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Impact of COVID-19 lockdown on communication development in young children: A retrospective descriptive study from Hubli-Dharwad region

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Abstract

The COVID-19 pandemic and associated lockdowns disrupted early childhood environments, limiting social interaction, structured play, and caregiver engagement, which may have adversely affected communication development in children aged two to five years. This study aimed to profile communication abilities in young children suspected of developing communication disturbances following the lockdown in the Hubli-Dharwad region.

A retrospective descriptive design was employed with ten children (8 males, 2 females) aged 2–5 years from middle-upper and upper-class families. Data collection occurred between June 2021 and December 2022. Post-lockdown assessments included the Receptive–Expressive Emergent Language Scale (REELS) and the Communication DEALL (ComDEALL) Developmental Checklist to evaluate receptive and expressive language, cognitive, and social-communicative skills. Retrospective parental reports and an investigator-developed checklist captured pre-linguistic abilities, social-behavioural functioning, and screen exposure during lockdown, while clinical observations documented attention, eye contact, initiation, imitation, and responsiveness to verbal prompts. Quantitative data were summarized descriptively, and qualitative patterns were thematically analyzed.

All children demonstrated delays in expressive and receptive language, with expressive skills more affected. Over half showed deficits in pre-linguistic skills, including attention, eye contact, and concentration. Behavioural concerns such as irritability, inattention, restlessness, and limited peer interaction were observed. Higher daily screen exposure (≥4 hours) was associated with more pronounced language delays and attentional difficulties. Clinical observations confirmed poor initiation, minimal reciprocal communication, and limited joint attention.

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These findings suggest that communication delays and behavioural concerns may be linked to restricted social interaction, limited parental engagement, and excessive screen exposure during the lockdown. Early identification, structured parent–child interaction, moderated screen use, and opportunities for social play are recommended to support post-pandemic recovery in young children.

Keywords: Covid-19 pandemic, lockdown, communication delay, speech and language, children, screen time

1. Introduction

The COVID-19 outbreak was a major global medical emergency that threatened survival and posed significant life-threatening risks. In response, the Government of India imposed a nationwide lockdown beginning in March 2020, which lasted for several weeks, followed by phased restrictions and gradual reopening. It ultimately took nearly two years for daily life across the country to return to a semblance of normalcy (Mint, 2022; Pasricha, 2022; The Straits Times, 2022). The majority of government assistance and human resources were focused on meeting the needs of people who tested COVID positive and halting the disease's spread.

Despite its unavoidability, the lockdown posed substantial risks to even those who did not have the sickness as well as to the state of the community at large. Social disruption and economic repercussions, due to the lockdown caused several difficulties like financial insecurity, the strain of providing care, the stress associated with confinement, product scarcity, the ability to access medical care, an upsurge in domestic violence, anxiety, and fear of contracting the virus, grief due to loss of loved ones; to name a few (Mackolil & Mackolil, 2020; Prime et al., 2020). These challenges affected the well-being of the general population, not just those with COVID-19. Young children were among the most vulnerable groups during the pandemic, as their adaptation to the economic and social repercussions of COVID-19 had an outsized impact on their emotional, social, and developmental well-being (Fegert et al., 2020).

The developmental well-being of young children is important both as an investment in the future of our society and because children constitute an important group themselves (Wallander & Koot, 2016). Childhood is a crucial period of motor, speech and language, psychological, cognitive, social, and emotional development. Especially from birth to 5 years of age, children rapidly develop foundational capabilities on which subsequent development builds. Sensitive periods are optimal times in development when the brain's plasticity is high and certain areas of the brain are most ready to benefit from the experience. Early experience exerts a profound influence on the brain and on development. Such periods allow experience to instruct neural circuits to process or represent information in a way that is adaptive for the individual (Knudsen, 2004). Optimal development during this period requires an integration of several factors such as the adequate amount and quality of positive parent-child interaction (Myers et al., 1989), good stimulation and model, enriching peer interactions (Cameron & Tenenbaum, 2021), and a healthy and supportive familial environment influencing the

behaviour and development. However, many of the above-mentioned factors were impacted by lockdown due to COVID-19 pandemic, in diverse ways. COVID-19 increased the likelihood that children would experience maltreatment, domestic violence, and poor nutrition which would severely impact children's physical well-being (Hoffman & Miller, 2020).

Early research during the pandemic indicated that younger children (ages 3-6 years) displayed serious psychological disorders that included increased irritability, and inattention, along with feeling uncertain, afraid, and alone. Also, it revealed that kids struggled with nightmares, poor appetite, and separation anxiety (Jiao et al., 2020). In addition to these challenges, communication and social development were notably affected. Although parents spent majority of their time at home, with their children during the lockdown, parents could not spend quality time with their children due to demands of working from home. The economic hardships, layoffs, and social restrictions imposed during the pandemic further intensified these parenting challenges. The resulting profound changes to daily family life significantly increased parental stress and intrafamilial tension, which in turn heightened the risk of adverse childhood experiences. Studies suggest that these conditions may have contributed to increases in domestic violence, child abuse, and neglect, leaving children more vulnerable during an already challenging time (Calvano et al., 2022). Moreover, the reduction in parental speech stimulation, parent–child playtime, positive interactions, and emotional bonding likely had an adverse impact on children's speech and language development.

Peer interactions play an integral role in children's social, emotional, and cognitive development, enabling them to build social communities and establish norms for interaction (Balter & Tamis-LeMonda, 2016). Such interactions are vital for cognitive growth, as discussing ideas with peers promotes learning more effectively than solitary study by encouraging 'exploratory talk' (Tenenbaum et al., 2020). In this type of dialogue, children co-construct knowledge by sharing, challenging, and evaluating ideas collaboratively, developing important skills that often require guidance to fully flourish (Mercer, 2008).

However, lockdowns restricted children's opportunities for face-to-face connection with peers, potentially delaying social and language skills. Play, a crucial aspect of childhood, was also disrupted; with playgrounds and schools closed, traditional play spaces became inaccessible (Graber et al., 2021). The shift to isolated, home-based play limited children's natural development of social skills through peer exchange, potentially impacting their language and emotional resilience.

Furthermore, reduced opportunities for independent peer interactions away from adults hindered young children's ability to engage in social problem-solving on their own terms. These self-directed exchanges are important for learning conflict resolution, cooperation, and communication in contexts that are outside of adult influence (Cameron & Tenenbaum, 2021). Social distancing and lockdown measures thus had a direct impact on children's development of essential interpersonal skills.

However, COVID-19 pandemic and the resulting lockdown measures led to an exponential increase in screen usage among children across many

regions (Bergmann et al., 2022). Although virtual platforms allowed people to stay connected during isolation and offered some benefits, increased social media use among parents also contributed to more screen exposure for children. Factors such as parental and sibling screen habits, socioeconomic status, and the extent of lockdown restrictions all influenced the rise in young children's screen usage. This prolonged screen time, especially more than one hour daily for children under five, has been linked to a higher risk of language delays, particularly affecting expressive vocabulary development during the pandemic (Ghaisani & Salam, 2022).

Several Indian studies have provided deeper insight into how the COVID-19 lockdown affected young children's communication, language, and psychosocial development. Kaur et al., (2022) examined 30 children with Autism Spectrum Disorder through a cross-sectional design. Parents rated their child's developmental abilities before and after lockdown, and the study found significant regression across domains—particularly in language and social engagement—emphasizing how therapy discontinuation and isolation adversely affected progress.

Dave and Yagnik (2020) analysed CHILDLINE India helpline data and reported a 50% rise in child distress calls during lockdown, indicating heightened psychosocial vulnerability and reduced access to reporting systems due to school closures. Similarly, the study by Banerjee and Mukhopadhyay (2021) on early childhood care in Ahmedabad investigated the impact of the COVID-19 lockdown on children under six years from poor and marginalized households attending the full-day Bal Sewa centres run by Sewa's Sangini Co-operative. The study documented significant disruptions in holistic growth and development, highlighting issues such as limited access to early childhood education and care, increased developmental risks, and the cascading effects of lockdown-related closures on both children's progress and maternal well-being within these vulnerable communities.

Further, Khobragade and Shenoy (2025) conducted a cross-sectional analytical study on under-five children and found that an average daily screen use of 2.22 hours was significantly correlated with delayed speech and weaker social reciprocity. A hospital-based prospective observational study (Harsha et al., 2025) also demonstrated that children exposed to screens for more than two hours daily were nine times more likely to experience speech delays. Pasi et al., (2024) investigated the neurobehavioral profile of school-aged children and revealed that restricted mobility and online learning stress predicted increased aggression, attention difficulties, and mood swings. Additionally, reports such as The Indian Express (Tripathy, 2025) corroborated these findings through clinical observations, highlighting a nationwide rise in referrals for communication delays, particularly among toddlers who replaced peer play with passive digital interaction.

In parallel, a systematic review (Abdoli et al., 2024) highlighted the negative behavioural and emotional consequences of increased screen time in children, noting a rise in anxiety, irritability, and attention deficits—precursors to social and communication difficulties. The researchers observed associations between excessive exposure and symptoms of ADHD, depression, and social withdrawal, emphasizing that the quality of media content and parental involvement are crucial factors in mitigating these effects.

In the study by Varghese and Karuppali (2024), 192 parents of typically developing children aged 6 to 10 years were surveyed. While some parents reported positive outcomes—such as improvements in receptive and expressive language related to vocabulary, syntax, and pragmatics—statistical data indicated notable limitations in language use associated with screen exposure. Specifically, 55% of children rarely asked for word meanings, 58% rarely shared information, 64% showed reduced understanding and use of higher language functions such as jokes and sarcasm, and 54% seldom talked about daily activities with peers. These findings highlight a dual impact of screen exposure: moderate, interactive, and parent-supervised use may foster learning, whereas prolonged, passive engagement is linked to weaker expressive language development. The study emphasizes that parental mediation and purposeful, interactive engagement are crucial for positive communication outcomes.

Although screen use has become an integral aspect of modern childhood, its developmental effects depend largely on the quality, duration, and context of use. During the COVID-19 lockdown, children frequently experienced extended, unsupervised screen exposure due to restricted outdoor play and increased parental workload. This limited opportunities for reciprocal interaction, shared attention, and natural language stimulation, which are vital for fostering early communication. Consequently, excessive screen use, when combined with reduced peer interaction and parental stress, may have significantly contributed to the emergence of communication disturbances in young children during the pandemic.

Though some studies have reported positive effects of the COVID-19 lockdown on young children's development—such as greater parental engagement, shared reading, and responsive caregiving within a supportive home environment—the majority of research points to predominantly negative consequences. Lockdowns led to social isolation, reduced opportunities for peer play, increased screen time, and elevated caregiver stress, all of which are associated with delays in speech, language, social, and cognitive domains. While a few children benefited from enriched home-based interactions, these gains were less consistent and limited in scope. Overall, the global evidence indicates that the cumulative developmental impact of the pandemic has been largely detrimental, particularly for early communication and social skills (Mulkey et al., 2023; Sato et al., 2023; Scott et al., 2024). In light of these findings, the present study aims to examine how pandemic-related environmental factors, particularly excessive and unmonitored screen exposure, may have influenced receptive and expressive language development in young children within the Indian sociocultural context.

1.1. Need for the study

The COVID-19 pandemic and subsequent lockdown created an unprecedented disruption in young children's developmental environments, limiting opportunities for social interaction, structured play, and language-rich communication. Early childhood, being a critical period for speech, language, and cognitive development, may have been particularly vulnerable to these environmental constraints. While previous research has highlighted potential communication and social challenges arising from the pandemic,

there remains limited systematic evidence on the specific factors that contributed to such developmental disturbances in young children.

This study aims to bridge this gap by examining how pandemic-related influences—such as increased screen time, reduced peer interaction, and heightened parental stress—may have affected communication development. It further explores the impact of lockdown conditions on receptive and expressive language, cognitive skills, pre-linguistic abilities, and social-behavioural functioning in children aged two to five years.

Understanding these effects is essential for identifying early risk indicators and supporting recovery in post-pandemic contexts. The findings will provide valuable insights for parents, educators, and speech-language pathologists in designing targeted interventions to enhance communication outcomes, promote healthy social engagement, and reduce the long-term developmental impact of crisis-induced isolation among young children.

1.2. Aims and objectives

Aim: To profile communication skills in young children suspected to have developed communication disturbances due to covid-19 pandemic lockdown.

Objectives:

1. To report the receptive language age (RLA), expressive language age (ELA), and cognitive age (CA) in two- to five-year-old young children reported to have developed communication disturbances due to covid-19 pandemic lockdown.
2. To report screen time, pre-linguistic skills, and social behavioral problems in two- to five-year-old young children suspected to have developed communication disturbances due to covid-19 pandemic lockdown.

2. Methodology

2.1. Research Design

The study employed a retrospective descriptive research design, where the development of communication abilities in young children post-pandemic lockdown (March 2020–March 2022) was evaluated. This design relies on post-lockdown assessments and retrospective parental reports to determine suspected delays in communication abilities. The retrospective component involved reviewing parental recall of the child's communication, play, and social behaviours during the lockdown period, while the descriptive component involved formal and informal assessments conducted after the lockdown.

Case files, parental interview records, and standardized assessment outcomes were reviewed for all participants. The retrospective review included case files and assessment records collected between June 2021 and December 2022, covering children born between 2016 and 2020 who were between two to five years of age at the time of data collection. Thus, this dual approach allowed for triangulation of retrospective parental information with direct post-lockdown clinical observations, ensuring both historical and current perspectives on communication development.

2.2. Participants

Data collection took place between June 2021 and December 2022. Convenience sampling was used for selecting participants. The study included 10 children aged between two to five years from the Hubli-Dharwad districts of Karnataka (Table 1). These children, consisting of eight males and two females, belonged to middle-upper and upper-class socio-economic statuses.

Each child's year of birth, current age at assessment, and approximate age during the COVID-19 lockdown (2020–2021) were recorded to better interpret developmental variations across infants, toddlers, and preschoolers. This categorization is essential as developmental domains such as pre-linguistic, linguistic, and cognitive skills evolve differently across these age groups. Hence, communication disturbances were interpreted in relation to age-specific expectations.

Inclusion criteria: Children with predominant complaints of impaired communication abilities post-pandemic lockdown. All the participants had experienced approximately one to two years of restricted social and educational exposure during the lockdown. Prior to the lockdown, all children were reported by their parents to have normal speech, language, cognitive, motor development, and age-appropriate social skills, with no abnormal behaviors observed before the pandemic.

Exclusion criteria: Children with a history of spoken language disorders; children with pre-, peri-, or post-natal risk factors for speech and language disorders; and those with developmental delays or atypical behaviours prior to lockdown were excluded.

Table 1
Participant Demographics, Age during COVID-19 Lockdown, and Developmental Groupings

Participants	Year of Birth	Age During Pandemic (2020-21)	Current Age (at assessment)	Gender
Participant 8	2019	1 yr (infant)	24 months	Male
Participant 3	2019	1 yr (infant)	25 months	Male
Participant 1	2019	1–2 yrs (toddler)	29 months	Male
Participant 4	2019	1–2 yrs (toddler)	29 months	Male
Participant 6	2018	2 yrs (toddler)	36 months	Male
Participant 9	2018	2 yrs (toddler)	36 months	Female
Participant 2	2017	3–4 yrs (preschooler)	48 months	Female
Participant 7	2017	3 yrs (preschooler)	48 months	Male
Participant 5	2016	4 yrs (preschooler)	51 months	Male
Participant 10	2016	4 yrs (preschooler)	54 months	Male

Note: Data were collected retrospectively between June 2021 and December 2022. Children were grouped as infants (0–2 years), toddlers (2–3 years), and preschoolers (3–5 years) to interpret developmental impact relative to age-specific domains.

2.3. Materials

The study employed a combination of standardized and investigator-developed tools to comprehensively assess the participants' language, cognitive, and social-communication abilities, as well as to gather retrospective information about their developmental experiences during the

COVID-19 lockdown. The Receptive–Expressive Emergent Language Scale (REELS) (Brown et al., 2020) was used to evaluate receptive and expressive language skills through a structured parent interview and direct observation. The Communication DEALL (ComDEALL) Developmental Checklist (Karanth, 2011) was administered to assess cognitive, pre-linguistic, and social-communicative domains through play-based interaction.

In addition to standardized tools, an informal communication and behavioural checklist was developed by the investigators to capture parental recall of the child's communication, play, and social behaviours during the lockdown period. This semi-structured checklist focused on five developmental areas—pre-linguistic skills (such as eye contact, attention, and concentration), expressive language (naming, requesting, and sentence use), receptive language (understanding words and commands), social interaction (initiating or responding to play), and behavioural patterns (attention, irritability, or screen dependence).

A screen-time documentation form was also used to record the average daily duration, content type, and level of caregiver involvement during screen exposure. Parents reported whether screen use was interactive (e.g., co-viewing or discussing content) or passive (e.g., unsupervised viewing). Screen time was categorized using World Health Organization (2019) and American Academy of Pediatrics (2020) recommendations—no screen time for children below two years (except video calls) and up to one hour per day of high-quality, supervised content for those aged two to five years. Children exceeding these recommendations or demonstrating passive viewing patterns were classified as high-risk screen users.

2.4. Procedure

The data collection followed a two-phase process that combined retrospective parental reporting with post-lockdown developmental assessments. In the first phase, a semi-structured parental interview was conducted to obtain retrospective information about each child's communication, play, and social behaviours during the lockdown (March 2020–March 2022). A uniform set of core questions was asked to ensure consistency across participants, covering domains such as expressive and receptive communication, pre-linguistic skills, and screen use. Example questions included, "How did your child communicate needs during the lockdown?", "Did your child initiate interaction with siblings?", and "Was your child supervised during screen use?" Additional age-specific probes were included for infants, toddlers, and preschoolers to elicit relevant developmental information. Parents were encouraged to provide concrete examples and recall specific behaviours to improve accuracy. The responses were compared against developmental milestones outlined in the REELS and ComDEALL manuals for validation.

In the second phase, post-lockdown clinical assessments were conducted in a quiet clinical setting by two experienced Speech-Language Pathologists, each with more than three years of clinical experience. The REELS was administered to determine receptive and expressive language ages, while the ComDEALL checklist was used to evaluate cognitive, pre-linguistic, and social-communicative skills. Informal behavioural observations were made

during play-based interactions to corroborate parental reports. Each assessment session lasted approximately 60–75 minutes. Information from parental interviews, standardized tests, and behavioural observations was integrated to develop a comprehensive communication profile for each child, thereby allowing both retrospective and current developmental information to be analyzed together.

2.5. Statistical Analysis

Both quantitative and qualitative descriptive analyses were employed in this study. Quantitatively, data from each participant—including chronological age, gender, receptive language age (RLA), expressive language age (ELA), delay durations, cognitive age, and daily screen time—were summarized through frequency counts, ranges, and presented in tabular form. No inferential or hypothesis-driven statistical tests were performed due to the small sample size and descriptive study design.

Qualitatively, parental reports and clinical observations regarding pre-linguistic skills and social-behavioral problems were analyzed thematically to capture patterns of attention, concentration, eye contact, social engagement, and behavioral difficulties. These narrative observations provided contextual detail to supplement the quantitative findings, enabling a comprehensive, mixed-methods understanding of communication and behavioral changes in the children post-lockdown.

3. Findings

The results of the present study are given under the following sub-headings.

3.1. Language and Cognitive Age in Children Aged two- to five-years.

Receptive Language Age (RLA), Expressive Language Age (ELA), and Cognitive Age (CA) were assessed among ten children aged two to five years using standardized tools. The results are presented in Table 2.

Table 2
Receptive and Expressive Language Ages of Participants

Participants	**Developmental Group**	**Current Age (at assessment)**	**Gender**	**RLA (in months)**	**RLA Delayed by (in months)**	**ELA (in months)**	**ELA Delayed by (in months)**
Participant 1	Infant	24 months	Male	6 to 7	17 to 18	5 to 6	18 to 19
Participant 2	Infant	25 months	Male	14 to 16	9 to 11	8 to 9	16 to 17
Participant 3	Toddler	29 months	Male	18 to 20	9 to 11	11 to 12	17 to 18
Participant 4	Toddler	29 months	Male	22 to 24	5 to 7	10 to 11	18 to 19
Participant 5	Toddler	36 months	Male	24 to 27	9 to 12	16 to 18	18 to 20

Participant 6	Toddler	36 months	Female	11 to 12	24 to 25	5 to 6	30 to 31
Participant 7	Preschooler	48 months	Female	36 to 42	6 to 12	22 to 24	24 to 26
Participant 8	Preschooler	48 months	Male	33 to 36	12 to 15	18 to 24	24 to 30
Participant 9	Preschooler	51 months	Male	36 to 42	9 to 15	33 to 36	15 to 18
Participant 10	Preschooler	54 months	Male	24 to 27	27 to 30	22 to 20	32 to 34

Note: RLA = Receptive Language Age; ELA = Expressive Language Age.

The assessment results revealed that all ten participants exhibited delays in both receptive and expressive language development relative to their chronological ages. The receptive language age (RLA) delays ranged from 5 to 30 months, while expressive language age (ELA) delays ranged from 16 to 34 months. All participants demonstrated significant delays across both domains, with expressive language being more adversely affected than receptive language. The cognitive age (CA), as determined using the ComDEALL checklist, was found to be within normal limits for all participants.

3.2. Screen Time, Pre-Linguistic Skills, and Social-Behavioral Problems in Children Aged Two- to Five Years

The screentime, pre-linguistic skills, and social behavioural problems were documented in two- to five-year-old young children. The results are tabulated below in Table 3.

Table 3
Screentime, pre-linguistic skills, and social behavioural problems, in two- to five-year-old young children

Participants	**Screentime per day (in hours)**	**Pre-linguistic skills**	**Social behavioural problems as reported by parents**
Participant 1	4	Inadequate attention, concentration, and eye contact	Throws temper tantrums, Inattentive
Participant 2	4	Inadequate attention, concentration, and eye contact	Does not socialize with peers
Participant 3	4	Inadequate attention, concentration, and eye contact	Self-injurious behaviour, throws temper tantrums, does not socialize with peers, distractive, irritable, and restless
Participant 4	4	Age adequate	Quarrelsome

Participant 5	2	Inadequate attention, concentration, and eye contact	Nil
Participant 6	6	Inadequate attention, concentration, and eye contact	Does not socialize with peers, restless
Participant 7	2	Age adequate	Does not socialize with peers, aggressive, quarrelsome, restless
Participant 8	3	Age adequate	Restless
Participant 9	6	Age adequate	Quarrelsome, throws temper tantrums, aggressive, irritable
Participant 10	8 to 10	Inadequate attention, concentration, and eye contact	Does not socialize with peers, restless

The screen exposure was substantially high among participants, ranging from 2 to 10 hours per day, far exceeding the guidelines on screen time (supervised) given by Indian Academy of Pediatrics, which is 1 hour per day (Gupta et al., 2022). Six out of ten children had screen times of four hours or more daily, and these children also exhibited inadequate attention, poor eye contact, and concentration difficulties. Social-behavioural challenges were reported in nine out of ten children. The most common behaviours included poor peer interaction, temper tantrums, irritability, restlessness, and aggression. A few participants exhibited self-injurious or distractive behaviours.

During clinical observation, several children demonstrated poor reciprocal interaction, minimal initiation of conversation, and reduced response to verbal prompts from the examiner. Instances of limited imitation, lack of peer-oriented play, and poor joint attention were also noted. Parents additionally reported reduced opportunities for social play and decreased verbal engagement at home, indicating both quantitative and qualitative limitations in caregiver–child and peer interactions during the lockdown.

4. Discussion

The present study examined the possible effects of the COVID-19 lockdown on communication development in young children aged two to five years, focusing on receptive and expressive language, pre-linguistic abilities, and social-behavioural functioning. The findings revealed consistent delays in both receptive and expressive language, deficits in pre-linguistic skills, increased screen exposure, and behavioural concerns such as irritability, inattention, and poor peer interaction. These outcomes may be due to interrelated environmental and psychosocial factors that altered children's developmental contexts during the lockdown period.

All participants demonstrated noticeable delays in receptive and expressive language development, with expressive delays being more

pronounced. This pattern may be because expressive language development depends heavily on active social interaction, verbal modeling, and feedback from caregivers and peers (Myers et al., 1989). The restrictions on social engagement and the absence of routine classroom and outdoor interactions may have limited opportunities for natural language use and conversational turn-taking (Balter & Tamis-LeMonda, 2016). The resulting reduction in linguistic stimulation may have contributed to slower expressive vocabulary growth.

Changes in the home environment during the lockdown could also explain the observed language delays. Parents balancing work-from-home responsibilities may have had limited time and emotional resources to engage in responsive communication with their children (Calvano et al., 2022). The reduced frequency and quality of parent–child verbal exchanges may have slowed expressive language development. Similar findings were reported by many researchers (Banerjee & Mukhopadhyay, 2021; Harsha et al., 2025; Kaur et al., 2022), who observed that the pandemic disrupted early developmental trajectories due to reduced stimulation and therapy discontinuation.

Interestingly, receptive language delays were comparatively milder. This may be because comprehension skills can be sustained through passive listening and exposure to everyday speech within the household, even when opportunities for active expression are limited. Varghese and Karuppali (2024) found that receptive vocabulary often remains stable with consistent auditory exposure, while expressive skills decline without active verbal engagement.

The study also found that children with higher daily screen exposure (≥4 hours) exhibited more significant expressive delays, poorer eye contact, and reduced attention spans. These outcomes may be because excessive screen use restricts opportunities for reciprocal communication, which is crucial for language development (Bergmann et al., 2022). Passive screen viewing does not offer the contingent feedback necessary for learning linguistic rules and pragmatic use of language (Tenenbaum et al., 2020). Prolonged exposure to digital media may further overstimulate attention systems, leading to shorter concentration spans and decreased focus on verbal input (Abdoli et al., 2024). Comparable results were reported by Harsha et al. (2025) and Khobragade and Shenoy (2025), who found that extended screen exposure correlated with significant delays in speech and social reciprocity.

The quality of media use may also play a critical role. Varghese and Karuppali (2024) emphasized that interactive, parent-mediated viewing can facilitate learning, while unsupervised or passive screen use is associated with poorer expressive outcomes. In the present study, most parents reported that screens were used as a substitute caregiver while they attended to work or household duties, which may have intensified the negative effects on communication skills.

Deficits in pre-linguistic abilities—such as attention, concentration, and sustained eye contact—were evident in many participants. These challenges may be because such skills develop through shared social routines, imitation, and play, all of which were limited during the lockdown (Cameron & Tenenbaum, 2021). Only eye contact, attention, and concentration were included as representative pre-linguistic indicators because these were

consistently documented across participants. Although pre-linguistic skills broadly include gestures, imitation, and joint attention, the study focused on these core behaviours due to retrospective data limitations and participants' varied developmental stages.

Behavioural difficulties, including irritability, temper tantrums, and inattention, were also reported and may reflect the effects of confinement stress, disrupted routines, and reduced opportunities for social play. Parental anxiety and limited social support may have further contributed to children's emotional dysregulation (Prime et al., 2020). Pasi et al. (2024) similarly found that restricted mobility and online learning stress were associated with increased aggression and attention problems. Moreover, exposure to fast-paced digital content may have conditioned children to seek constant stimulation, reducing their tolerance for delayed gratification (Abdoli et al., 2024).

Overall, these findings suggest that the communication delays and behavioural challenges observed may be the cumulative result of reduced social interaction, inadequate linguistic stimulation, high levels of screen exposure, and increased psychosocial stress during the lockdown. The greater impact on expressive language implies that environmental deprivation may have particularly affected the use and practice of communication rather than comprehension. Similar conclusions have been drawn by few researchers (Mulkey et al., 2023; Sato et al., 2023; Scott et al., 2024), who also reported post-lockdown delays in language and social skills. Although some studies noted enhanced parent–child bonding in supportive households, the overall evidence suggests that most children—especially those with excessive screen exposure—experienced measurable developmental setbacks (Varghese & Karuppali, 2024).

5. Conclusion

The study found that young children exhibited notable delays in receptive and expressive language, along with deficits in pre-linguistic skills and behavioural issues such as inattention and irritability following the COVID-19 lockdown. These outcomes may be due to reduced social interaction, limited verbal engagement, and increased screen exposure during home confinement. The findings emphasize the importance of early screening, parental responsiveness, and promoting interactive communication to support recovery in post-pandemic developmental trajectories.

6. Future Directions

Future research should examine larger, more diverse populations to validate and generalize these findings across different socioeconomic and cultural contexts. Longitudinal studies are recommended to track the long-term effects of pandemic-related environmental changes on communication and social development. Intervention studies focusing on structured parent–child interaction, guided peer play, and moderated screen exposure could help identify effective strategies to mitigate post-lockdown developmental delays. Additionally, incorporating comprehensive pre-linguistic and cognitive

assessments will provide a clearer understanding of early communication trajectories.

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