

Impact of the COVID-19 Pandemic on Children with Developmental Delays

Nataly Abrams, MS, Genetic Counseling NJLEND Fellow

Barbara Blain; Jill Harris, PhD; Marilyn Lopez; Amy Norton, MA, Children's Specialized Hospital

Caroline Coffield, PhD, The Boggs Center on Developmental Disabilities

Jessica Rispoli, MGC, CGC, Genetic Counseling Master's Program, Rutgers University

Background

- The Quick Peek Early Developmental Screening Program (Quick Peek) is a free community-based screening program designed to improve early access to care for children (ages 11-66 months) with developmental delays (DD), primarily in underserved communities and increase accessibility to these services by reducing barriers (i.e., language, transportation, cost, etc.). [1]
- Screenings were completed within community spaces and used the Ages & Stages Questionnaires®, Third Edition (ASQ®-3) for evaluation (see Figure 8). However, in response to the COVID-19 pandemic, Quick Peek transitioned into virtualized screenings.
- Studies of parents of young children with moderate to severe DD have expressed concerns due to the disruption of care and social networks on their child's health caused by the COVID-19 pandemic. [2-5]
- This study aims to investigate if there were impacts on developmental domains related to the pandemic within Quick Peek participants by comparing the ASQ®-3 domain scores from December 2012 to December 2019 (in-person evaluations) and June 2020 to December 2022 (virtual evaluations).

Table 1: Demographics, Scores and Recommendations between In-Person and Virtual

	In-Person n= 2723	Virtual n= 538	p-Value
Sex, n (%)			
Male	1677 (62)	355 (66)	.05
Female	1046 (38)	183 (34)	.05
ASQ®-3 Domain Scores, median (IQR)			
Communication	40 (20-55) n= 2680	40 (15-50) n= 537	.08
Gross Motor	60 (50-60) n= 2672	50 (45-60) n= 537	<.001
Fine Motor	45 (30-55) n= 2662	40 (20-50) n= 537	<.001
Personal-Social	50 (40-60) n= 2670	45 (30-55) n= 537	<.001
Problem Solving	50 (30-60) n= 2655	45 (30-35) n= 537	.02
Referred for Additional Services After Evaluation, n (%)			
Yes	1426 (52.4)	362 (67.3)	<.001
No	1297 (47.6)	176 (32.7)	<.001

Abbreviations: ASQ®-3, Ages & Stages Questionnaires®, Third Edition; IQR, interquartile range

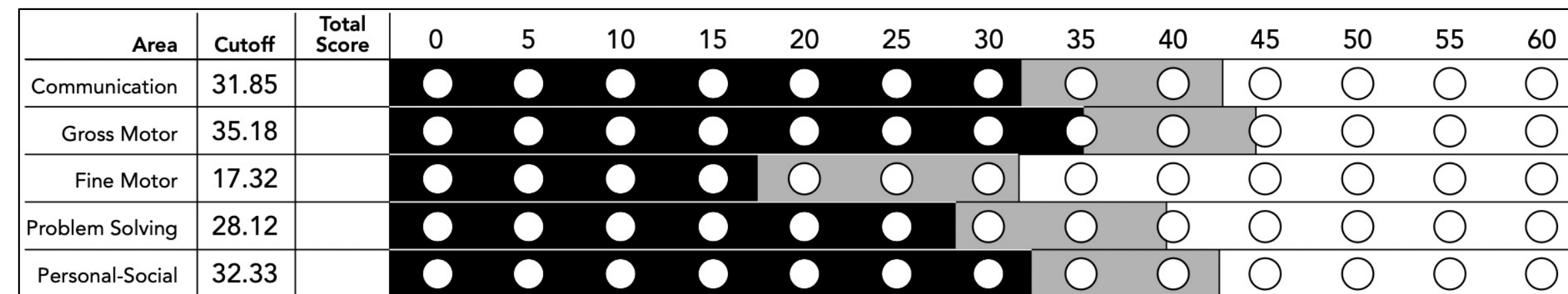


Figure 1: An example of an ASQ®-3 score scale. These score cards are unique for their respective age groups. These scores, in combination with parental concern, guide the referral process for additional services post-evaluation. Adapted from Squires and Bricker, 2009.

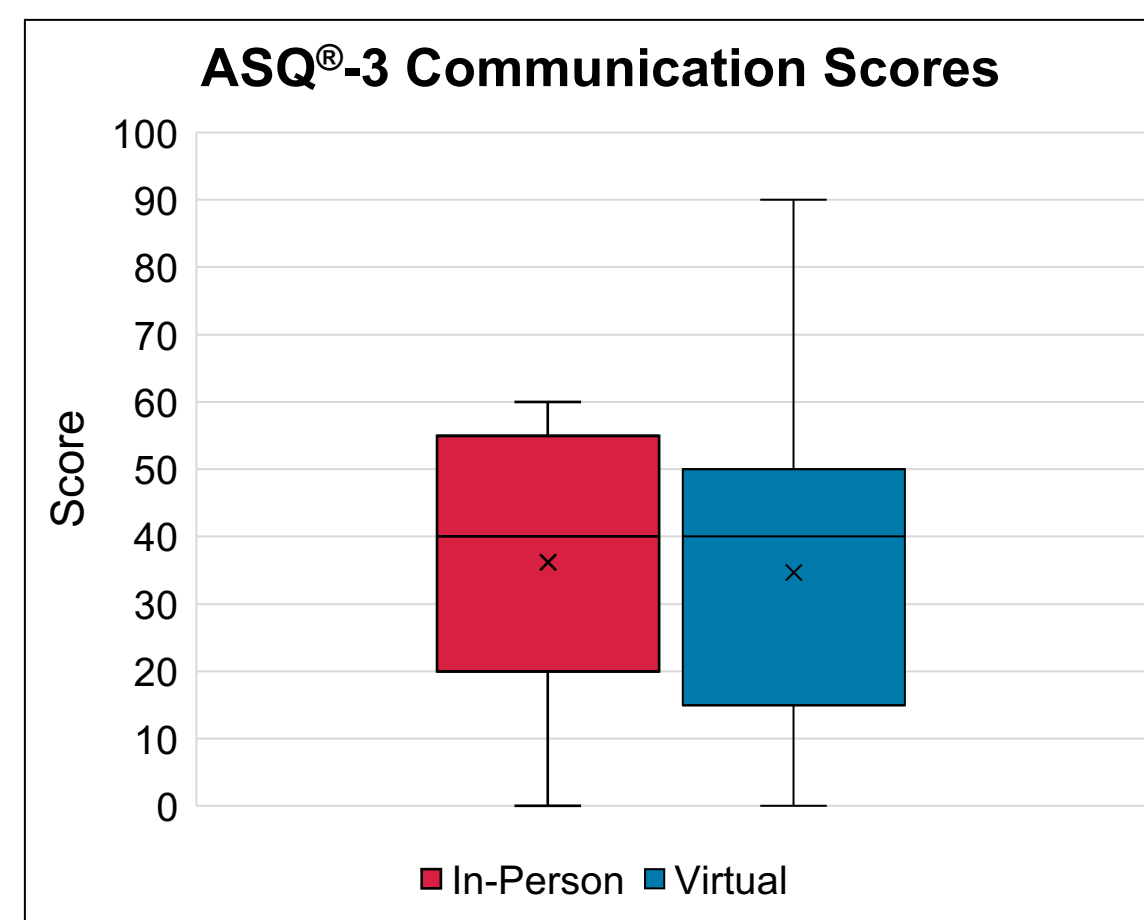


Figure 2: ASQ®-3 Communication Scores

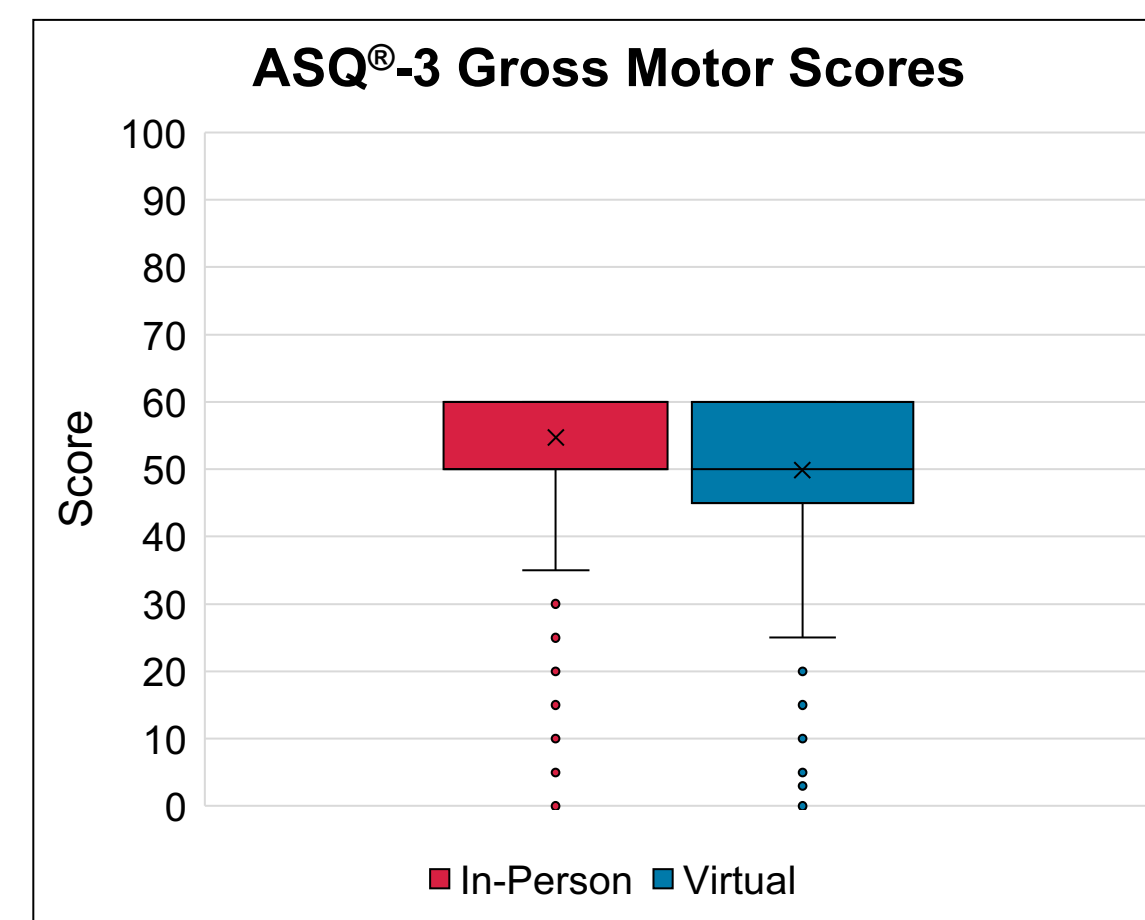


Figure 3: ASQ®-3 Gross Motor Scores

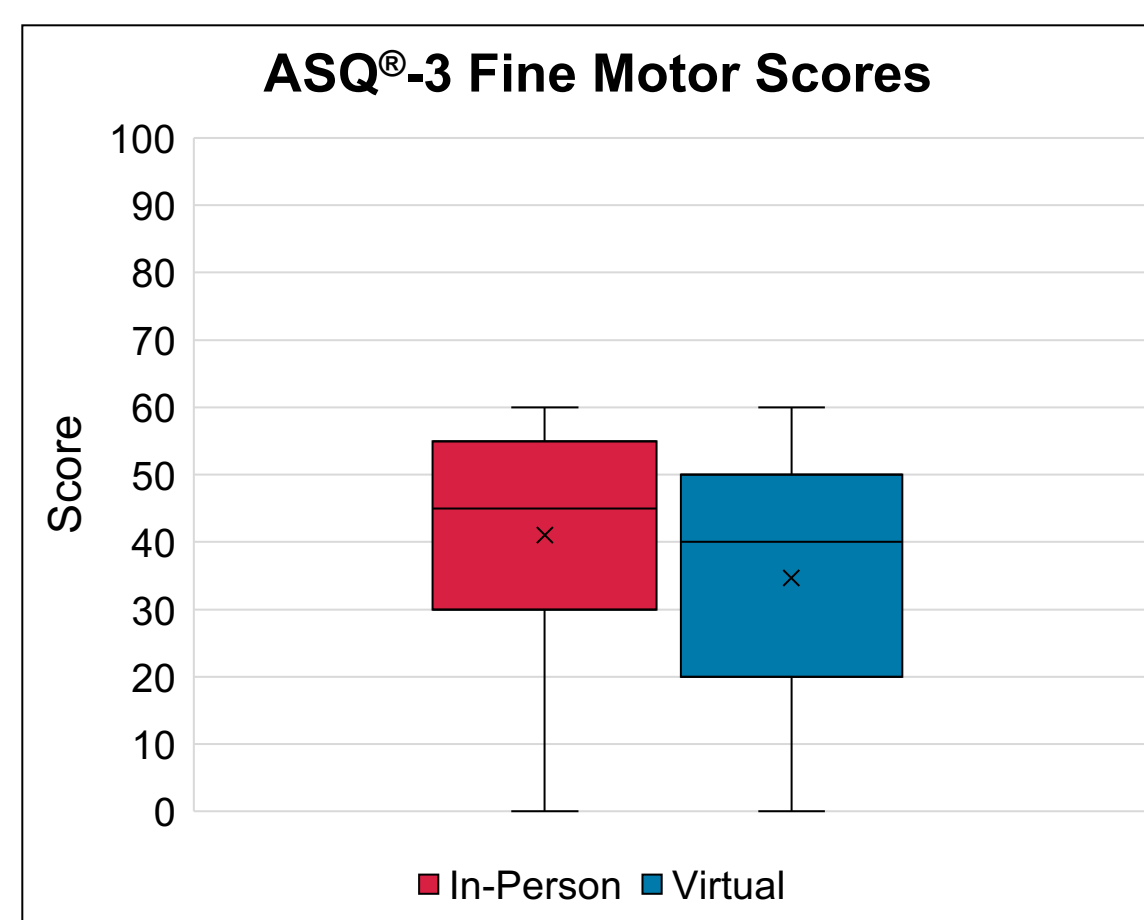


Figure 4: ASQ®-3 Fine Motor Scores

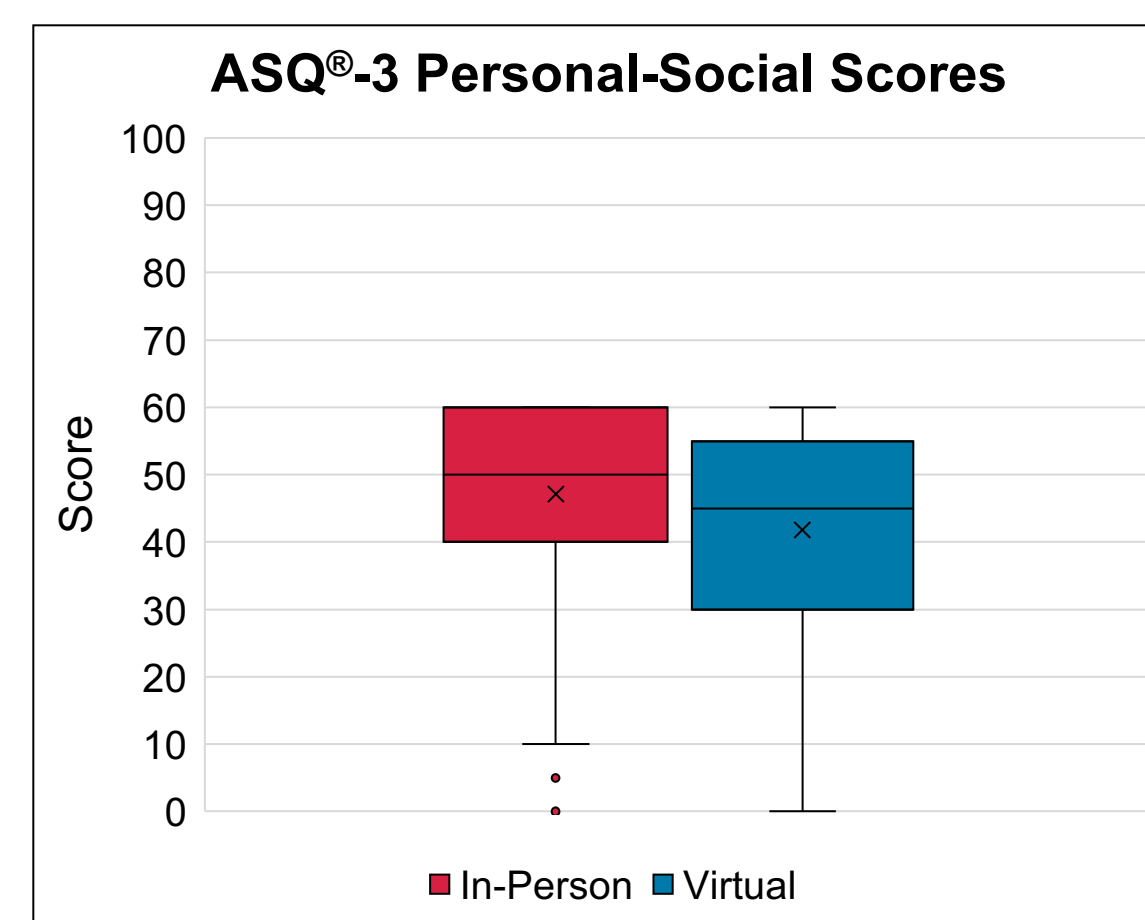


Figure 5: ASQ®-3 Personal-Social Scores

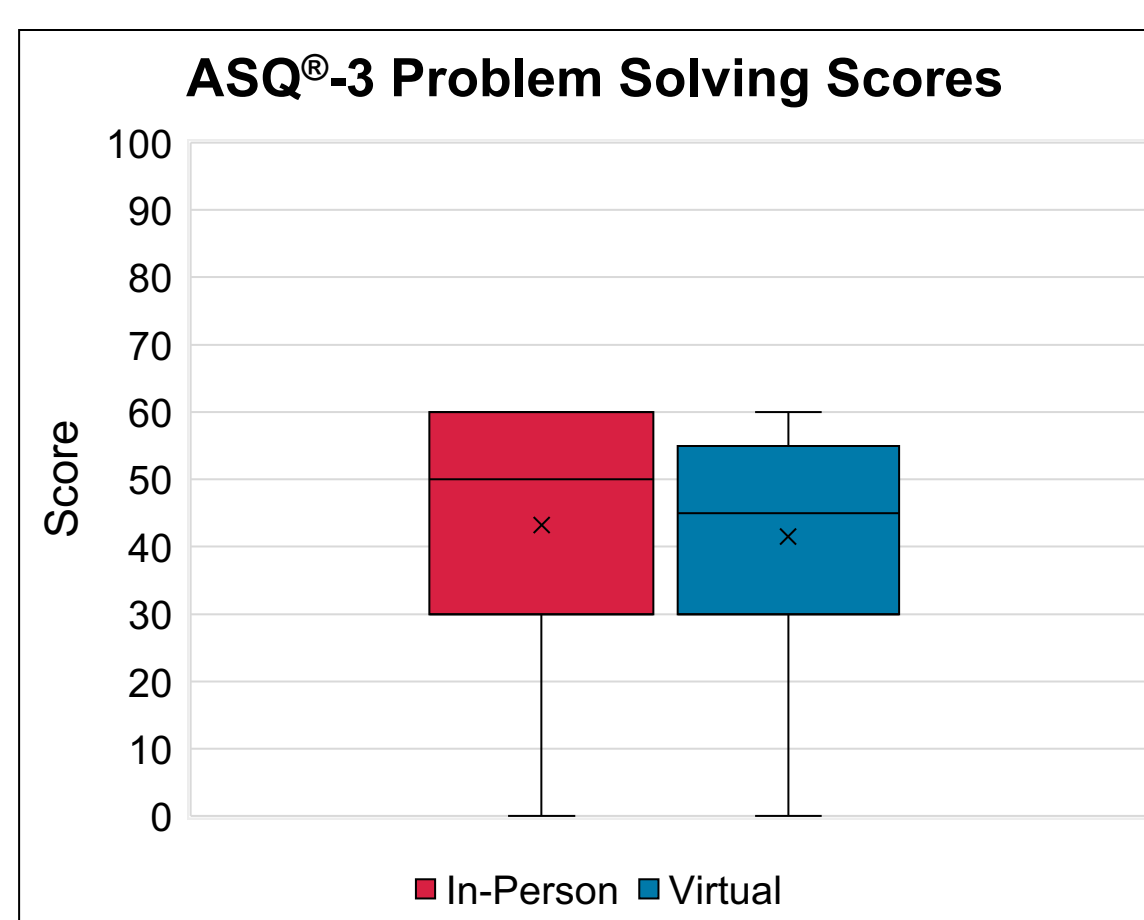


Figure 6: ASQ®-3 Problem Solving Scores

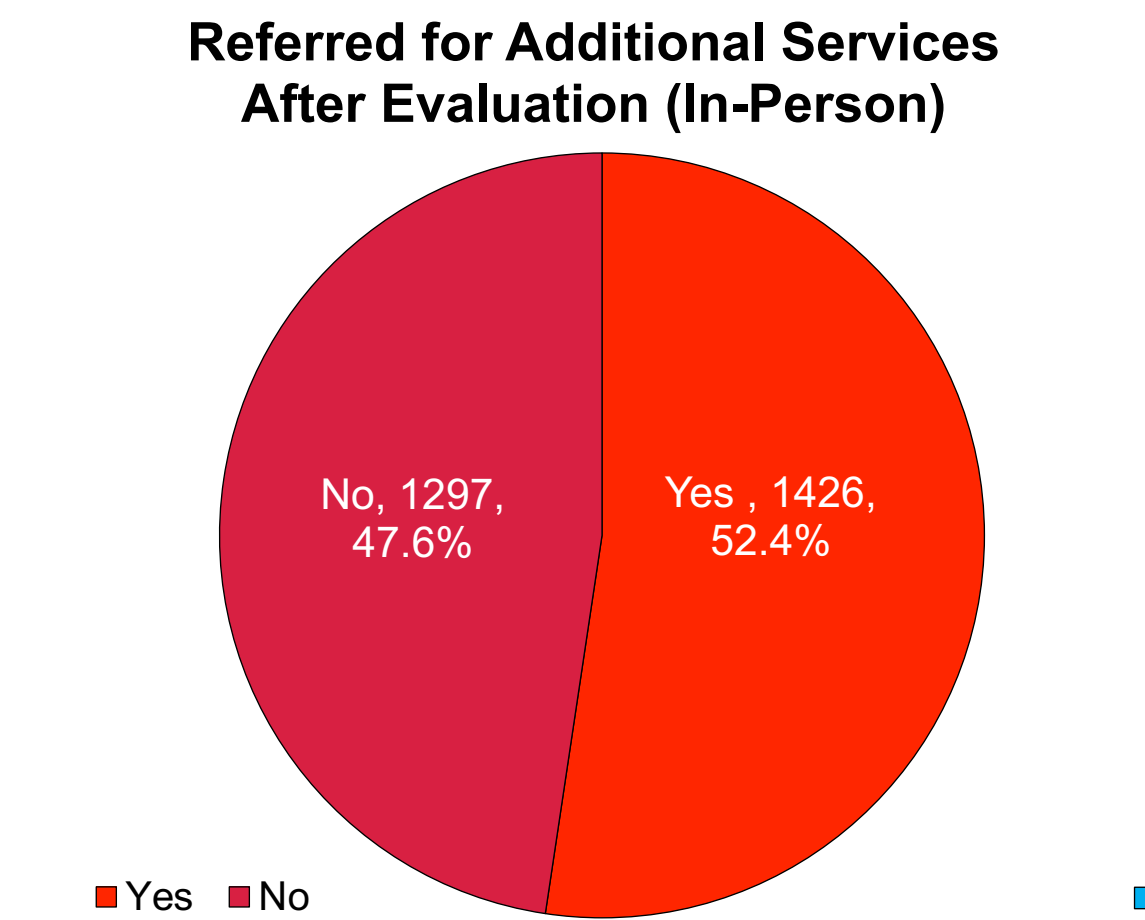
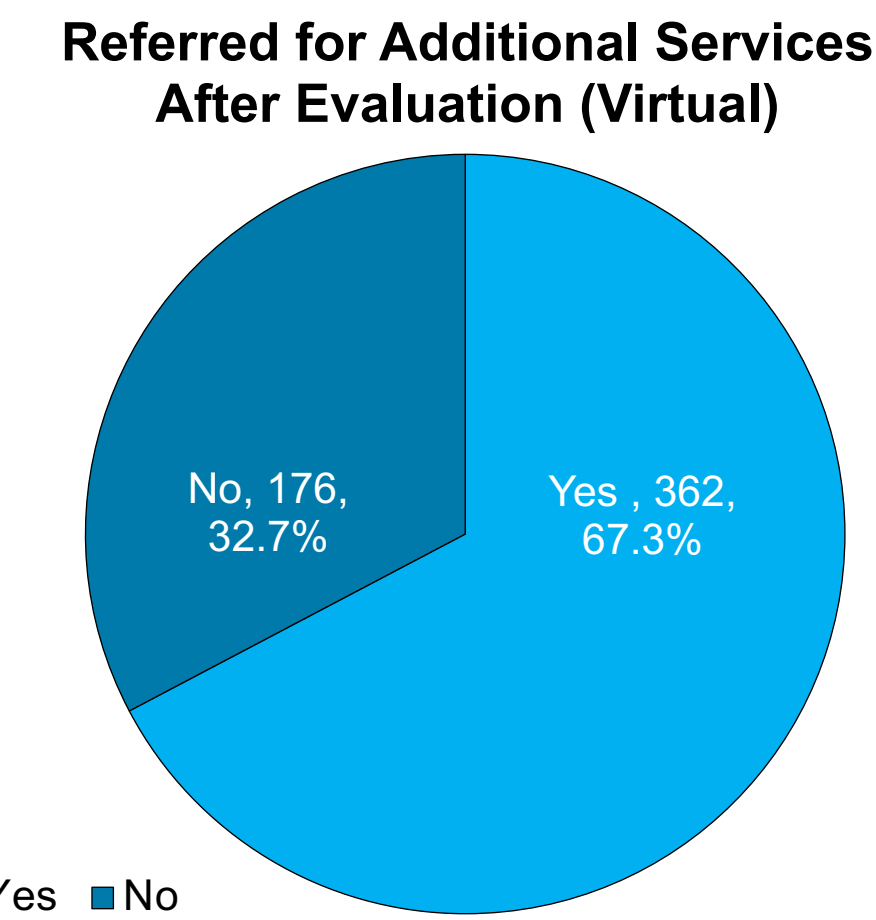


Figure 7: Referred for Additional Services After Evaluation



Outcomes and Implications

- Descriptive statistics were used to describe the demographics in median, interquartile ranges, and percentages. Pearson's Chi-square test and Wilcoxon Rank-Sum test were used to compare domain scores and follow-up recommendations. Statistical significance was set at $p < .05$. All analyses were performed using R version 4.2.3.
- Significant differences were seen in Gross Motor, Fine Motor, Personal-Social, Problem Solving scores (Fig. 2-6), and referrals for additional services after evaluation (Fig. 7).
- These data demonstrate a significant reduction of ASQ®-3 scores of these developmental domains and an increased need for follow-up after June 2020, around the time when many states implemented restrictions in response to the pandemic.
- As states ease their restrictions, it is critical that they reimplement services that support children with DD and their families in anticipation of these increased needs.

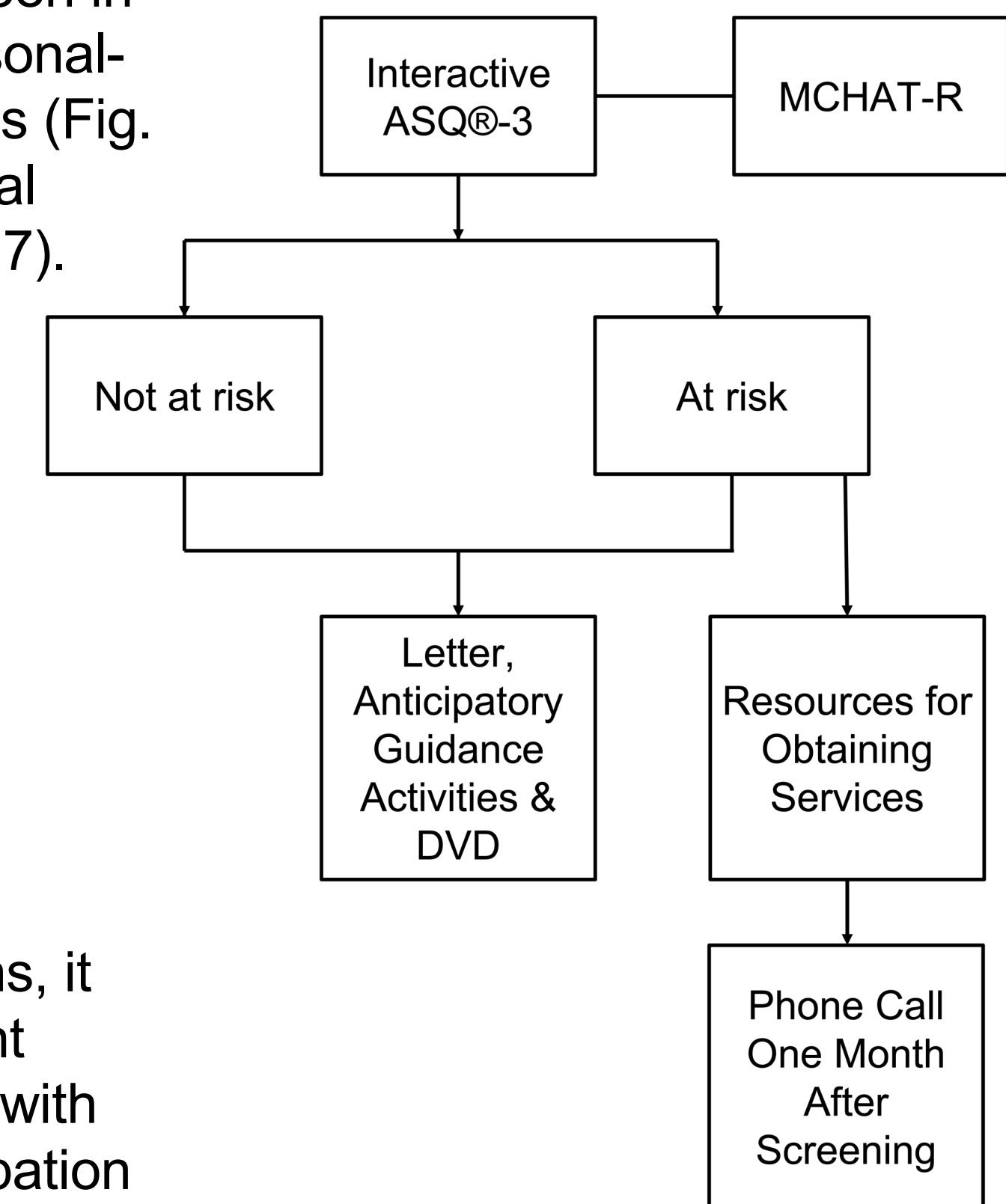


Figure 8: Quick Peek Screening Model Adapted from Harris and Norton, 2016 [1]

References

- Harris, J. and A. Norton, *The Quick Peek Program: A Model for Developmental Screening Within Underserved Communities*. *Infants & Young Children*, 2016. 29(4).
- Fadda, M., et al., *Joys or Sorrows of Parenting During the COVID-19 Lockdown: A Scoping Review*. *Public Health Rev*, 2022. 43: p. 1605263.
- Paulauskaite, L., et al., *My Son Can't Socially Distance or Wear a Mask: How Families of Preschool Children with Severe Developmental Delays and Challenging Behavior Experienced the COVID-19 Pandemic*. *Journal of Mental Health Research in Intellectual Disabilities*, 2021. 14(2): p. 225-236.
- Rizzo, R., et al., *Impact of the COVID-19 Pandemic on Family Wellbeing in the Context of Neurodevelopmental Disorders*. *Neuropsychiatr Dis Treat*, 2021. 17:p. 3007-3014.
- Zhang, S., et al., *COVID-19 Pandemic Impacts on Children with Developmental Disabilities: Service Disruption, Transition to Telehealth, and Child Wellbeing*. *Int J Environ Res Public Health*, 2022. 19(6).
- Squires, J. and D. Bricker, *Ages and Stages Questionnaire (ASQ): A Parent Completed Child Monitoring System (3rd ed.)*. 2009, Brooks Publishing Company: Baltimore, MD.