

# Child Behavioral Inhibition and Family Conflict: Results from The ABCD Study

Lara Abou Ammar—EPHD

Preceptor: Dr. Martine El Bejjani

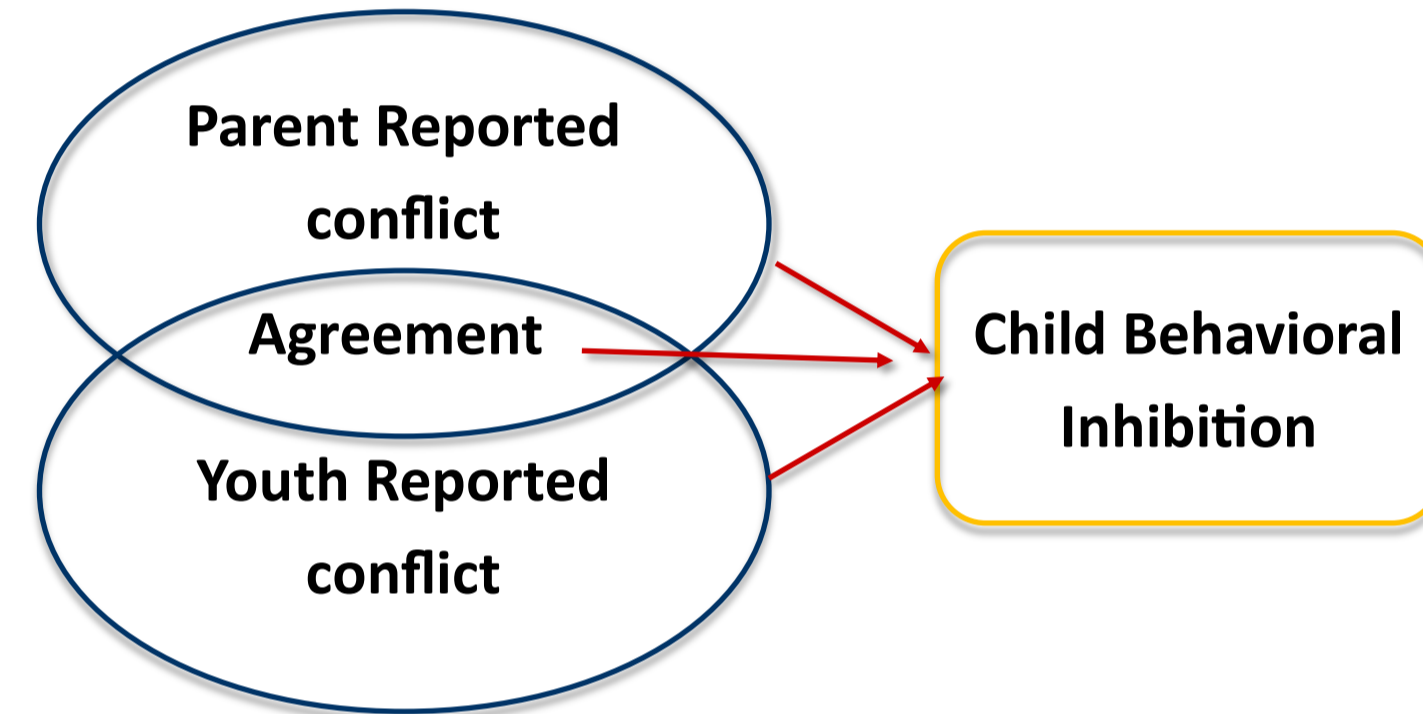
Advisor: Dr. Stephen McCall

## Background

- Behavioral Inhibition (BI) refers to the child's fearful and heightened behavioral reaction to unfamiliar people, objects, and contexts, or challenging situations.
- Approximately **10 to 15%** of 2-3 years old Caucasian children are estimated to be behaviorally inhibited.
- BI is the most recognized risk factor for Social Anxiety Disorder (SAD): almost 50% of inhibited children eventually develop SAD.**
- SAD is the most prevalent type of anxiety disorders among youth: approximately 1 in 4 American adolescents is affected by it by the age of 18 years old.**
- The variability in developing a disorder is affected by family environment including familial interaction.

## Objectives

- Examine the association of child-reported and parent-reported family conflict with BI in an American sample of children aged 9-10.
- Assess the level of agreement between children and parents on family conflict evaluation and its association with child BI.



## Methods

### Adolescent Brain Cognitive Development (ABCD) Study

Longitudinal study in the USA

Age : 9-10 years old through early adulthood.

Study Sample: 11878 children: 1720 twins and 9780 single births.

Recruitment Duration: September 1, 2016 - August 31, 2018

Sampling Strategy: Multi-staged probability sampling

### Study Design & Sample

Cross Sectional Study using the baseline ABCD sample of 9-10 years old children

Complete observation approach—>11168 children

### Measures

**Outcome:** BI was measured using the Behavioral Inhibition/Behavioral Activation Scale (Carver and White,1994)

**Main Exposure:** Family Conflict was measured through the Family Conflict subscale of the Moos Family Environment Scale (FES). Classified into 4 levels: zero conflict, 1-3=low conflict, 4-6=moderate conflict and 7-9=high conflict.

**Secondary Exposure:** Parent-Child Family Conflict Agreement coded as binary (Yes/No)

### Statistical analysis

Associations between family conflict measures and BI were estimated through **linear multilevel mixed models accounting for clustering of the outcome within families**. Child-reported conflict (**Model 1**), parent-reported conflict (**Model 2**) and BI were examined separately, and then jointly in **Model 3** where they were mutually adjusted for each others. In **Model 4**, parent-child conflict score agreement was assessed as an independent variable with BI. All models adjusted for confounders.

We compared the profiles of the families with matching family conflict scores to the families whom scores don't match using binomial logistic regression.

Sensitivity analysis was conducted for several variables including household income, child rank and parent and self-reported child mental health Status.

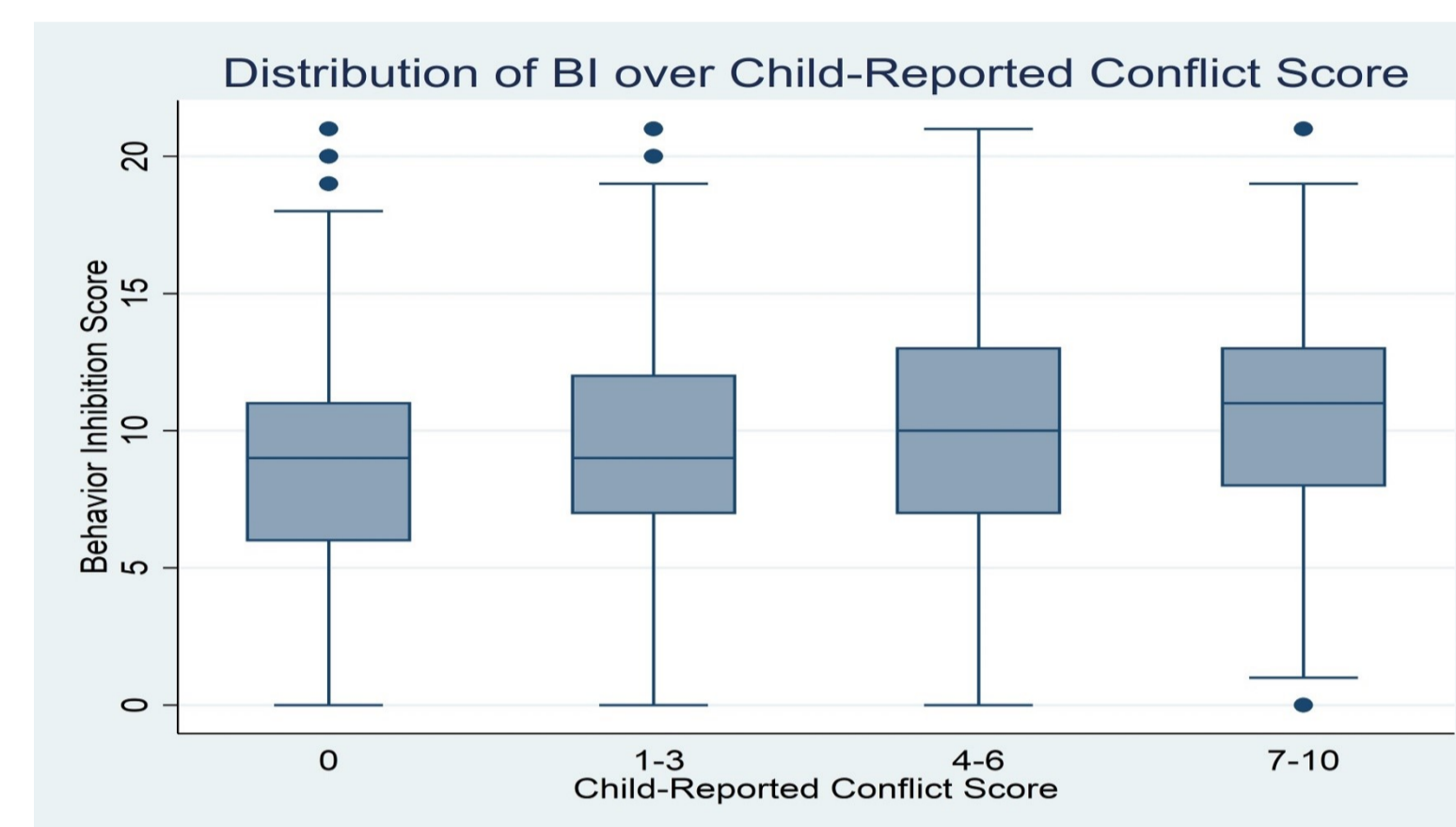
## Results

### Descriptive Statistics

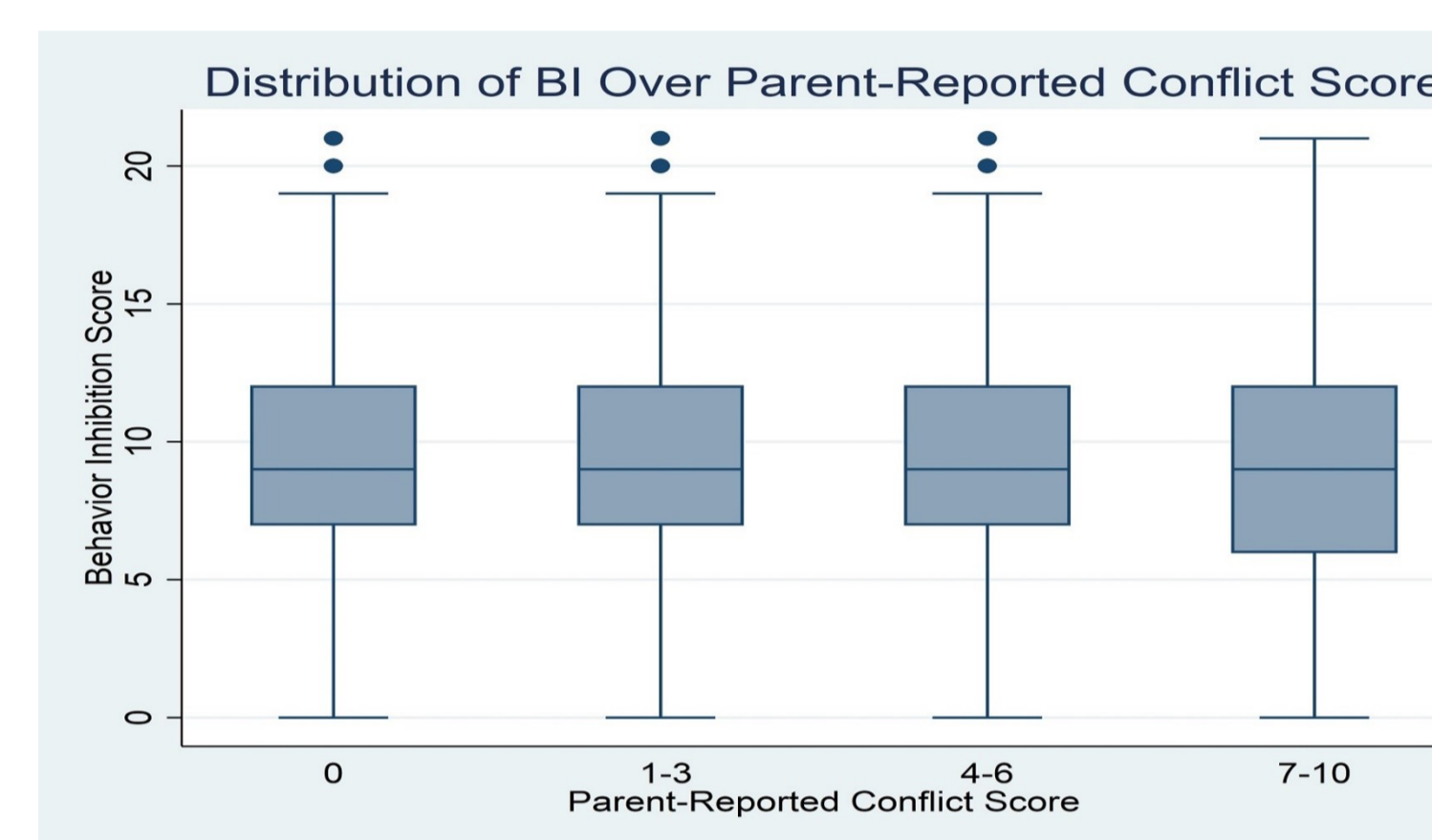
The children had an average BI score of 9.53 (SD=3.75) with a median age of 119 months (IQR=14); 52.2% were males and 53.4% were white. 60.3% of the children's parents had a college degree and above, 68.5% were married, and 19.5% had a psychopathology.

### BI Scores Across The Categories of Child- and Parent-Reported Family Conflict Assessments

A **dose response positive significant** association between BI and child-reported conflict score.

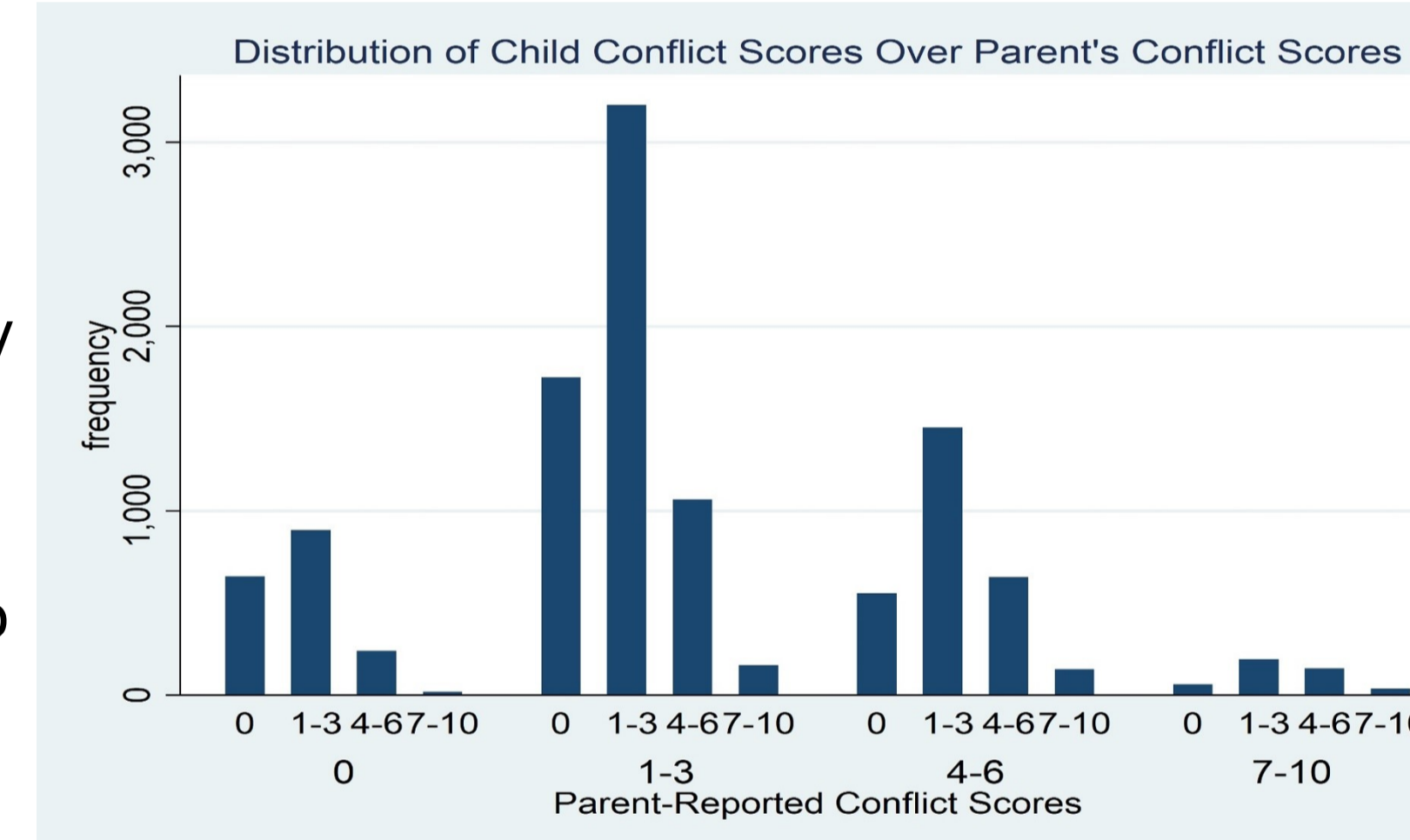


BI is **negatively associated** with parent-reported conflict score on low and high conflict levels, however the association is not statistically significant.

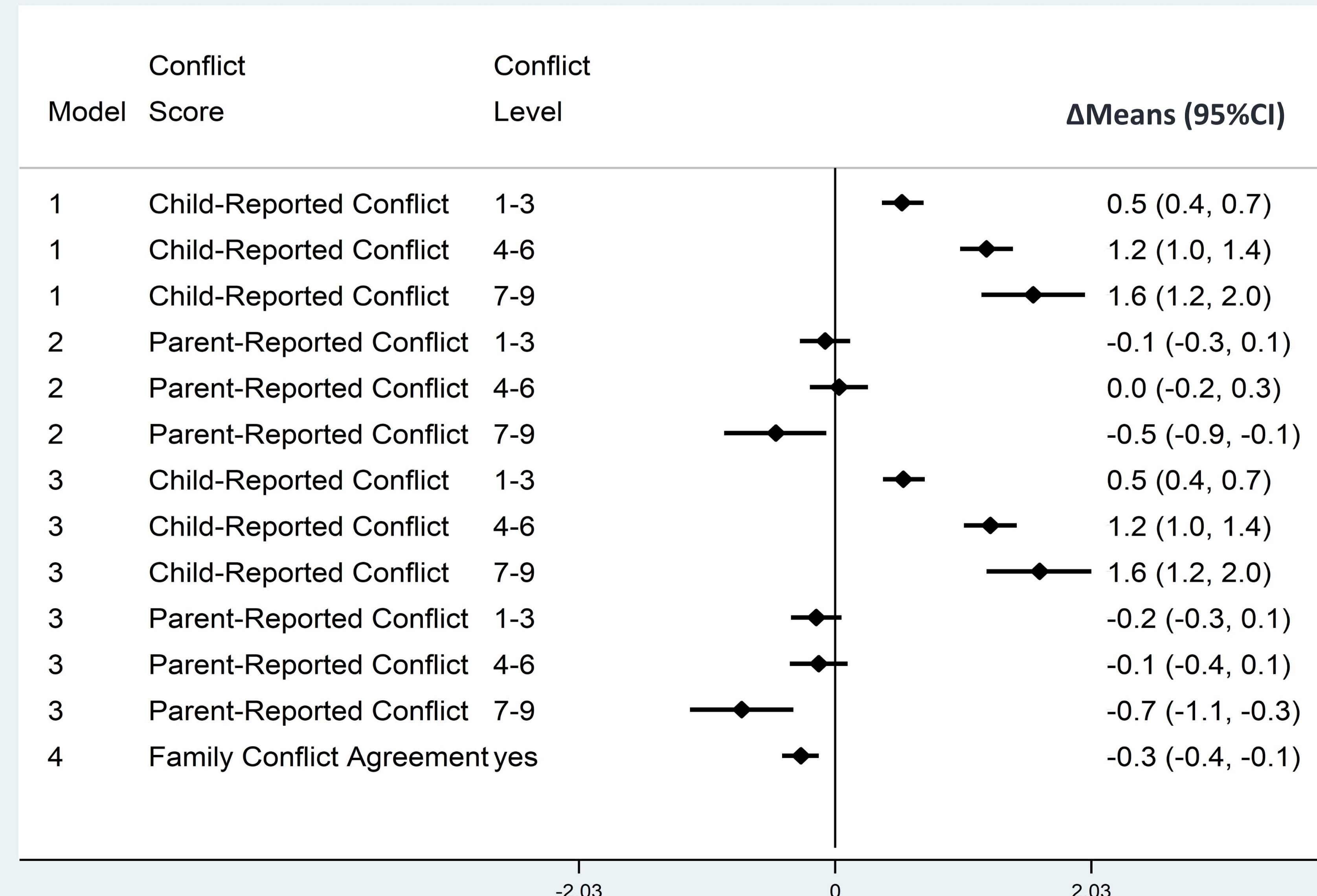


### Parent-Child Conflict Score Agreement

There was a 65.5% agreement between parents and children in their evaluation of family conflict, especially in the scores ranging between 1 to 3. Older, female and white children were more likely to show agreement with their parents, as well as those that have less siblings, married, better educated parents with no mental disorders.



### Adjusted Association of BI with Family Conflict Measures



Adjusted for child' sex, race and age, number of siblings, parent marital status, education and mental health.

## Sensitivity Analysis

No effect on the associations between family conflict measures and BI was found after including household income, child rank and parent and self-reported child mental health status separately into the model.

## Limitations

◆ **Reverse causality of cross-sectional design.**

◆ **Information Bias:**

⇒ Self-reporting → social desirability or recall bias  
 ⇒ One-time measurement of family conflict → we can't differentiate between single or continuous exposure.

◆ **Confounding Bias:**

⇒ Family composition and sociodemographic variables were used as a proxy of the family environment → residual confounding  
 ⇒ Unmeasured confounders (earlier experiences of conflict, parenting styles, conflict type...)

## Challenges

◆ Challenges in data management and compilation due to the large sample size and scattered data files.

◆ Other challenges were related to the decisions taken in choosing the most appropriate BI score (Initial vs. Modified) for our study sample, and using variables that we re-coded versus using ABCD generated ones for comparability.



## Conclusion

◆ Child perceptions of family conflict was positively associated with their BI whereas parent-reported conflict showed a differential negative association with only the higher levels of parent-reported conflict.

◆ Child and parent-reported assessments of family conflict might be capturing different information; this highlights the need for a better understanding of how to assess family environment, which is hypothesized to be a main contributor to child development.

◆ The convergence of the child and parent perceptions of family conflict was negatively correlated with child BI, however a big proportion of the children disagreed with their parents in their evaluation of family conflict, which emphasizes the need to better understand the predictors of parent-child perceptual agreement.