Relationships between Family/Household Environments and Turn-Taking Intervention Effectiveness

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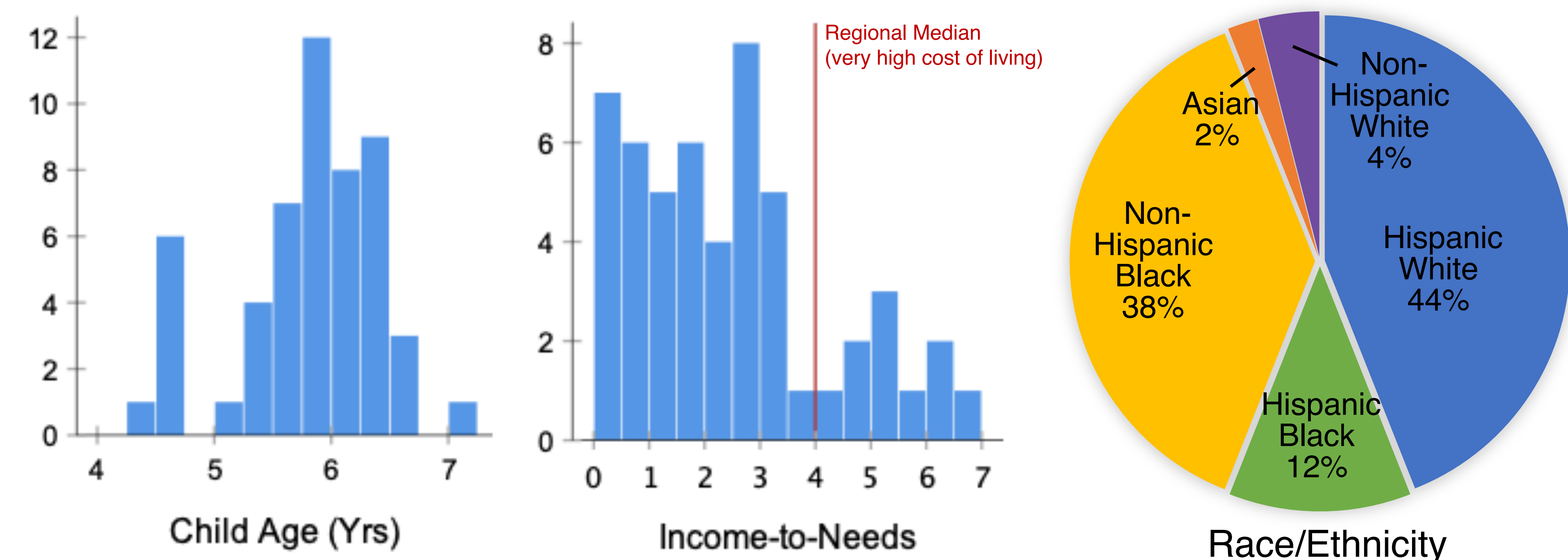
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Background

- Childhood socioeconomic status (SES) is frequently associated with disparities in early language experiences, with consequences for linguistic, cognitive, and academic development.

- To understand differences in language input, it is critical to also understand **the contexts in which stimulating language experiences occur**, as well as inequities in those circumstances.

- We previously reported that a 9-week interactive family-based intervention for lower-SES families of 4-6-year-olds resulted in **increased adult-child conversational turns**, which explained increases in children's language and executive functioning.[1]

- Here, we extend those results by examining whether any family or household characteristics predict **greater intervention effectiveness**.

Methods

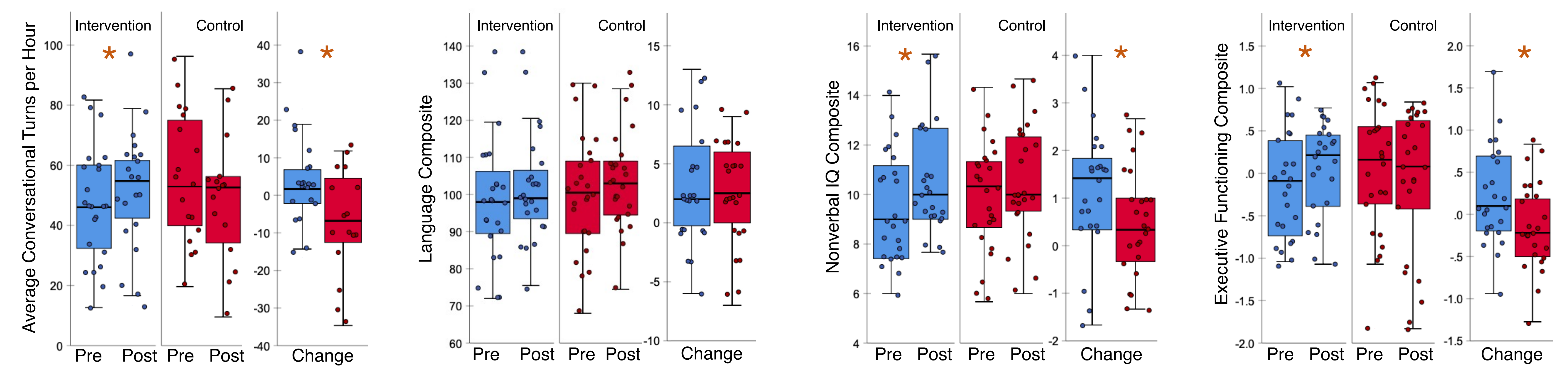Participants: n=101 families of pre-K/K children (n=107, 60% male)

Child Age (Yrs)

Income-to-Needs

Regional Median (very high cost of living)

Race/Ethnicity

Non-Hispanic White 4%
Asian 2%
Hispanic White 44%
Hispanic Black 12%
Non-Hispanic Black 38%

Intervention:

- 9-week, interactive, family-based intervention provided in small groups to all interested caregivers in either English or Spanish [2,3]

- A main focus was responsive "meaningFULL language" to enhance children's communication, executive functioning, and school readiness.

Pre/Post Measures of Interest (n=52)

- Language: PPVT-4 Receptive Vocabulary & CELF-5 Core Language Score
- Nonverbal cognition: WPPSI-IV Matrix Reasoning, Picture Memory, & Bug Search
- Executive function: Head-Toe-Knees-Shoulders[4] and Hearts & Flowers[5]
- Home Language: 2 full weekend days of LENA (n=39)
- Parent-Reported Perceived Stress Scale (PSS)[6] – 10 questions
- Chaos, Hubbub, & Order Scale (CHAOS)[7] – 15 questions

[1]Romeo et al., *Dev Cogn Neurosci*, 2021; [2]Romeo et al., *J Res Educ E*ff, 2021; [3]Neville et al., *PNAS*, 2013; [4]McClelland, et al., *Front Psychol*, 2014; [5]Davidson et al., *Neuropsychologia*, 2006; [6]Cohen & Williamson, *The Social Psychology of Health*, 1988; [7]Matheny et al., *J Appl Dev Psychol*, 1995.

Results

The intervention group exhibited **greater increases in conversational turns, child nonverbal IQ, and child EF**. Both groups experienced language increases.

Changes in turn-taking correlated with all three measures, and **significantly mediated language and EF intervention effects.**
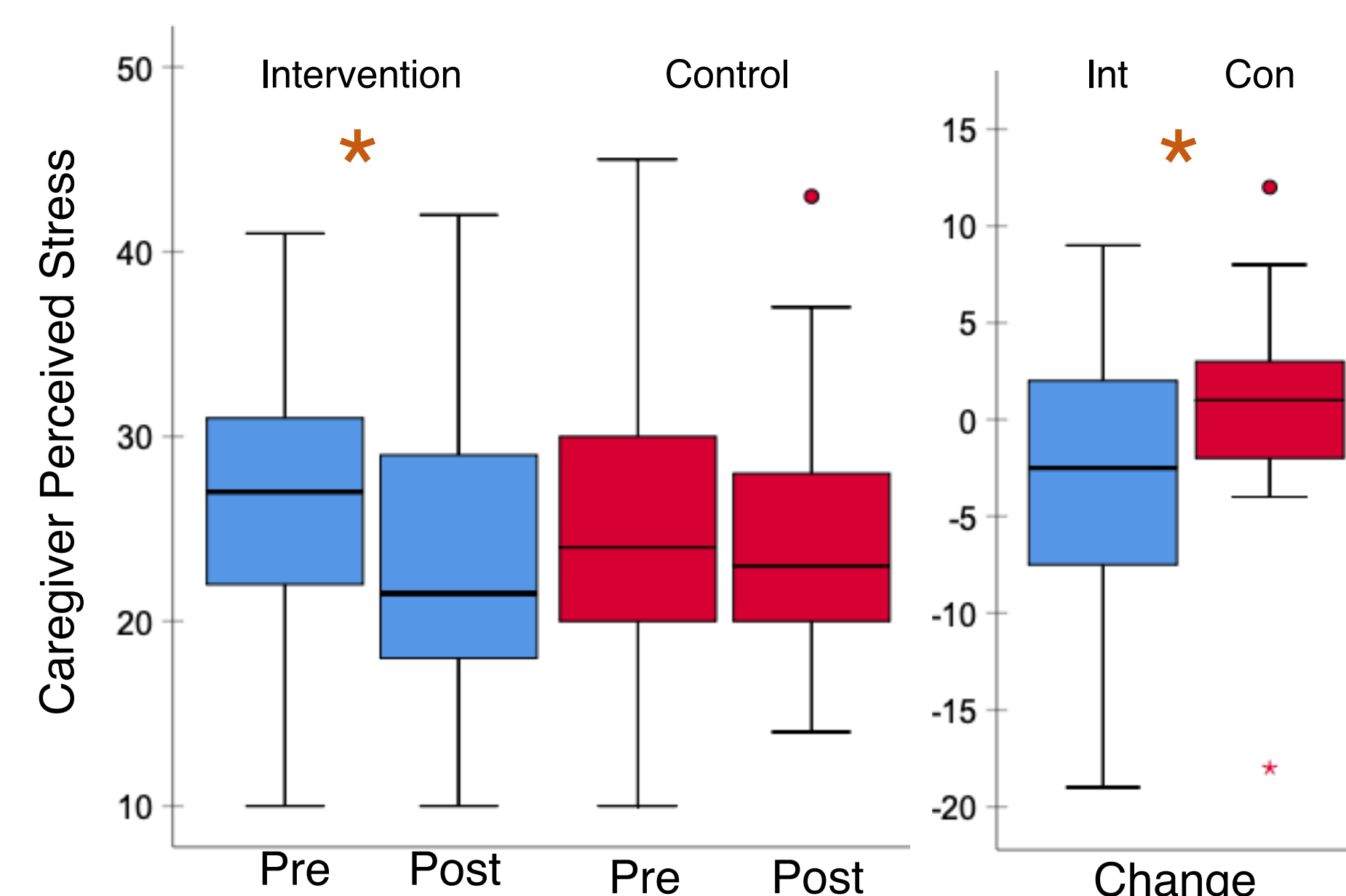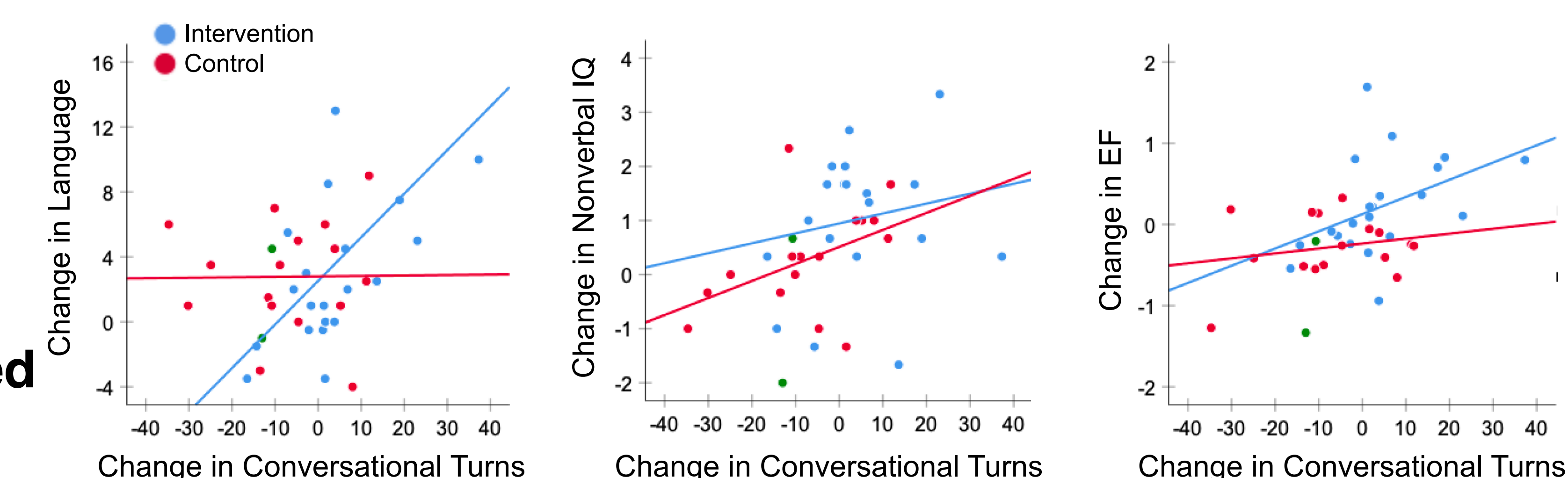
At baseline, the amount of **caregiver stress was positively correlated** with conversational turns. The intervention group exhibited **significant reductions in caregiver stress.**
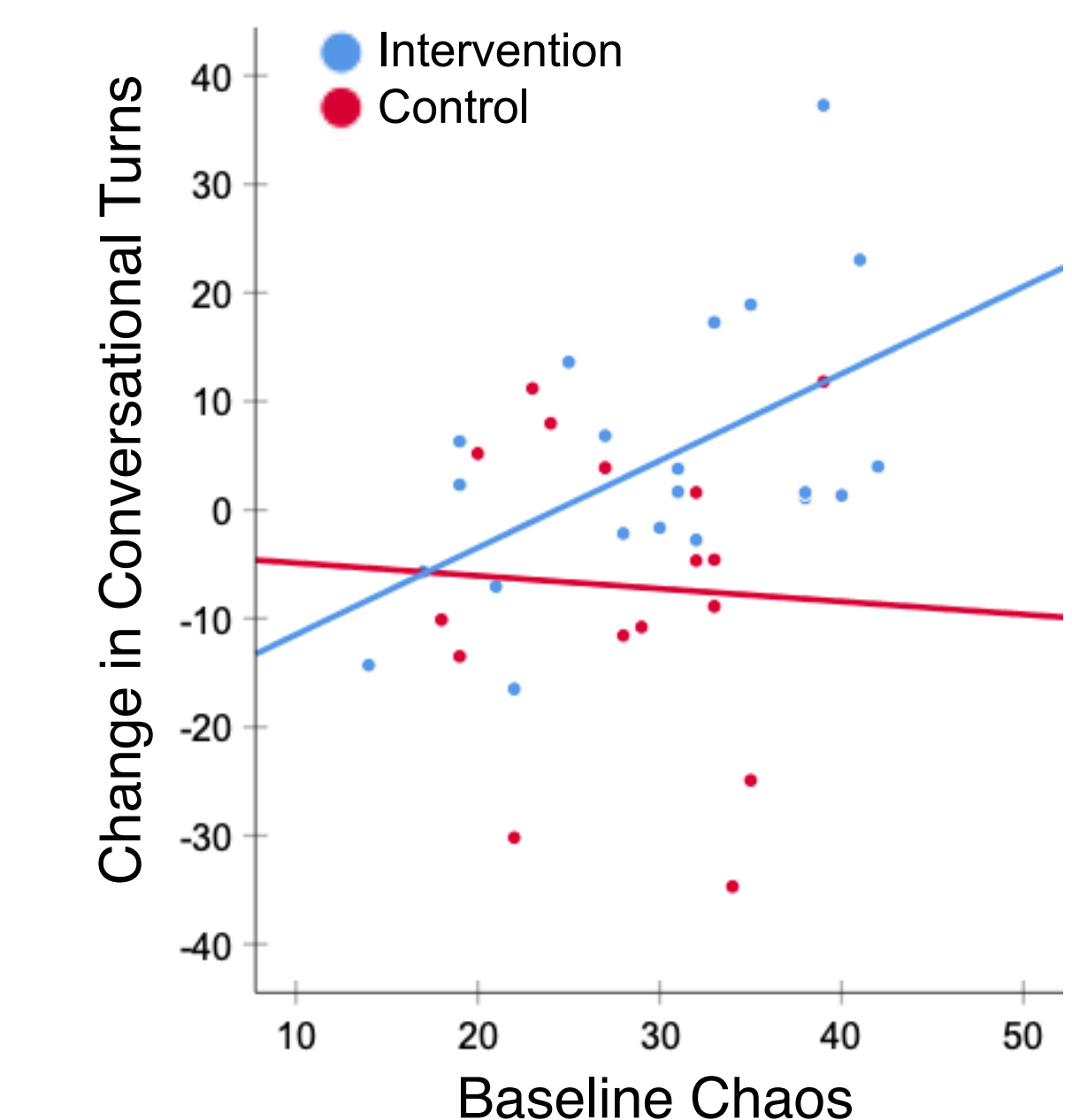
Within the intervention group, families **with greater baseline household chaos** exhibited the **greatest increases in conversational turns** after the intervention.

While only turn-taking increases predicted language score increases, both turn-taking increases and stress reduction independently predicted EF increases, suggesting multiple mechanisms of change.

Conclusions

- Although we cannot determine the direction of effects, results suggest that **opportunities for adult-child conversational turns** are associated with parental stress and levels of "chaos" in the home.

- Further, it suggests that interventions addressing family communication can increase turn-taking and reduce stress, and that benefits are largest for families experiencing greater "chaos."

- This has implications for **interventions** focused on language experience equity to focus not just on caregiver language input itself, but also the **circumstances and contexts in which language experience occurs**.

- Further research is needed to better understand how broader societal inequities contribute to differences in children's opportunities for enriching language experience.

Acknowledgements