Background

- RCT evidence demonstrates efficacy of the Social ABCs, a manualized parent-mediated naturalistic developmental behavioural intervention (NDBI) for toddlers with autism spectrum disorder (autism/ASD) or related social communication challenges
- A brief group-based version also appears effective, with few differences between in-person and virtual delivery
- No demographic predictors of treatment response have been identified (toddler age, sex; parent gender, education, ethnicity)
- Predictive role of specific treatment components (i.e., ‘active ingredients’) has not been examined, despite calls to do so

Objective

To examine program components that predict treatment response (‘active ingredients’) in Group-Based Social ABCs

Method

- The Intervention
  - 6 weeks of live 1:1 parent coaching (9 x 60-min sessions)
  - 6, 90-minute weekly group learning sessions for parents
  - In-person (45 families) or virtual (37 families) delivery
  - Video-coding (blinded to time-point)
  - Parents’ implementation fidelity (% correct use of 10 strategies at antecedent and consequence strategies, adapted from PRT)
  - Toddlers’ responsivity (% of parent language opportunities (here, 1-2 words) that received a directed vocal response from the toddler)

Participants

- 82 parent-toddler dyads (21 groups x 3-5 families each)
- Parents and their 3-yr-olds with autism/ASD or social communication challenges (67% confirmed ASD; 4% other diagnoses; 27% assessment in progress)
- Recruited through Holland Bloorview clinics (Toronto)
- Toddler mean age: 30.5 months (18-36 mos); 79% boys
- Caregivers (83% mothers); diverse ethnic and educational backgrounds (see figures 1 & 2)
- 51% of families spoke >1 language in the home

Highlights

- Parents’ use of all strategies increased significantly over 6 weeks
  - 4 active ingredients emerged:
    - Shared control
    - Clear language opportunities
    - Contingent reinforcement* [greatest impact]
    - Reinforcing all attempts
  - Parents’ positive emotion sharing and self-efficacy were associated with following their child’s lead in play, fostering child attention, and providing natural reinforcement for all vocal attempts

Parents’ Strategy Use

- At baseline, parents were already using some strategies at a high rate (following child’s choice in play, sharing positive emotions)
- Clear language opportunities, shared control, and contingent reinforcement (R+) were used infrequently at baseline
- Parents’ strategy use increased significantly over 6-week training period for each of 10 strategies (p’s < .001; see figure 3)
- Greatest increases were: parents’ use of shared control, clear language opportunities (here, 1-word model prompts), and contingent reinforcement

Active Ingredients

- Four key strategies were significantly positively associated with toddlers’ responsiveness to parents’ language opportunities following intervention, across antecedent and consequence strategies (p’s < .02)

Antecedent strategies

- Shared control (r² = .30)
- Clear language opportunities (r² = .32)

Consequence strategies

- Contingent reinforcement (r² = .60)
- Reinforcing all attempts (r² = .30)

Implications

- Natural: Parents were already using some of the strategies at baseline, highlighting model’s natural fit as a parent-mediated program
- Active ingredients: Providing unambiguous language opportunities with shared control + contingent reinforcement based on directed vocal attempts allows toddlers to experience success with minimal frustration
- Keep it fun: Capitalizing on child motivation and attention and providing natural reinforcement fosters a positive learning context. But these strategies alone were not enough to increase child responsivity – they may be necessary but not sufficient
- Strategies work in concert: Contingent reinforcement had the greatest impact on child responsivity, within the positive learning context
- Impact: Identification of active ingredients allows coaches to focus on training priorities that are likely to have the greatest impact

References


Antecedent strategies

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Consequence strategies

- Contingent reinforcement (r² = .60)
- Reinforcing all attempts (r² = .30)

Parents’ gains in positive emotion sharing were associated with:
- Following child’s lead/child motivation (r² = .30), gaining child attention (r² = .31), and providing natural reinforcers (r² = .38) based on all attempts (r² = .33), p’s < .009
- Parents’ self-reported sense of efficacy following intervention was also associated with increased positive emotion sharing (r² = .26, p = .05)

Figure 1: Active Ingredients

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