Behavioral Strategies during a Toy Delay Task in 18-Month Toddlers with Autistic Traits

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Background

As early as 18 months, toddlers use behavioral strategies (e.g., looking away, fidgeting, vocalizing) to regulate impulses, reflecting the early emergence of inhibitory control.

Autistic children often show greater difficulty in delay tasks, but evidence at 18 months is scarce, and little is known about the types and patterns of behavioral strategies they use at this age.

Objectives

- To examine whether autistic traits are associated with inhibitory control performance at 18 months.
- To investigate whether autistic traits are associated with differences in the type and pattern of behavioral strategies used during the waiting periods of the delay task.

Methods

Participants. 101 toddlers (*M*=18.11 months, *SD*=0.96; 38 females) completed the ADOS-2.
Task. Toddlers completed a Toy Delay Task assessing their ability to refrain from touching a visible toy for 30 seconds across three difficulty levels (**Fig. 1**).
Coding. Sessions were video-coded at 1-second intervals for visual, motor, and verbal behaviors, each coded as distract, focus, or withhold (**Table 1**).
Analysis. ADOS scores were treated as continuous (*M*=10.61, *SD*=6.20; range=1-26). For descriptive purposes, scores were categorized into Low, Medium, and High groups based on ADOS-2 classification.

Modality	Distract (shift attention away)	Focus (attention on toy)	Withhold (suppress action)
Visual	Looks around (examiner, parent, environment)	Looks at toy	Eyes closed
Motor	Fidgeting, whole-body movements	Reaching/ pointing	Holds hands together
Verbal	Unrelated talk/ vocalizations	Talks about toy/task	Repeats rules

Table 1. Examples of behavioral strategies coded during the Toy Delay Task.

Fig. 1. Three difficulty levels in the Toy Delay Task: Level 1 (left) provides the most adult inhibitory support, while Level 3 (right) requires the highest level of independent regulation, with no adult intervention.

Results

- Higher ADOS scores were associated with poorer inhibitory control (ρ=-.376, *p*<.001; **Fig. 2**); only 8% of the High group reached the hardest level vs. 58% of the Low group.
- Toddlers with higher ADOS scores showed reduced overall strategy use (both frequency and duration, ρ≈-.40, *p*<.001).
- Higher ADOS scores were associated with less visual distraction (ρ=-.366, *p*<.001) but more motor distraction (ρ=.470, *p*<.001; **Fig. 3**).

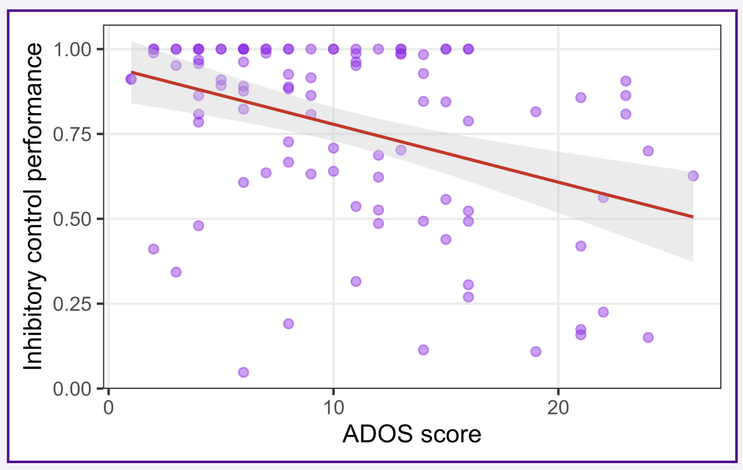

Fig. 2. Association between ADOS scores and inhibitory control performance (proportion of time not touching box/toy) across all difficulty levels.

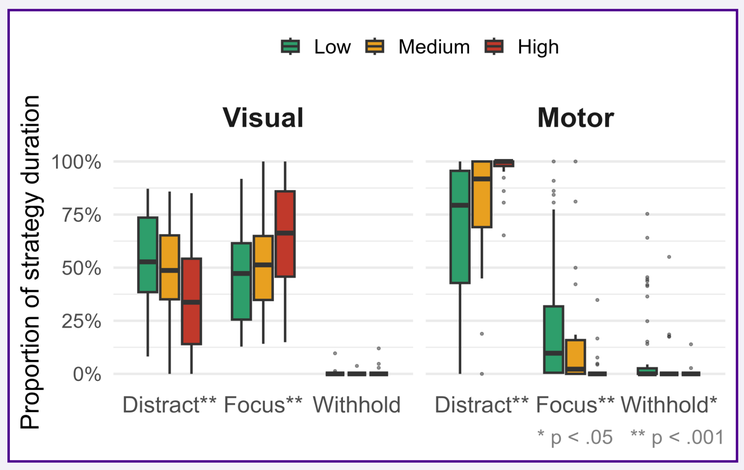

Fig. 3. Proportion of strategy duration within visual and motor modalities by ADOS group, across all difficulty levels. Verbal strategies were rare and excluded from figure.

Conclusions

Higher autistic traits were associated with poorer inhibitory control, detectable as early as 18 months using a supported delay task.

Toddlers with higher autistic traits used fewer behavioral strategies and showed a modality-specific pattern: less visual but more motor distraction strategies.

Our longitudinal study will follow toddlers' inhibitory control performance and behavioral strategies at 24 and 36 months.

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