

Parental Stress and Behavioral Problems in Children Aged 1.5–5 Years Attending a Well Child Clinic: A Cross-Sectional Observational Study

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Abstract

Background: Parenting stress may influence emotional and behavioral functioning in preschool children, but Indian data from well-child populations are limited. **Objectives:** To estimate the hospital-based prevalence of parental stress and behavioral abnormalities among children aged 1.5–5 years and assess their association. **Material and Methods:** This cross-sectional observational pilot study enrolled 50 child–parent dyads attending the Department of Pediatrics, S.V.R.R. Government General Hospital, Tirupati, from 21 November 2022 to 20 November 2023. Enrolled patients completed cbcl check list. Demographic variables were recorded, and associations with high parental stress were evaluated using logistic regression. Correlation between PSS and CBCL scores was assessed using Pearson correlation. **Results:** High parental stress was present in 23/50 (46%) parents. Behavioral abnormalities were identified in 21/50 (42%) children; 22% were in the clinical range and 28% in the borderline range for total problems. Fifteen of 23 children of parents with high PSS scores had behavioral abnormalities compared with 6 of 27 children of parents with low scores. Mean CBCL score was 32.36 (SD 9.65). Nuclear family status was associated with high parental stress in univariable analysis (OR 3.54, 95% CI 1.10–12.49; $p=0.039$); the reported multivariable estimate was OR 3.83 (95% CI 1.04–16.05; $p=0.051$). PSS and CBCL scores showed a modest positive correlation ($r=0.321$, 95% CI 0.046–0.550; $p=0.023$). **Conclusion:** Parental stress was common in this small well-child clinic sample and correlated positively with child behavioral problem scores. Screening parental stress alongside child behavior may help identify families who could benefit from early support; larger prospective studies are required.

Keywords: Parental stress; child behavior; preschool children; Child Behavior Checklist; well child clinic.

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INTRODUCTION

Behavioral and emotional problems can become evident during the preschool years and may persist into later childhood. Early identification is important because persistent internalizing and externalizing problems can affect social functioning, school readiness, and family well-being. Parent–child interactions are central to early emotional development, and parenting stress is increasingly recognized as a potentially modifiable family-level factor associated with child behavior.^[1–3]

Parenting stress reflects the distress that can arise when perceived parenting demands exceed available personal and social resources. Prior work has linked higher parenting stress with less optimal parent–child interactions and greater internalizing and externalizing symptoms.^[4–8] The relationship may also be transactional: difficult child behavior can increase parental stress, which in turn may reinforce behavioral problems over time.^[9]

Most published studies have focused on children with developmental disorders, chronic illness, prematurity, or other high-risk conditions.^{[4], [10–12]} Evidence from parents of otherwise healthy preschool children in Indian clinical settings remains limited. The present study therefore assessed parental stress and behavioral abnormalities among

children aged^[1,5–5] years attending a well child clinic and examined the association between parental stress and child behavior.

MATERIALS AND METHODS

Study design and setting: A cross-sectional observational pilot study was conducted in the Department of Pediatrics, S.V.R.R. Government General Hospital, Tirupati, Andhra Pradesh, India, over 12 months from 21 November 2022 to 20 November 2023. A convenience sample of 50 child–parent dyads was enrolled.

Participants: Children of either sex aged 1.5–5 years attending the outpatient department/well child clinic for vaccination or a minor illness, together with their accompanying parent, were

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eligible. Children with previously diagnosed chronic medical disorders such as congenital heart disease, chronic liver disease, or nephrotic syndrome were excluded. Parents who declined consent were also excluded.

Data collection and instruments: After counselling and written informed consent, demographic and family information was recorded using a predesigned proforma, including child age and sex, parental age, education and occupation, family type, living status, per-capita income, average time spent with the child, and socioeconomic status according to the Modified Kuppuswamy scale (2021).

Parental stress was assessed using the 18-item Parental Stress Scale (PSS). Items were rated on a five-point Likert scale from strongly disagree to strongly agree; items 1, 2, 5, 6, 7, 8, 17 and 18 were reverse scored. Total scores ranged from 18 to 90. In the study analysis, the sample mean (approximately 41) was used to classify low versus high parental stress.

Child behavior was assessed using the 100-item Child Behavior Checklist (CBCL), completed by parents with researcher assistance when needed. Items were scored 0 (not true), 1 (sometimes true) or 2 (often true). The study classified scores below the 95th percentile as normal, scores between the 95th and 98th percentiles as borderline, and scores above the 98th percentile as clinical range.

Statistical analysis: Data were entered in Microsoft Excel and analyzed using Epi Info version 7.2.5. Quantitative variables were summarized using means and standard deviations where applicable; categorical variables were summarized as frequencies and percentages. Categorical comparisons used the chi-square test. Logistic regression was used to examine factors associated with high parental stress, and Pearson correlation was used to assess the relationship between PSS and CBCL scores. A p value <0.05 was considered statistically significant.

Ethics: Institutional Ethics Committee approval was obtained before data collection. Written informed consent was obtained from parents/guardians, participation was voluntary, and participants could withdraw at any stage.

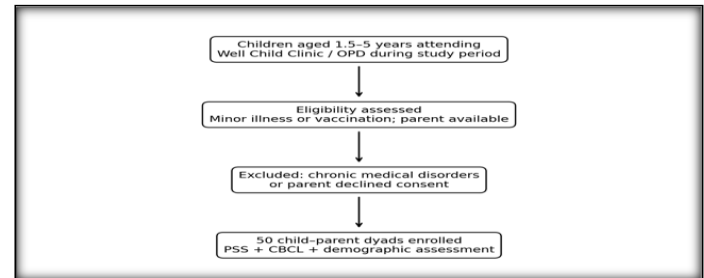


Figure 1: Study flow and assessment pathway.

RESULTS

Fifty child-parent dyads were included. Most children were aged 2–4 years (66%), 56% were male, and 58% belonged to nuclear families. Most parents had secondary education (54%), 88% were homemakers, and 68% of families were in the lower-middle socioeconomic class. All parents were reported to be living together. The most common parental age group was 26–30 years (48%).

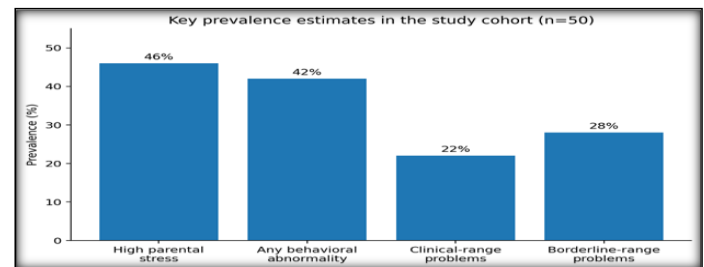


Figure 2: Key prevalence estimates reported in the study cohort.

Table 1: Baseline characteristics of the study population (n=50)

Characteristic	n (%)
Child age 1.5–2 y	2 (4)
Child age 2–3 y	15 (30)
Child age 3–4 y	18 (36)
Child age 4–5 y	15 (30)
Male sex	28 (56)
Female sex	22 (44)
Joint family	21 (42)
Nuclear family	29 (58)
Parent education: graduate	21 (42)
Parent education: secondary	27 (54)
Parent education: primary	2 (4)
Parent occupation: homemaker	44 (88)
Parent occupation: semi-skilled	3 (6)
Parent occupation: unskilled	3 (6)
Socioeconomic class: upper	1 (2)
Upper-middle	13 (26)
Lower-middle	34 (68)
Upper-lower	2 (4)
Parent age 21–25 y	9 (18)
Parent age 26–30 y	24 (48)
Parent age 31–35 y	16 (32)
Parent age 36–40 y	1 (2)
Time with child 7–12 h/day	12 (24)
13–18 h/day	21 (42)

19–24 h/day	17 (34)
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Parental stress and child behavioral abnormalities: The mean parental stress score was approximately 41. Twenty-seven parents (54%) were classified as having low PSS scores and 23 (46%) as having high PSS scores. Behavioral abnormalities were identified in 21 children (42%). Among children whose parents had high PSS scores, 15/23 had behavioral abnormalities; among children whose parents had low PSS scores, 6/27 had behavioral abnormalities.

For total behavioral problems, 11 children (22% of the cohort) were reported in the clinical range and 14 behavioral problem classifications (28%) in the borderline range. Four children had two behavioral abnormality categories; therefore 25 behavioral problem classifications were identified among 21 affected children. Twelve of the 21 affected children were boys and nine were girls.

Table 2: Parental stress and behavioral findings

Outcome	Result
High parental stress	23/50 (46%)
Low parental stress	27/50 (54%)
Any child behavioral abnormality	21/50 (42%)
Behavioral abnormality with high PSS	15/23
Behavioral abnormality with low PSS	6/27
Clinical-range total problems	11/50 (22%)
Borderline-range total problems	14 classifications (28% of cohort)

CBCL profile: The overall CBCL mean score was 32.36 (SD 9.65), with a median of 33 and range 10–49. Among syndrome/problem scores, the highest mean was for

aggressive behavior (6.40), followed by sleep problems (5.00), ADHD (4.66), and anxiety (4.48). The lowest mean was for ODD (1.32).

Table 3: CBCL and domain score distribution

Scale/domain	Mean	Median	SD	Min	Max
CBCL total	32.36	33.00	9.65	10	49
Depression	2.92	4.00	1.41	0	5
Anxiety	4.48	5.00	2.38	1	14
ASD	2.56	2.00	1.83	0	7
ADHD	4.66	4.00	2.83	1	11
ODD	1.32	1.00	1.82	0	8
Emotional reactive	2.76	3.00	2.04	0	10
Somatic complaints	2.84	3.00	1.67	0	9
Withdrawn	1.64	1.00	1.52	0	6
Sleep problems	5.00	5.00	2.13	1	10
Aggressive behavior	6.40	6.00	3.18	1	15

Factors associated with high parental stress: Child age, child sex, parental educational status, and time spent with the child were not significantly associated with high parental stress in the reported models. Nuclear family status was associated with high parental stress on univariable

analysis (OR 3.54, 95% CI 1.10–12.49; $p=0.039$). The study reported an adjusted OR of 3.83 (95% CI 1.04–16.05; $p=0.051$). Because the reported p value and confidence interval are not fully concordant, the underlying regression output should be rechecked before journal submission.

Table 4: Logistic regression for factors associated with high parental stress

Factor	Univariable OR (95% CI)	Multivariable OR (95% CI)
Age of child (per year)	1.24 (0.64–2.48); $p=0.525$	1.07 (0.47–2.49); $p=0.866$
Female vs male	0.96 (0.31–2.96); $p=0.945$	1.00 (0.24–4.12); $p=0.995$
Secondary vs graduate education	0.73 (0.23–2.30); $p=0.594$	0.47 (0.11–1.75); $p=0.273$
Primary vs graduate education	1.00 (0.04–27.48); $p=1.000$	2.98 (0.08–109.35); $p=0.514$
Nuclear vs joint family	3.54 (1.10–12.49); $p=0.039$	3.83 (1.04–16.05); $p=0.051$
13–18 h vs 7–12 h with child	3.30 (0.74–18.21); $p=0.134$	4.46 (0.75–34.60); $p=0.119$
19–24 h vs 7–12 h with child	3.37 (0.72–19.53); $p=0.140$	3.55 (0.60–25.61); $p=0.178$

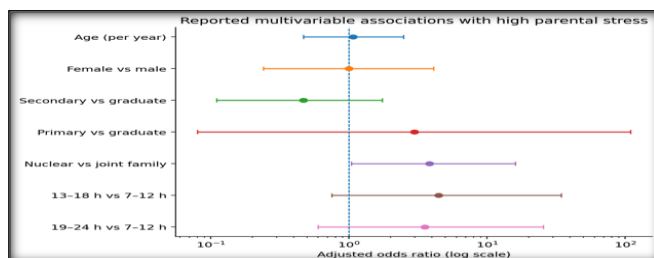


Figure 3: Forest plot of reported multivariable odds ratios for high parental stress.

Correlation between parental stress and child behaviour: Parental stress score correlated positively with CBCL score (Pearson $r=0.321$; $p=0.023$). The reported 95% confidence interval was 0.046–0.550, with Fisher z effect size 0.332 (SE 0.146). This represents a modest positive relationship, with higher parental stress associated with higher reported child behavioral problem scores.

DISCUSSION

In this hospital-based pilot study of 50 preschool-aged children

and their parents, nearly half of parents had high parental stress scores and 42% of children had at least one behavioral abnormality on the CBCL. Most importantly, parental stress and child behavior scores were positively correlated. These findings support the premise that parental psychological burden and child behavioral functioning are interrelated even in a general pediatric outpatient/well-child population.

The observed prevalence of high parental stress (46%) was close to the 48.7% reported by Joseph and Chacko among parents of differently abled children, although the populations differ substantially and direct comparison should be cautious.⁴ The behavioral abnormality prevalence in the present cohort was higher than estimates cited in the thesis from Erol et al., where clinical and borderline ranges were lower in a much larger community sample.^[13] Differences in sampling, setting, age distribution, instrument interpretation, and sample size may account for the variation.

The positive PSS–CBCL correlation ($r=0.321$) is consistent with prior literature describing reciprocal relationships between parenting stress and child behavior. Baker et al. reported that behavior problems were strongly linked to parenting stress among preschool children with and without developmental delay, while longitudinal work by Neece et al. demonstrated that parenting stress and behavior problems can influence one another over time.^[8,9] Such evidence cautions against interpreting the association as exclusively parent-to-child; difficult child behavior may also increase parental stress.

Nuclear family structure was the only demographic factor showing a clear association with high parental stress in the univariable model. Reduced availability of extended-family support is a plausible explanation, consistent with broader literature emphasizing social support as a buffer against parenting stress.^[5–7] However, the adjusted result in this small sample was imprecise, with a wide confidence interval. The study reports a p value of 0.051 alongside a confidence interval excluding 1.0; this discrepancy should be verified against the original regression output before submission.

The study has practical relevance for pediatric outpatient care. Well-child encounters often focus on growth, nutrition, immunization and developmental milestones, but they also provide an opportunity to identify parental distress and early behavioral concerns. A brief parental stress assessment, combined with behavioral surveillance and targeted counselling, could help identify families who may benefit from parenting support, mental-health referral, or closer developmental follow-up.

Several limitations should be considered. The sample was small and selected by convenience from a single center, limiting precision and generalizability. The cross-sectional design precludes causal inference and cannot determine the direction of the parent stress–child behavior relationship. Both PSS and CBCL were parent-reported, creating potential common-reporter bias. The study did not measure several potentially important confounders, including parental anxiety/depression, marital conflict, child

temperament, screen exposure, sleep, and broader social support. In addition, dichotomizing PSS at the sample mean is not a standard diagnostic threshold and may limit comparison with other studies.

CONCLUSION

Parental stress was common among parents of children aged 1.5–5 years attending this well child clinic, and higher parental stress scores were associated with higher CBCL scores. Child behavioral abnormalities were also frequent in this small hospital-based sample. Integrating parental well-being assessment with routine developmental-behavioral surveillance may enable earlier family-centered intervention. Larger multicenter and longitudinal studies are needed to confirm the magnitude and direction of these associations.

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Conflicts of interest

No conflicts of interest

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