Diagnostic Category: Autism Spectrum Disorder
Discipline: Psychology

Reference **Country** **Study Design** **Quality (for RCTs)**	**N** **Sample description (dx specifics, age, gender)**	**Intervention (n)** **vs.** **Comparison (n)** **Frequency & duration**	**Telerehabilitation program's:** I. **Focus** II. **Nature** III. **Target** IV. **Receiving client**	**Platform & clinician's involvement**	**Outcomes** **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**
Bearss et al., 2018 USA Pre-post study	**N= 18** Children with a community diagnosis of ASD Mean age: 5.8 ± 1.7 yrs Age range: 3-8 yrs 9M:5F	Research Unit on Behavioral Interventions Parent Training (RUBI-PT) (n=14) 60-90 min/session 11 sessions over 16 weeks (with supplemental 2 optional sessions)	I. Child behavior, skill deficits, disruptive behavior II. Core sessions focus on Antecedent-Behavior-Consequence model; this model identifies he situations or events that precede disruptive behavior (antecedent), the disruptive behavior itself or environmental response (consequence) that may reinforce the behavior to determine the purpose of the child's behavior. Core sessions also focus on teaching techniques for antecedent management and strategies to	Videoconference Didactic sessions between therapist and parent. 3 telephone booster sessions were given at weeks18, 20, and 22 for maintenance of skills.	**At post-treatment (24 weeks):** (+) *Irritability*: Aberrant Behavior Checklist (ABC) (Parent-reported)—irritability subscale (+) *Social withdrawal*: ABC (Parent-reported)—social withdrawal subscale (+) *Stereotypes*: ABC (Parent-reported)—stereotypes subscale (+) *Hyperactivity*: ABC (Parent-reported)—hyperactivity subscale (+) *Inappropriate speech*: ABC (Parent-reported)—inappropriate speech subscale (+) *Child noncompliance*: Home Situations Questionnaire-Autism

			implement appropriate consequences such as positive reinforcement, planned ignoring, and compliance training. These sessions are followed by teaching techniques such as how to conduct a task analysis and the use of chaining as means to improve child's adaptive behaviors (e.g., brushing teeth, hand washing, dressing, tying shoes, working buttons and zippers)—supplemental sessions covered toileting, feeding sleep, and time out. Parents were also given homework assignments to complete between sessions. III. Child + Parent IV. Parent Alone		Spectrum Disorder (HSQ-ASD) (Parent-reported) (-) *Communication skills*: Vineland Adaptive Behavior Scales, Second Edition (VABS-II) (-) *Daily living skills*: VABS-II (-) *Motor skills*: VABS-II (-) *Socialization*: VABS-II (-) *Composite skills*: VABS-II *Global impression*: Clinical Global Impression: Improvement Scale (CGI-I): On the CGI-I, 11 of 14 participants (78.6%) were rated as much improved or very much improved by the independent evaluator Feasibility outcomes: • Most caregivers who completed the Parent Satisfaction Questionnaire (11 of 13; 84.6%) reported that the number of sessions was appropriate. • All 13 caregivers who completed the PT program reported greater confidence to manage current and future disruptive behaviors, and all 13 caregivers indicated that they would recommend the program to other parents of children ASD and with similar problems.

Conaughton et al., 2017 Australia RCT PEDro score: 8/10 High quality	N= 42 Children with High Functioning Autism Spectrum Disorder (HFASD) and anxiety disorder Mean age: 9.74 ± 1.3 yrs Age range: 8-12 yrs 36M:6F	BRAVE-ONLINE (NET) (n=21) Waitlist control (n=21) 60 min/session for 6 sessions (parent) or 10 sessions (child); 1 session/week (additional 2 booster sessions after completion of program)	I. Anxiety, child behavior II. BRAVE-ONLINE is a online CBT program for anxiety disorders. 10 sessions are completed by the child and consist of learning skills to overcome fearful or worrying situations. Information and skills are learned through animations, quizzes, puzzles, and interactive games that are designed to keep youth interested and engaged. Young people learn to identify anxiety and stress, develop relaxation skills, how to replace negative thinking with more positive, useful thinking and problem-solving skills. (taken from BRAVE-ONLINE website: https://www.brave-online.com/about-brave-online-program/program-content/ Parents complete 6 sessions. III. Child IV. Child/youth + parent	Web + calls Participants receive weekly, online contact with a therapist in response to session activities, as well one short phone call midway through the program to assist with exposure hierarchy construction.	**At post-treatment (10-12 sessions):** (+) *Number of diagnoses*: pre-post measurements (+) *Severity of diagnosis:* Clinician Severity Rating (+) *Overall level of functioning:* Children's Global Assessment Scale (+) *Internalizing behaviors:* Child Behavior Checklist—Revised (+) *Anxiety symptoms:* Spence Children's Anxiety Scale—Child-reported (+) *Anxiety symptoms:* Spence Children's Anxiety Scale—Parent-reported *Satisfaction:* 5-point scale (child-reported): Children reported moderate levels of satisfaction (M=3.03, SD=1.03) *Satisfaction*: 5-point scale (parent-reported): Parents reported moderate levels of satisfaction (M=3.58, SD=0.86)

Hepburn et al., 2016 USA Quasi-experimental design	N= 33 Families with children with ASD from rural and frontier communities in a western state Mean age: 11.82 ± 2.34 yrs Age range: 7-19 yrs 17M:16F	Telehealth Facing Your Fears (FYF) (n=17) vs. Waitlist control (n=16) 1 hour/session, 1 session per week for 10 weeks	I. Anxiety of youth with ASD, parent sense of competence II. FYF is usually given in a clinic or school but is given in a telehealth version in this study. Treatment is delivered in a small group format, comprised of four to six parent–youth dyads. Each session is supported by a chapter in a Facilitator's Manual, a Parent's Manual, and a Youth Workbook. The first six sessions focus on psychoeducational aspects of anxiety. The second six sessions build upon the psychoeducational curricula by promoting the development and implementation of youth-specific anxiety reduction strategies, with the goal of reducing the interference of anxiety and supporting the youth's ability to cope with small amounts of physiological and cognitive distress. Modifications for youth with ASD are integrated throughout the FYF intervention and include provision of visual supports, predictable session routines, video modeling activities, and	Videoconferencing using Oovoo platform.	**At post-treatment (3 months):** (+) *Youth anxiety symptoms*: Screen for Anxiety and Related Emotional Disorders in Children - parent-reported Satisfaction: The mean Satisfaction score for youth was 88.8%. Younger children tended to report higher levels of enjoyment in the activities than most of the participating adolescents. When asked if they would recommend the program to a friend, 11 of 14 (79%) of participating youth said "yes." Satisfaction: The mean Satisfaction score for parents was 92.9%, suggesting high parent satisfaction with the intervention content, delivery method, and alliance with therapist. When asked if they would recommend the program to a friend, 100% of parents responded affirmatively.

			repetition of key concepts. III. Child/Youth + parent IV. Child/youth + parents		
Ingersoll et al., 2015; 2017 USA RCT PEDro score: 5/10 Fair quality	N= 162 Parents of a child with ASD who self-enrolled Child mean age: 4.56 ± 1.72 yrs Child age range: 1.58-12.67 yrs Child gender: 131M:31F Parent gender: 23M:139F	Open trial group (n=112) Controlled trial group (n=50); enrolled in pilot (n=27) or full-scale efficacy trial (n=23) 75min/session, 1 session/week, for 12 sessions	I. Child language level, adaptive behavior II. Open trial group: Information about the open trial was disseminated via flyers given to families by professionals at community organizations serving children with ASD, websites providing information about ASD, and an Internet search. Community organizations who expressed interest were given recruitment materials with a unique site code which participants entered at the time of program registration to track referrals. Recruitment materials provided a link to the ImPACT Online website. The website described the content of the program, system requirements, research requirements, and allowed visitors to view a brief video demonstration of the program. Controlled trial group:	Self-directed: Passive web Therapist assisted: web + videoconferencing	**At follow up (6 months):** (+) *Program engagement*: Electronic tracking of user behavior (+) *Parent intervention knowledge*: 20-item multiple-choice quiz* *significantly associated with program engagement.

			Information about the pilot and subsequent full-scale efficacy trials was disseminated via community providers to families within 3 hours of the research lab. Interested parents were directed to contact the research lab to learn more about the specific study. After intake assessments, pilot study participants were randomly assigned to a self-directed (n=13) or therapist-assisted group (n=14). Participants in the full-scale study were randomly assigned to a self-directed (n=6), therapist-assisted (n=8), or informational control group (n=9). ImPACT content includes slideshows, a manual, self-check questions and answers, exercises in the for 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 the week" emails. III. Child + Parent IV. Parent Alone		
Kuravackel et al., 2018 USA RCT PEDro score: 7/10 High quality	N= 33 Families of a child with autism Child mean age: 8.08 ± 2.5 yrs Child age range: 3.25-12.75 yrs 7M:26F	C-Hope telehealth (TH) (n=10) vs. C-hope face-to-face (FF) (n=13) vs. Waitlist control (n=10) Group sessions: 2 hours Individual sessions: 1 hour 8 sessions (4 of each) over a period of 8 weeks	I. Parent-parent interaction, parent knowledge and skills. child behavior II. C-Hope intervention: There was a group and individual format for the sessions (4 of each). The individual sessions included: an overview of C-HOPE and its goals, assessment and initial goal identification; development of child's personalized behavior plan using COMPASS framework; review of individual behavior plan and how well its work (with modifications); pertinent skills from previous sessions were reviewed and progress towards goal was examined and modifications were implemented, if necessary. Behavior plans included understanding the antecedents or causes of behavior, making the behavior ineffective, teaching replacement skills that result in desired outcomes for the child, and rewarding positive	Videoconferencing	**At post-treatment (8 weeks):** **Telehealth vs. waitlist:** (+) *Child problem behavior*: Eyberg Child Behavior Inventory (ECBI) (-) *Parenting competency*: (BPS) (-) *Parent stress*: Parent Stress Index (PSI) **Telehealth vs face-to-face:** (-) *Child problem behavior*: ECBI (-) *Parenting competency*: BPS (-) *Parent stress*: Parent Stress Index PSI

			skills. The group sessions included: an introduction of parents and their child to the group based on assessment of social, communication, and other behaviors and an overview of cognitive theories of autism; direct education on principles of behavior and learning as well as proactive and reactive strategies; discussion of teaching strategies positive behavior approaches to prevent disruptive behaviors, teach new skills, and respond effectively; discussion of parents and caregivers as essential "environmental supports" for the child and the emotions associated with the diagnosis, parenting expectations, and transitions. There was also a review of a wellness package of activities designed to identify strategies for self-care and relaxation. III. Child + Parent IV. Child/youth + parent		

St. Peter et al., 2014 USA Quasi-experimental	N= 32 Parents with children who have ASD Child age range: <5 yrs Parent Mean age: 35.87 yrs Parent age range: 24-69 Parent gender: 11M:21F	Video material (n=17) vs. Written material (n=15) 1 session/week between parent-child (at least) An experimenter called each participant weekly on the phone to discuss any problems, provide assistance with the programs, and provide encouragement to the parents.	I. Parental adherence II. Video group: A 37-min video that describe Discrete Trial Instruction (DTI) was mailed to parents. DTI is an effective, structured form of teaching social, language, and academic skills to children with autism spectrum disorders. The video included vocal didactic instruction and video models of therapists implementing discrete-rial sessions with a child with autism. Written group: A 30-page written manual was mailed to parents. The manual was writing at an 8th grade reading level. The manual was similar in content to the video but was presented in paper format with interspersed pictures of therapists modeling correct techniques. Based on results of initial assessments and interviews, a Board-Certified Behavior Analyst developed individualized curriculum sheets for each child, which provide instructions about the specific structure of each trial for teaching a target skill. Video or written instructions on the	Web + calls	**At post-treatment (10 months):** (+) *Parent adherence*

			implementation of DTI were sent to parents depending on which group they were assigned to. A one-page curriculum sheet, datasheets, and all materials needed to implement the curriculum were sent to each parent in paper copies. Parents were asked to video record themselves each week while conducting at least one 12-trial DTI session with their children. They then sent it along with datasheets to the experimenters in order to measure adherence. Parents then received feedback either in video (video group) or written (written group) format. III. Child + parent IV. Parent alone		