

Prevalence of Behavioral and Socioemotional problems in preschoolers born during COVID-19 pandemic and its correlation with Parenting style: An observational study.

Prevalencia de problemas conductuales y socioemocionales en preescolares nacidos durante la pandemia por COVID-19 y su correlación con el estilo de crianza: un estudio observacional

Brijesh M,¹ Deepa Metgud,²

Abstract

BACKGROUND: Early childhood development has been uniquely shaped by the COVID-19 pandemic, with disruptions to peer interactions, environments, and early experiences raising concerns regarding behavioral vulnerabilities. While increased behavioral and socioemotional difficulties were reported during the pandemic, there is limited post pandemic evidence on the prevalence of these problems among preschoolers born during the COVID-19 pandemic, and few studies have examined their association with parenting styles.

OBJECTIVE: To determine the prevalence of behavioral and socioemotional problems among preschoolers born during the COVID-19 pandemic and to evaluate its association with parenting styles.

METHODS: This observational cross-sectional study included preschoolers aged 3–5 years. The prevalence of behavioral and socioemotional problems was determined using Child Behavior Checklist (CBCL/1½–5). Parenting styles were assessed using Parenting Styles and Dimensions Questionnaire-2 (PSDQ-2). Data were analyzed using appropriate parametric and non-parametric statistical tests based on data distribution. Correlation analyses were subsequently performed to examine associations between parenting style dimensions and CBCL outcome scores.

RESULTS: The prevalence of behavioral and socioemotional problems in preschoolers born during the pandemic was 12.8%. Maternal authoritative parenting demonstrated a significant negative association with total behavioral problems, whereas maternal authoritarian and permissive parenting styles showed positive associations with externalizing and internalizing problem domains, respectively.

CONCLUSION: Behavioral and socioemotional difficulties were observed among preschool children born during the COVID-19 pandemic. Significant associations were identified between parenting styles and behavioral outcomes. Further longitudinal studies are needed to better understand these relationships.

KEYWORDS: Child, Preschool; Child Behavior Disorders; Social Behavior; COVID-19; Parenting.

¹Department of Pediatric Physiotherapy, KAHER Institute of Physiotherapy, Belagavi, Karnataka, India- 590010.

²Department of Pediatric Physiotherapy, KAHER Institute of Physiotherapy, Belagavi, Karnataka, India- 590010.

ORCID

<https://orcid.org/0009-0000-7847-268X>

<https://orcid.org/0000-0002-3012-1642>

Received: 26 de enero 2026

Accepted: 23 de junio 2026

Correspondence

Brijesh M
u25brijeshyum@gmail.com

This article should be cited as: Brijesh M, Deepa M. Prevalence of Behavioral and Socioemotional problems in preschoolers born during COVID-19 pandemic and its correlation with Parenting style: An observational study. Acta Pediatr Méx 2026; 47: e3361.

Resumen

ANTECEDENTES: El desarrollo en la primera infancia se ha visto influenciado de manera particular por la pandemia por COVID-19, con alteraciones en las interacciones entre pares, los entornos y las experiencias tempranas, lo que ha generado preocupación sobre posibles vulnerabilidades conductuales. Aunque durante la pandemia se reportó un aumento de las dificultades conductuales y socioemocionales, existe evidencia limitada en el período post pandémico sobre la prevalencia de estos problemas en preescolares nacidos durante la pandemia, así como pocos estudios que hayan analizado su asociación con los estilos de crianza.

OBJETIVO: Determinar la prevalencia de problemas conductuales y socioemocionales en preescolares nacidos durante la pandemia por COVID-19 y evaluar su asociación con los estilos de crianza.

MÉTODOS: Estudio observacional de tipo transversal que incluyó a niños preescolares de 3 a 5 años de edad. La prevalencia de problemas conductuales y socioemocionales se determinó mediante el *Child Behavior Checklist (CBCL/1½–5)*. Los estilos de crianza se evaluaron utilizando el *Parenting Styles and Dimensions Questionnaire-2 (PSDQ-2)*. Los datos se analizaron mediante pruebas estadísticas paramétricas y no paramétricas, según la distribución de los datos. Posteriormente, se realizaron análisis de correlación para examinar las asociaciones entre las dimensiones de los estilos de crianza y las puntuaciones obtenidas en el CBCL.

RESULTADOS: La prevalencia de problemas conductuales y socioemocionales en los preescolares nacidos durante la pandemia fue del 12.8%. El estilo de crianza autoritativo materno mostró una asociación negativa significativa con los problemas conductuales totales, mientras que los estilos de crianza autoritario y permisivo maternos presentaron asociaciones positivas con los dominios de problemas externalizantes e internalizantes, respectivamente.

CONCLUSIONES: Los preescolares nacidos durante la pandemia por COVID-19 presentan una carga relevante de dificultades conductuales y socioemocionales. El estilo de crianza emerge como un factor modificable clave. Estos hallazgos subrayan la necesidad de implementar estrategias tempranas de tamiz conductual e intervenciones centradas en los padres dentro de los marcos de salud pública en el período post pandémico.

PALABRAS CLAVE: Niño preescolar; Trastornos del comportamiento infantil; Conducta social; COVID-19; Relaciones Padres-Hijo.

INTRODUCTION

During COVID-19 lockdowns in India, about 20 million births occurred, with restricted early environments raising concerns regarding children's long-term socioemotional development^{1,2}. Socioemotional and behavioral problems in pre-schoolers have been associated with difficulties

in cognitive growth by limiting engagement in learning and social interactions, thereby restricting opportunities for skill development and academic readiness³. It is a public health concern as the early deficits in these skills have been associated with long-term challenges in education, employment, mental health, and social functioning, increasing the risk of adverse outcomes into adulthood⁴.

Globally, the pooled prevalence of socioemotional and behavioral problems during the COVID-19 pandemic was estimated at 24.3%, compared to 6.9–14.7% before the pandemic⁵. In India, pre-pandemic studies reported considerable variation: 46.7% of preschoolers in Bhopal (2019) ⁶were at risk for behavioral problems, 24.8% in Solapur (2014)⁷, and 24% in Karad (2016)⁸. In Dharwad, between 2018 and 2021, 47% of children had borderline and 13.8% had clinical behavioral problems, highlighting the widespread prevalence of these issues in both global and Indian contexts⁹. A US-based study during the pandemic found marked decline in preschooler's socioemotional functioning ¹⁰, while research from Kerala reported 24.9% with behavioral concerns and limited protective socioemotional factors¹¹.

Recent evidence has increasingly highlighted developmental and socioemotional concerns among children born during or exposed early to the COVID-19 pandemic period. Preschool-based studies have reported greater executive functioning difficulties, speech and language concerns, and delays in developmental milestones among pandemic-born children compared to pre-pandemic cohorts¹². Longitudinal cohort studies have also demonstrated lower communication and personal-social developmental scores during early childhood among children born during the pandemic¹³. Furthermore, large cohort data have reported increased odds of socioemotional developmental concerns and communication delays among infants and toddlers exposed to the pandemic during the first years of life, even after adjusting for demographic and family-related factors¹⁴. Reduced peer interaction, altered caregiving environments, parental stress, and prolonged social restrictions during early childhood have been proposed as possible contributing factors.

Given that early development is strongly embedded within the family environment, parenting

style has been recognized as a potential modifiable factor associated with socioemotional outcomes¹⁵. Authoritative parenting has consistently been associated with better emotional regulation and social competence, whereas authoritarian and permissive styles have been linked to increased behavioral difficulties¹⁶. Previous literature suggests that parenting practices may be associated with child development through mechanisms such as modeling of emotional responses, fostering secure attachment, and providing structured opportunities for learning and social interaction. Parenting behaviors may also vary according to contextual factors such as parental education, mental health, and socio-economic status.

However, there is limited post-pandemic literature examining behavioral and socioemotional problems among preschoolers born during the COVID-19 pandemic. Furthermore, the relationship between parenting styles, and child behavioral outcomes among preschoolers born during the COVID-19 pandemic has received comparatively less attention in earlier research. The primary objective of the study was to determine the prevalence of behavioral and socioemotional problems in preschoolers aged 3-5 years who were born during COVID-19 pandemic in Belagavi, Karnataka, India and the secondary objective was to determine the correlation between behavioral and socioemotional problems and parenting style in among these preschoolers.

MATERIALS AND METHODS

Study design and setting

This observational cross-sectional study was conducted following approval from KLE Institutional Research and Ethics Committee (Serial No. 865) on 23 November 2024 and was registered with the Clinical Trials Registry of India (CTRI/2024/12/077862). The study was

conducted in Belagavi, Karnataka, India, from December 2024 to April 2025. The sample size was calculated using the formula $n = Z^2 p(1-p)/d^2$, considering a prevalence of 24.3% for socioemotional and behavioral problems, with a 95% confidence interval and 7.5% precision.⁵ The minimum required sample size was 125 participants. Participants were recruited using a two-stage cluster sampling method through Early Childhood Education Centers (ECECs).

Participants and sampling

Before commencement of the study, a list of registered ECECs was procured from the Block Education Office, Belagavi, Karnataka, India and stratified into four geographic zones (North, South, East, and West; $n = 21, 14, 18$, and 26 , respectively). Using proportional allocation, ECECs were randomly selected in the first stage ($5, 3, 4$, and 5 centers), followed by simple random sampling of preschoolers in the second stage, yielding a total of 140 children (i.e. $35, 21, 28$, and 41 children from the respective zones). Fifteen children were excluded as they did not meet the inclusion criteria and did not provide consent for participation. This two-stage cluster sampling approach ensured proportional geographic representation while minimizing selection bias. (Figure 1)

Outcome measures

Child Behavior Checklist for Ages $1\frac{1}{2}$ –5 years, Empirically Based Form (CBCL/ $1\frac{1}{2}$ –5) was used for the evaluation of behavioral and socioemotional problems, which is a validated parent-reported screening instrument evaluating emotionally reactive behavior, anxiety/depression, somatic complaints, withdrawal, sleep problems, attention problems, and aggressive behavior. Internalizing, externalizing, and total problem scores were interpreted using standardized T-score cut-offs. The CBCL/ $1\frac{1}{2}$ –5 has good psychometric properties with internal consistency coefficients ranging from 0.78–0.97,

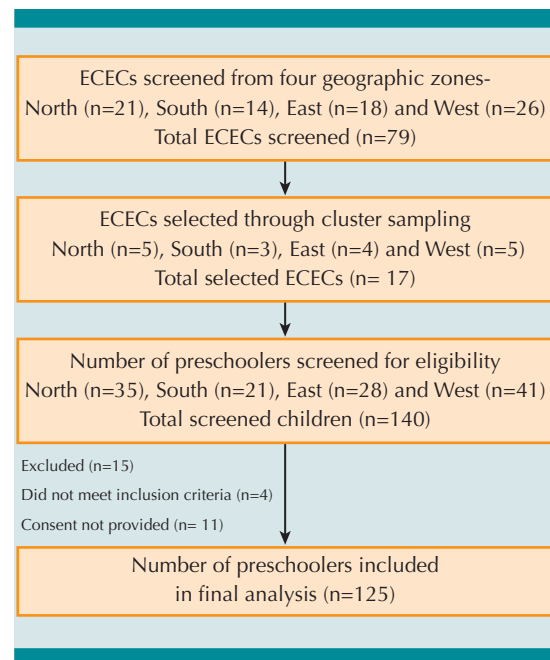


Figure 1. STROBE flowchart- Participation selection and recruitment process through ECECs (Early childhood education centers).

test-retest reliability ranging from 0.68–0.92 and has Indian translations available in Kannada¹⁷ and Hindi¹⁸, which were used in the present study.

Parenting style was assessed using the Parenting Styles and Dimensions Questionnaire–Second Edition (PSDQ-2), a validated self-report instrument assessing authoritative, authoritarian, and permissive parenting dimensions. PSDQ-2 has demonstrated satisfactory psychometric properties, with Cronbach's alpha values reported between 0.62–0.86 across parenting domains. A translated Kannada¹⁹ and English version of the PSDQ-2 was used, while Hindi administration was carried out through interviewer-assisted verbal translation. Each child was screened according to the inclusion and exclusion criteria.

Inclusion and Exclusion criteria

Children aged 3–5 years, born between January 2020 and April 2022, were included in the study.

Both male and female children were considered. Inclusion required the availability of both parents, with written informed consent obtained from the parent. Children with diagnosed developmental disorders or unstable mental health conditions were excluded.

Data collection procedure

Formal permission was obtained from the concerned educational authorities of the selected ECECs prior to initiating the study. The primary investigator had contacted the parents of the selected preschoolers and scheduled prior appointments after ECEC hours. The study's purpose, procedures, and confidentiality safeguards were explained to parents in their preferred language (Kan Hindi, or English), and only those who provided written informed consent were recruited. Data collection was conducted in a quiet, private room in their ECEC. The primary investigator recorded demographic information including the child's name, age, gender, birth weight, birth order, number of siblings, family type, daily play time, daily screen time, and socioeconomic status. Socioeconomic status was assessed using the Modified Kuppaswamy Scale (2024), an Indian socioeconomic classification scale based on parental education, occupation, and monthly family income²⁰. This was followed by interviewing the primary caregiver using the CBCL/1½–5 for which a formal training in administration was priorly obtained from the research supervisor. Subsequently, the PSDQ-2 was handed to be filled by the both the parents and any queries in completion of questionnaire were clarified by the principal investigator. All questionnaires were reviewed for completeness of data entry, scoring, and interpretation by the research supervisor ensuring no significant missing data. The collected data were then entered into a spreadsheet and subjected to statistical analysis.

Statistical Analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 25.0 (IBM Corp., Armonk, NY, USA). Continuous variables were tested for normality using the Shapiro–Wilk test. Descriptive statistics were expressed as mean $\pm$ standard deviation for normally distributed continuous variables and as median (interquartile range) for non-normally distributed variables. Categorical variables were summarized using frequencies and percentages. Associations between parenting styles (PSDQ-2) and behavioral and socioemotional outcomes (CBCL/1½–5) were analyzed using Pearson's correlation coefficient for normally distributed data and Spearman's rank correlation coefficient for non-normally distributed data. Comparisons between groups were conducted using independent samples t-test or one-way analysis of variance (ANOVA) for parametric data, and corresponding non-parametric tests where applicable. All statistical tests were two-tailed, and a p-value < 0.05 was considered statistically significant. Ninety-five percent confidence intervals were calculated where applicable. No interim analyses were performed.

RESULTS

A total of 125 preschool-aged children (mean age: 4.1 ± 0.9 years), born during the COVID-19 pandemic, were included in this study. Most of the children were male (61%), first-born (65.6%), and belonged to nuclear families, with the majority of mothers being unemployed (74.4%) and participants predominantly belonging to lower middle socioeconomic class (49.6%). The demographic characteristics of the study participants are summarized in **Table 1**.

The prevalence of internalizing problems was 20.8% (16% borderline clinical, 4.8% clinical),

Table 1. Sociodemographic data of studied sample

Variables	Characteristics	n (%)
Gender Distribution	Male	77(61%)
	Female	48(39%)
Gestational Age	Term	101(80.8%)
	Late Preterm	16(12.8%)
	Very Preterm	8(6.4%)
Birth Order	First-born	82(65.6%)
	Second-born	38(30.4%)
	Third-born	5(4.0%)
Family Structure	Nuclear	87(69.6%)
	Joint	38(30.4%)
Mother's Occupation	Unemployed	93(74.4%)
	Skilled/Clerical/Service	31(24.8%)
	Others	1(0.8%)
Mother's Education Level	Graduate	43(34.4%)
	Intermediate/Diploma	27(21.6%)
	High School Certificate	13(10.4%)
	Primary/Middle School	36(28.8%)
	Illiterate	6(4.8%)
Father's Occupation	Professionals	30(24.4%)
	Technicians and associate professionals	22(17.9%)
	Skilled agricultural and fishery workers	21(17.1%)
	Elementary occupation	14(11.4%)
	Clerks	12(9.8%)
	Skilled workers and shop and market sales workers	11(8.9%)
Father's Education Level	Honours	4(3.2%)
	Graduate	41(32.8%)
	Intermediate/Diploma	22(17.9%)
	High School Certificate	32(25.6%)
	Primary/Middle School	14(11.4%)
	Illiterate	12(9.8%)
Socio-Economic Class (Kuppuswamy Scale 2024)	Middle class	25(20%)
	Lower Middle class	62(49.6%)
	Lower class	38(30.4%)

n= number of participants, %= percentage of total sample.

externalizing problems 20.8% (8% borderline, 12.8% clinical), and total problems 12.8% (8.8% borderline, 4% clinical). **(Table 2)**

Parenting style distribution showed a predominance of authoritative parenting (61.6%), followed by authoritarian (24.8%) and permissive (13.6%), with non-authoritative styles significantly correlated with higher CBCL scores ($p < 0.05$). A statistically significant negative correlation was found between mother's authoritative parenting style and total CBCL problems ($r = -0.241$, $p = 0.031$). **(Table 3)**

Statistically significant positive correlations were observed between verbal hostility ($r = 0.245$, $p = 0.020$), corporal punishment ($r = 0.245$, $p = 0.020$), and non-reasoning ($r = 0.275$, $p = 0.020$), sub dimensions of maternal authoritarian parenting and externalizing problems. Maternal permissive parenting style also showed a sig-

nificant positive correlation with internalizing problems ($r = 0.273$, $p = 0.020$). No significant associations were observed between maternal authoritative parenting and either internalizing or externalizing problems. **(Table 4a)** No statistically significant correlation was found between paternal parenting styles and internalizing or externalizing problems. **(Table 4b)**

DISCUSSION

This cross-sectional study found a notable prevalence of behavioral and socioemotional problems among preschoolers born during the COVID-19 pandemic, with internalizing and externalizing problems each affecting 20.8% of the sample. Maternal authoritative parenting style showed a significant association with total behavioral problems, while maternal non-authoritative parenting styles showed significant associations with higher behavioral problems.

In the present study, the prevalence of behavioral and socioemotional problems was 12.8%, which is lower than rates reported in recent post-pandemic studies. A study from Kerala reported a prevalence of 24.9%²¹, while studies from the United States have documented persistent socioemotional difficulties following pandemic-related disruptions¹⁰. In contrast, markedly higher prevalence was reported during the pandemic period, particularly in Dharwad, where 47% of children were in the borderline range and 13.8% in the clinical range⁹, possibly reflecting behavioral concerns reported during that period. Pre-pandemic Indian studies also reported higher prevalence rates, including 46.7% in Bhopal

Table 2. Prevalence of Behavioral and Socioemotional problems using CBCL/1½–5

CBCL Scale	Clinical range	n (%)
Internalizing problem	Borderline Clinical	20 (16%)
	Clinical	6 (4.8%)
	Total	26 (20.8%)
Externalizing problem	Borderline Clinical	10(8%)
	Clinical	16 (12.8%)
	Total	26(20.8%)
Total problems	Borderline Clinical	11(8.8%)
	Clinical	5(4%)
	Total	16(12.8%)

CBCL: Child Behavior Checklist, n= number of participants, %= percentage of total sample.

Table 3. Pearson Correlation between PSDQ-2 and CBCL/1½–5 (empirical) total problems

PSDQ-2	Mother Authoritative (n=58)	Mother Authoritarian (n=28)	Mother Permissive (n=39)	Father Authoritative (n=77)	Father Authoritarian (n=26)	Father Permissive (n=22)
Pearson r	-0.241*	0.171	0.171	-0.114	0.207	-0.109
p valued(two-tailed)	0.031	0.139	0.139	0.416	0.128	0.438

* $p < 0.05$, CBCL: Child Behavior Checklist, PSDQ: Parenting Style Dimension Questionnaire.

Table 4a. Correlation between maternal parenting style sub-dimensions (PSDQ-2) and CBCL/1½–5 empirical internalizing, externalizing problems

CBCL Outcome	Mother Parenting Style						
	Authoritative (n=58)			Authoritarian(n=28)			Permissive (n=39)
	Warmth & Support	Reasoning & Induction	Democratic Participation	Verbal Hostility	Corporal Punishment	Non-reasoning	
Internalizing Problems	r = -0.095 p = 0.500	r = -0.075 p = 0.500	r = -0.092 p = 0.500	r = 0.048 p = 0.500	r = 0.068 p = 0.500	r = 0.058 p = 0.500	r = 0.273* p = 0.020
Externalizing Problems	r = -0.025 p = 0.500	r = -0.010 p = 0.500	r = -0.020 p = 0.500	r = 0.245* p = 0.020	r = 0.275* p = 0.020	r = 0.280* p = 0.020	r = -0.004 p = 0.500

*p<0.05, CBCL: Child Behavior Checklist, PSDQ: Parenting Style Dimension Questionnaire.

Table 4b. Correlation between paternal parenting style sub-dimensions (PSDQ-2) and CBCL/1½–5 empirical internalizing, externalizing problems

CBCL Outcome	Father Parenting style						
	Authoritative (n=77)			Authoritarian (n=26)			Permissive (n=22)
	Warmth & Support	Reasoning & Induction	Democratic Participation	Verbal Hostility	Corporal Punishment	Non-reasoning	
Internalizing Problems	r = -0.152 p = 0.500	r = -0.138 p = 0.500	r = -0.145 p = 0.500	r = 0.185 p = 0.100	r = 0.205 p = 0.100	r = 0.202 p = 0.100	r = 0.089 p = 0.500
Externalizing Problems	r = -0.095 p = 0.500	r = -0.082 p = 0.500	r = -0.090 p = 0.500	r = 0.068 p = 0.500	r = 0.078 p = 0.500	r = 0.076 p = 0.500	r = 0.123 p = 0.500

*p<0.05, CBCL: Child Behavior Checklist, PSDQ: Parenting Style Dimension Questionnaire.

(2019)⁶, 24% in Karad (2016)⁸, and 24.8% in Solapur (2014)⁷. However, the prevalence observed in the current study is comparable to global pre-pandemic estimates ranging from 6.9% to 14.7%⁵. The variations across studies may also be attributed to methodological differences, regional socio-economic disparities, and the tools used for assessment. Improved family adaptations, greater parental awareness, and contextual supports may also have contributed to healthier outcomes.

A direct negative association observed between maternal authoritative parenting and total CBCL problems in the present study is concordant with the meta-analytic evidence of Pinquart *et al.*²², which demonstrated a protective effect

of authoritative parenting on child behavioral outcomes, albeit without distinction between maternal and paternal roles. The present findings are consistent with those of Wang *et al.*²³ and Zhang *et al.*²⁴, reporting higher maternal warmth, responsiveness and involvement, core components of authoritative parenting which are associated with lower behavioral difficulties in children, with these associations observed with maternal rather than paternal parenting. Consistent with the present results, Indian clinical studies by Sahitya *et al.*²⁵ and Chandreshekar *et al.*²⁶ have demonstrated that higher maternal authoritative parenting is associated with fewer emotional and behavioral difficulties in preschool children. Lower behavioral and socio-emotional difficulties among preschoolers

with maternal authoritative parenting may be associated with enhanced emotion modeling and stable caregiving environments. There is a study have reported non-significant relationship between authoritative parenting and child behavioral outcomes ²⁷.

The present study demonstrated a significant positive association between maternal authoritarian parenting and externalizing problems, as well as between maternal permissive parenting and internalizing problems. These findings are consistent with international literature indicating that authoritarian parenting, characterized by harsh discipline, verbal hostility, and low responsiveness, is associated with increased aggression, oppositional behavior, and conduct problems in preschool children due to impaired development of self-regulation and emotional control ^{21, 24, 26}. Similarly permissive parenting, marked by high warmth but low behavioral control, has been linked to greater internalizing symptoms such as anxiety, withdrawal, and emotional insecurity, likely due to insufficient structure and inconsistent limit-setting during early childhood^{27,28}. Indian studies have reported comparable patterns, with maternal authoritarian practices associated with externalizing behaviors and permissive caregiving linked to emotional difficulties in young children ^{25,26}. The differences in emotional responsiveness, behavioral control, and consistency across parenting styles may be associated with varying patterns of internalizing and externalizing difficulties in preschool children. However, some studies have reported non-significant associations, suggesting that cultural norms, parental stress levels, and family context may moderate the impact of parenting styles on child behavioral outcomes ²⁵.

The associations observed between parenting styles and child behavioral outcomes should be interpreted as relational findings rather than directional effects. While parenting practices may be associated with children's behavioral and

socioemotional functioning and/or children's behavioral characteristics may also influence parental responses and caregiving approaches. Therefore, the present findings may reflect a potentially reciprocal relationship between parenting styles and child behavioral outcomes.

Strengths and Limitations

The strengths of the study include the use of validated tools (CBCL/1½–5 and PSDQ-2). It provides estimates of the prevalence of behavioral and socioemotional problems among preschoolers born during COVID-19 pandemic. The study contributes to existing literature on behavioral and socioemotional problems in preschool children and provides evidence to inform targeted intervention planning.

The study did not account for factors such as parent personality traits, mental health status, stress levels, environmental stressors and family dynamics, which may influence parenting style and child behavioral outcomes. The cross-sectional design of the study and the absence of a pre-pandemic comparison group limit causal interpretation of the observed associations. In the sample size estimation cluster effect, variance adjustment, and statistical power were not separately estimated during the sample size calculation. Since the PSDQ-2 is a self-report measure; the possibility of response bias cannot be excluded. Additionally, a translated Hindi version of the PSDQ-2 was not available, which may have led to translation bias.

CONCLUSION

We conclude that prevalence of behavioral and socioemotional problems among preschoolers born during the COVID-19 pandemic were 12.8%. Maternal authoritative parenting showed a significant negative association with total behavioral problems, whereas maternal authoritarian and permissive parenting were positively

associated with externalizing and internalizing problems, respectively. These findings highlight the potential relevance of positive parenting practices and early socioemotional monitoring in preschoolers.

REFERENCES

- World Health Organization. Coronavirus disease (COVID-19) pandemic [Internet]. Geneva: World Health Organization; 2024 [cited 2026 Feb 20]. Available from: <https://www.who.int/europe/emergencies/situations/covid-19>.
- United Nations Children's Fund. Millions of pregnant mothers and babies born during COVID-19 pandemic threatened by strained health systems and disruptions in services [Internet]. New York: UNICEF; 2024 [cited 2026 Feb 20]. Available from: <https://www.unicef.org/rosa/press-releases/millions-pregnant-mothers-and-babies-born-during-covid-19-pandemic-threatened>
- Lerner RM, Lerner JV, Zabski S. The academic consequences of early childhood problem behaviors. *J Genet Psychol*. 1985;146(4):457–72.
- Jones DE, Greenberg M, Crowley M. Early social-emotional functioning and public health: The relationship between kindergarten social competence and future wellness. *Am J Public Health*. 2015;105(11):2283–90. doi: 10.2105/AJPH.2015.302630.
- Jing JQ, Yang CJ, Wang Y, Su XY, Du YJ. Impact of COVID-19 on emotional and behavioral problems among preschool children: a meta-analysis. *BMC Pediatr*. 2024;24(1):1–12. doi: 10.1186/s12887-024-04931-8.
- Chaturvedi S, Shrivastava N, Agrawal A, Shrivastava J. Prevalence of children at risk of behavioral problems among preschool children aged 3–6 years. *Int J Contemp Pediatr*. 2019;6(6):1–5.
- Kulkarni SS, Kumavat AP, Dixit JV. Behavioral problems among preschool children: a descriptive study at Solapur. *Natl J Res Community Med*. 2014;3(2):113–7.
- Reddy BRNR, Pawar JM, Aundhakar CD, Mishra L, Goyal P. Study of behavioral problems in preschool children. *J Med Sci Clin Res*. 2016;4(12):14641–9.
- Mokashi MV, Khadi PB, Patil M, Vastrad J, Malagi U. Prevalence of behavioral problems among preschool children of Dharwad district. *J Farm Sci*. 2022;35(2):272–7.
- Davies SM, Collier ZK, Mesman GR, Johnson AD. COVID-19 pandemic effects on preschoolers' social-emotional and executive functioning: a comparison with pre-pandemic cohorts. *Early Child Res Q*. 2024;66:425–39.
- Deoni SCL, Beauchemin J, Volpe A, D'Sa V; RESONANCE Consortium. Impact of the COVID-19 pandemic on early child cognitive development: initial findings from a longitudinal observational study. *JAMA Pediatr*. 2024;178(2):190–9. doi: 10.1001/jamapediatrics.2023.4925.
- Nozadi SS, Li X, Kong X, Rennie B, MacKenzie D, et al. Socioemotional development of infants and toddlers during the COVID-19 pandemic. *JAMA Pediatr*. 2024;178(1):55–63. doi: 10.1001/jamapediatrics.2023.5153.
- Byrne S, O'Flaherty E, Frazer K, O'Donoghue K, Heffernan S, Murphy J, et al. Pandemic babies: developmental outcomes in preschool-aged children born during the COVID-19 era. *Early Hum Dev*. 2024;188:105901. doi: 10.1016/j.earlhumdev.2023.105901.
- Monroy-Rivas MC, Martinez-Sanchez L, Zhang W, Deater-Deckard K, Shaffer RC, et al. Prenatal and early childhood exposure to the COVID-19 pandemic and socioemotional development: a systematic review. *NeurosciBiobehav Rev*. 2024;160:105622. doi: 10.1016/j.neubiorev.2024.105622.
- Whittaker JV, Cowan PA, Cowan CP. Contemporary models of parenting and child socioemotional outcomes: Current evidence and future directions. *Dev Rev*. 2023;65:101100.
- Pinquart M. Associations of parenting styles with behavior problems in children and adolescents: a meta-analysis. *J Child Fam Stud*. 2017;26:109–22.
- Wild D, Furtado T, Angalakuditi M. The translation and cultural adaptation of the Child Behavior Checklist for use in Israel (Hebrew), Korea, the US (Spanish), India (Malayalam and Kannada), and Spain. *Psychol Res Behav Manag*. 2012;5:51–6.
- Achenbach System of Empirically Based Assessment (ASEBA). Translations [Internet]. Burlington (VT): ASEBA; [cited 2026 May 28]. Available from: <https://aseba.org/translations/>
- Sapna B, Sulthana DSG. Validity and reliability of the Kannada version of the Parenting Styles and Dimensions Questionnaire-Short Form. *J Indian Assoc Public Health Dent*. 2024;22(4):392–8. doi: 10.4103/jiaphd.jiaphd_226_23.
- Mandal I, Hossain SR. Update of modified Kuppuswamy scale for the year 2024. *Int J Community Med Public Health*. 2024;11(7):2945–6. doi: 10.18203/2394-6040.ijcmph20241863.
- Vincent J, Santhakumari RM, Nair ANK, Sharahudeen A, Asvini KP, Suresh MM, et al. What children lost and gained during school closure in the COVID-19 pandemic: psychological distress, behavioural concerns and resilience in preschool children. *Int J Equity Health*. 2024;23:14. doi: 10.1186/s12939-023-02090-3.
- Kartal H, Yalçın SS, Aktaş H, Tümkaya S, Yıldız M, Şimşek Ş, et al. Parenting styles and preschool children's emotional development. *Early Educ Dev*. 2022;33(8):1105–20. doi: 10.1080/10409289.2021.197621.
- Wang L, Tian J, Rozelle S. Parenting style and child mental health at preschool age: evidence from rural China. *BMC Psychiatry*. 2024;24:314. doi: 10.1186/s12888-024-05707-1.
- Zhang W, Wei X, Ji L, Chen L, Deater-Deckard K. Reconsidering parenting in Chinese culture: subtypes, stability, and change of maternal parenting style during early childhood. *J Fam Psychol*. 2017;31(8):1111–21. doi: 10.1037/fam0000358.
- Sahithya BR, Raman V, Kumar S, et al. Parenting style, parental personality, and child temperament in children with anxiety disorders: a clinical study from



- India. *Indian J Psychol Med.* 2021;43(5):401–8. doi: 10.1177/02537176211012064.
26. Chandrasekaran SA, John HB, Padankatti SM, Lydia MD, Gowri MS, Santhanam S. Influence of parenting style on behavior of preschool-age children born very preterm: a cross-sectional comparative study. *Indian J Occup Ther.* 2023;55(4):141–7.
27. Wang L, Li D, Delvecchio E, Wang M. Parental warmth, control, and preschool children's internalizing and externalizing problems: the mediating role of emotion regulation. *J Child Fam Stud.* 2020;29(8):2192–204.
28. Liu Y, Merritt DH. Parenting stress and children's problem behavior during the COVID-19 pandemic: a transactional model. *J FamViolence.* 2022;37(8):1261–72.