

Diagnostic Category: Autism Spectrum Disorder Discipline: Speech Language Pathology

Reference	N	Intervention (n)	Telerehabilitation program's:	Platform & clinician's involvement	Outcomes
Country Study Design Quality (for RCTs)	Sample description (dx specifics, age, gender)	vs. Comparison (n) Frequency & duration	I. Focus II. Nature III. Target IV. Receiving client		Child-related outcomes Parent-related outcomes (+) significant between-group differences for RCTs or within group improvements for non-RCTs (-) no significant between-group differences for RCTs or within group improvements for non-RCTs
Ingersoll et al., 2016 USA RCT PEDro score: 6/10 High quality	N= 28 Families of a child with ASD Child mean age: 3.65 ± 1.06 yrs Child age range: 1.58-6.08 yrs	Therapist-assisted (n=14) vs. Self-directed (n=13) Both interventions were telehealth interventions Self-directed: 75min/session, 1 session/week, for 12 sessions	I. Child language level, adaptive behavior, parent self-efficacy, stress II. Self-directed: The self-directed group received access to the secure, password-protected, ImPACT Online website for 6 months. The content was adapted from Project ImPACT (Ingersoll and Dvortcsak 2010), a NDBI-based Parent-mediate Intervention (PMI) for young children with ASD targeting	Self-directed: Passive web Therapist assisted: web + videoconferencing	At post-treatment (3 months): (+) <i>Parent fidelity</i> : Parent-child interactions pre-post score (-) <i>Parent self-efficacy</i> : Parent Sense of Competence Scale (+) <i>Positive perceptions of the child</i> : Family Impact Questionnaire (-) <i>Parent Stress</i> : Family Impact Questionnaire (-) <i>Language targets</i> : Parent-child interactions pre-post score (-) <i>Expressive vocabulary</i> : MacArthur-Bates Communicative Development Inventory (MCDI)—parent-reported

	<p>Child gender: 20M:8F</p> <p>Parent gender: 1M:26F</p>	<p>Therapist-assisted: same pace as self-directed BUT + coaching: 30min/session, 2 sessions/week for 12 weeks</p> <p>The first coaching session of each week was used to clarify the lesson content and help parents apply the information to their child. The second session of the week was used to provide parents with live feedback on their intervention use with their child</p>	<p>social communication development. The website contained 12, self-directed lessons;</p> <p>Therapist-assisted: The therapist-assisted group was given access to the ImPACT Online website for 6 months and was encouraged to work through the program at the same pace as the self-directed group. However, they received additional weekly coaching.</p> <p>ImPACT content included slideshows, a manual, self-check questions and answers, exercises in the form of brief video clips of intervention techniques, homework, and reflection. Users also had the access to supplemental components such as a video library of adults using intervention techniques, a forum to share info with other participants, additional resources for the interventions, and “tip of</p>		<p>(-) <i>Communication</i>: Vineland Adaptive Behavior Scales, Second Edition (VABS-II)</p> <p>(+) <i>Socialization</i>: VABS-II</p> <p>(-) <i>Daily living skills</i>: VABS-II</p> <p>(-) <i>Motor skills</i>: VABS-II</p> <p>At follow-up (6 months):</p> <p>(-) <i>Parent fidelity</i>: Parent-child interactions score</p> <p>(-) <i>Language targets</i>: Parent-child interactions score</p>
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<p>Vismara et al., 2012; 2013</p> <p>USA</p> <p>Single-subject, multiple-baseline</p>	<p>N= 9</p> <p>Families with children with ASD</p> <p>Child mean age: 2.41 ± 0.64 yrs</p> <p>Child age range: 1.33-3.17 yrs</p> <p>Child gender: 8M:1F</p>	<p>Early Start Denver Model (ESDM) (n=9)</p> <p>1 hour/session, 1 session/week for 12 weeks</p> <p>Follow up: 3 additional 1-hour sessions, scheduled 2 weeks apart</p>	<p>I. Language, social skills, cognitive skills</p> <p>II. The Early Start Denver Model (ESDM) is a behavioral therapy for children with autism based on the methods of applied behavior analysis (ABA). Parents and therapists use play to build positive and fun relationships. Through play and joint activities, the child is encouraged to boost language, social, and cognitive skills.</p> <p>The model approaches language development from a communication science orientation, emphasizing the social function of language and the development of nonverbal communication and imitation as foundations for verbal language.</p>	<p>Web + Videoconferencing</p> <p>During videoconferencing calls, the parent and therapist spend 5-10 minutes to review the past topic, 10 minutes of a parent-child play activity. The activity allowed the therapist to observe the parent’s skill delivery from the prior week’s topic. If needed, the therapist coached the parent to strengthen some technique before proceeding to the next topic. The therapist then discussed the next topic. During the final 10-15 minutes, the parent and therapist identified at least two different natural routines each day at home to continue practicing the techniques.</p>	<p>At post-treatment (12 weeks):</p> <p>(+) <i>Parent fidelity</i>: EDSM Fidelity Scale</p> <p>(+) <i>Parent responsivity</i>: Maternal Behavior Rating Scale (MBRS)</p> <p>(+) <i>Parent Affect</i>: Maternal Behavior Rating Scale (MBRS)</p> <p>(+) <i>Achievement oriented behavior</i>: Maternal Behavior Rating Scale (MBRS)</p> <p>(-) <i>Directive behavior</i>: Maternal Behavior Rating Scale (MBRS)</p> <p>(+) <i>Child attention</i>: Child Behavior Rating Scale (CBRS)</p> <p>(+) <i>Child initiation</i>: Child Behavior Rating Scale (CBRS)</p> <p>(+) <i>Spontaneous verbalizations</i>: Point-rated by examiner</p> <p>(+) <i>Prompted verbalizations</i>: Point-rated by examiner</p> <p>(+) <i>Spontaneous imitation</i>: Point-rated by examiner</p> <p>(+) <i>Vocabulary</i>: MacArthur CDI vocabulary</p> <p>(+) <i>Comprehension</i>: MacArthur CDI comprehension</p> <p>(+) <i>Adaptive behavior</i>: Vineland Adaptive Behavior Scales 2nd Edition (VABS-II)</p>

			<p>Parents were mailed and given access to intervention materials on a DVD. The DVD contained recordings of the therapist demonstrating each ESDM topic with children of different ages, skill level, and ethnicity. The parents had access to links to recommended activities next to each online topic. Parents were also able to revisit earlier modules either for their own instruction or with the therapist for additional review at any point during the program.</p> <p>III. Child + parent</p> <p>IV. Parent alone</p>		<p>Feasibility and acceptability: At the beginning of the study, 8/9 parents were concerned about whether telehealth would provide enough support to change behavior. At the end of the study, the same parents felt reassured and perceived the distance coaching as informative and as valuable as live in-home or center-based sessions.</p> <p>Six parents identified the DVD examples as more helpful than the reading handouts. The other 3 parents noted that weekly video + videoconferencing + DVD was interactive, helpful, and easier to use than first anticipated.</p>
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