

Telehealth-Delivered Parent-Mediated Interventions for Young Children with Autism Spectrum Disorder: A Systematic Review of Effectiveness, Access, and Equity

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Abstract

Autism spectrum disorder (ASD) affects children's communication, social interaction, and behaviour, creating challenges for families in accessing appropriate interventions. Telehealth-delivered parent-mediated interventions provide caregivers with training and support through information and communication technologies and have the potential to improve access to ASD services, particularly for underserved populations. However, evidence on their effectiveness, accessibility, and equity remains fragmented, as do findings on the demographic and geographic factors that influence their success. This systematic review examined the effectiveness of telehealth-delivered parent-mediated interventions for young children with ASD, assessed their implications for access and equity, and evaluated demographic and geographic factors associated with intervention outcomes. Peer-reviewed studies were identified from academic databases. Thirty-two studies were initially identified, of which two were excluded for not meeting the inclusion criteria. The remaining studies were synthesized using narrative and thematic analysis. The findings indicate that telehealth-delivered parent-mediated interventions generally improve outcomes for both parents and children. Parent outcomes included improved intervention fidelity, self-efficacy, knowledge, competence, and reduced parental stress. Child outcomes included reductions in problem behaviours, including irritability, lethargy, and hyperactivity, as well as improvements in language and motor development, adaptive skills, social communication, joint attention, and social reciprocity. Regarding access and equity, telehealth improved access to interventions for families in remote, rural, and underserved areas. However, its equity benefits were not universal, as socioeconomic disadvantage and limited English proficiency may create barriers to participation. The review also identified access to technology, parental age, family involvement, individual parental needs, primary language, and rural–urban location as factors that influence intervention success. The review concludes that telehealth-delivered parent-mediated interventions are an effective approach for supporting young children with ASD, but their benefits depend on contextual and demographic factors. Intervention designers and implementers should therefore incorporate accessibility, language, technological, and family-specific considerations to enhance effectiveness and promote equitable access.

Keywords: *Telehealth, Parent-Mediated Interventions, Autism Spectrum Disorder, Access and Equity, Young Children.*

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1. Introduction

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental disability and is characterized by impairments in social communication and interaction as well as restricted interests and stereotypical behaviors (Hirota & King, 2023). ASD affects a child's reciprocal communication, social interaction, and behavior patterns (Ghanouni & Jarus, 2021). The core symptoms of ASD not only disrupt children's ability to develop and maintain social relationships but also affect their future social participation. (Duvall et al., 2022). Turgeon, Lanovaz, and Dufour (2021) described that 50–90% of autistic children display at least one of the following challenging behaviors: aggression, destruction, self-injury, tantrums, and stereotypical behaviors. These behaviors can severely limit a child's opportunities to engage in positive social interactions (Lindgren et al., 2020).

Parents are the earliest teachers of children and can easily notice the emergence of skill deficits and maladaptive behaviors in autistic children. Therefore, parents play a crucial role in the treatment process as they are the primary caregivers and teachers for autistic children (Pan, Kuo & Kuo, 2023). When parents actively participate in their child's treatment, they experience various benefits, including reduced stress and improvements in joint attention, intellectual development, and dyadic communication (Frosch, Schoppe-Sullivan, & O'Banion, 2021). Parent-mediated telehealth interventions can provide caregivers of children with autism spectrum disorder (ASD) with support and the training required to care for autistic children (Pan, Kuo & Kuo, 2023).

Parent-mediated interventions are therapeutic approaches that use parent training to help parents provide primary support and intervention for their child by developing the skills, knowledge, and resources they need (Cullenward, Curtin and Dos Santos, 2024). Parent-mediated interventions are also defined as technique-focused interventions in which the parent is the agent of change, and the child is the direct beneficiary of treatment (Rooks-Ellis et al., 2020). Parent-mediated interventions can be broadly divided into two stages: Clinicians educating, training, and coaching parents in implementing an intervention and providing relevant information regarding their child's condition, and Parent(s) mediating and implementing the intervention based on the coaching and education received. These interventions can act as the primary intervention for children or supplement clinical interventions (Pan, Kuo & Kuo, 2023).

Outcomes of parent-mediated interventions include long-term symptom reduction, improved prognosis for a wide range of behavioral and brain functions, and enhanced parent-child dyadic social communication (Cullenward, Curtin & Dos Santos, 2024). Parent-mediated interventions can improve child outcomes, underscoring the importance of individualized, evidence-based early intervention by parents as mediators and adequate coaching from interventionists (Yoder, Stone & Edmunds, 2021). Recent studies suggest that when parents actively engage in the treatment process and are coached to incorporate specific behavioral and developmental strategies into daily routines and family activities, young children with ASD achieve positive outcomes (Liu, Hsieh & Chen, 2025). Likewise, researchers have demonstrated that parent involvement helps to facilitate generalization across environments, thereby providing the "real-life" intensity of services necessary for significant changes in many

toddlers with ASD (Pan, Kuo & Kuo, 2023). The parent-mediated intervention (PMI) is a cost-effective model that enhances various aspects of children's social development, including social communication (Li et al., 2022). Parents are often their child's primary caretakers and can increase intervention intensity and generalize it across contexts (Turgeon et al., 2021). Parent training increases their competence and reduces their stress (Hao et al., 2023). In PMIs, parents are trained to increase their child's developmental skills and strengthen the caregiver-child relationship. Coaching caregivers based on collaboratively selected goals can reduce caregiver stress and improve overall family functioning (Anis et al., 2020).

Telehealth, broadly defined as a modality of healthcare service that utilizes information and communication technology, for instance, internet/website, mobile applications, video conferencing, telephone, messaging/emails to deliver formal assessment, education, and treatment (Clarke et al., 2025), may offer an alternative or adjunct to face-to-face service delivery. Research suggests telehealth can reduce the costs of behavioral interventions by up to half for service users and providers (Schaffer, Nakrani & Pirraglia, 2020). Furthermore, parents living in rural and urban communities around the world report favoring telehealth approaches for providing support to autistic and non-autistic children (Clarke et al., 2025). This is reportedly due to the intervention's convenience and accessibility, reduced travel, the ability to fit it into family routines and situations, and increased privacy. Further, some parents note that during the COVID-19 pandemic, telehealth has provided a safe alternative for accessing services (Cheung et al., 2022).

Telehealth innovations have shown advantages over in-person service delivery in cost-effectiveness and accessibility (Pacione, 2022). Telehealth offers an option to rural families seeking early intervention by using communication technologies where providers are able to consult and deliver services in real-time over geographical distances (Rooks-Ellis, Howorth, Kunze, Boulette & Sulinski, 2020). Pan, Kuo, and Kuo (2023) stated that telehealth-based training for parents of autistic children has several advantages, including 24-hour, widespread accessibility; standardized training; individualized treatment; and a risk-free training environment. Telehealth can help deliver current treatment methods more effectively, mainly because it offers remote diagnostic methods with reduced delays in ASD detection, care for families of autistic children, and the opportunity for family members to be involved in the therapy through effective PMI. The telehealth delivery model facilitates interdisciplinary coordination and consultation with local specialists, overcoming geographical barriers (Marino et al., 2023). Sadeghi, Pouretemad, and Shalani (2022) suggested that telehealth was as effective as face-to-face interventions in improving ASD-like symptoms in children and alleviating parent stress.

Numerous recent studies demonstrated the efficacy of telehealth for training parents of autistic children. For instance, parents' understanding of treatment concepts significantly increased after they attended self-guided web-based tutorials (Liu, Hsieh & Chen, 2025). Most importantly, it provides broad access to training and helps address the shortage of ASD interventionists. Pan, Kuo, and Kuo (2023) reported that therapist-assisted, telehealth-based training for parents of autistic children improved caregivers' implementation fidelity, caregivers' perceptions of the child, and the child's language and social skills. Moreover, it can address problems in face-to-face parent training, including difficulties attending sessions due to cost, time, and location (Sadeghi et al., 2021).

Despite the benefits of telehealth, this model of care also has limitations, including the cost of installing and setting up telecommunications equipment, the potential for equipment malfunctions during consultations, and user difficulties with technology. Service providers have also reported difficulties maintaining client engagement (Traube et al., 2021).

1.1 Problem Statement

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental disability that affects a child's reciprocal communication, social interaction, and behavior patterns (Ghanouni & Jarus, 2021), which can severely limit a child's opportunities to engage in positive social interactions (Lindgren et al., 2020). Parent-mediated telehealth interventions are designed to provide caregivers of children with ASD with support and the training required to care for autistic children (Pan, Kuo & Kuo, 2023). Telehealth uses information and communication technology to deliver formal assessment, education, and treatment for ASD (Clarke et al., 2025), reducing the costs of behavioral interventions and offering convenience and access in geographically constrained areas (Cheung et al., 2022). However, despite its potential advantages, studies rarely synthesize its effectiveness, its impact on access and equity, and how demographic and geographic factors influence its success. Therefore, this systematic review aimed to address this gap by examining the effectiveness of telehealth-delivered parent-mediated interventions for young children with ASD, assessing access and equity outcomes, and evaluating the demographic and geographic factors influencing their effectiveness.

1.2 Objectives

1. To examine the effectiveness of telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder.
2. To assess equity and access disparities of telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder.
3. To evaluate demographic and geographic factors influencing the effectiveness of telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder.

1.3 Research Questions

1. How effective are telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder?
2. What disparities exist in accessing telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder?
3. What demographic and geographic factors influence the effectiveness of telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder?

2. Methodology

This study conducted a systematic review. Studies were sourced from academic peer-reviewed journals. Search keywords included ASD, telehealth, parent-mediated interventions, young children, demographic factors, and geographic factors. Studies were included if they targeted young children aged 0-12 years with ASD. The review also included articles published in academic, peer-reviewed, English-language journals. Studies were included only if they focused on the effectiveness, access, and equity of telehealth-delivered parent-mediated interventions, or on socioeconomic and geographic factors affecting their effectiveness. We excluded studies that focused on children older than 12 years, were not published in an

academic peer-reviewed journal, or were not written in English. Initially, 32 studies were identified. We excluded two studies because they did not meet the review's inclusion criteria. Narrative/thematic analysis was used to synthesize the studies.

3. Results

3.1 Effectiveness of telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder

The reviewed studies demonstrated a positive effect of telehealth-delivered parent-mediated interventions for young children with ASD on both child and parent outcomes.

3.1.1 Parent Outcome

Specifically, telehealth-delivered parent-mediated interventions were evidently effective in improving parental fidelity, thereby enhancing their ability to deliver the intervention. Pan, Kuo, and Kuo (2023) demonstrated that parent implementation fidelity ($p = .003$, $CI = 0.58-2.74$) was significantly higher in the telehealth group than in the control group. Liu, Hsieh, and Chen (2025) confirmed that the intervention group reported improved fidelity ($g = 0.77$). In Rooks-Ellis, Howorth, Kunze, Boulette, and Sulinski (2020), parents demonstrated increased fidelity to intervention strategies. Similarly, Martin et al. (2024) reported that parents and clinicians implemented Behavioral Parent Training (BPT) via telehealth with high fidelity. In Ferguson, Dounavi, and Craig (2023), parents showed higher fidelity. In the study by Wainer et al. (2021), secondary outcomes of the telehealth intervention included parent fidelity (assessed using the RIT parent fidelity form).

Telehealth-delivered parent-mediated interventions also effectively improved parents' self-efficacy. In Pan, Kuo, and Kuo (2023), parent self-efficacy ($p = .005$, $CI = 0.11-0.63$) increased significantly in the telehealth group compared with the control group. Liu, Hsieh, and Chen (2025) confirmed that the intervention group reported increased self-efficacy ($g = 0.93$). In Wainer et al. (2021), secondary outcomes of the telehealth intervention included parental self-efficacy (Early Intervention Parenting Self-Efficacy Scale). Tilson, Khawar, and Griffith (2025) also found that participants' psychological flexibility improved post-intervention.

Telehealth-delivered parent-mediated interventions have also reduced parental stress. Pan, Kuo, and Kuo (2023) demonstrated that parent stress ($p = .02$, $CI = -1.23$ to -0.10) decreased significantly ($p = .002$, $CI = -2.70$ to -0.60) in the telehealth group compared with the control group. Liu, Hsieh, and Chen (2025) confirmed that the intervention group reported reduced parenting stress. In Cheong et al. (2026), parenting stress decreased significantly, with most parents reporting reduced distress and improved perceptions of child behavior. Similarly, Martin et al. (2024) found promise in reducing parents' stress. Gentile et al. (2022) also reported reduced parental stress. In Setien-Ramos et al.'s (2025) study, parental stress decreased significantly post-treatment. Results of the study by Tilson, Khawar, and Griffith (2025) indicated that depression and parental stress improved for the participants post-intervention. However, Setien-Ramos et al. (2025) found that the reduction in parental stress was not sustained over time.

Other studies also confirmed that the telehealth-delivered parent-mediated interventions for young children with ASD were effective in increasing parental knowledge and competence in delivering the intervention. For instance, Liu, Hsieh, and Chen (2025) reported parent autism knowledge as a secondary outcome ($g = 0.69$). The systematic review by Andrade, Carmo, Tamanaha, and Perissinoto (2024) provided preliminary evidence that telehealth-delivered

parent-mediated interventions can enhance knowledge about ASD. In the study by Martin, Crowley-Zalak, Gould, Weddle, and Anderson (2024), the program showed promise for improving parents' sense of parenting competence. Dahiya, Ruble, Kuravackel, and Scarpa (2022) also found significant effects on parent competency, knowledge, and activation. In Boydston, Redner, and Wold (2023), all parents improved on skill and knowledge assessments, with mean gains of 67.6%–95.5% on skill assessments and 19.0%–49.0% on knowledge assessments. Ingersoll and Berger (2015) found that program completion ($\beta = .51, P = .02$) predicted post-treatment intervention knowledge. Gentile et al. (2022) found that program participation promotes parents' empowerment.

3.1.2 Child Outcome

The reviewed studies also demonstrated positive outcomes of telehealth-delivered parent-mediated interventions for young children with ASD. One such positive outcome was a reduction in child problem behaviours. For instance, in Pan, Kuo, and Kuo (2023), children's problem behaviors significantly decreased ($p = .002, CI = -2.70$ to -0.60) in the telehealth group compared with the control group. Rooks-Ellis et al. (2020) reported statistically significant pre-to-post change in children's ASD symptomatology and repetitive and restricted behaviors. Martin et al. (2024) also showed that telehealth-delivered, parent-mediated interventions reduced disruptive behavior in autistic children. Dahiya et al. (2022) also noted significant effects on child problem behaviors. In Setien-Ramos et al. (2025), irritability, lethargy, and hyperactivity significantly decreased immediately after treatment, with improvements in irritability and hyperactivity sustained at the 3- and 6-month follow-ups. Gould et al. (2024) found promise in reducing children's disruptive behavior. In Dai et al.'s (2021) study, parents reported that the program helped improve their children's behavior. However, Tilson, Khawar, and Griffith (2025) reported no statistically significant decreases in emotion regulation or child behavior.

Telehealth-delivered parent-mediated interventions for young children with ASD were also effective in improving children's daily living skills. In Clarke, McLay, France, Blampied, and van Deurs (2025), telehealth-delivered behavioral interventions improved daily living skills (DLS) in autistic children. Post-intervention assessments of the Pivotal Response Treatment (PRT) program in Cheong et al. (2026) reported medium-to-large effect sizes for adaptive functioning, particularly in the daily living and motor domains. In Cheong et al.'s (2026) study, Pivotal Response Treatment (PRT) showed significantly greater improvements in language and motor development. Martin et al. (2024) also showed that telehealth-delivered, parent-mediated interventions improved children's adaptive skills. Gould et al. (2024) findings showed promise for improving children's adaptive skills. In the study by Dai et al. (2021), parents reported that the program was useful in improving their children's skills.

Another reported outcome was improvement in communication. Rooks-Ellis et al. (2020) demonstrated statistically significant pre-to-post change in children's ASD symptomatology in communication. The systematic reviews in Andrade, Carmo, Tamanaha, and Perissinoto (2024) provided evidence that telehealth-delivered, parent-mediated interventions can foster social and communication skill development in children with ASD. However, Alatar's (2021) study found no significant treatment difference in children's social communication. Nearly half of the 49 experiments in Sparks, Akers, and Liu (2026) demonstrated strong evidence of intervention effects on social communication. Children showed gains in verbal operants in Ferguson, Dounavi, and Craig (2023). In Wainer et al. (2021), children showed group differences in social communication. Barber et al. (2020) provided evidence that parent-

mediated interventions improve spoken language and social communication. Similarly, Hao et al. (2025) reported significant pre- to post-intervention improvement, supporting the use of telehealth social communication interventions to improve pragmatic skills among children with ASD. Yllades et al. (2022) concluded that telepractice-based parent coaching can help family members improve communication for bilingual children with autism spectrum disorder.

Another positive outcome was improvement in child joint attention. For instance, the intervention group in Liu, Hsieh, and Chen's (2025) study showed a child joint attention score ($g = 0.62$). Social reciprocity was another outcome. Rooks-Ellis et al. (2020) showed that social reciprocity significantly improved post telehealth-delivered parent-mediated interventions.

3.2 Access and Equity of telehealth-delivered parent-mediated interventions for young children with Autism Spectrum Disorder

Based on the systematic review, telehealth-delivered parent-mediated interventions for young children with ASD were found to improve equity and access to ASD interventions for young children. Telehealth-delivered parent-mediated interventions were particularly effective in improving access for families living in remote, rural, and underserved areas. For instance, Rooks-Ellis et al. (2020) conducted a study in a rural setting that demonstrated the feasibility of telehealth-delivered parent-mediated interventions. In Katakis et al. (2025), telehealth was expected to improve equity for some families, including those in geographically remote areas. However, telehealth potentially disadvantaged some families, such as socioeconomically disadvantaged families and those with limited English proficiency. Cheong et al. (2026) reported the promise of telehealth-delivered, parent-mediated PRT as a scalable model to improve service accessibility for young children with ASD in underserved settings. Dahiya, Ruble, Kuravackel, and Scarpa (2022) compared outcomes of telehealth-delivered C-HOPE for rural ($n = 12$) versus urban ($n = 8$) parents and found significant effects in both groups. In Boydston, Redner, and Wold (2023), where all participants lived in rural/underserved areas, the study demonstrated effectiveness. In the study by Ingersoll and Berger (2015), in which most families (19/27, 70%) resided in rural or medically underserved areas, the program demonstrated potential to increase access to parent-mediated intervention for families of children with ASD.

Fell et al. (2023) identified strengths of the virtual model, such as its flexibility and the opportunity it provided to see children in their home environment, suggesting that telehealth services for children with autism spectrum disorder could be a helpful tool in decreasing barriers and improving service delivery, especially when tailored to the individual needs of the patient. In a study by Bearss et al. (2018) conducted in rural communities, 11 of 14 (78.6%) participants rated their improvement as much/very much, indicating that parents found telehealth-based parent training acceptable and that therapists could deliver treatment reliably. Gould et al. (2024) found the program feasible and satisfactory for parents and community providers in the Appalachian region of the United States, a culturally and geographically distinct area. Yllades et al. (2022) found that this approach can help family members improve communication with bilingual children with autism spectrum disorder. The advantages of telehealth-delivered parent-mediated interventions that increased equity and access included greater convenience, flexibility, and efficiency (reduced costs and travel time), improved service provision, and access to timely care (Katakis et al., 2025).

3.3 Demographic and Geographic Factors

Some of the reviewed studies established that some demographic and geographic factors have an influence on the success of telehealth-delivered parent-mediated interventions for young children with ASD. Katakis et al. (2025) reported that certain disadvantages, such as technical difficulties, concerns about the family's role, and safeguarding issues, affected the effectiveness of the telehealth program. Moreover, the study found that telehealth improved equity for some families (geographically remote families) while potentially disadvantaging others (socioeconomically disadvantaged families and those with limited English proficiency). Further, children who were older, less active, less medically and psychosocially complex, and those with a clearer presentation of ASD were considered more suitable for a telehealth evaluation for ASD. Gentile et al. (2022) revealed that parents' age mediated the relationship among parents' ability, stress, and empowerment levels. Fell et al. (2023) suggested that telehealth services for children with autism spectrum disorder could help reduce barriers and improve service delivery, especially when tailored to individual patient needs, implying that parents' individual needs influence effectiveness. In the study by del Hoyo Soriano et al. (2021), the intervention was administered in the language that the parent reported to use to communicate at home, where good test-retest reliability for ELS-N-derived youth outcome measures (i.e., talkativeness, vocabulary, syntax, dysfluency, and intelligibility) was reported, suggesting that primary language has an influence on telehealth effectiveness. Oudet et al. (2025) reported variation in the demographic information collected and the outcomes reported. In Yllades et al. (2022), who integrated culturally responsive approaches into the coaching model, a multimodal telepractice parent-coaching intervention showed promising results. Katakis et al. (2025) reported that telehealth was expected to improve equity for families in geographically remote areas. However, Dahiya, Ruble, Kuravackel, and Scarpa (2022) found no difference in the program's effectiveness between rural and urban areas.

4. Discussion

The systematic review revealed that telehealth-delivered parent-mediated interventions for young children with ASD, in terms of both child and parent outcomes, are largely effective. In particular, telehealth-delivered parent-mediated interventions produce positive parental outcomes, including improved fidelity, increased parents' self-efficacy, increased parental knowledge and competence in delivering the intervention, and reduced stress among parents. Similarly, telehealth-delivered parent-mediated interventions produce positive outcomes for the child. These include reduced child problem behaviors such as irritability, lethargy, and hyperactivity; improved children's daily living skills such as language and motor development; improved adaptive skills; improved social communication; improved child joint attention; and improved social reciprocity.

Regarding access and equity, telehealth-delivered parent-mediated interventions improve access for families in remote, rural, and underserved areas. Telehealth-delivered parent-mediated interventions are flexible and allow clinicians to see children in their home environment, making them a helpful tool for reducing barriers and improving service delivery, especially when tailored to the patient's individual needs. Telehealth-delivered parent-mediated interventions can improve equity and access, even in culturally and geographically distinct regions. However, telehealth may improve equity for some families, such as those in remote areas, while potentially disadvantaging others, such as socioeconomically disadvantaged families and those with limited English proficiency.

Some of the reviewed studies established that some demographic and geographic factors have an influence on the success of telehealth-delivered parent-mediated interventions for young children with ASD. These include: technology, family's role, parents' ages, parents' individual needs, primary language, and location (rural or urban). Technical difficulties, such as poor internet access, undermine the effectiveness of the telehealth program, whereas delivering the intervention in the primary language improves it. Tailoring the telehealth program to the individual needs of children with autism spectrum disorder is a helpful tool in decreasing barriers and improving service delivery, positively influencing its effectiveness. Additionally, parents' age mediates the relationship among the parents' ability, stress, and empowerment levels.

5. Conclusion

Based on the findings, the study concludes that telehealth-delivered parent-mediated interventions for young children with ASD are an effective tool for delivering interventions for ASD to young children. In particular, telehealth-delivered parent-mediated interventions improve parents' fidelity, self-efficacy, knowledge, and competence while reducing parents' stress, thereby enhancing their ability to deliver the intervention. Additionally, telehealth-delivered parent-mediated interventions are useful in reducing child problem behaviours such as irritability, lethargy, and hyperactivity; improving children's daily living skills such as language and motor development; improving adaptive skills; improving social communication; and improving child joint attention and social reciprocity, which are positive outcomes for young children with ASD.

The study also concludes that telehealth-delivered parent-mediated interventions make ASD interventions equitably accessible to individuals with different characteristics, such as disparities in location. Telehealth-delivered parent-mediated interventions effectively reach individuals living in rural, remote, and underserved areas. Telehealth-delivered parent-mediated interventions may, however, disadvantage some families, such as socioeconomically disadvantaged families and those with limited English proficiency.

Finally, the study concludes that demographic and geographic factors, including technology, family role, parents' age, parents' individual needs, primary language, and location (rural versus urban areas), influence the success of telehealth-delivered parent-mediated interventions for young children with ASD. Recipients experiencing technical difficulties such as poor internet access may not benefit from the program. Moreover, delivering the program using the recipient's primary language improves its effectiveness. Parents' age may also affect their ability to access and benefit from the program, including through reduced stress and improved intervention delivery.

6. Recommendations

Based on the findings, the study recommends that designers and implementers of telehealth-delivered parent-mediated interventions consider factors that may inhibit their effectiveness. They should consider recipients' language and deliver the intervention in their primary language of communication. Implementers should also consider parents' ages and roles when choosing the delivery mode. The government should also implement policies to expand internet infrastructure in regions experiencing these difficulties.

References

- Agunbiade, O. (2022). Telehealth And Direct Parent Training (DPT): Improving Healthcare Access and Outcomes for Children with Autism Spectrum Disorder (ASD). *Available at SSRN 4784149*.
- Alatar, W. I. (2021). *Telemedicine in the Kingdom of Saudi Arabia: The feasibility of delivering parent-mediated early intervention targeting social communication in autism* (Doctoral dissertation, University of Reading).
- Andrade, J. G. L., Carmo, A. C. F. D., Tamanaha, A. C., & Perissinoto, J. (2024). Effectiveness of Distance Educational Programs for parents of children diagnosed with Autism Spectrum Disorder: an integrative review. In *CoDAS* (Vol. 36, p. e20230291). Sociedade Brasileira de Fonoaudiologia.
- Anis, L., Letourneau, N., Benzies, K., Ewashen, C., & Hart, M. J. (2020). Effect of the attachment and child health parent training program on parent–child interaction quality and child development. *Canadian Journal of Nursing Research*, 52(2), 157–168.
- Barber, A. B., Swineford, L., Cook, C., & Belew, A. (2020). Effects of Project ImPACT parent-mediated intervention on the spoken language of young children with autism spectrum disorder. *Perspectives of the ASHA Special Interest Groups*, 5(3), 573-581.
- Bearss, K., Burrell, T. L., Challa, S. A., Postorino, V., Gillespie, S. E., Crooks, C., & Scahill, L. (2018). Feasibility of parent training via telehealth for children with autism spectrum disorder and disruptive behavior: A demonstration pilot. *Journal of autism and developmental disorders*, 48(4), 1020–1030.
- Boydston, P., Redner, R., & Wold, K. (2023). Examination of a telehealth-based parent training program in rural or underserved areas for families impacted by autism. *Behavior analysis in practice*, 16(3), 795–811.
- Cheong, P. L., Lin, M. C., Lin, C. H., Wang, Y. C., Lai, Y. T., Kang, L. J., ... & Hsu, T. C. (2026). Telehealth-based parent-mediated pivotal response treatment for preschool children with autism spectrum disorder: A pilot randomized controlled study. *Journal of Autism and Developmental Disorders*, 1-18.
- Cheung, W. C., Aleman-Tovar, J., Johnston, A. N., Little, L. M., & Burke, M. M. (2023). A qualitative study exploring parental perceptions of telehealth in early intervention. *Journal of Developmental and Physical Disabilities*, 35(3), 353–373.
- Clarke, M., McLay, L., France, K., Blampied, N., & van Deurs, J. (2025). Telehealth-delivered supports for daily living skills for autistic children: A systematic review. *Review Journal of Autism and Developmental Disorders*, 12(2), 243–272.
- Cullenward, J., Curtin, M., & Dos Santos, V. (2024). Characteristics of effective parent-mediated interventions for parents of children with neurodevelopmental disorders in rural areas: a systematic review protocol. *BMJ open*, 14(8), e083464.
- Dahiya, A. V., Ruble, L., Kuravackel, G., & Scarpa, A. (2022). Efficacy of a telehealth parent training intervention for children with autism spectrum disorder: Rural versus urban areas. *Evidence-Based Practice in Child and Adolescent Mental Health*, 7(1), 41–55.
- Dai, Y. G., Thomas, R. P., Brennan, L., Helt, M. S., Barton, M. L., Dumont-Mathieu, T., & Fein, D. A. (2021). Development and Acceptability of a New Program for Caregivers of Children with Autism Spectrum Disorder: Online Parent Training in Early

- Behavioral Intervention: Online Program for Caregivers of Children with ASD. *Journal of Autism and Developmental Disorders*, 51(11), 4166–4185.
- de Nocker, Y. L., & Toolan, C. K. (2023). Using telehealth to provide interventions for children with ASD: A systematic review. *Review Journal of Autism and Developmental Disorders*, 10(1), 82–112.
- del Hoyo Soriano, L., Bullard, L., Hoyos Alvarez, C., Thurman, A. J., & Abbeduto, L. (2021). Using telehealth-delivered procedures to collect a parent-implemented expressive language sampling narrative task in monolingual and bilingual families with Autism Spectrum Disorder: A pilot study. *Frontiers in Rehabilitation Sciences*, 2, 716550.
- Duvall, S., Armstrong, K., Shahabuddin, A., Grantz, C., Fein, D., & Lord, C. (2022). A road map for identifying autism spectrum disorder: Recognizing and evaluating characteristics that should raise red or “pink” flags to guide accurate differential diagnosis. *The Clinical Neuropsychologist*, 36(5), 1172–1207.
- Fell, L. A., Albright, C. M., Kryszak, E. M., Butter, E., & Kuhlthau, K. A. (2023). Provider perspectives on telehealth services for children with autism spectrum disorder during the coronavirus disease 2019 pandemic. *Academic Pediatrics*, 23(6), 1196-1203.
- Ferguson, J., Dounavi, K., & Craig, E. A. (2023). The efficacy of using telehealth to coach parents of children with autism spectrum disorder on how to use naturalistic teaching to increase mands, tacts and intraverbals. *Journal of Developmental and Physical Disabilities*, 35(3), 417-447.
- Frosch, C. A., Schoppe-Sullivan, S. J., & O'Banion, D. D. (2021). Parenting and child development: A relational health perspective. *American journal of lifestyle medicine*, 15(1), 45-59.
- Gentile, M., Messineo, L., La Guardia, D., Arrigo, M., Città, G., Ayala, A., ... & Allegra, M. (2022). A parent-mediated telehealth program for children with autism spectrum disorder: Promoting parents' ability to stimulate the children's learning, reduce parenting stress, and boost their sense of parenting empowerment. *Journal of Autism and Developmental Disorders*, 52(12), 5285-5300.
- Ghanouni, P., & Jarus, T. (2021). Social Interaction among individuals with autism spectrum disorder: relations with repetitive and restricted behaviors and interests. In *Repetitive and restricted behaviors and interests in autism spectrum disorders: From neurobiology to behavior* (pp. 159-173). Cham: Springer International Publishing.
- Gould, K., Martin, R. J., Bottini, S., Crowley-Zalak, J., Losh, A., McCammon, M., ... & Anderson, C. (2024). Behavioral parent training via telehealth for autistic children in rural Appalachia: A mixed methods feasibility study. *Journal of Positive Behavior Interventions*, 26(4), 204-217.
- Han, J., Hao, Y., Cui, N., Wang, Z., Lyu, P., & Yue, L. (2023). Parenting and parenting resources among Chinese parents with children under three years of age: rural and urban differences. *BMC primary care*, 24(1), 38.
- Hao, Y., Du, Y., Zhang, S., Sun, L., Keene, G., & Ikuta, T. (2025). Effectiveness of telehealth social communication intervention on language skills among children with autism spectrum disorder: A systematic review and meta-analysis. *Review Journal of Autism and Developmental Disorders*, 12(4), 618-635.

- Hirota, T., & King, B. H. (2023). Autism spectrum disorder: a review. *Jama*, 329(2), 157-168.
- Ingersoll, B., & Berger, N. I. (2015). Parent engagement with a telehealth-based parent-mediated intervention program for children with autism spectrum disorders: Predictors of program use and parent outcomes. *Journal of Medical Internet Research*, 17(10), e4913.
- Katakis, P., Frankson, P., Lockwood Estrin, G., Wolstencroft, J., Mirzaei, V., Sayani, S., ... & Heys, M. (2025). Families' and clinicians' experiences with telehealth assessments for autism: A mixed-methods systematic review. *PLOS Digital Health*, 4(7), e0000931.
- Li, F., Wu, D., Ren, F., Shen, L., Xue, M., Yu, J., ... & Li, F. (2022). Effectiveness of online-delivered project ImPACT for children with ASD and their parents: A pilot study during the COVID-19 pandemic. *Frontiers in Psychiatry*, 13, 806149.
- Lindgren, S., Wacker, D., Schieltz, K., Suess, A., Pelzel, K., Kopelman, T., ... & O'Brien, M. (2020). A randomized controlled trial of functional communication training via telehealth for young children with autism spectrum disorder. *Journal of autism and developmental disorders*, 50(12), 4449-4462.
- Liu, Q., Hsieh, W. Y., & Chen, G. (2025). Telehealth Parent-Mediated Intervention for Children with Autism in China: A Randomized Controlled Trial. *Topics in Early Childhood Special Education*, 02711214251404914.
- Liu, Q., Hsieh, W. Y., Cheatham, G., & Yin, Y. (2021). Parent-mediated intervention delivered through telehealth for children with autism spectrum disorder. *The Cochrane Database of Systematic Reviews*, 2021(3), CD014793.
- Marino, F., Failla, C., Bruschetta, R., Vetrano, N., Scarcella, I., Doria, G., ... & Pioggia, G. (2023). TeleRehabilitation of social-pragmatic skills in children with autism spectrum disorder: a principal component analysis. *International Journal of Environmental Research and Public Health*, 20(4), 3486.
- Martin, R. J., Crowley-Zalak, J., Gould, K., Weddle, S., & Anderson, C. M. (2024). Behavioral parent training via telehealth for autistic children: Further exploration of feasibility during the COVID-19 pandemic. *Advances in Neurodevelopmental Disorders*, 8(2), 324-337.
- Oudet, S., Howard, K., Gilhuber, C., Robert, M., Zimmerli, J., Katsos, N., & Durrleman, S. (2025). Parent-led communication therapy for young bilingual autistic children: A scoping review. *Journal of Autism and Developmental Disorders*, 55(11), 3860-3887.
- Pacione, L. (2022). Telehealth-delivered caregiver training for autism: Recent innovations. *Frontiers in Psychiatry*, 13, 916532.
- Pan, C. Y., Kuo, T. Y., & Kuo, F. L. (2023). Meta-analysis of effectiveness of parent-mediated telehealth interventions in children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 107, 102209.
- Pollard, J. S., Quiroz, L. S., Boyd, J. A., Jo, B., & Hall, S. S. (2026). Telehealth Versus In-Person Caregiver-Mediated Behavioral Treatment for Challenging Behaviors in Children with Autism Spectrum Disorder: Protocol for COACH (Caregiver Outreach for Autism Coaching at Home) Randomized Controlled Trial. *JMIR Research Protocols*, 15(1), e91840.

- Rooks-Ellis, D., Howorth, S. K., Kunze, M., Boulette, S., & Sulinski, E. (2020). Effects of a parent training using telehealth: Equity and access to early intervention for rural families. *Journal of Childhood, Education & Society*, 1(2), 141.
- Sadeghi, S., Pouretemad, H. R., & Shalani, B. (2022). Internet-based versus face-to-face intervention training for parents of young children with excessive screen-time and autism spectrum disorder-like symptoms: a comparative study. *International Journal of Developmental Disabilities*, 68(5), 744-755.
- Salman, F. S., Ilias, K., Hashim, N. M., Azri, M. A., Jamil, N., & Daud, A. Z. C. (2022). Parents' Experiences in Using Telehealth to Carry Out Parent-Mediated Intervention Program for Children with Autism Spectrum Disorder (ASD) During the Pandemic Covid-19. *Malaysian Journal of Medicine & Health Sciences*, 18, 237.
- Schaffer, C. T., Nakrani, P., & Pirraglia, P. A. (2020). Telemental health care: A review of efficacy and interventions. *Telehealth and Medicine Today*, 5(4).
- Setien-Ramos, I., Alonzo-Castillo, T., García-Martínez, A., Lugo-Marín, J., Martínez-Ramírez, M., Ramos-Quiroga, J. A., & Gisbert-Gustemps, L. (2025). Telehealth group parent training for children with autism spectrum disorder and behavioral difficulties: feasibility, acceptability and preliminary efficacy. *The European Journal of Psychiatry*, 39(4), 100319.
- Sparks, K., Akers, J., & Liu, R. (2026). Telehealth-delivered social communication skills interventions among individuals with intellectual and developmental disabilities: A systematic review. *Review Journal of Autism and Developmental Disorders*, 1-16.
- Tilson, C., Khawar, S., & Griffith, A. K. (2025). Feasibility of acceptance and commitment therapy via telehealth with parents of children with autism: a pilot study. *Journal of Child and Family Studies*, 34(5), 1292-1306.
- Traube, D. E., Cederbaum, J. A., Taylor, A., Naish, L., & Rau, A. (2021). Telehealth training and provider experience of delivering behavioral health services. *The Journal of Behavioral Health Services & Research*, 48(1), 93-102.
- Turgeon, S., Lanovaz, M. J., & Dufour, M. M. (2021). Effects of an interactive web training to support parents in reducing challenging behaviors in children with autism. *Behavior Modification*, 45(5), 769-796.
- Wainer, A. L., Arnold, Z. E., Leonczyk, C., & Valluripalli Soorya, L. (2021). Examining a stepped-care telehealth program for parents of young children with autism: A proof-of-concept trial. *Molecular Autism*, 12(1), 32.
- Yllades, V. A., Ganz, J. B., Wattanawongwan, S., Dunn, C., & Pierson, L. M. (2022). Parent coaching via telepractice for children from Latinx backgrounds with autism spectrum disorder. *Journal of Special Education Technology*, 37(4), 469-481.
- Yoder, P. J., Stone, W. L., & Edmunds, S. R. (2021). Parent utilization of ImPACT intervention strategies is a mediator of proximal then distal social communication outcomes in younger siblings of children with ASD. *Autism*, 25(1), 44-57.