Effect of COVID-19 on Early Childhood Development

Bullock Sarah MD; Ericson Katherine MD; Gonzalez Alexandra MD; Sanchez Miguel MD; Adjo Janine MD; Rubin David MD;
Department of Pedatrics, St Barnabas Hospital
St Barnabas Hospital, Bronx, New York

SBH Health System BRONX

Background

- Childhood development encompasses changes in growth, social, emotional, cognitive, motor, and communication domains.
- Development is affected by genetic factors, birth factors, and environmental factors.
- The COVID-19 pandemic altered the environment in which children were growing up by restricting socialization, closure of day care and school centres, more time spent at home, and increasing stress of parents.
- As per CDC, there was an increase in diagnosis of developmental disability in 3-17 year olds from 7.4% in 2019 to 8.56% in 2021.
- Specifically, there was an increase in "other developmental delays" from 5 to 6%.
- Developmental delays were more common in boys (7.3%) compared to girls (4%).

Objective

- Determine if there is a difference in developmental delay diagnoses before and after COVID-19 pandemic and to see if one domain is affected more than the others.

Methods

- Chart review for developmental milestones during 12-24 month well child visits pre- and during COVID-19 pandemic in an urban community clinic.
- Inclusion criteria: children aged 12-24 months coming for well child visits in 2018-2019 (pre-COVID group) and 2020-2021 (COVID group).
- Exclusion criteria: any child already diagnosed with developmental delay, any missing well child visits previously, any patient with conditions that would make developmental delays more likely (CP, T21, HIE), a child who had previous care at an outside pediatrician.
- Developmental screening questions were embedded in each well child visit chart.

Results

Table 1. Demographic Data

	Pre-COVID (n=251)	During COVID (n=251)	P-value
Sex (Males)	132	124	0.48
Daycare	29	19	0.07
Siblings	138	155	0.06
Babysitter	25	44	**0.01**
Live with mom	245	242	0.14
Parents Working	111	171	**<0.001**

Table 2. Demographic Data

	Pre-COVID	During COVID	P-value
Age (months)	14.4 +/- 3.6	12.2 +/- 0.8	**<0.001**
Gestational Age (weeks)	39.6 +/- 1.7	39.5 +/- 2.2	0.26

Table 3. Development screening questions

	Pre-COVID (n=251)	During COVID (n=251)	P-value
Gross Motor 12 months	3	8	**0.03**
Speech 12 months	14	25	0.85
Social 12 months 1	10	18	0.89
Social 12 months 2	15	20	0.65
Fine motor 12 months 1	4	4	0.11
Fine motor 12 months 2	6	10	**0.02**
Gross Motor 15 months 1	4	0	0.15
Gross Motor 15 months 2	3	0	0.36
Speech 15 months	5	4	0.40
Social 15 months	2	0	0.59
Fine motor 15 months	1	0	0.33

Results

Table 4. Diagnoses of developmental delays

	Pre-COVID (n=251)	During COVID (n=251)	P-value
Developmental Delay Dx	13	13	1
Fine motor delay Dx	1	2	0.56
Speech Delay Dx	12	10	0.86

Discussion

- Demographically, the two groups were similar except for mean age, if they had a babysitter, and if the parents were working.
- With the COVID-19 pandemic, more children were babysat at home than sent to a day care and more parents were not working since many businesses were shut down.
- In the COVID-19 group, more children had missed appointments such as the 9 or 15 month well child, which led to more exclusion of patients and a younger cohort overall.
- There was no difference in developmental delay diagnosis in the two groups.
- There were more screening questions that were marked as positive for delay in the COVID-19 group.
- There could be a few different reasons for this, such as a follow up visit would be scheduled for a month or two later to reassess development before diagnosing with delay and referring for Early Intervention Services, or other questions in that area of development were asked during the visit and were on par for age, so no diagnosis of delay was made.
- There was not an overall difference in diagnosis of delays in the two groups.

Conclusions

- There was no statistically significant difference between pre-COVID and during COVID diagnoses of developmental delay or specific developmental delays.
- There were significant differences in the fine and gross motor domains of developmental screening pre- and during COVID in the 12 month age group.
- This data suggests that COVID-19 did not greatly alter children's development in the age range of 1-2 years old.

References

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