Title: Siblings Use of Enhanced Milieu Teaching Strategies with Their Siblings with Down Syndrome

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Introduction: Young children with Down syndrome (DS) present with significant delays in developing speech and language. Enhanced Milieu Teaching (EMT) is a naturalistic, conversation-based communication intervention designed to address expressive language and communication delays in young children with language impairment, including children with DS, through the use of responsive interaction strategies (Kaiser & Hampton, 2017). Typically-developing siblings of young children with DS may be appropriate implements of EMT because they spend considerable time with their brothers and sisters in a range of naturalistic contexts, although often in asymmetrical social and caretaking roles (Gallagher, Powell, & Rhodes, 2006).

Previous research suggests that older, typically-developing children can be taught to implement responsive interaction strategies with high fidelity during play in the home with their younger siblings with DS, resulting in modest language gains for the siblings with DS (Trent, Kaiser, & Wolery, 2005; Trent-Stainbrook, Kaiser, & Frey, 2007). The purpose of the current study was to advance the research on teaching typically-developing siblings to implement EMT strategies with their younger siblings with DS during play by increasing the number of taught EMT strategies and by adapting the strategies to reflect advances in EMT.

Method: Data have been collected from two sibling dyads in which the older child is typically-developing and the younger child has been diagnosed with DS. Data collection for both dyads is complete. Analysis for the first dyad (Dyad 1) is complete, and analysis for the second dyad (Dyad 2) will be completed by the Conference.

The study used a multiple baseline single-subject design across behaviors (Gast, Lloyd, & Ledford, 2014). The primary dependent variables were the typically-developing siblings’ use of three, sequentially-introduced EMT strategies adapted for use in this study (i.e. Play-Talk-Give, Copy-Talk, and Respond). The secondary dependent variables were the siblings with DS’ use of social communication (i.e. words/signs, vocalizations, and gestures). Data for both the primary dependent variables and secondary dependent variables were collected in all baseline, intervention, generalization, and maintenance sessions.

All sessions occurred in the participants’ homes over a period of approximately six months each. All sessions were recorded on video. Data for the dependent variables were measured from the video recordings using ProCoder. Interobserver agreement (IOA) were calculated for at least 30% of sessions across dyads and conditions on the primary dependent variables, the secondary dependent variables, and the implementers’ procedural fidelity.

Result: Visual analysis was used to examine the results of the primary dependent variables data and the secondary dependent variables data. Data were analyzed across and within conditions and tiers for stability, level, trend, overlap, consistency, and immediacy.

Visual analysis of primary dependent variables results for Dyad 1 indicate that three demonstrations of behavior change were present across the three tiers at three different points in time, suggesting that a functional relation does exist between teaching EMT strategies to the typically-developing sibling and the typically-developing sibling’s use of EMT strategies in play with his sibling with DS. Visual analysis of secondary dependent variables results for Dyad 1 indicate that teaching EMT strategies to the typically-developing sibling correspond with a modest increase in the sibling with DS’ use of words, as well as total social communication acts (i.e. sum of words, vocalizations, and gestures).

Data for Dyad 2 will also be examined using visual analysis, and will be completed by the Conference.

Discussion: Results from Dyad 1 indicate that the typically-developing sibling was able to learn and implement the three adapted EMT skills in intervention, generalization, and maintenance sessions at higher levels than in baseline sessions. The sibling with DS’ average number of all social communication acts doubled from baseline to the final five intervention sessions, indicating that the intervention was effective in increasing the sibling with DS’ social communication levels, albeit variable and modest across intervention, generalization, and maintenance. Furthermore, a participants’ parent survey completed by the mother of Dyad 1 indicate that the play and communication between the siblings improved and that the sibling relationship was more positive after intervention. This study adds to the literature on sibling training to use EMT strategies and reflects the updated model of EMT (Kaiser & Hampton, 2017). Forthcoming data from Dyad 2 will assess the potential generalizability of results from Dyad 1 to other sibling dyads. Further replications and refinements of this study’s procedures have the potential to benefit the relationships between young children with DS and their typically-developing siblings through improvements in play and language during sibling interactions.
References/Citations: