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University of Northern Colorado
Greeley, Colorado

A SYSTEMATIC REVIEW OF PARENT TRAINING EFFECTS CHILDREN'S USE OF
AUGMENTATIVE AND ALTERNATIVE COMMUNICATION SYSTEMS

A Thesis Submitted in Partial Fulfillment For Graduation With Honors Distention and the
Degree of Bachelor's of Science

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College of Natural and Health Sciences

December 2021

A SYSTEMATIC REVIEW OF PARENT TRAINING EFFECTS CHILDREN'S USE OF
AUGMENTATIVE AND ALTERNATIVE COMMUNICATION SYSTEMS

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ABSTRACT

Augmentative and Alternative Communication (AAC) are communication systems used when someone cannot express their needs with naturally spoken speech. For children who use AAC, parent training is an essential part because it teaches the parents how to use the device and encourages their child to use the device. A systematic review was completed to explore the literature regarding parent training for parents whose children are AAC users, and how the training impacts the child's success using the AAC system. The results from this can be used to explore if parent training is effective and if there is a need for more research on most effective parent training for child success. This is important for clinicians to provide the best services for their client's success in family-centered therapy.

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Thank you to my faculty advisor Dr. Nicole Reisfeld for supervising this systematic review and all your guidance through this process. Thank you for teaching me how to make a systematic review, helping me find research articles, and helping me organize my systematic review. Thank you for provided constructive feedback that shaped this systematic review while also helping me grow as an academic writer.

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INTRODUCTION

Augmentative and Alternative Communication (AAC) are commonly used to help aid or replace spoken speech for people who cannot communicate their needs with natural speech. These systems help provide aid or replace spoken language that helps people communicate. They are used with children diagnosed with a variety of communication disorders, such as; autism spectrum disorder, cerebral palsy, traumatic brain injury, and Angelman Syndrome. When children use AAC parent training is often used so that the parents know how to work the device, but more importantly how to encourage their child to use it. Parent training is important because for children most of their exposure to language happens within the home so parent training helps parents support children with special needs (Roberts et.al.,2019). This study will be a systematic review of current literature evaluating how different types of parent training affects their child's AAC use. The purpose of this study is to inform clinicians if parent training is beneficial for successful AAC use and to determine different ways of parent training that are effective. In addition, this review can inform future directions regarding training of parents whose children use AAC. This will help clinicians provide the best care for the success of their child clients who use AAC.

LITERATURE REVIEW

The purpose of this study is to create a systematic review of the research done with parent training and how it affects the use of Augmentative and Alternative Communication (AAC). More specifically this review is designed to look at what types of parent training encourages children with communication disorders to be more successful in their AAC use. This is important

because knowing how to effectively train parents and which methods work the best will help clinicians develop more effective treatment plans. This literature review is going to be broken into three parts. First, it will look at what AAC are and what they are used for. Second, it will examine why parent training and parent involvement is important. Finally, it will explore parent's perspectives on AAC training.

Augmentative and Alternative Communication (AAC)

Augmentative and Alternative Communication (AAC) is used when individuals cannot reach their communication needs purely through spoken speech (Beukelman & Light, 2020). AAC systems are either unaided or aided. Unaided means that the system uses nothing outside of the body to help support communication; a person using sign language, gestures, or eye blinking (Beukelman & Light, 2020). Aided systems include technologies outside of the body that can be either low-tech or high-tech (Beukelman & Light, 2020). Some examples of low-tech options are communication boards or picture exchange systems (Beukelman & Light, 2020). Then high-tech options include apps on iPad/ tablets or computer-generated speech (Beukelman & Light, 2020). This variety allows the system to be designed for the individual's needs and capabilities.

AAC can be used for many different communication disorders. AAC is used for anyone who cannot communicate their needs using natural speech, which in America in 2013, was estimated to be 4 million people (Beukelman and Mirenda, 2013). There are many different developmental and acquired conditions that can affect someone's ability to communicate fully with spoken language. A developmental condition is something that occurred during prenatal development some examples are: down syndrome, cerebral palsy, autism spectrum disorder (ASD), and developmental apraxia of speech (Beukelman & Light, 2020). Then acquired

conditions happen during one's lifetime such as traumatic brain injury (TBI) and strokes (Beukelman & Light, 2020).

AAC Effectiveness

AAC has been shown to help people communicate and to encourage speech production. Schlosser & Wendt, 2008 completed a systematic review to determine how AAC affects children with autism's ability to produce speech and found that there's no evidence that AAC use hinders the ability to learn spoken languages and could lead to small growth in language. (Schlosser & Wendt, 2008). The small growth doesn't mean the AAC does not work, it depends on the individual's abilities, so there must be realistic goals (Schlosser & Wendt, 2008). One study did an experiment where they used Augmentative Intervention and Spoken Communication intervention; the results showed that the groups that received augmentative interventions demonstrated substantially more vocabulary growth (Ronski et. al., 2010). Another study looked specifically at how using Picture Exchange Communication System (PECS) Phase IV, an app, affected the child's use of verbal requests. This study found that when using PECS more children attempted verbal requests and used their device to assist them (Alzrayer, 2020). Overall, some research suggests that AAC is an effective way to help someone communicate. AAC can help someone use spoken language and provides a way for people to communicate if they cannot use natural spoken language.

Parent training

Parent training is seen as an important part of evidence based practice. The reasoning behind parent training is that a child naturally learns a lot of their language from parents/ caretakers and spends a majority of their time with them. Having parents who are familiar with what is going on in speech or language therapy and how to effectively practice it at home

provides a naturalistic and effective way of improving language. While providing a more naturalistic approach it also provides more structured practice. For example if the child was only receiving speech and language services 2 times a week 30 minutes each that's only 1 hour a week of practice, but if the parents work on it regularly at home they get much more practice.

A systematic review regarding parent training and child language development looked into the correlation between parent training and the outcomes of the child. In this systematic review there were 59 randomized clinical trials and 17 nonrandomized clinical trials in total there were 5848 participants (Roberts et.al.,2019) In those participants the children were aged 2 months through 5 years old. (Roberts et.al.,2019) Parents received several types of training In 63 studies, parents were taught to use responsive and naturalistic strategies,49 studies used a coaching approach, 21 used therapist modeling, 17 used workshops, then 16 studies used a dialogic reading approach (Roberts et.al.,2019). This large variety in how the parents were trained shows how broad what is considered parent training is. Parent training can be anything that educates the parents on their child needs and instruction on how to help their child improve.

The results for the children saw that overall there was an increase in the child's language skills, the study looked more into different types of language benefits under categories , expressive, receptive, social and engagement(Roberts et.al.,2019). The study concluded that the relationship across the board between parent training and communication was moderate (Roberts et.al.,2019). Then for specifically receptive and expressive language skills there was a large statistically significant change (Roberts et.al.,2019). This study also looked at outcomes for parents and found that there was a large change in how many parents use language support after parent training (Roberts et.al.,2019). These findings suggest that parent training should be

included in treatment because it helps parents be more engaged with their kids and has shown to improve the child language development (Roberts et.al.,2019).

Parent Perceptions of AAC

There is a moderate amount of research that looks at parent perceptions of AAC. One research study done in Europe parents did pre and post surveys before and after their child received a communication aid. The responses from the post survey after six to eight weeks the results showed that overall parents were satisfied with the progress their child made using the communication aid (Newton et al., 2007). Another article showed that a crucial part of the success of the child is the involvement of the parents in the assessment and intervention of the child (Mcnaughton et al., 2008). This was found through a focus group that was held for 9 weeks on the internet. This focus group was designed to have families of people who use AAC and people who use AAC explain their experience. In this focus group, one thing they discussed was that parents provide many roles to the child, therefore, make a significant member of the team. It is necessary to include the parent in the treatment of a child because the parents are the child support system as they all work together as a family unit. Another thing this article talked about was how parents often felt frustrated with the clinicians as they did not always know much about AAC or how to use them. The parents discussed how they want clinicians “to know what they don't know”, so they can ask for outside expertise when they need it (Mcnaughton et al., 2008). They also discussed how it is unrealistic that every clinician will know everything about AAC, but a clinician needs to know about the AAC their client is using (Mcnaughton et al., 2008). Mcnaughton’s research is important because it shows that it is important for parents to be trained on how to use AAC, but also that clinicians need more specific training on types of AAC. There are many different types of AAC making it difficult to be an expert, but to provide the best

treatment the clinician needs to be well versed in the AAC that their client is using. This would allow them to properly work with the family and client.

Another article found that “AAC professionals must be prepared to work not only with parents who will require an introduction to AAC.. but also with parents who are fully informed and who will expect respect for their in-depth knowledge of AAC” (Angelo et al., 1996). This is an important statement because a lot of parent training focuses on teaching they are not how to use AAC, but not every parent will be a novice in AAC. Some parents will have already received training and know a lot about how the AAC their child uses and the clinician must understand and respect the parents' knowledge as well. This may be especially true considering that many parents felt like the clinicians didn't know enough about their child's specific AAC device. This shows how important it is for clinicians to value the parents' role in the team because they may be more of an expert in their child's specific AAC. While these parent perceptions are not directly tied to parent perceptions of parent training itself, it's still really important to consider the experience parents have when working with a clinician for their child.

Parent perceptions of parent training

One study done across Southern Europe conducted a survey about parents' views on parent training for parents of children who have autism. Two hundred thirty-five surveys were sent out and 148 were sent back; in these surveys 90% of parents would like to attend and receive parent training courses. The survey also had parents rate which topics they would like to receive support on in parent training (Preece et al. 2016). The top five results of new strategies they wanted to learn were: enhancing my child's communication, facilitating my child's interaction with other children, sensory integration and development Identifying and/or

developing socialization opportunities and information on behavior management (Preece et al. 2016).

Another study conducted in the United Kingdom evaluated a parent training program, Enhanced Parent-Based Intervention, EPBI, through the children's center. They provided it to 18 families who had prior mentioned they would like more support (Gilbard & Smith, 2015). This training consisted of 20 sessions with a children's center teacher over the course of 20 weeks each lasting an hour and a half (Gilbard & Smith, 2015). Half of the sessions were the already established Parent Based Intervention, PBI, then the other half was the EPBI (Gilbard & Smith, 2015). The difference being that EPBI would build upon what PBI sessions taught them by providing further clarification and modeling (Gilbard & Smith, 2015). The other parts of EPBI that was different from PBI was a teacher went to the home to talk to the parents about how they could support their child at home (Gilbard & Smith, 2015). Then, involved the children by having craft days that connected to what the parents were learning in their PBI sessions (Gilbard & Smith, 2015). Finally, EPBI helped support parents by giving them a notification every week a day before their session (Gilbard & Smith, 2015). Overall EPBI was designed to be an extension upon PBI to make it more successful. Once implemented the EPBI attendance went from 35% to 100% (Gilbard & Smith, 2015).

This study also tracked parents' perceptions through phone calls on in person conversations (Gilbard & Smith, 2015). Which over all found that parents had a positive experience with EPBI (Gilbard & Smith, 2015). All the parents reported that they felt more informed about their child language difficulties and when they hit milestones (Gilbard & Smith, 2016). With this they also felt more connected with what their individual child needs and what their next steps in therapy would be (Gilbard & Smith, 2015). twelve parents felt they had more

realistic informed goals and nine found that they felt more motivated to help their child reach those goals (Gilbard & Smith, 2015). All the parents felt that they had a better understanding of how to communicate with their child now that they knew what level of language their child understood (Gilbard & Smith, 2015). twelve parents were able to prove specific strategies they could use to help support their child and fourteen felt they were more equipped to support communication at home (Gilbard & Smith, 2015). All the parents noticed positive relationship changes between them and their child, as they were able to help mediate communication breakdowns (Gilbard & Smith, 2015). All parents commented that their child seemed less frustrated now and appeared more confident and willing to communicate (Gilbard & Smith, 2015).

Overall this literature shows that both AAC and parent training are effective tools to help children be more successful communicators. That parents should be considered a primary member of the child's team and be able to provide feedback and get support from professionals. Also the literature suggests that parents want parent training because it increases their understanding of their child language needs and connection to their child. This systematic review aims to organize and evaluate the research on the overlap to see how effective parent training is to help children who use AAC be successful.

PROJECT DESIGN

Methods /Data Collection Procedures

This systematic review was done through the database Summon. Using the search term “AAC, Parent training” through the years 1995- 2021. To filter through these article results the PRISMA 2020 flow chart was followed, Table 1. During the filtering process detailed notes were taken

on what articles that were removed through each level of scanning. Appendix 1 shows the automatic search terms used and Appendix 2 shows the level of scanning and articles removed. Through this system, the articles went from 3880 in the original search to 12 articles that were included in this systematic review. The criteria that were used to find appropriate articles was: described parent training, participants included preschool to school-age children that have complex communication needs, including AAC use, the goal was to encourage AAC success

Data Analysis Procedures

The first step will be to make a summary table based on the articles that fit the inclusion criteria; the article had specific parent training, the population was preschool and school age children with some room around (2 years old to 14 years old), children used aided AAC systems, peer reviews, completed with results, and between the years 1995 and 2021. I completed two tables evaluating the articles. Table 2 contains the article information and research rating. Table 3 contains the coding questions. From those tables, I found themes in the summary table. This will be able to create a summary of findings on what types of parent training are used and how it affects the success of children who use AAC.

RESULTS

This systematic review evaluated 12 studies (one was a systematic review and held 3 new studies in it but the systematic review was counted as one study) to be included they had to have some level of parent training for parents with children who used an aided AAC system. There were a total of 145 participants. Out of the children participants the ages ranged from 2 years old to 14 years old, majority flailing between 4-6 years old. Most of the studies had small

populations. The largest study had 61 families; the smallest were one parent and one child. For more details on the populations see Table 2

These studies have varying levels of parent training. Four studies were more intensive, one having a camp focused around it, another having six months training, another having nine sessions, and the last having a detailed eight step program. Then some of the other ones were less structured such as teaching them naturalistic strategies, dialogic reading, watching a training video, then one was in the middle where there were multiple sessions to compare if training allowed was enough or if it should be training and coaching. So there was a lot of variety in what was considered parent training. One theme was that all different methods of training saw positive results in both parents feeling more confident communicating with their child and their child using their AAC more.

Some studies were focusing more on how did the parents' behavior change after the training like are they more comfortable with the AAC device or did they use strategies more often. Five articles found that after receiving training parents felt more confident using the strategies and interacted more with their child using AAC. One example was that after receiving parent training by watching training videos that showed three different scenarios and how to correct them; mothers were able to teach their child how to use the AAC (Park et al. 2011). These results lasted when they were tested again a month later and the skills generalized with other communication partners (Park et al. 2011). Another study had two different types of parent training half the parents just observed the therapist working with their child while the other half observed then got coached by the therapist on how to work with their child, the results showed that observation alone was beneficial but parents did better when they also received coaching (Shire et. al 2015).

Other studies looked at both parents and child or child results. Four articles found that children used their AAC more often after their parents received parent training. One example where parents went through an eight step training program found that afterwards children were more successful using their AAC (Iris et. al. 2015). Another example was after parents attended the Camp Chatterbox they noticed they not only felt more confident using AAC. Now their child used the AAC much more at home. Before it would be used as a secondary form of communication now the child would reach for it to communicate (Bruno et. al. 1998). Then, one that had a less intense parent training where the mother was taught naturalistic skills to repair communication breakdowns and encourage use she remarked that her son used his AAC much more(nunes et.al 2007).

DISCUSSION

Overall the studies found that there was positive change to either the parents, children or both after the parents received parent training.

One thing that is interesting would be that all the parent training shows positive results regardless of how intense the training was. Both parents who went to an intensive camp and a mother who received naturalistic strategies both reported that their children used their AAC substantially more. This could show that parent training of any form is better than no parent training and helps parents and children use the AAC more often. Only two studies compared two different types of AAC to see which one did better. Both found that parents could learn from just teaching or observation but did better with coaching. Where they worked with hands on and shown how to problem solve. Overall it seems any parent training is helpful in the success of AAC use but something hands on with coaching may do better. It would be good to do more research directly comparing two types of parent training to find which ones work the best.

One theme throughout the articles is that all of them have small population groups. While that's typically seen as a limitation to a study, it's pretty standard for studies done on special populations. People who benefit from using AAC are very broad and the AAC system is usually picked to fit the needs of the individual. With that it can be hard to find people that match in both categories or their speech and/or language disorder and the same AAC system. Due to this single subject designs and case studies are common. Therefore, I think findings from these studies should still be recognized as significant.

I think some generalization can be drawn from all the articles as all of them show a theme that parent training helps regardless of the type of training, type of AAC, or diagnosis of the child, So it seems parent training would help broad populations that use AAC. More research needs to be done on which parent training works best. Even though you could draw some generalization across the articles it's hard to directly compare which parent training worked best since the populations were different and the sample size were so different it's hard to draw direct comparisons. Although in the two articles that did a split study and evaluated two different trainings with the same population found that coaching parent training works best.

Limitations of this study

The articles in this systematic review had small sample sizes with varying diagnoses, types of parent rang and types of AAC. These limitations made it hard to accurately compare results, but I was able to find general trends. For future research, it would be beneficial to compare different types of parent training to see if one type of parent training is more beneficial. Another way to research this could be through interviews with parents to see their perspectives on different types of parent training and which one they felt they learned more from. It would

also be important to take baseline data on the children and compare data afterwards to see if they show improvement.

Future Research

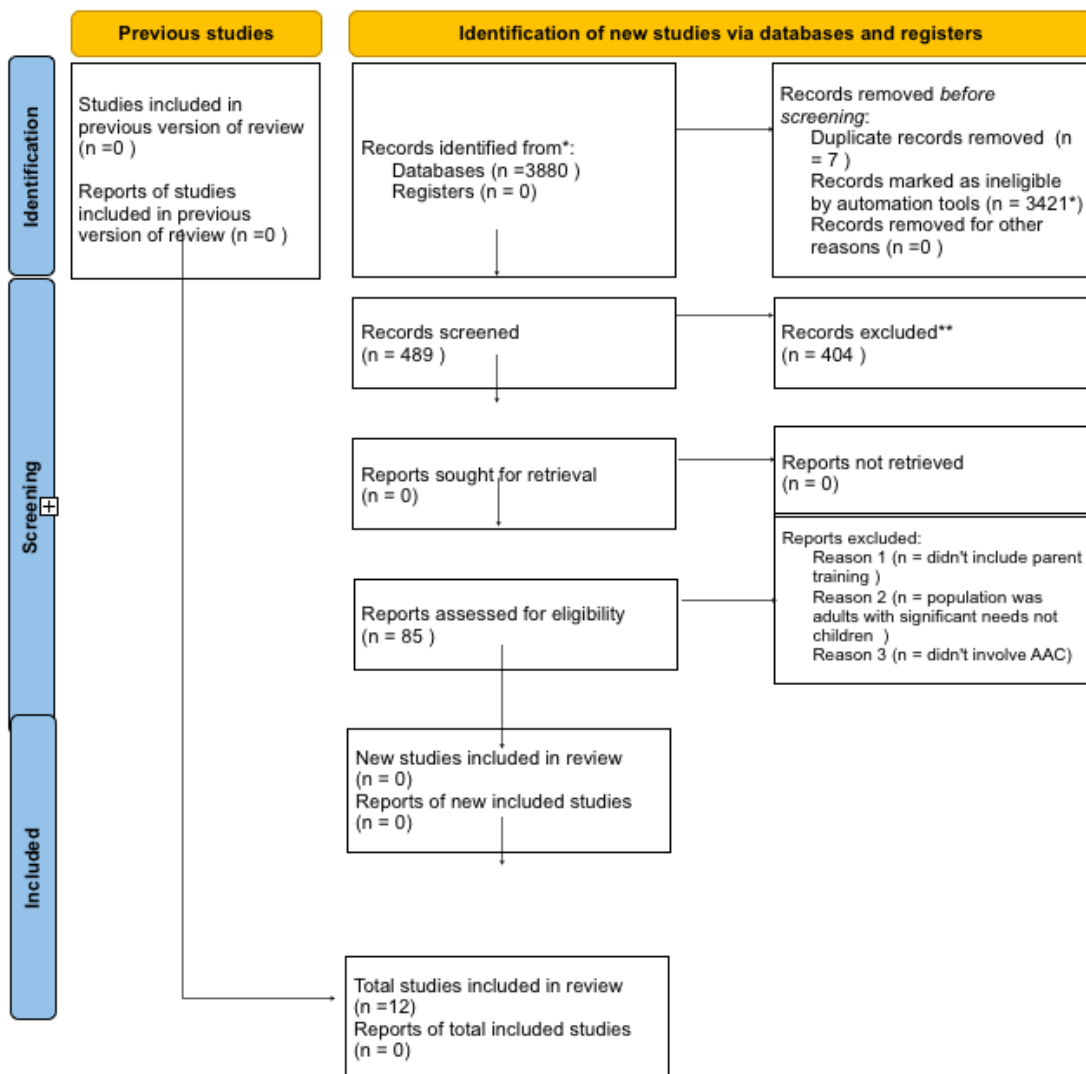
Through this systematic review I found twelve articles going over parent training for parents with children who use AAC systems. This shows that there should be more research will have to be done to explore this topic more. Continued research could focus on comparing types of training by tracking parent perceptions and child responses to evaluate if there's a more successful form of parent training.

Supervision

The research process will be supervised by Dr. Nicole Reinfeld, where the student Mia Constransitch will conduct the systematic review with the advising of Dr. Reinfeld

FIGURES
Figure 1: PRISMA

PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases and registers only



Tables

Table 1: Article information

Title	Authors	year	Type of research	Level of research
A Review of Picture Exchange Communication Interventions Implemented by Parents and Practitioners	Batool Alsayedhassan, Devender R. Banda & Nora Griffin-Shirley	2016	Systematic review of case studies	Level III
Outcomes in AAC: Evaluating the effectiveness of a parent training program	Joan Bruno; Michael Dribbon.	1998	Case study	Level IV
Understanding Communication Intervention for Young Children with Autism and Their Parents: Mixing Behavioral and Social Validity Findings	Chung Moon; Melinda R Snodgrass; Hedda Meadan; Yusuf Akamoglu; James W. Halle	2016	Case Study	Level IV
Effects of Parent Instruction on Communicative Turns of Latino Children Using Augmentative and Alternative Communication During Storybook Reading	Linda Iris Rosa-Lugo; Jennifer Kent-Walsh.	2008	Single Subject Design	Level IV
Enhancing the Alternative and Augmentative	Debora Nunes & Mary Frances Hanline	2007	Case Study	Level IV

Communication Use of a Child with Autism through a Parent-implemented Naturalistic Intervention				
Effects of Mother-Implemented Picture Exchange Communication System (PECS) Training on Independent Communicative Behaviors of Young Children With Autism Spectrum Disorders	Ju Hee Park, Sheila R. Alber-Morgan, and Helen Cannella-Malone	2011	Single subject Design	Level IV
Coaching Parents of Children With Developmental Disabilities to Implement a Modified Dialogic Reading Intervention Using Low Technology via Telepractice	Lauren M. Pierson, Julie L. Thompson, April N. Haas, J. B. Ganz, Sanikan Wattanawongwan, and Valeria Ylladesa	2021	Single subject Design	Level IV
Parents' Adoption of Social Communication Intervention Strategies: Families Including Children with Autism Spectrum Disorder Who are Minimally Verbal	Stephanie Y. Shire, Kelly Goods, Wendy Shih, Charlotte Distefano, Ann Kaiser, Courtney Wright, Pamela Mathy, Rebecca Landa, Connie Kasari	2015	Cohort Study	Level IV
A boy and his AAC team: building instructional competence across team members	Melinda R. Snodgrass & Hedda Meadan	2018	Single Subject	Level IV

Family-Centered Intervention and Satisfaction With AAC Device Training	Starble, Amy; Hutchins, Tiffany; Favro, Mary Alice; Prelock, Patricia; Bitner, Brooke. Communication Disorders Quarterly;	2005	Case Series	Level IV
Promoting Augmentative Communication During Daily Routines: A Parent Problem-Solving Intervention	Dara Stiebel	1999	Case Series	Level IV
Teaching caregivers to implement mand training using speech generating devices	Rachel Suberman and Catia Cividini-Motta	2020	Case Series	Level IV
Using the ImPAACT program with preschoolers with Down syndrome: a hybrid service-delivery model	Erika M. Timpe, Jennifer Kent-Walsh, Cathy Binger, Debbie Hahs-Vaughn, Nancy Harrington & Jamie B. Schwartz	2021	Single Subject Design	Level IV

Table 2: Systematic review article details

Title/ author	Sample size	Type of communication disorder	Children Age	Type of parent training	Type of AAC	Results
<p><i>A Review of Picture Exchange Communication Interventions Implemented by Parents and Practitioners</i></p> <p><i>Batool Alsayedhassan, Devender R. Banda & Nora Griffin-Shirley</i></p>	<p><i>A systematic review so 13 studies and 154 people who use PECS, 2 who had multiple diagnoses, and 152 with ASD</i></p> <p><i>Then parents were involved in 5 out of the 13 studies</i></p> <p><i>In the 5 studies there were 15 children and 15 parents.</i></p> <p><i>Also out of these studies two are already included in this systematic review marked with a * new studies have 9 children and 9 parents</i></p>	<p><i>ASD/ multiple disorders</i></p> <p><i>2/5 is ASD</i></p> <p><i>1 is not specified</i></p>	<p><i>In the new studies children aged 2-8 years old</i></p>	<p><i>Included - modeling, verbal feedback, written instructions, practice pecs in generalization sessions.</i></p>	<p><i>Pecs</i></p>	<p><i>All the 3 new studies showed children improved and 2 of 3 showed parents improved but one didn't record parents results just the child's.</i></p>

<p>Outcomes in AAC: Evaluating the effectiveness of a parent training program</p> <p>Joan Bruno; Michael Dribbon.</p>	<p>16 parents, 13 mothers 3 fathers 14 children</p>	<p>Mainly cerebral palsy but their communication disorders</p>	<p>Children age ranged 6 years old to 14 years old</p>	<p>Camp Chatter Box is a parent and child day camp. The parent program consisted of 2 parts deceive training and interactive training</p>	<p>Aided; PowerBook with speaking Dynamically, PowerBook with Talk About, Liberator, Touch Talker with Mini speak, and DynaVox.</p>	<p>Parents noticed a significant improvement in their ability to operate the AAC and to interact with their children. Then parents noted they gave the AAC to their child for longer periods before it was used as a secondary communication now it's used more frequently.</p>
<p>Effects of Parent Instruction on Communicative Turns of Latino Children Using Augmentative and Alternative Communication During Storybook Reading</p> <p>Linda Iris Rosa-Lugo; Jennifer Kent-Walsh.</p>	<p>Two mother and child dyads.</p>	<p>Complex speech and language needs</p>	<p>3 years old</p>	<p>An 8 step instructional program incorporating 4 communicative interaction skills; aided AAC modeling, use of expectant delay, use of open-ended questions, increases responsiveness to communication attempts</p>	<p>Aided with pictures</p>	<p>Results showed that parent coaching helped increase child success with AAC. showed that even small parent training like an 8 step instruction showed good improvement</p>

<p>Enhancing the Alternative and Augmentative Communication Use of a Child with Autism through a Parent-implemented Naturalistic Intervention</p> <p>Debora Nunes & Mary Frances Hanline</p>	<p>Mother and son dyad</p>	<p>ASD</p>	<p>4.6 years old</p>	<p>Taught her natural teaching strategies around the environmental arrangement, mands/comments, mands/comments with AAC, modeling then gave her hand out with the teaching strategies and gave her a small cheat sheet with the basics from each category</p>	<p>Aided; communication board</p>	<p>Showed it was effective and increased his use of AAC</p>
<p>* Effects of Mother-Implemented Picture Exchange Communication System (PECS) Training on Independent Communicative Behaviors of Young Children With Autism Spectrum Disorders</p> <p>Ju Hee Park, Sheila R. Alber-Morgan, and</p>	<p>3 children and their mothers</p>	<p>ASD</p>	<p>2-3 years old 2.5 years 2.7 years 2.6 years</p>	<p>Mothers watched a training video where it showed 3 possible outcomes of communication attempts a correct response, incorrect response, and no response. Then showed how to respond</p>	<p>Aided, PECS</p>	<p>Results show that the mothers were able to teach their kid how to use the AAC device where the skill was still there when they tested back after a month and generalized with different communication partners</p>

Helen Cannella-Malone						
Coaching Parents of Children With Developmental Disabilities to Implement a Modified Dialogic Reading Intervention Using Low Technology via Telepractice Lauren M. Pierson, Julie L. Thompson, April N. Haas, J. B. Ganz, Sanikan Wattanawongwan, and Valeria Ylladesa	Four parent and child groups	ASD and Downs syndrome	5-8 years old 7.3 5.9 5.0 6.1	Dialogic reading training	Lowtech	Children did show any change but parents showed they were reading better to their children
Parents' Adoption of Social Communication Intervention Strategies: Families Including Children with Autism Spectrum Disorder Who are Minimally Verbal	61 children and their families Wherefrom the families they would choose one caregiver to participate in the training the other was allowed to watch but to make sure everyone got	ASD	5-8	Long-lasting intervention 6 months- combining two evidence-based practices the Joint Attention, Symbolic Play, Engagement, and Regulation (JASPER) and the	Speech Generating device through DynaVox or and IPAD	The treatment was effective parents were able to implement the skills they learned and work well with their child. This showed that the parents learned from the observation alone

<p>Stephanie Y. Shire, Kelly Goods, Wendy Shih, Charlotte Distefano , Ann Kaiser, Courtney Wright , Pamela Mathy , Rebecca Landa , Connie Kasari</p>	<p>the same amount of training only one parent got a full training</p>			<p>Enhanced Milieu Teaching (EMT) then some children used an AAC which in this study was called a speech-generating device (SGD) those received JASP+ EMT+ SGD. The first 3 months the parent observed the clinician working with their child and modeling the teaching then the next 3 months the parents attended workshops and recent active and passive parent coaching.</p>		<p>but did much better with direct coaching. Then it was also good to have a variety of different direct coaching.</p>
<p>A boy and his AAC team: building instructional competence across team members Melinda R. Snodgrass &</p>	<p>A boy and his speech team including his parents, two paraeducators the school SLP, special education teacher, occupational therapist</p>	<p>Angleman syndrome</p>	<p>5.5 years</p>	<p>The study looked at the benefits of training and coaching and just training, 3 got just training the other 4 got training and coaching. Mother received training and coaching</p>	<p>“speech-generating app on an iPad mini3 with the Pragmatic Organization Dynamic Display VR (PODD)”</p>	<p>Results showed that training with coaching did better</p>

Hedda Meadan				<p>father received just training.</p> <p>The training was a class meeting where they went over skills, coaching was a one on session where they got to practice and set goals</p>		
<p>Family-Centered Intervention and Satisfaction With AAC Device Training</p> <p>Starble, Amy; Hutchins, Tiffany; Favro, Mary Alice; Prelock, Patricia; Bitner, Brooke. Communication Disorders Quarterly;</p>	One child and parents	Cerebral palsy	4.6 years	Family-centered intervention	Big mack and step 2 step	The questioners show high levels of satisfaction in most areas of the training especially around the personality of the instructor
*Promoting Augmentative Communication During Daily Routines: A Parent Problem-	3 children and their parents	ASD	4.2 years 6.8 years 4.6 years	One to two training sessions at home that helped develop problem-solving skills for 3	Picture cards	Showed that the kids used their photo cards more after parents received training

Solving Intervention Dara Stiebel				different home routines		
Teaching caregivers to implement mand training using speech generating devices Rachel Suberman and Catia Cividini-Motta	3 caregiver-child dyads	ASD	9 years 12 years 10 years	Behavioral skills training is used to teach caregivers mand training procedure	iPad® with Proloquo2Go™	Caregivers learned how to use mand with their children
Using the ImPAACT program with preschoolers with Down syndrome: a hybrid service-delivery model Erika M. Timpe, Jennifer Kent-Walsh, Cathy Binger, Debbie Hahs-Vaughn, Nancy Harrington & Jamie B. Schwartz	3 parents and preschool-age children	Down syndrome	Preschool	ImPAACT Program (Improving Partner Applications of Augmentative Communication Techniques) Included 9 sessions where parents learned how to use read ask answer	Apple iPads with protective cases and the TouchChatVR HD with WordPower	Results support ImPAACT because parents learned turn-taking how to use RAA and children used more turn taking

APPENDICES

Appendix 1

Date 4/23/2021

Search Terms- AAC, Parent Training

Select-

Peer-Reviewed

Journals

English

Years 1995-2021

Discipline	
Allowed	Unselected
Biology	Agriculture
Education	Anatomy & physiology
Languages & Literature	Anthropology
Medicine	Applied sciences
Occupational Therapy & Rehabilitation	Architecture
Physical Therapy	Botany
Psychology	Business
Public Health	Chemistry
Sciences	Computer Science
Social Science	Dance
Social Welfare	Dentistry
Sociology & Social History	Diet & Clinical Nutrition
	Drama
	Ecology
	Economics
	Engineering
	Environmental Science
	Forestry
	Geography

	Geology
	Government
	History & Archaeology
	International Relations
	Journalism & Communication
	Law
	Library & Information Science
	Mathematics
	Military & Navel Science
	Music
	Nursing
	Oceanography
	Pharmacy, therapeutics, & Pharmacology
	Philosophy
	Physics
	Political Science
	Recreation & Sports
	Religion
	Statistics
	Veterinary Medicine
	Visual Arts
	Woman's Studies
	Zoology

Subject Terms	
Allowed	Unselected
AAC	Adolescent

Analysis	Adult
Assistive Technology	Adults
Audiology & Speech-Language Pathology	Life Sciences & Biomedicine
Augmentative and Alternative Communication	Middle Age
Autism	Psychology
Autism Spectrum Disorder	Psychology, Developmental
Autistic Children	Psychology, Psychoanalysis, Psychiatry
Behavior	Psychopathology, Psychiatry
Biological And Medical Sciences	Science & Technology
Care And Treatment	Social Sciences
Caregivers	Vocabulary
Case Studies	Young Adult
Cerebral Palsy	
Child	
Child And School Psychology	
Child Development	
Child, Preschool	
Children	
Children & Youth	
Communication	
Clinical Neurology	
Communication Aids For Disabled	
Communication Disorders	
Communication Disorders -Rehabilitation	
Communication Strategies	
Complex Communication Needs	
Developmental Disabilities	
Disabilities	

Disability	
Disabled Children	
Disabled Students	
Early Intervention	
Education	
Education and educational research	
Education, Special	
Educational Technology	
Families & Family Life	
Female	
Foreign Countries	
Health Aspects	
Humans	
Infant	
Intellectual Disabilities	
Interpersonal Communication	
Intervention	
Language	
Language Acquisition	
Learning	
Learning Disabilities	
Linguistics	
Literacy	
Male	
Medical Science	
Methods	
Neurosciences & Neurology	
Nonverbal Communication	

Parents	
Parents and Parenting	
Pediatrics	
Pervasive Developmental Disorders	
Preschool Children	
Program Effectiveness	
Public Health	
Qualitative Research	
Questionnaires	
Research	
Severe Disability	
Social Aspects	
Special Education	
Speech	
Speech-Language Pathology	
Speech Therapists	
Speech Therapy	
Students	
Teachers	
Teaching Methods	
Technology	
Training	
Treatment Outcomes	
Young Children	

Appendix 2

Original search	3880
Discipline	1788

Subject terms	489
Title scan	85
Abstract scan	32
Chosen	15

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