caregivers Of Intellectual Disabled Children with Generalized Self-Efficacy Scale

variables	1	2	3	4
Social stressors scale	-	.716**	.631**	-
Social Discrimination	-	-	.350**	
Family & Finacial Stressors	-	-	-	-
Generalized Self-Efficacy Scale	.100	.025	.085	-

*Note: p**<0.01*

The findings confirm the convergent and discriminant validity of the newly developed Social Stressors Scale (SSS) for primary caregivers of children with intellectual disabilities. Convergent validity was established through a statistically significant positive correlation between the SSS subscales and existing indigenous social stressors scales. Discriminant validity was supported by a non-significant correlation between the SSS and the Generalized Self-Efficacy Scale, demonstrating that the SSS distinctly measures social stressors without overlapping with unrelated psychological constructs.

Discussion

The Social Stressors Scale (SSS) represents a culturally grounded instrument constructed directly from Pakistani caregivers' lived experiences rather than adapted from Western frameworks, establishing strong internal consistency alongside theoretically coherent convergent and divergent validity. However, confirmatory factor analysis (CFA) revealed a final model fit (GFI/CFI/TLI≈.80) below conventional .90 standards, with only two of the five initial exploratory factor analysis (EFA) factors surviving structural confirmation. This pattern demonstrates that the two-factor structure—comprising Social Discrimination and Financial/Family Stressors—forms the

psychometric core of caregiver social stress in this population, whereas secondary content regarding social blaming, criticism, and avoidance requires further empirical refinement.

The structural survival and stability of the Social Discrimination and Financial/Family Stressors factors align closely with established regional literature. Discrimination-related distress, characterized by being judged, excluded, or treated differently due to a child's disability, mirrors stigma patterns documented among caregivers of children with developmental disabilities across South Asian and Middle Eastern contexts (Aldosari & Pufpaff, 2014; Khamis, 2007). Similarly, financial and family-related strain directly reflects the documented economic burden of caregiving, encompassing both direct expenditures (specialized schooling, rehabilitation, transport) and indirect losses such as reduced employment or forgone household income. That these two dimensions exhibited clear, stable loadings across independent confirmatory samples suggests they represent the most salient, universally articulated facets of social stress among local caregivers.

Conversely, the failure of the remaining three factors (Social Blaming, Social Criticism, and Social Avoidance) to replicate in the confirmatory stage highlights structural measurement challenges rather than simple exploratory artifacts. Behaviors such as blame, criticism, and interpersonal avoidance are typically enacted by specific social actors (e.g., extended family, in-laws, neighbors) within specific settings or developmental phases. Consequently, caregiver reports of these situational dynamics are inherently more context-dependent and variable than the global, pervasive experiences captured by general discrimination and financial hardship. Establishing these situational experiences as distinct, stable factors will likely require larger confirmatory samples alongside items explicitly anchored to specific relational and environmental contexts.

In terms of regional psychometric benchmarking, the overall cumulative variance explained by the SSS during EFA (50.5%) is comparable to other indigenously developed caregiver scales in Pakistan, such as the Perceived Autism Related Stigma by Association Scale, which similarly accounted for just over 50% of total variance. This convergence indicates that accounting for 50–55% of cumulative variance is an expected, realistic threshold for indigenously constructed instruments measuring complex, socially embedded caregiving phenomena in South Asia. However, the SSS's revised RMSEA (.106) remains higher than typical structural models in comparable populations, signaling that while the scale demonstrates acceptable preliminary validity, its underlying structural fit requires continued refinement.

The SSS offers meaningful practical utility across research, clinical, and policy domains. For researchers, it provides a localized metric to investigate how social stressors independently predict outcomes like caregiver depression or family system dysfunction relative to general parenting stress. Clinically, the scale functions as an actionable intake tool: caregivers scoring high on social discrimination can be directed toward peer support and advocacy groups, whereas those elevated on financial and family stressors can be prioritized for subsidized healthcare, therapy referrals, or social assistance programs. From a policy standpoint, these findings provide an empirical foundation to advocate for state-subsidized transport, rehabilitation, and special education, while allowing program evaluators to assess intervention effects on specific stress dimensions independently.

Methodologically, the study gains credibility from grounding item generation in qualitative caregiver interviews, establishing content validity via a multidisciplinary expert panel, evaluating convergent and divergent validity against established comparison scales, and utilizing two completely independent samples for EFA and CFA rather than a split-sample design. Nevertheless, key limitations bound these conclusions: sampling was restricted to special education institutions in Lahore, limiting geographic generalizability to rural areas or other provinces; the sample size, while adequate for a 20-item two-factor structure, may have underpowered the initial 39-item five-factor model; factor labeling relied on subjective researcher interpretation; and the cross-sectional, self-report design precludes

causal assertions regarding caregiver mental health over time.

Future research should prioritize replicating the CFA across larger, geographically diverse samples—including rural populations and underrepresented provinces such as Sindh, Khyber Pakhtunkhwa, and Balochistan—to determine whether dropped factors recover statistical power. Longitudinal designs are needed to establish whether SSS scores reliably predict changes in caregiver well-being over time and respond dynamically to community-based anti-stigma interventions. Finally, validating the SSS among non-institutionalized populations—caregivers whose children are not enrolled in formal special education or therapeutic facilities—remains critical, as these families may experience even greater degrees of social isolation, unmeasured financial strain, and unaddressed social stress.

Conclusion

This study successfully developed and provided preliminary psychometric validation for an indigenous Social Stressors Scale for Pakistani caregivers of children with intellectual disability. Item generation grounded in caregivers' own qualitative accounts, expert-rated content validity, and a two-stage exploratory–confirmatory factor-analytic process together yielded a final two-factor, 19-item measure, spanning social discrimination and financial/family stressors, that is reliable and shows theoretically consistent convergent and divergent validity. At the same time, the modest confirmatory model fit and the failure of three exploratory factors to replicate indicate that the instrument, in its current form, should be regarded as a promising but provisional measure rather than a finalized one. Further refinement across larger, more geographically and socioeconomically diverse samples, potentially including revised or additional items intended to more stably capture blame-, criticism-, and avoidance-related content, is recommended before the SSS is adopted for widespread clinical or research use.

Limitation and Future Recommendation

Key study limitations include restricted access to special education institutions in Lahore, subjective factor labeling, and item deletions during CFA that highlight the need for a larger dataset to achieve factor stability. Future research should expand sampling to other Pakistani cities, validate the scale in non-institutionalized populations, and integrate mixed-methods approaches like focus group interviews to capture indigenous social stressors more comprehensively.

Implications of the Study

The Social Stressors Scale (SSS) offers significant research, clinical, and policy implications by providing a precise, culturally grounded tool to assess the unique challenges faced by mothers of children with intellectual disabilities. In research, it enables targeted investigations into indigenous stress dynamics and coping mechanisms. Clinically, it functions as an early screening and communication tool, allowing healthcare providers, therapists, and social service agencies to identify at-risk caregivers, design tailored interventions, and implement holistic, family-centered care. Furthermore, by generating empirical evidence of caregiver strain, the scale strengthens advocacy efforts, promotes policy reform for subsidized support services, raises societal awareness, and helps reduce disability-related stigma.

Conflict of Interest

The authors declare no conflict of interest regarding the publication or usage of this scale. The Social Stressors Scale (SSS) is open-access and free to use for academic and clinical research purposes.

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Appendix 1

ذہنی طور پر معذور بچوں کی دیکھ بھال کرنے والوں کے سماجی تناؤ کو ماپنے کے لیے سوالنامہ

اس سوالنامے میں آپ کچھ سوالات کے جواب دیں گے اور اپنی ذات کے متعلق بنیادی معلومات بھی فراہم کریں گے۔ اس تحقیق کا بنیادی مقصد آؤٹ ڈور حالات میں ذہنی معذور بچوں کی دیکھ بھال کرنے والے والدین کے سماجی تناؤ کو جانچنا ہے۔ اس سلسلے میں ملنے والی تمام معلومات/اقدامات کو انتہائی اور ہنگامی راز میں رکھا جائے گا، اور انہیں صرف تحقیقی مقصد کے لیے استعمال کیا جائے گا۔ آپ کو کسی بھی بات کے لیے مجبور نہیں کیا جائے گا۔ آپ سے گزارش ہے کہ اس مسئلے کو جانچنے کے اور صحیح مسئلے کا مواد حاصل کرنے میں اپنے تعاون کا مظاہرہ کر کے نتائج کی تصدیق کریں۔

میں نے مذکورہ بالا معلومات پڑھ لی ہیں، مجھے اس کے بارے میں سوالات کرنے کا موقع ملا ہے۔ میرے تمام سوالات کا تسلی بخش جواب مجھے ملا ہے، میں مکمل اطمینان کے ساتھ آگاہ ہوں۔ میں رضامندانہ طور پر اس مطالعے میں حصہ لینے کے لیے رضامند ہوں۔

حصہ لینے والے کا نام:.....

دستخط:.....

ذاتی کوائف

دیکھ بھال کرنے والے کی عمر:..... جنس: مرد / عورت

تعلیم: ناخواندہ / پرائمری / مڈل / میٹرک / انٹرمیڈیٹ / گریجویشن / ماسٹرز

ازدواجی حیثیت: شادی شدہ / علیحدگی / طلاق یافتہ / بیوہ

ملازمت کی نوعیت: ذاتی / سرکاری / پرائیویٹ / دیگر

بچوں کی کل تعداد:..... بیٹے:..... بیٹیاں:.....

ذہنی معذور بچوں کی کل تعداد:..... ذہنی معذور بچے کی عمر:.....

ذہنی معذور بچے کی جنس: لڑکا / لڑکی

بہن بھائیوں میں بچے کا نمبر:.....

سماجی حیثیت: دیکھ بھال کرنے والے کے لیے کوئی مددگار لگا ہے یا نہیں؟.....

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ہدایات:
نیچے دیے گئے ہر بیان کے آگے 5 ممکنہ جوابات دیے گئے ہیں۔ ہر بیان کو غور سے پڑھیں اور یہ فیصلہ کریں کہ وہ آپ کے بارے میں کس حد تک درست یا غلط ہیں۔ آپ ان 5 ممکنہ جوابات میں سے کسی ایک مناسب جواب پر دائرہ لگائیں۔

نمبر شمار	بیانات	بہت زیادہ متفق (5)	متفق (4)	غیر جانبدار (3)	غیر متفق (2)	بہت زیادہ غیر متفق (1)
	معاشرتی امتیاز (Social Discrimination)					
1	ذہنی معذور بچے کی وجہ سے آپ کو معاشرے میں قبول کرنے سے رد کیا جاتا ہے	O	O	O	O	O
2	ذہنی معذور بچے کی وجہ سے لوگ آپ کو نیچا دکھاتے ہیں	O	O	O	O	O
3	ذہنی معذور بچے کی وجہ سے لوگ آپ کو ناقابل برداشت باتیں کہتے ہیں	O	O	O	O	O
4	ذہنی معذور بچے کی پرورش کرنے میں مالی مشکلات کا سامنا کرنا پڑتا ہے	O	O	O	O	O
5	ذہنی معذور بچہ چھپے رہ جائے گا اور دوسرے نارمل بچے اپنی زندگی میں آگے بڑھ جائیں گے، کیا یہ بات آپ کے لئے ذہنی پریشانی کا سبب بنتی ہے؟	O	O	O	O	O
6	معاشرے میں ذہنی معذور بچے کی وجہ سے آپ کے دوسرے نارمل بچوں کو بھی نظر انداز کیا جاتا ہے	O	O	O	O	O
7	ذہنی معذور بچے کی وجہ سے آپ کے بہن بھائیوں کے تعلقات آپ کے ساتھ خراب ہوتے ہیں	O	O	O	O	O
8	ذہنی معذور بچے کی وجہ سے دوسرے نارمل بچوں کی زندگی متاثر ہوتی ہے	O	O	O	O	O
9	ذہنی معذور بچے کے ساتھ زیادہ وقت گزارنے میں آپ کے ازدواجی تعلقات متاثر ہوتے ہیں	O	O	O	O	O
	خاندانی اور مالی دباؤ (Family and Financial Stress)					
10	کیا لوگوں کی باتیں آپ کے لیے تکلیف ہوتی ہیں؟	O	O	O	O	O
11	کیا معاشرے کے لوگ معذور بچے کی ماں کو شکر ادا نہ کرنے والے لوگوں میں شمار کرتے ہیں؟	O	O	O	O	O
12	کیا لوگ آپ پر افسوس کرتے ہیں؟	O	O	O	O	O
13	کیا معذور بچوں کی ماں کو باکل سمجھا جاتا ہے؟	O	O	O	O	O
14	کیا آپ کے بچے کو دیکھ کر لوگ اپنے بچے کو چھپا لیتے ہیں؟	O	O	O	O	O
15	کیا لوگ آپ سے ملنے سے منع کرتے ہیں؟	O	O	O	O	O
16	کیا لوگ سمجھتے ہیں کہ آپ کے بچے کی وجہ سے ان کے بچے متاثر ہو جائیں گے؟	O	O	O	O	O
17	کیا ذہنی معذور بچے کی ماں کی اس معاشرے میں کوئی حیثیت ہے؟	O	O	O	O	O
18	کیا آپ کو دوسرے نارمل بچوں کی ماؤں کے ساتھ موازنہ کروایا جاتا ہے؟	O	O	O	O	O
19	کیا لوگ آپ کے بچے کو باکل باکل کہتے ہیں؟	O	O	O	O	O

تبصرہ / اضافی رائے (Comments / Additional Feedback):