

Adverse Childhood Experiences (ACEs) in Children with Autism Spectrum Disorder (ASD)

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INTRODUCTION

- ACEs are traditionally defined to include three categories of childhood abuse which include psychological, physical, and sexual abuse and four categories of household dysfunction¹
- ACEs affect both children with ASD and the mothers of these children
- Prior studies have shown that a greater number of maternal ACEs leads to a greater likelihood of ASD and ADHD in offspring^{2,3}
- Prematurity, low birth weight, and pregnancy duration have all been identified to increase likelihood of ASD in children³
- The UC Davis MARBLER (Markers of Autism Risk in Babies Learning Early Signs) is a prospective longitudinal study which began in 2006 and enrolls women who already have a child with autism to investigate the recurrence in future children⁴

OBJECTIVE

- Investigate whether there is an association between the number of maternal ACEs and the recurrence of autism in families with an autistic child.

METHODS

- Used Google Scholar to find research articles containing the words: Autism; Autism Spectrum Disorder (ASD); and Adverse Childhood Experiences; maternal ACEs
- Analyzed data containing information about maternal and child ACEs from the MARBLER study using parent and child responses
- Data used was collected through the ECHO study for the MARBLER cohort and includes responses from 3 surveys: Child Report, Parent Report, and Adult Primary Version

RESULTS

Figure 1. Percentage of Respondents from Child Report Questionnaire and Number of Stressful Events experienced by child

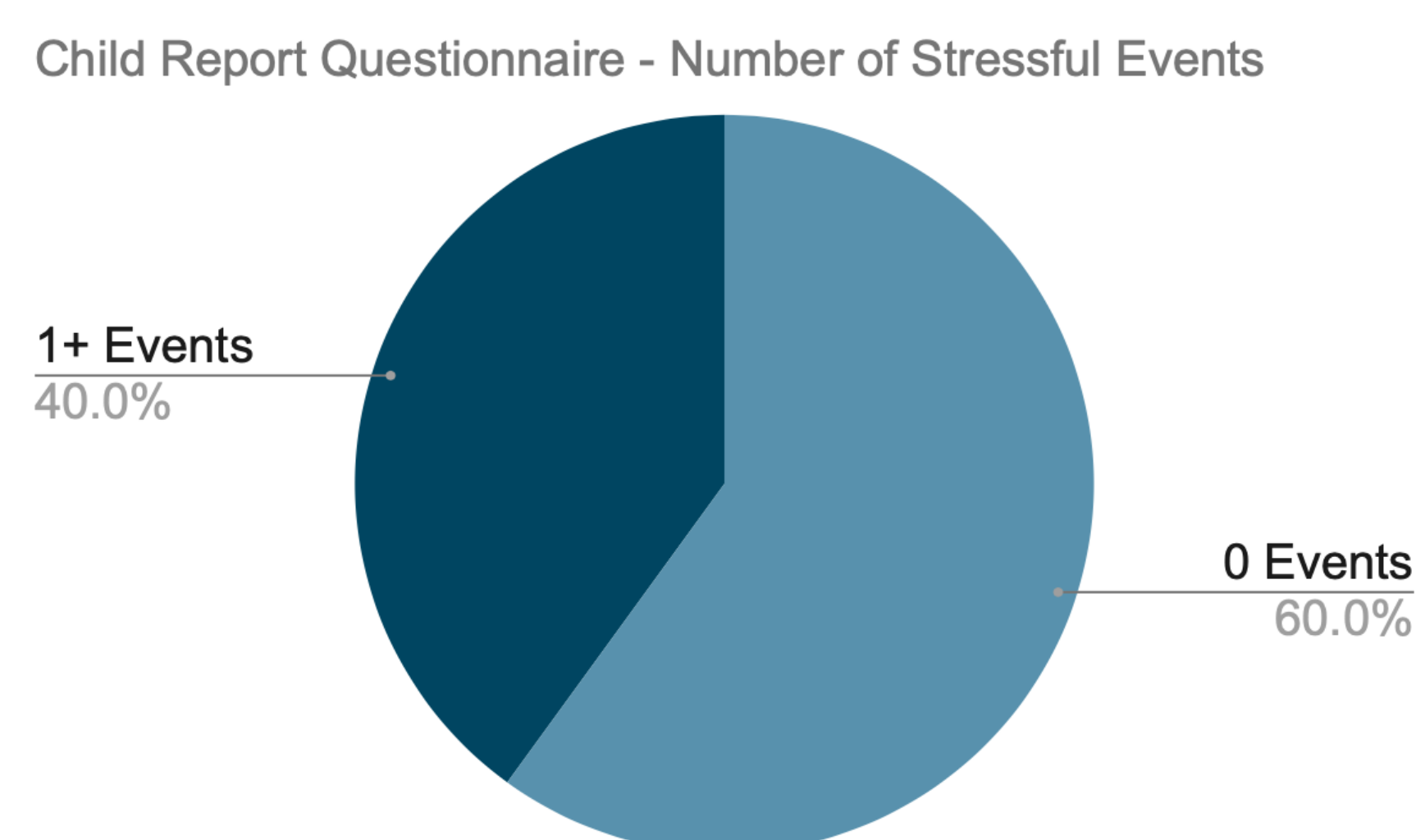


Figure 2. Percentage of Respondent from Parent Report Questionnaire and Number of Stressful Events experienced by child

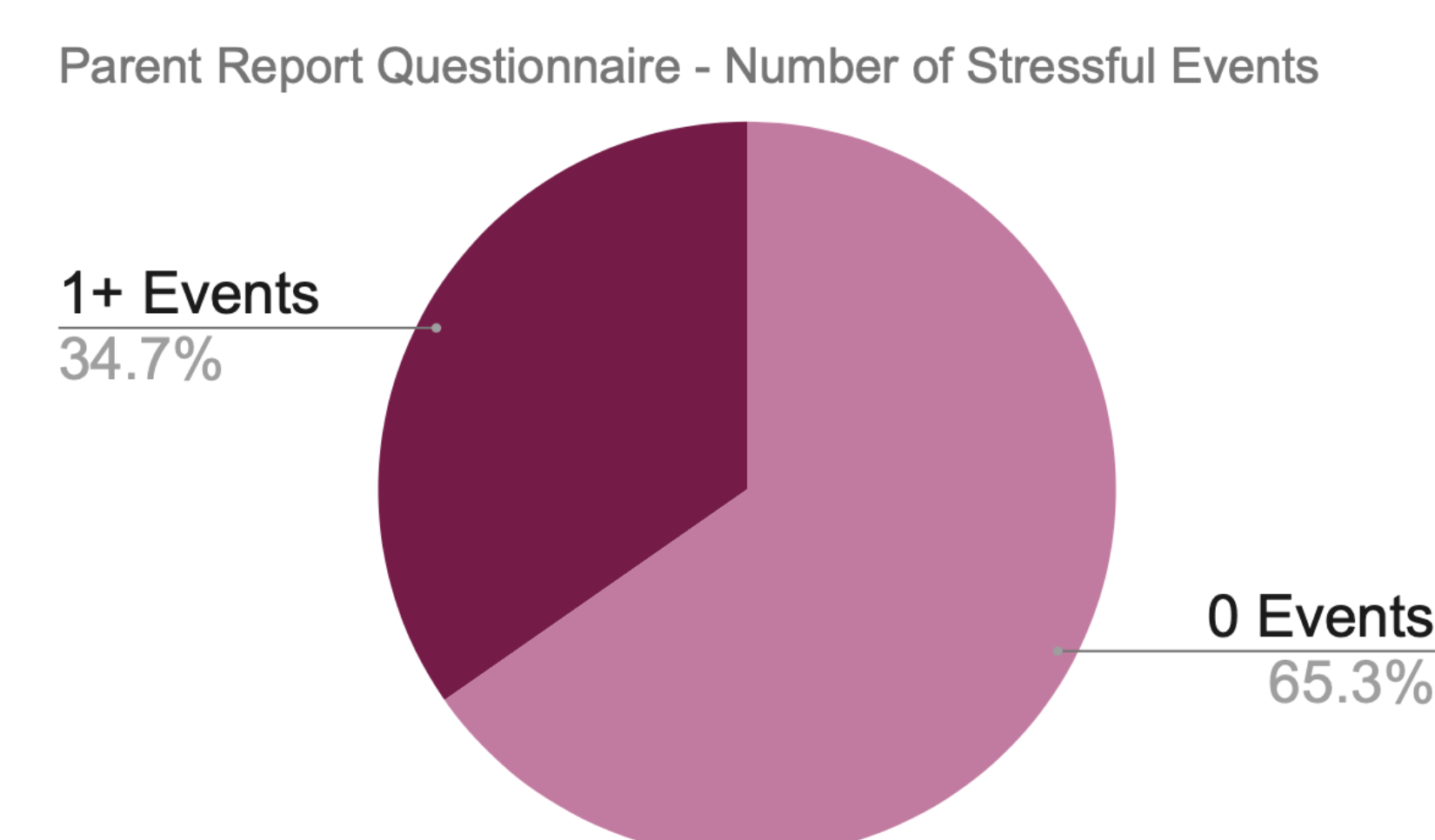


Figure 3. Percentage of Adult Respondents Who Reported their Child Experienced ACEs by Child Neurodevelopmental Outcome

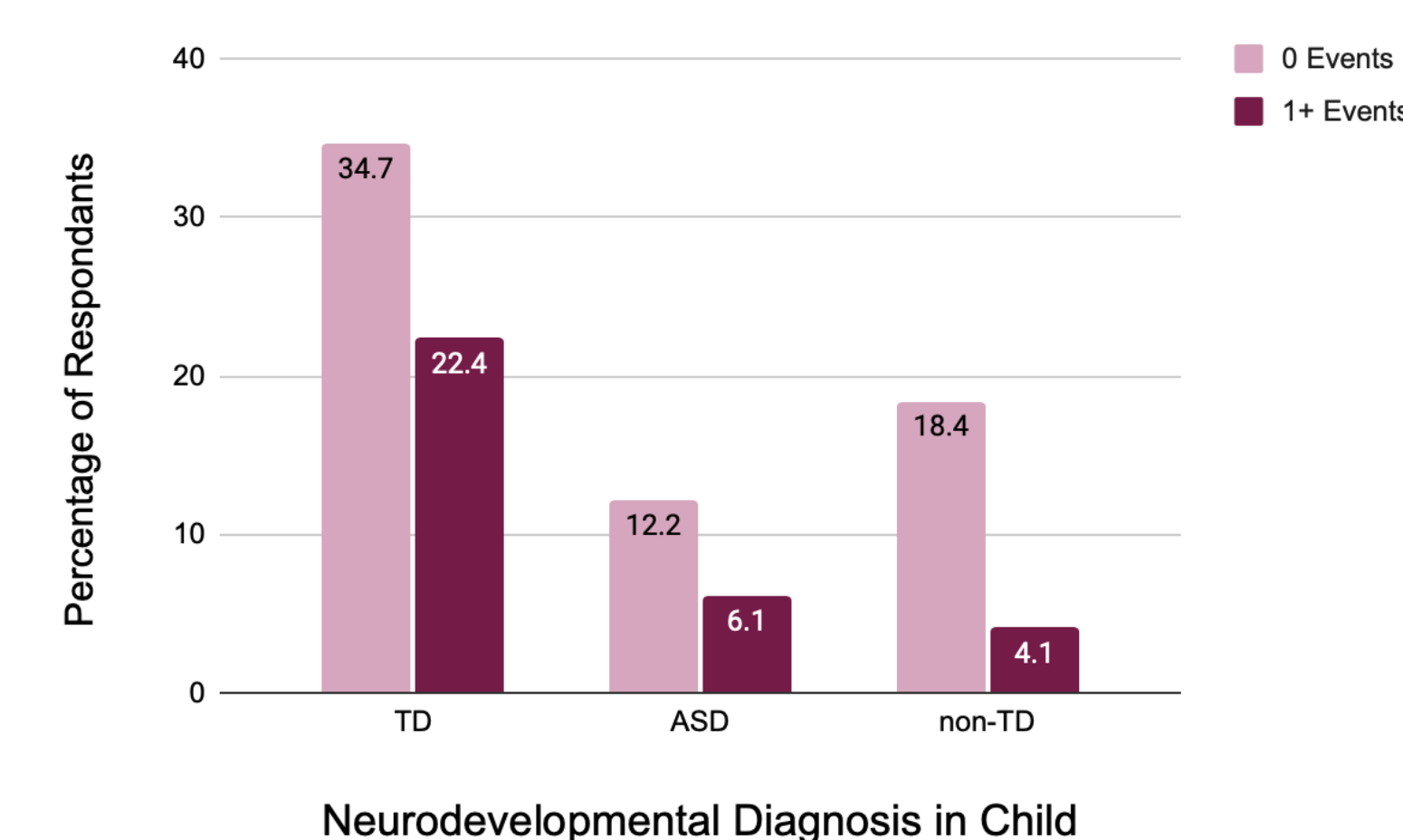


Figure 4. Average Number of Maternal ACEs per category of neurodevelopmental diagnosis in child as reported in Adult Primary Version Questionnaire

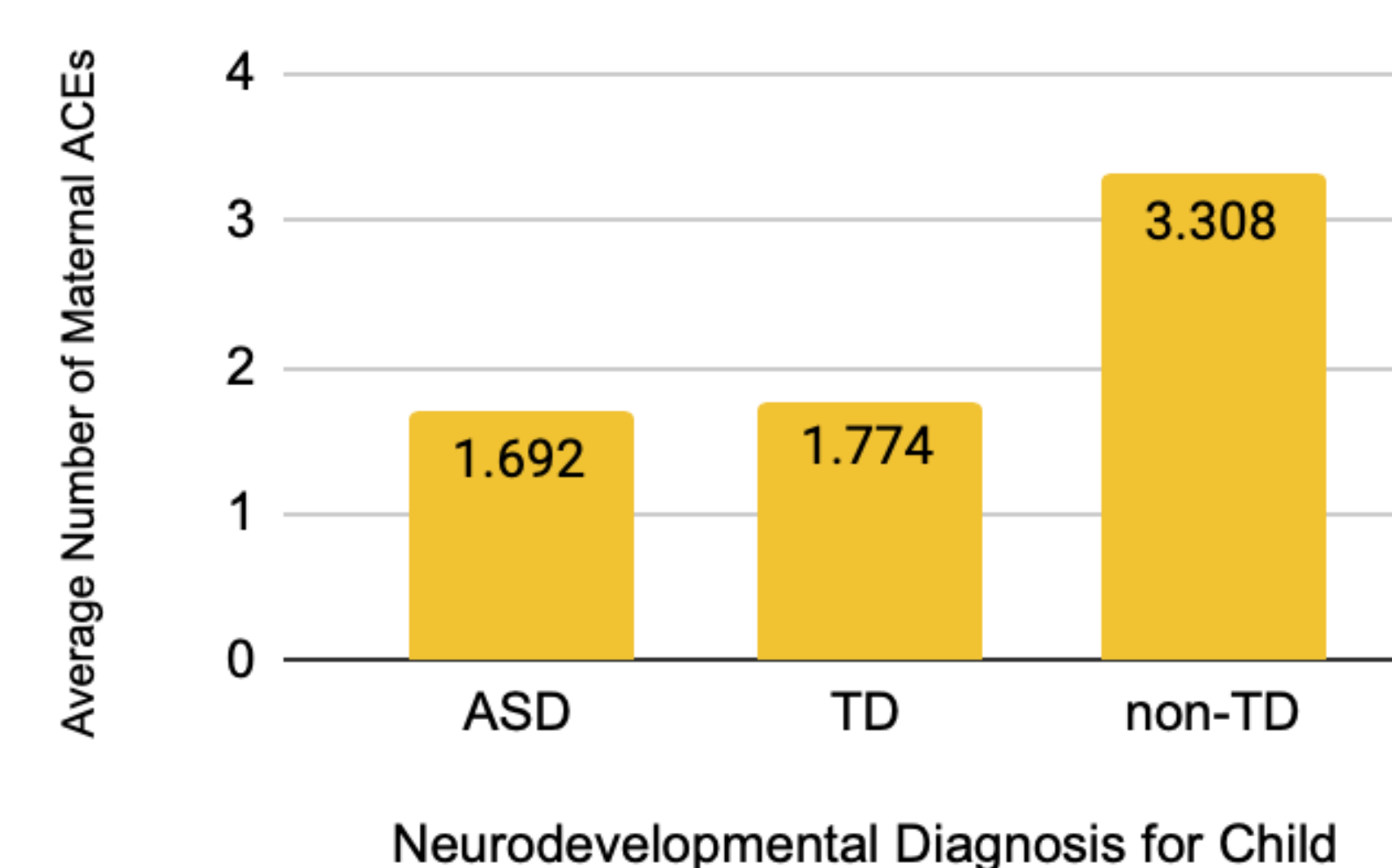


Diagram: Description of the 3 categories of child neurodevelopmental diagnosis used in this study

ASD:

- Autism Spectrum Disorder
- Tested using Autism Diagnostic Observation Schedule (ADOS)

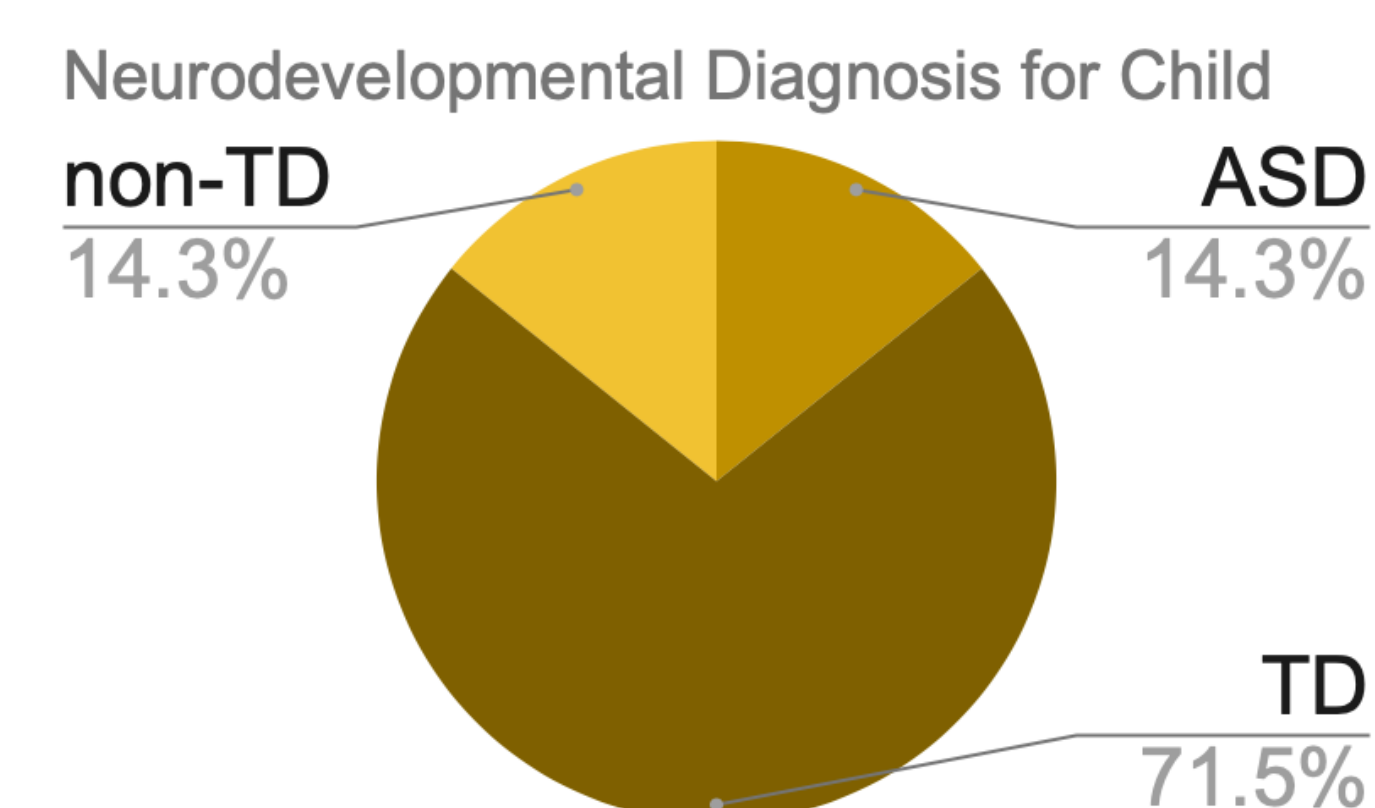
TD:

- Typical Development
- Determined based on results of ADOS and MSEL tests

Non-TD:

- Non-typical Development
- Tested for using Mullen Scale of Early Learning (MSEL) to assess cognitive function

Figure 5. Percentage of Respondents from Adult Primary Version Questionnaire and Neurodevelopmental Outcome of Child



DISCUSSION

- Overall, children diagnosed with non-typical development (Non-TD) were associated with the greatest number of average maternal ACEs equaling 3.3.
- The number of ACEs reported for the child by the parent was less for ASD and non-TD compared with TD children
- The National Survey of Children's Health Data from 2017-18 reported that 30% of children experienced at least one ACE⁶
- Maternal ACEs have been shown to be associated with cognitive development concerns in children in another study using a Parental Evaluation of child development⁵

CONCLUSIONS

- Maternal ACEs were associated with child development in high-risk families who already have an autistic child
- Current literature supports that ACEs could affect multiple domains such as child problem solving, communication, and personal-social skills
- The results of this study did not support the hypothesis that children born to mothers reporting a greater number of maternal ACEs would be diagnosed with ASD.⁷

STRENGTHS & LIMITATIONS

- Provides insight to how maternal ACEs affect neurodevelopmental outcomes in offspring of high risk families
- Limited to data collected from the ECHO cohort in the MARBLER study and need bigger data set for future statistical analysis

FUTURE DIRECTIONS

- Complete this analysis with a larger population
- Look into epigenetic array data which may affect biological aging and mechanism resulting in cognitive delays in children

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ASD-ER ECHO: UH3OD023342

