

Parent-implemented naturalistic language intervention: Systematic literature review of parent's teaching methods

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Introduction

Rakap and Rakap (2014) conducted a literature review in which the objective was to review the empirical literature focused on parent-implemented naturalistic intervention approaches designed to support the language development of children with disabilities aged 60 months or less. Fifteen parent-implemented naturalistic language intervention studies that employed a single-subject experimental research design were reviewed to assess functional relationships between (a) parent training and parent implementation of naturalistic intervention approaches, and (b) implementation of naturalistic intervention approaches and children's learning outcomes. The results indicated that parents were able to learn naturalistic language interventions and were capable of implementing them with their young children. The review showed that when parents implemented these interventions, positive changes in children's language skills were identified.

In the study by Rakap and Rakap (2016), only single-subject design studies were analyzed to evaluate the functional relationship between parent training and children's language. This type of research ends up favoring studies that used individual interventions, as the present study aims to evaluate the different ways that intervention can be performed, other types of delineation such as group research design and pre- and post-test design were also included. In addition, the study by Rakap and Rakap (2014) was age-restricted to children up to 60 months, the present research did not set an upper age limit and even adolescents could be included.

Aim

This review aimed to identify the current state-of-art in the parent's teaching methods of parent-implemented naturalistic language interventions applied with children who show either one of the following traits: intellectual disabilities, language delay or communication impairments.

Methods

First, searches were conducted in the databases Scopus, Web of Science, and PsycInfo, using "language, speech, intellectual, disability, delay, child (infants), infant (toddlers), child (children), parent (parents), family (families), mother (mothers), father (fathers), language intervention, speech intervention, naturalistic, routine" as keywords.

In the second phase, the articles found were selected from the Psychology and Social Science areas, including only full studies published in journals between 2011 and 2020.

In the next phase, the abstracts were read and the articles were filtered according to the following criteria: a) the study describes an intervention directed to parents, b) the intervention should use teaching language stimulation strategies to be applied during the family's routine, c) the participating children had intellectual disability, language delay or impairment. For this stage of selection, the StArt software (State of the Art through Systematic Review - Fabbri et al., 2016) was used.

In the last phase, the articles were read in full and those that did not fit the criteria of the previous phase were excluded together with those articles that a) used Augmentative and Alternative Communication (AAC), b) Discrete trial intervention package, and c) studies in which children with sensory (hearing loss) or motor (motor speech) impairment participated. Studies in which the parents were adolescents were not excluded.

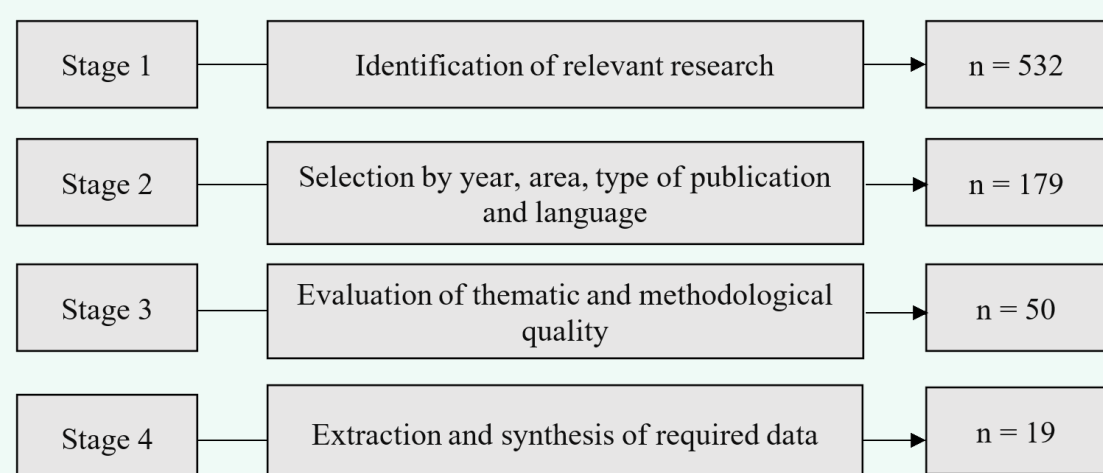


Figure 1. Selection steps and numbers of articles analyzed at each step

Results

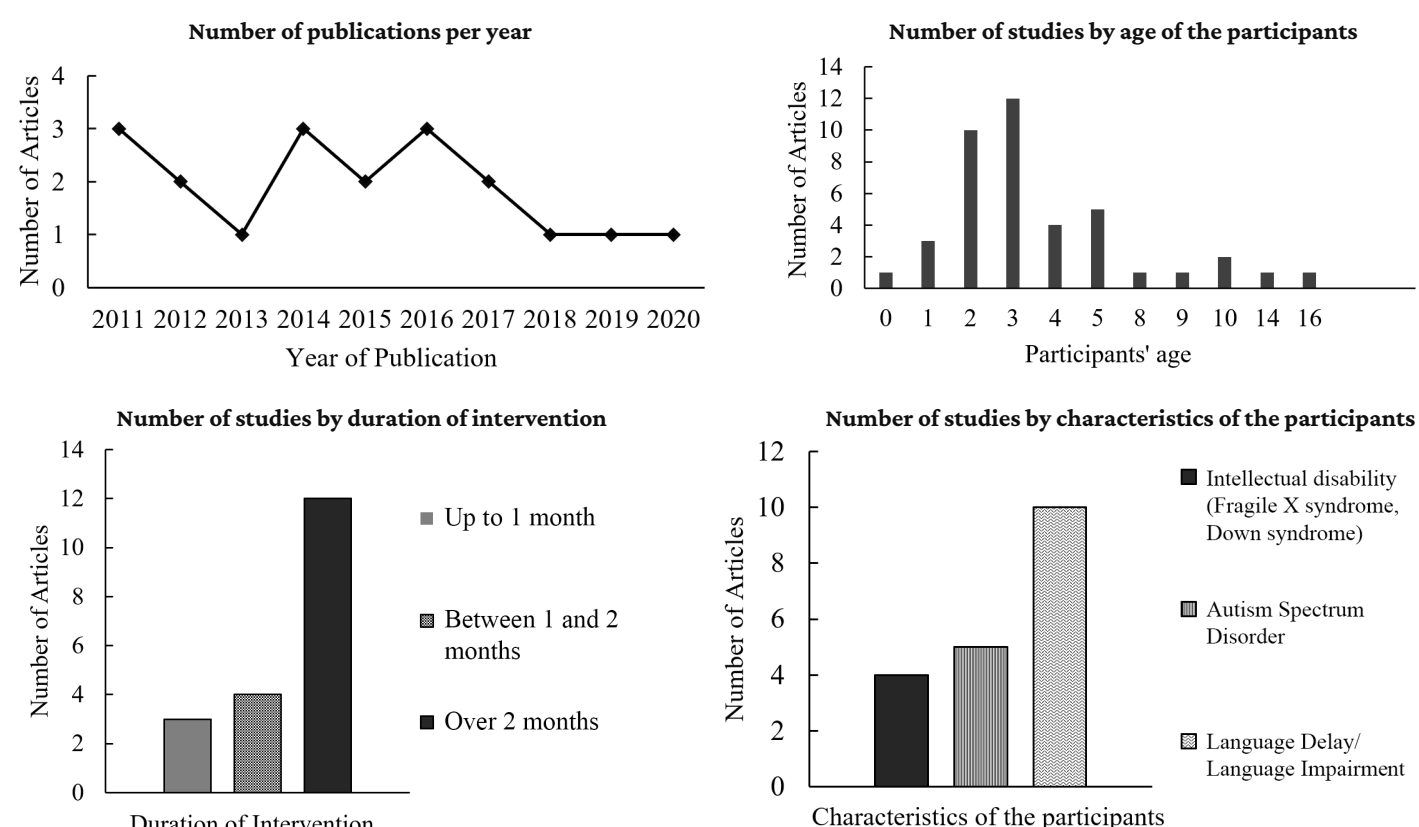


Figure 2. Number of articles by publication year, participant characteristics, participant age and intervention format

Discussion

It was noted that in a large proportion of the studies reviewed the parent teaching took place both in the participants' homes (Prelock et al, 2011; Peredo et al, 2018; Bradshaw et al, 2017), but also involved a phase in the clinic or community space (Wright & Kaiser, 2017; Akamoglu & Meadan, 2019; Buschmann et al. 2015; Roberts et. al, 2014), or also through videoconferencing or other remote technological ways (McDuffie et al, 2013; McDuffie et. al, 2016; Bigelow et al, 2020).

Bigelow et al. (2020) systematically used text messaging via cell phone application to follow up with families during the intervention. The authors discuss that text messaging offers a relatively low-cost and time-efficient strategy to support parent engagement and the reliability of parent use of strategies.

Part of the studies conducted the intervention in parent groups, which enables a greater reach of the intervention and allows for interaction among parents (Allen & Marshall, 2011; Buschmann et. al, 2015; Moore et al, 2014; Nunes et al, 2016; Prelock et al, 2011; Venker et al, 2012). In contrast, other studies conducted the teaching individually over multiple sessions, with defined criteria for applying the strategies, which may favor the accuracy of using the techniques. (Roberts et al, 2014; Peredo, Zelaya & Kaiser, 2018; Wright & Kaiser, 2017). Teaching can also happen very briefly and be cost-effective, as in Colmar's (2011, 2014) studies in which there was only one meeting with the parents, in which the professional provided verbal explanation to the mother and demonstrated the strategy with the child, in addition to providing written instructions.

References

Akamoglu, Y., & Meadan, H. (2019). Parent-Implemented Communication Strategies During Storybook Reading. *Journal of Early Intervention*, 10538151985500. doi:10.1177/105381519855007; Allen, J., & Marshall, C. R. (2010). Parent-Child Interaction Therapy (PCIT) in school-aged children with specific language impairment. *International Journal of Language & Communication Disorders*, 101018023331052. doi:10.3109/13682822.2010.517600; Bigelow, K. M., Walker, D., Jia, F., Irvin, D., & Turcotte, A. (2020). Text messaging as an enhancement to home visiting: Building parents' capacity to improve child language-learning environments. *Early Childhood Research Quarterly*, 51, 416-429. doi:10.1016/j.ecresq.2019.12.010; Bradshaw, J., Koegel, L. K., & Koegel, R. L. (2017). Improving Functional Language and Social Motivation with a Parent-Mediated Intervention for Toddlers with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 47(8), 2443-2458. doi:10.1007/s10803-017-3155-8; Brassart, E., & Schelstraete, M.-A. (2015). Enhancing the Communication Abilities of Preschoolers at Risk for Behavior Problems. *Infants & Young Children*, 28(4), 337-354. doi:10.1097/tyc.0000000000000049; Buschmann, A., Multhauf, B., Hasselhorn, M., & Pietz, J. (2015). Long-Term Effects of a Parent-Based Language Intervention on Language Outcomes and Working Memory for Late-Talking Toddlers. *Journal of Early Intervention*, 37(3), 175-189. doi:10.1177/1053815115609384; Colmar, S. H. (2011). A Book Reading Intervention with Mothers of Children with Language Difficulties. *Australasian Journal of Early Childhood*, 36(2), 104-112. doi:10.1177/183693911103600214; Colmar, S. H. (2014). A parent-based book-reading intervention for disadvantaged children with language difficulties. *Child Language Teaching and Therapy*, 30(1), 79-90. doi:10.1177/0265659013507296; Gengoux, G. W., Schapp, S., Burton, S., Ardel, C. M., Libove, R. A., Baldi, G., ... Hardan, A. Y. (2018). Effects of a parent-implemented Developmental Reciprocity Treatment Program for children with autism spectrum disorder. *Autism*, 15623451877553. doi:10.1177/156234518775538; Gilkerson, J., Richards, J. A., & Topping, K. (2017). Evaluation of a LENA-Based Online Intervention for Parents of Young Children. *Journal of Early Intervention*, 39(4), 281-298. doi:10.1177/1053815117718490; Lund, E. (2018). The Effects of Parent Training on Vocabulary Scores of Young Children With Hearing Loss. *American Journal of Speech-Language Pathology*, 27(2), 765. doi:10.1044/2018.ajslp-16-0239; McDuffie, A., Machalicek, W., Oakes, A., Haebig, E., Weismer, S. E., & Abbeduto, L. (2013). Distance Video-Teleconferencing in Early Intervention. *Topics in Early Childhood Special Education*, 33(3), 172-185. doi:10.1177/0271121413476348; McDuffie, A., Machalicek, W., Bullard, L., Nelson, S., Mello, M., Tempero-Feigles, R., ... Abbeduto, L. (2014). A Spoken-Language Intervention for School-Aged Boys With Fragile X Syndrome. *American Journal on Intellectual and Developmental Disabilities*, 121(3), 236-265. doi:10.1352/1944-7558-121.3.236; McDuffie, A., Oakes, A., Machalicek, W., Ma, M., Bullard, L., Nelson, S., & Abbeduto, L. (2016). Early Language Intervention Using Distance Video-Teleconferencing: A Pilot Study of Young Boys With Fragile X Syndrome and Their Mothers. *American Journal of Speech-Language Pathology*, 25(1), 46. doi:10.1044/2015.ajslp-14-0137; Moore, H. W., Barton, E. E., & Chironis, M. (2013). A Program for Improving Toddler Communication Through Parent Coaching. *Topics in Early Childhood Special Education*, 33(4), 212-224. doi:10.1177/0271121413497520; Nunes, D. R., Araújo, E. R., Walter, E., Soares, R., & Mendonça, C. (2016). Augmenting caregiver responsiveness: An intervention proposal for youngsters with autism in Brazil. *Early Childhood Education Journal*, 44(1), 39-49; Oakes, A., Ma, M., McDuffie, A., Machalicek, W., & Abbeduto, L. (2014). Providing a parent-implemented language intervention to a young male with fragile X syndrome: Brief Report. *Developmental Neurorehabilitation*, 18(1), 65-68. doi:10.3109/17518423.2014.967416; Peredo, T. N., Zelaya, M. L., & Kaiser, A. P. (2018). Teaching Low-income Spanish-Speaking Caregivers to Implement EMT in Spanish With Their Young Children With Language Impairment: A Pilot Study. *American Journal of Speech-Language Pathology*, 27(1), 136-153; Prelock, P. A., Calhoun, J., Morris, H., & Platt, G. (2011). Supporting Parents to Facilitate Communication and Joint Attention in Their Young Children With Autism Spectrum Disorders. *Topics in Language Disorders*, 31(3), 210-234. doi:10.1097/tld.0b013e318227bd3f; Roberts, M. Y., & Kaiser, A. P. (2012). Assessing the Effects of a Parent-Implemented Language Intervention for Children With Language Impairments Using Empirical Benchmarks: A Pilot Study. *Journal of Speech, Language and Hearing Research*, 55(6), 1655. doi:10.1044/1092-4388(2012)11-0236; Roberts, M. Y., Kaiser, A. P., Wolfe, C. E., Bryant, J. D., & Spidaliere, A. M. (2014). Effects of the Teach-Model-Coach-Review Instructional Approach on Caregiver Use of Language Support Strategies and Children's Expressive Language Skills. *Journal of Speech, Language and Hearing Research*, 57(5), 1851. doi:10.1044/2014.jslhr-11-0113; Snodgrass, M. R., Chung, M. Y., Biller, M. F., Appel, K. E., Meadan, H., & Halle, J. W. (2017). Telepractices in Speech-Language Therapy: The Use of Online Technologies for Parent Training and Coaching. *Communication Disorders Quarterly*, 38(4), 242-254. doi:10.1177/1535740116680424; Fabbri, S., Silva, C., Hernandez, E., Occhipinti, F., Di Thommazo, A., & Belgamo, A. (2016). Improvements in the StArt tool to better support the systematic review process. In *Proceedings of the 20th International Conference on Evaluation and Assessment in Software Engineering* (pp. 1-5).