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Brief Report: A Scoping Review of Caregiver Coaching Strategies Within Caregiver-Mediated Interventions for Autism

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Caregiver-mediated interventions for young autistic children are increasingly considered standard of care. These interventions share two sets of components: strategies to improve children's communication, behavior, and development; and procedures to coach caregivers to implement those strategies. To date, no review has examined how caregiver coaching is described in caregiver-mediated intervention manuals. We assessed how caregiver coaching is described in caregiver-mediated intervention manuals for young autistic children. We conducted a scoping review to identify publicly available manuals that are designed to support providers in their practice; target core or co-occurring symptoms that affect young autistic children; and were tested as caregiver-mediated interventions in randomized controlled trials. We identified 11 publicly available manuals that met inclusion criteria. Manuals were coded using a summative content analysis to identify the presence and frequency of descriptions of caregiver coaching. The content analysis highlighted a wide range in the descriptions of caregiver coaching. Many intervention manuals did not include specific descriptions of caregiver coaching. Intervention developers should include explicit information about how to coach caregivers. Implementation strategies that specifically target caregiver coaching can serve as critical supports to increase the use of coaching in early intervention. **Key words:** *autism, caregiver coaching, caregiver-mediated intervention, coaching*

CAREGIVER-MEDIATED interventions for young autistic children have gained increasing support and attention based on data indicating the critical importance of involving caregivers in their child's

treatment. Several randomized trials, mostly university-based, found that caregiver-mediated early intervention resulted in significant improvements in children's cognitive ability, social functioning, behavior, academic skills, and daily living skills (Green et al., 2010; Kasari et al., 2014; Rogers et al., 2012; Stadnick, Stahmer, & Brookman-Frazee, 2015). Many efficacious caregiver-mediated

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interventions involve caregiver coaching to transfer intervention skills and knowledge to caregivers so that children can receive these interventions in their homes and communities throughout the day (Kasari et al., 2014; Stahmer et al., 2020; Wetherby & Woods, 2006a).

Coaching is an interactive process between a practitioner and a caregiver that involves observation, reflection, and action to promote the caregiver's ability to support their child's participation in home and community activities (Dunst & Trivette, 2009; Hanft, Rush, & Shelden, 2004). The Division for Early Childhood (DEC) identifies coaching as an evidence-based practice to support and engage families of young children with disabilities in the early intervention process (DEC, 2014). Research on adult learning theory has served as the empirical foundation for developing caregiver coaching approaches (Friedman, Woods, & Salisbury, 2012; Rush & Shelden, 2011; Trivette, Dunst, Hamby, & O'herin, 2009). The National Research Council conducted a comprehensive research review of adult learning theory components, which is often cited in descriptions of caregiver coaching (Bransford et al., 2005; Lorio et al., 2020). A series of meta-analyses and research syntheses have identified the core components of effective caregiver coaching (Friedman et al., 2012; Kemp & Turnbull, 2014; Trivette et al., 2009). These are (1) using *authentic learning experiences*: delivering learning opportunities as part of real-life situations; (2) *collaborative decision making*: actively involving the learner in selecting goals and strategies; (3) *demonstration*: modeling the use of techniques; (4) *in vivo feedback*: observing the learner's use of strategies and providing immediate feedback; and (5) *reflection*: engaging the learner in self-evaluation or assessment of their performance. The underlying premise behind caregiver coaching is that effective coaching results in the caregiver's increased intervention skills and motivation to use these newly acquired skills, subsequently leading to improved child outcomes (Landa, 2018).

Caregiver coaching comprises an understudied set of targets for implementation research. While providers commonly receive training and support in the intervention strategies used to treat children on the autism spectrum, they are far less likely to receive training in the best ways to work with caregivers. Perhaps, as a result, early intervention providers rarely use caregiver coaching (McBride & Peterson, 1997; Romano & Schnurr, 2020; Salisbury, Woods, & Copeland, 2010). Recent studies evaluating the use of caregiver coaching in early intervention for young children on the autism spectrum indicate that coaching is underused, especially with families from minoritized backgrounds (Lee, Kaat, & Roberts, 2022, Pellicchia et al., 2023; Straiton, Frost, & Ingersoll, 2023). This highlights a critical implementation gap in community-based autism services.

To date, no studies have examined the extent to which caregiver-mediated intervention manuals explicitly identify and incorporate caregiver coaching strategies. Given the increasing use of caregiver-mediated interventions for young children with autism, it is critical to improve their implementation in community-based early intervention. A necessary first step is to understand how existing caregiver-mediated intervention models available to community providers describe and support caregiver coaching in their manuals. A clear understanding of whether caregiver-mediated intervention models explicitly include caregiver coaching techniques can inform the development of strategies to improve their implementation. The purpose of this scoping review is to identify how caregiver coaching is included and described in manualized caregiver-mediated autism interventions.

METHOD

Scoping review

We completed a scoping review to identify empirically tested and manualized caregiver-

mediated interventions for young autistic children. Inclusion criteria for articles were the following: (1) intervention was implemented with autistic children; (2) children were less than 8 years old; (3) intervention described caregiver training and/or caregiver-mediated components; and (4) intervention was evaluated using a randomized controlled trial. We used the PRISMA-ScR checklist (Tricco et al., 2018) to conduct our review. We conducted the initial search in March 2019. First, we generated and refined a list of relevant key words and defined inclusion and exclusion criteria. Next, we conducted a literature search in PubMed, PsycInfo, and ERIC to identify manuscripts where the title or abstract included our search terms: “random*,” or “RCT,” and “parent,” or “caregiver,” and “train*,” or “interven*,” or “mediate*,” or “implement*,” and “autis*,” or “ASD,” and “toddler*,” or “child*,” or “pre-school*.” We did not restrict date of publication but did limit our search to peer-reviewed articles in English. Next, we created a data table with the date of search, title, and abstract for all manuscripts identified. We then deleted duplicates and screened the remaining manuscripts by reading each title and abstract to determine whether the study met all inclusion criteria. If the title and abstract review was insufficient to decide, two team members conducted a full article review and then met to reach consensus. We also reviewed the reference section of four peer-reviewed manuscripts that did not meet the inclusion criteria because they were systematic reviews and a meta analyses (i.e., McConachie & Diggle, 2007; Nevill, Lecavalier, & Stratis, 2018; Oono, Honey, & McConachie, 2013; Postorino et al., 2017) to identify any additional potentially eligible articles. All parts of this process were recorded and tracked to ensure accurate completion of the PRISMA Flow Diagram (Figure 1). After completing the scoping review, we identified the manual associated with each intervention reviewed and included those interventions with manuals that were publicly available and included

a parent training component to the intervention in the content analysis. We defined publicly available manuals as those that could be purchased from a bookseller or publisher or were freely available online, as these would be available to community providers.

Content analysis

Manuals were coded using a summative content analysis approach (Hsieh & Shannon, 2005) to identify the presence of the five elements of coaching described as best practice. A content analysis is a method of developing objective inferences using textual data (Kondracki, Wellman, & Amundson, 2002). The purpose of a content analysis is to examine high frequency words from text and draw conclusions based on this information (Stemler, 2000). A summative content analysis involves identifying and quantifying certain words or content within a text. This approach identifies content beyond simple word counts and allows one to discover underlying meaning within the text by identifying alternative terms for the content (Hsieh & Shannon, 2005). For example, identifying the content matter for “collaboration” would involve identifying use of the words “collaborate” or “collaboration,” as well as implicit mentions of the concept of collaboration such as “ask for caregiver input” or “include caregiver’s preferences into session planning.”

We coded each manual based on the frequency of mentions of the five core elements of coaching (i.e., daily routines (authentic learning experiences), collaboration, demonstration, feedback, and reflection/problem solving), as well as any general mentions of caregiver coaching. We developed a codebook with definitions and examples of each coaching element and used it to guide coding for the content analysis (see Table 2 for coding definitions and examples). A team of five coders read and coded the first manual together to establish agreement on codes and to refine the codebook. The coding team was led by a doctoral-level psychologist with expertise in caregiver coaching and early autism

intervention. All coders held either a master's or doctoral degree and had experience with autism intervention and qualitative coding. Two coders then independently read and coded all remaining manuals. Coders read through each manual in its entirety and coded each explicit or implicit mention of

each core element. Two coders then reviewed and compared codes. Any discrepancies were discussed and resolved through consensus until agreement was reached. The frequency of occurrence was calculated as the total number of explicit or implicit mentions of each coaching strategy.

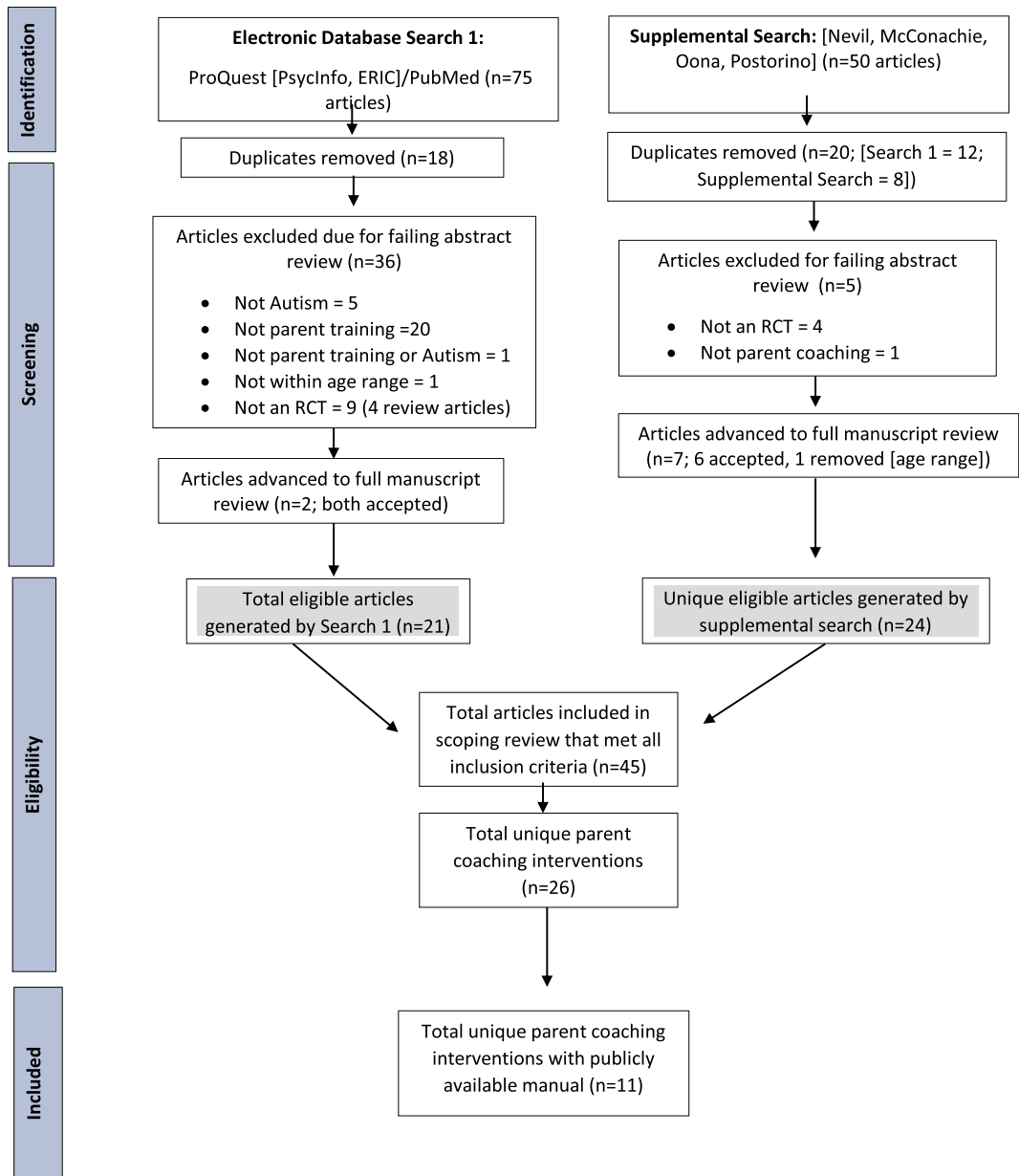


Figure 1. PRISMA diagram of literature review.

RESULTS

The results of the scoping review are displayed in the PRISMA Flow Diagram (Figure 1). The search resulted in 125 articles that met the inclusion criteria. We removed 38 duplicates, for a total of 87 articles to be screened. Review of the abstracts identified 46 that did not meet our inclusion criteria. Full text review resulted in our eliminating one additional article. A total of 45 articles met all inclusion criteria, which led to a total of 26 unique interventions because several interventions were evaluated in more than one RCT. Eleven of these interventions had publicly available manuals and were included in the content analysis (see Table 1).

The results of the content analysis are displayed in Table 3. Manuals varied considerably in how often they described evidence-based caregiver coaching strategies. General descriptions of training caregivers or including caregivers in delivering the intervention ranged from zero occurrences in the Hanen Program Manual (Sussman 1999) to 148 occurrences in the Parent Child Interaction Therapy Manual (McNeil & Hembree-Kigin, 2010). General descriptions of caregiver coaching often included statements about training caregivers in intervention strategies or involving caregivers in intervention delivery but often did not include specific descriptions of how to train or coach caregivers. Descriptions of specific caregiver coaching strategies also varied greatly across manuals. Reflection/problem solving was the most frequently described strategy with 338 mentions in the Project ImPACT manual (Ingersoll & Dvortcsak, 2019), 58 mentions in the Coaching Parents of Young Children with Autism Manual (Vismara, Dawson, & Rogers, 2021), and 52 mentions in both the Parent Child Interaction Therapy (McNeil & Hembree-Kigin, 2010) and Parent Training for Disruptive Behavior: RUBI manual (Bearss, Johnson, Handen, Lecavalier, & Scahill, 2018); three manuals (i.e., The Hanen Program, Sussman 1999), Floortime (Pajareya & Nopmaneejumrulers, 2011),

and Pivotal Response Training (Koegel et al., 1988) did not mention these strategies. Supporting caregivers during daily routines was the least frequently mentioned coaching strategy; when included, daily routines were often described alongside more detailed descriptions of child-directed intervention strategies, e.g., *the parent can work on communication during mealtimes*, rather than explicit examples of how to coach caregivers to use intervention strategies during daily routines. Most manuals mentioned providing in vivo feedback, collaborating, and demonstrating intervention techniques for caregivers.

The level of detail and frequency of descriptions for these coaching strategies varied greatly across manuals. For example, the Floortime and Hanen Program (Sussman 1999) manuals did not mention collaborating with caregivers, while the Project ImPACT manual (Ingersoll & Dvortcsak, 2019) included 138 explicit descriptions of ways to collaborate with caregivers during intervention. The frequency with which any caregiver coaching strategy was mentioned in each manual also varied greatly from 813 mentions in the Project ImPACT manual (Ingersoll & Dvortcsak, 2019), to 180 in the Parent Training for Disruptive Behavior (RUBI) manual (Bearss et al., 2018), and to zero in the Hanen Program Manual (Sussman 1999).

DISCUSSION

The content of most caregiver-mediated autism intervention manuals we reviewed largely described child-directed intervention strategies and paid far less attention to methods to support caregivers in implementing those strategies. While child-directed activities are a critical component of caregiver-mediated interventions, helping providers support caregivers in implementing these interventions requires equal attention on how to *coach* caregivers (Nevill et al., 2018; Oono et al., 2013). It is especially important that manuals clearly

Table 1. Parent-Mediated Interventions Included in Content Analysis

Intervention manual name	Manual citation	Research citation
Coaching Parents of Young Children with Autism	Vismara, L. A., Dawson, G., Rogers, S. J. (2021). <i>Coaching Parents of Young Children with Autism: Promoting Connection, Communication, and Learning</i> . United States: Guilford Publications.	Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., Donaldson, A., Varley, J. (2010). Randomized controlled trial of an intervention for toddlers with autism: the Early Start Denver model. <i>American Academy of Pediatrics: Pediatrics</i> , 125(1), e17–23.
Focused Playtime Intervention (FPI)	Siller, M. (2012). <i>Focused Playtime Intervention Training Manual</i> . United States: Hunter College/City University of New York.	Rogers, S.J., Estes, A., Lord, C., Vismara, L., Winter, J., Fitzpatrick, A., Guo, M., Dawson, G. (2012). Effects of a brief Early Start Denver model (ESDM)-based parent intervention on toddlers at risk for autism spectrum disorders: a randomized controlled trial. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> , 51(10), 1052–65. doi: 10.1016/j.jaac.2012.08.003.
Focused Playtime Intervention (FPI)	Siller, M. (2012). <i>Focused Playtime Intervention Training Manual</i> . United States: Hunter College/City University of New York.	Siller, M., Hutman, T. & Sigman, M. (2013). A parent-mediated intervention to increase responsive parental behaviors and child communication in children with ASD: a randomized clinical trial. <i>Journal of Autism and Developmental Disorder</i> , 43(3), 540–555. Kasari, C., Siller, M., Huynh, L.N., Shih, W., Swanson, M., Hellemann, G.S., Sugar, C.A. (2014). Randomized controlled trial of parental responsiveness intervention for toddlers at high risk for autism. <i>Infant Behavior Development</i> , 37(4), 711–21. doi: 10.1016/j.infbeh.2014.08.007. Siller, M., Swanson, M., Gerber, A., Hutman, T., Sigman, M. (2014). A parent-mediated intervention that targets responsive parental behaviors increases attachment behaviors in children with ASD: results from a randomized (continues)

Table 1. Parent-Mediated Interventions Included in Content Analysis (*Continued*)

Intervention manual name	Manual citation	Research citation
Hanan's More than Words	Sussman, (1999). <i>More Than Words: Helping parents promote communication and social skills in children with autism spectrum disorder.</i> Toronto: The Hanen Centre.	clinical trial. <i>J Autism Dev Disord.</i> , 44(7), 1720-32. doi: 10.1007/s10803-014-2049-2.
Parent-Child Interaction Therapy (PCIT)	McNeil, C. B., Hembree-Kigin, T. L. (2010). <i>Parent-Child Interaction Therapy.</i> Ukraine: Springer US.	Carter, A.S., Messinger, D.S., Stone W.L., Celimli, S., Nahmias, A.S., Yoder, P. (2011). A randomized controlled trial of Hanen's "More Than Words" in toddlers with early autism symptoms. <i>J Child Psychol Psychiatry</i> , 52(7), 741-52. doi: 10.1111/j.1469-7610.2011.02395.x.
Pivotal Response Training (PRT)	Koegel, R.L., Schreibman, L., Good, A., Cerniglia, L., Murphy, C., Koegel, L.K. (1988). <i>How To Teach Pivotal Behaviors to Children with Autism: A Training Manual.</i> United States: California University, San Diego.; California University, Santa Barbara.	Ginn, N. C., Clifonsky, L. N., Eyberg, S. M., Warner-Metzger, C., Abner, J. P. (2015). Child-directed interaction training for young children with autism spectrum disorders: Parent and child outcomes. <i>Journal of Clinical Child and Adolescent Psychology</i> , 18, 1-9.
Preschoolers Autism Education Program	Breerton, A.V., Tonge, B.J. (2005). <i>Pre-Schoolers with Autism: An Education and Skills Training Programme for Parents—Manual for Clinicians.</i> United Kingdom and United States: Jessica Kingsley Publishers.	Hardan, A.Y., Gengoux, G.W., Berquist, K.L., Libove, R.A., Ardel, C.M., Phillips, J., et al. (2015). A randomized controlled trial of Pivotal Response Treatment Group for parents of children with autism. <i>Journal of Child Psychology and Psychiatry</i> , 56(8), 884-892.
		Nefdt, N., Koegel, R., Singer, G., Gerber, M. (2010). The use of a self-directed learning program to provide introductory training in pivotal response treatment to parents of children with autism. <i>Journal of Positive Behavior Interventions</i> , 12 (1), 23-32.
		Tonge, B., Breerton, A., Kiomall, M., Mackinnon, A., Rinehart, N.J. (2014). A randomised group comparison controlled trial of "preschoolers with autism:" a parent education and skills training intervention for young children with autistic disorder. <i>Autism</i> , 18(2), 166-177.

(continues)

Table 1. Parent-Mediated Interventions Included in Content Analysis (*Continued*)

Intervention manual name	Manual citation	Research citation
Teaching Social Communication to Children with Autism & Other Developmental Delays: The Project ImPACT Guide to Coaching Parents (Project ImPACT)	Ingersoll, B., Dvortsak, A. (2019). Teaching Social Communication to Children with Autism and Other Developmental Delays, Second Edition: The Project ImPACT Guide to Coaching Parents and The Project ImPACT Manual for Parents. United States: Guilford Publications.	Ingersoll, B., Wainer, A.L., Berger, N.I., Pickard, K. E., Bonter, N. (2016). Comparison of a Self-Directed and Therapist-Assisted Telehealth Parent-Mediated Intervention for Children with ASD: A Pilot RCT. <i>J Autism Dev Disord</i> , 46(7), 2275-84. doi: 10.1007/s10803-016-2755-z.
Promoting First Relationships (Infant Sibs IX)	Kelly, J.F., Zuckerman, T.G., Sandoval, D., Buehlman, K. (2016). A Program for Service Providers to Help Parents and Other Caregivers Nurture Young Children's Social and Emotional Development, Third Edition. United States: University of Washington, Seattle.	Jones, E.J.H., Dawson, G., Kelly, J., Estes, A., Jane Webb, S. (2017). Parent-delivered early intervention in infants at risk for ASD: Effects on electrophysiological and habituation measures of social attention. <i>Autism Res</i> , 10(5), 961-972. doi: 10.1002/aur.1754.
Parent Training for Disruptive Behavior: The RUBI Autism Network	Bears, K., Johnson, C. R., Handen, B. L., Lecavalier, L., Scahill, L. (2018). Parent Training for Disruptive Behavior: The RUBI Autism Network, Clinician Manual. United States: Oxford University Press, Incorporated.	Aman, M. G., McDougle, C. J., Scahill, L., Handen, B., Arnold, L. E., Johnson, C., et al. (2009). Medication and parent training in children with pervasive developmental disorders and serious behavior problems: Results from a randomized clinical trial. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> , 48(12), 1143-1154.
		Aman, M. G., Arnold, L. E., Hymn, S. L., Tumuluru, R. V., Lecavalier, L., et al. (2015). Atomoxetine, parent training, and their combination in children with autism spectrum disorder and attention-deficit/hyperactivity disorder. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> , 54(11), 905-915. Research Units on Pediatric Psychopharmacology [RUPP] Autism Network (2007). Parent training for children with pervasive developmental disorders: A multi-site feasibility trial. <i>Behavioral Interventions</i> , 22(3), 179-199. doi:http://dx.doi.org/10.1002/bin.236.

Table 2. Content Analysis Coding Definitions and Examples

Coaching strategy	Code definition	Examples from manuals
General Parent Coaching	Descriptions of providing the parent supports to improve their child's skills and development. Code any text describing how to support the parent in facilitating their child's skill development. If a specific coaching strategy is described, do not code for general parent coaching; code excerpt under that coaching specific strategy instead.	"The coach facilitates the parent's capacity to gather information, identify strategies, develop new skills, problem-solve and ultimately promote self-discovery." <i>Coaching Parents of Young Children with Autism</i>
Collaboration	Actively including the parent in developing intervention goals for their child and family and in deciding how to work on those goals. This can include collaborative goal setting, allowing parents to make decisions during sessions, and language, indicating that the provider and parent work as a team.	"Help the parent identify at least two activities for each goal, to help the parent use the strategies across settings." <i>Teaching Social Communication to Children with Autism & Other Developmental Delays: The Project ImPACT Guide to Coaching Parents</i> (Project ImPACT)
Daily Routines	Teaching parents to deliver the intervention directly in the environment or setting where it will ultimately be used. For example, working on communication skills during mealtime instead of during a "communication session" that is not typically part of the family's daily routine.	"Start to gather parents' ideas on how to facilitate play or other routines (think: meals, bath time, reading books, household chores, diapering, getting dressed, or other caretaking routines) to practice the three different types of pretend-play skills." <i>Coaching Parents of Young Children with Autism</i>
Demonstration	Teaching parents to use an intervention strategy by modeling the use of an intervention strategy for a parent and explaining how to use the specific procedure. Descriptions of explicitly teaching a strategy to the parent, explaining the purpose of a technique to parents, or explaining useful techniques to promote parent-child interaction should be coded.	"In addition to the didactic information, activity sheets, and video examples, the clinician also role-plays with the parent to review and try out the given skill." <i>Parent Training for Disruptive Behavior</i> (RUBI)
Feedback	Involves the provider giving the parent an opportunity to practice the demonstrated technique and offering feedback about the parents' observed use of the technique. Technique observation can either be through live observation or through video. Feedback can be corrective or praise. Commenting on strategies that are working well, allowing	"For example, a caregiver might be uncomfortable whenever a child moves away from her to explore, even when the situation is safe and appropriate. We would look for those rare moments when she does allow exploration and give her positive feedback on that interaction. This makes that

(continues)

Table 2. Content Analysis Coding Definitions and Examples (*Continued*)

Coaching strategy	Code definition	Examples from manuals
Reflection and Problem Solving	<p>sufficient time for the parent to practice the strategy, and giving constructive criticism would be coded here.</p> <p>Occurs when the provider asks the parent to reflect on the use of an intervention strategy (after demonstration and feedback) and any potential barriers to using the strategy within daily routines. The provider and parent then collaborate on potential strategies to overcome any identified barriers). This would include listening to parental concerns, collaboratively evaluating child's progress, and helping the parent work through barriers to implementing a technique.</p>	<p>particular skill feel doable to the caregiver and gives us something to build on." <i>Promoting First Relationships (PFR)</i></p> <p>"Discuss what went well and what was hard about recording the child's challenging behavior at home. If the parent did not record any challenging behavior, explain the importance of gathering this information in order to design an effective behavior plan. If the parent reported difficulty in completing the Challenging Behavior Record, problem-solve with the parent to find ways she can record the behavior." <i>Project ImPACT</i></p>

delineate coaching strategies because most providers who work with young autistic children receive training in improving children's skill development, not on how to coach caregivers (Dunst, Trivette, & Deal, 2011). The absence from pre-service professional training curricula of courses on communicating, motivating, and collaborating with caregivers points to an important gap in our clinician training process (Gisewhite, Jeanfreau, & Holden, 2021).

Importantly, two of the intervention manuals reviewed were revised editions. The *Project ImPACT* intervention manual was revised to include more detailed and specific information about caregiver coaching. Similarly, the authors of the *Early Start Denver Model* (Rogers et al., 2012) developed a revised manual, *Coaching Parents of Young Children with Autism* (Vismara, Dawson, & Rogers, 2021), specific to caregiver coaching. These revisions included greater detail and more frequent descriptions of caregiver coaching strategies than the previous versions and reflect the growing understanding of the need to describe strategies to support caregivers in using interventions; this trend signals a positive step forward for improving community implementation of parent-mediated interventions.

Our study has several limitations worth noting. We evaluated the extent to which caregiver coaching strategies were mentioned in intervention manuals; however, we did not have access to the training materials or training content. It is possible that training materials and training content provides trainees with thorough instruction in coaching caregivers to use the interventions identified in our scoping review.

Another limitation is that we did not review manuals that are not publicly available. Several parent-mediated intervention manuals described in the literature are not publicly available, including Pediatric Autism Communication Therapy (PACT; Aldred & Green, 2019). We reviewed only published manuals because they represent the resources that early intervention systems,

Table 3. Total Frequency Counts for Descriptions of Parent Coaching Strategies in Parent-Mediated Intervention Manuals

Intervention	Total number of pages in manual	Total number of coaching mentions	General parent coaching	Collaboration	Daily routines	Demonstration	In vivo feedback	Reflection/prob. solving
Teaching Social Communication to Children with Autism and Other Developmental Delays: The Project ImPACT Guide to Coaching Parents	448	813	88	138	37	101	111	338
Parent–Child Interaction Therapy (PCIT)	502	297	148	28	3	18	68	52
Parent Training for Disruptive Behavior (RUBI)	220	180	6	29	14	74	5	52
Coaching Parents of Young Children with Autism	324	173	29	36	25	14	11	58
Focused Playtime Intervention (FPI)	49	151	35	15	0	30	48	23
Promoting First Relationships (PFR)	155	72	6	2	7	5	26	26
Pivotal Response Training (PRT)	41	29	11	0	17	1	0	0
Early Start Denver Model (ESDM)	297	27	5	11	8	2	0	1
Preschoolers with Autism Education Program	144	24	6	12	1	13	4	10
Floortime	100	9	5	0	4	0	0	0
The Hanen Program	424	0	0	0	0	0	0	0

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agencies, and practitioners can access. As such, these manuals describe interventions more likely to be adopted in community-based early intervention. Additionally, we acknowledge that articles that employed single-case research designs were excluded from our original search. While it is possible that this exclusion may have limited the number of studies identified, we opted to include studies that used randomized trials, as these are most likely to be available as published manuals. It is also possible that expanded search terms (e.g., mother, father, Asperger*) may have yielded a larger number of studies in our initial review. Future research expanding this line of inquiry would benefit from a more expansive inclusionary criteria including studies that employed single-case designs and broader search terms. Lastly, a comparison of the frequency of times each manual mentioned or described caregiver coaching may disadvantage shorter manuals as they would inherently include fewer mentions of caregiver coaching than a longer or more comprehensive manual. However, this information provides an important direction for improvement in caregiver-mediated intervention manuals designed for young autistic children.

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CONCLUSION

Caregiver-mediated interventions are an important aspect of best practice in early autism intervention. Caregiver coaching is the mechanism through which caregivers learn interventions to support their child's development, yet it is an often-overlooked aspect of parent-mediated intervention manuals. Our results suggest that intervention developers should include more explicit information about how to coach caregivers; we should not assume that providers already possess these skills. Pre-service training and ongoing professional development should include targeted education about effective caregiver coaching strategies.

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