

Critical Review:
The Effectiveness of Parent Training on Shared Storybook Reading in Improving Children's Literacy Outcomes

Ashlie Culina
M.Cl.Sc. SLP Candidate
University of Western Ontario: School of Communication Sciences and Disorders

This critical review examines the evidence of the impact of parent training on shared storybook reading in improving children's literacy outcomes. The study designs in this review include one meta-analysis, five randomized-controlled trials, one nonrandomized research design, and one cross-sectional study. The findings of this review indicate that most studies conclude that there is an overall benefit from parent-child shared storybook reading in improving children's language and literacy skills. However, the evidence is mixed regarding the best type of parent-training approach, as there are inconsistent or nonsignificant outcomes for many of the reviewed studies. Lastly, the clinical implications and recommendations for Speech-Language Pathologists (SLPs) are discussed.

Introduction

Literacy is an integral part of our education system in North America, creating learning environments that allow children to be successful. Pratt, Justice, Perez, and Duran (2015) discussed that early literacy relies on a child's ability to understand that print is a meaningful code. The researchers further explained that regardless of the language, being able to read relies on an understanding of print knowledge.

Parents often spend a lot of time with their young children, therefore parent-training is an effective avenue to explore to help families enable their children to develop strong language and literacy skills (Reese, Sparks, & Leyva, 2010). At a young age, children are not able to learn from books without support from their caregivers, as children need many years of experience with storybooks before they are able to independently read (Mol, Bus, de Jong, & Smeets, 2008). However, research suggests that simply reading a book to a child is often not enough to increase their language skills (Saracho & Spodek, 2010).

Mol et al. (2008) describe that regardless of the book that is being read, the interaction between the parent and the child is the most important part. Mol et al. (2008) explained that when parents have the intent to stimulate language growth during their reading time with their children, then they are likely to approach the process of shared storybook reading differently than parents who are just reading to pass time. For example, they may ask their child more questions, provide feedback, and alter their language to suit their child's needs (Mol et al., 2008). Ultimately, the social context can have an impact on children's interest in book reading and their vocabulary growth.

Dialogic reading, a technique based on parent-child interactions before, during, and after reading, has been suggested as an option for parents to foster language and literacy skills (Saracho, 2017). Saracho (2017) has found that dialogic reading can be taught to parents as a reading strategy to help improve their child's vocabulary, reading comprehension, and overall literacy skills.

Objectives

The primary objective of this paper is to critically evaluate existing literature on whether parent training on shared storybook reading impacts children's literacy outcomes. The secondary objective is to provide clinical implications and recommendations for Speech-Language Pathologists (SLPs) working with preschool children on early language and literacy interventions.

Methods

Search Strategy

Online databases, including: Google Scholar, PubMed, and Scopus, were searched using the following terms:

[(parent training) AND (shared storybook reading) OR (dialogic reading) AND (literacy)]

[(parent training) AND (Head Start) AND (literacy)]

[(parent) AND (literacy) AND (intervention)]

[(Reach Out and Read) AND (literacy)]

The search yielded articles ranging from 1996-2016.

Selection Criteria

Articles were selected for inclusion in this critical review if they examined parent-child dyads during shared storybook reading, included an outcome measure of language and literacy, were available in English, and were peer-reviewed.

Data Collection

The literature search yielded eight articles that fit the inclusion criteria. These articles include one meta-analysis, five randomized-controlled trials, one nonrandomized research design, and one cross-sectional study.

Results

Meta-Analyses

A meta-analysis examines the evidence behind a compilation of studies with the same topic. Meta-analyses provide strong evidence for an outcome since they compare the available literature for a given area of interest.

Mol et al. (2008) conducted a meta-analysis of the literature examining the benefit of interactive versus non-interactive shared book reading. For a study to be included in the analysis it must have: made use of dialogic reading, included children with no handicaps, used vocabulary as an outcome variable, and been written in English. The studies within this paper ranged from 1988-2006 and included a total of 626 parent-child dyads with children between the ages of 2-6 years old. Researchers found that younger children received greater benefit from dialogic reading than older children or children with learning impairments.

The researchers reported several limitations with the study including: that there were only 16 eligible studies, many studies did not show effective control over the conditions, data was often missing or sparse, and several studies were part of a larger study examining school interventions. Appropriate statistical analyses were completed.

Despite the limitations, this study provides compelling evidence that dialogic reading can be beneficial for young children. Although these benefits were not observed in older children or children with literacy impairments.

Randomized-Controlled Trials

A randomized-controlled trial includes at least two groups that are randomized to either the treatment condition or the control condition. This type of study design provides a strong level of evidence because the results indicate whether receiving the treatment was beneficial.

Dale, Crain-Thoreson, Notari-Syverson, and Cole (1996) conducted a study looking at the impact of parent instruction of children with language delays regarding shared-book reading compared to conversational instruction. Participants included 33 children aged 3-6 years old with mild-moderate language delays. Children were randomly assigned to either the dialogic reading (book-reading episode) or conversational language training (play episode). In both conditions, an interactive and responsive style of communication was encouraged while interacting with their children. The pre-test included a videotaped session, then there were two instructional units, and the post-test included a final videotaped session at the two-month mark. The researchers hypothesized that more change would take place in the book-reading episode. However, results demonstrate that more change occurred in the play episode. Furthermore, the parents who altered their interaction more during the intervention resulted in their children having more language growth. Researchers suggested that it is possible that the play-based episode is less constrained than the book-reading episode which may have impacted the results.

The researchers reported that there were many limitations, such as the lack of monitoring over time, the short duration of the study, lack of consistency in monitoring the home intervention, and considerable variation of children within the sample. This study had a small sample size. As well, there was no interrater reliability completed for the coding of utterances. Parents also failed to appropriately date the audiotapes, therefore they were unable to be analyzed. Appropriate statistical analyses were completed.

This study provides equivocal evidence for play-based episodes including dialogic principles being more effective than dialogic principles used during the book-reading episodes. These results should be interpreted with caution due to many design and methodology flaws.

Chow, McBride-Chang, Cheung, and Chow (2008) conducted a study to look at how parent-child book reading and metalinguistic training impact language and literacy abilities of young children. Participants included 148 children aged 57-71 months. These children all spoke Cantonese and went to a school in Hong Kong. Participants were randomly assigned to 1 of 4 groups dialogic reading with morphology training (DR+MT), dialogic reading (DR), typical reading (TR), or a control condition. The researchers hypothesized that DR+MT and DR conditions would improve most in their vocabulary growth and that the DR+MT would result in improved morphological awareness and

recognition of Chinese characters. The intervention was completed over 12 weeks and the pre-test included demographic information, character recognition, vocabulary, morphological awareness, non-verbal IQ, and interest in reading. As well, at post-test these measures, except for non-verbal IQ testing, were assessed plus story identification and a follow-up questionnaire. Researchers found that shared book reading resulted in better language development, however the DR+MT condition better prepared children for learning to read. The researchers reported that it is important to recognize the difference between oral-language and meta-linguistic strategies when facilitating children's language and literacy.

Limitations of the study included that children's storybook identification was used as an indirect measure of parent's compliance to the program and that the morpheme identification task had low reliability. The randomized-controlled trial nature of this study provides strong evidence for their outcome. This study also has a moderate sample size. Despite similar outcomes to previous studies of English speakers, this study was based on Cantonese speakers and had a focus on morphological awareness instead of phonological awareness. Appropriate statistical analyses were completed.

This study provides somewhat compelling evidence to support the importance of dialogic reading and morphological awareness for Cantonese-speaking children in developing their literacy skills. However, these results should be interpreted with caution, as they are based on the Cantonese speakers and cannot be generalized to English speakers.

Reese et al. (2010) conducted a study to examine whether low-income mother-child dyads benefitted more from dialogic reading (DR) or elaborative reminiscing (ER) in enhancing their children's language and literacy. Participants included 33 parents of 4-year old children that attended a Head Start program between 2003-2006. Children were randomly assigned to either DR, ER, or the control group. The treatment groups received their assigned technique and then parents were trained on the use of the technique. All groups were visited at the home for an interview. The children were assessed using the Peabody Picture Vocabulary Test-III (PPVT-III), narrative tasks including story comprehension and story production, and the Concepts About Print test at pre-test and post-test. The researchers hypothesized that DR and ER would yield positive impacts for expressive vocabulary and narrative skills. The researchers found that ER was more effective in enhancing children's narrative skills and supporting their story comprehension than DR.

The limitations provided by the researchers included that they were unable to make a second home visit to determine whether the techniques were being implemented properly. Also, they did not assess parent's perceptions of the program that may have contributed to the outcome. The sample size is also quite small. The researchers mentioned that there were many missing data points at both pre-test and post-test. The researchers also tested print concepts without training parents to focus on print. Additionally, it was noted that other literacy skills were available to report on from the assessment, however they were not included in the analysis. Appropriate statistical analyses were completed.

This study provides equivocal evidence for the benefits of elaborative reminiscing over dialogic reading, as the design and methodology had multiple flaws.

Parish-Morris, Mahajan, Hirsh-Pasek, Golinkoff, and Collins (2013) conducted two studies to determine the impact of using electronic console books versus traditional books in developing strong literacy outcomes. A sample of 165 parent-child dyads were recruited. This study was split into two sections. The first section examined the impact on language with 92 children aged 3-5 years old. Children were randomly assigned to one of the three groups: electronic console book reading, traditional book reading, or a control group that used an electronic console with the electronic features turned off. Dyads in first study chose one of five available books and were videotaped so that researchers could transcribe and code the utterances. The second section examined the impact on story comprehension with 73 children aged 3-5 years old. Children were randomly assigned to either the electronic console book reading or the traditional book reading. The second study followed the same protocol for coding utterances as study one, however when the parents left the room to complete a questionnaire, the experimenter asked the children questions related to the story to target story comprehension. The results of these studies indicated that electronic features in both conditions resulted in negative impacts on both dialogic reading and story comprehension.

Limitations of these two studies include that SES was restricted to upper-middle class families and there was a ceiling effect for the 5-year old children in one study measure. This study had a moderate overall sample size and coders were blind to the study hypotheses. Appropriate statistical analyses were completed for both studies.

This study provides somewhat compelling evidence that younger children benefit more from traditional forms of

storybook reading.

Kumar, Cowan, Erdman, Kaufman, and Hick (2016) conducted a pilot study based on the feasibility and effectiveness of adolescent mothers partaking in the Reach Out and Read (ROR) program. Participants included 28 mother-child dyads, with children aged 6-20 months. Participants were randomly assigned to either the intervention group or the control group. Children in the intervention group received a new book per visit to the clinic, anticipatory guidance, counselling from the librarian, and a public library card. The control families only received the routine care. At pre-test and post-test, all mothers completed a questionnaire and the Beck Depression Inventory-Revised (BDI-IA). The results indicate that mothers in the intervention group were more likely to report their child's favourite activity as reading (29 vs 0%) and their maternal depression scores decreased from 12.5 to 7, where a score of 10 equals clinically significant depression. All other variables trended toward beneficial, compared to the control group where the mother's outcomes on all the measures worsened. The researchers expressed that this program shows promising outcomes for improving the amount of shared book reading and it also aids in decreasing maternal depression scores for adolescent mothers.

Reported limitations of this study include that it was a small sample size and there was a lack of long-term follow up of the families. Appropriate statistical analyses were completed.

This study provides somewhat suggestive evidence that ROR frequency can decrease maternal depression and increase the amount of time parents spend reading with their children to enhance the child's overall development.

Nonrandomized Research Design

Nonrandomized research designs include a nonequivalent control group and lacks full randomization. The level of evidence can vary depending on the methodology used in each study.

Pratt et al. (2015) conducted a study to determine the impacts that print-referencing can have on Spanish-speaking children with language impairment (LI). Participants included 13 parent-child dyads, with children aged 42-84 months that all had an LI diagnosis. Children were randomly assigned to either the intervention condition, called Leamos Juntos, or the control group. However, despite there being a randomized component, there were a priori decisions regarding having a larger intervention group which may have impacted the randomization and thus it is not clear

whether the outcome was impacted. The intervention consisted of an 8-week program where parents were expected to use print referencing and read the corresponding book for the week. Whereas, the control condition read as they typically would for the 8-week period. The pre-test included subtests from the Clinical Evaluation of Language Fundamentals – Preschool 2 Spanish (CELF-P2 Spanish) including word structure, expressive vocabulary, and sentence structure. As well, three additional subtests from the Phonological Awareness Literacy Screening – Español (PALS-Español) included print and word awareness, letter-name knowledge, and letter-sound knowledge. Parents were monitored with logs to determine their progress. Results indicate that some gains were made for the intervention group compared to the control group.

Limitations include that parents were advantaged, the sample size was small, and there were no long-term measures put in place to assess the participants. The sample for this study was quite small. As well, this study is based on Spanish speaking children; therefore, it is difficult to generalize to the English-speaking population. The wording that was used to describe the statistical outcomes was misleading. However, appropriate statistical analyses were completed.

This study provides somewhat suggestive evidence for the benefit of print-referencing with Spanish speaking children. However, the results should be interpreted with caution, as this study is based on a Spanish-speaking population and is difficult to generalize for English-speaking children.

Cross-Sectional Studies

Cross-sectional studies examine a group at a certain time, therefore this type of study yields a weak level of evidence since there is not a longitudinal or randomized component.

Weitzman, Roy, Walls, and Tomlin (2004) conducted a study to determine the relationship between the frequency of Reach Out and Read (ROR) meetings at well-child visits and the child's literacy outcomes. Participants included 100 families with children aged 18-30 months. Families completed an interview and a home visit that included 10 variables that were summed to create a Child Home Literacy Index. The Home Observation for Measurement of the Environment (HOME) was administered to provide a measure of the nurturing environment. Parents then received between 0-6 books based on their well-visit appointments. The researchers hypothesized that the relationship between the frequency of ROR meetings at the well-child visits and the child's home literacy profile would be significant. Results indicated that increasing frequency

of ROR meetings resulted in a small, yet significant, portion of the variance being explained by the child's home literacy profile (5%).

Limitations of this study include that there was not a baseline literacy measure to compare to, there was not a control group, and the attrition rate was 27%. Since there was no baseline comparison and control group, the findings should be interpreted with caution. However, a moderate sample size participated. Appropriate statistical analyses were completed.

This study provides somewhat suggestive evidence for the increased frequency of ROR leading to improved literacy outcomes.

Discussion

Dialogic reading (DR) was found to be most effective in younger children compared to older children or children with learning impairments (Mol et al., 2008). However, combining DR with metalinguistic training yielded more improvements in reading than solely DR due to improved character recognition and morphological awareness (Chow et al., 2008). Compared with DR, conversational training (Dale et al., 1996) and elaborative reminiscing (Reese et al., 2010) lead to greater literacy benefits than the DR condition. Additionally, when DR was used with electronic features versus with traditional storybooks, results indicate that electronic features negatively impacted children's shared reading experience and their comprehension of elements of the story (Parish-Morris et al., 2013).

The one study that looked at print-referencing found that some gains were made for the intervention group, as children improved their print-concept knowledge, alphabet knowledge, and letter sound knowledge (Pratt et al., 2015).

Two studies looked at Reach Out and Read (ROR) and results indicated that ROR can be effective in increasing young children's exposure to reading as well as their enjoyment during reading (Kumar et al., 2016; Weitzman et al., 2004).

Many of the studies are longitudinal (Chow et al., 2008; Dale et al., 1996; Kumar et al., 2016; Pratt et al., 2015; Reese et al., 2010; Weitzman et al., 2004). However, most of the studies within this critical review have several limitations. For example, half of the studies have small sample sizes which can lead to difficulties relying on their findings and an inability to provide a strong clinical recommendation (Dale et al., 1996; Kumar et al., 2016; Pratt et al., 2015; Reese et al., 2010).

Although, it can be difficult to recruit participants for this area of research due to the increased commitment to adhere to a reading program. As well, some studies had many methodological flaws such as lost data and inconsistent monitoring and/or follow up (Dale et al., 1996; Mol et al., 2008; Parish-Morris et al., 2013; Reese et al., 2010). In the Dale et al. (1996) study, the researchers mentioned that some of the post-tests were completed at 6-8 weeks, whereas others were completed at 10-11 weeks due to scheduling conflicts. Consequently, some children may have improved more due to practicing for another month or two, or it is possible that more time for general development may have impacted the scores. Whereas, in Parish-Morris et al. (2013) there was not a control put in place to determine the familiarity that families had with the books and whether they read the book more than once.

Another methodological flaw was found in group categorization for the Chow et al. (2008) study. There was not a metalinguistic group on its own to be able to determine the distinct difference between DR only and meta-linguistic training only. Similarly, in Reese et al. (2010), the elaborative reminiscing (ER) group utilized DR strategies and therefore the group should have been called ER + DR.

There were many parent-training approaches and measures that were looked at in this critical review which makes it difficult to compare across the studies. The parent-training approaches included DR, metalinguistic training, conversational training, elaborative reminiscing, print-referencing, ROR, and finally another study looked at the impact of electronic features during shared-storybook reading. As well, the level of interaction differed, since ROR (Kumar et al., 2016; Weitzman et al., 2004) was based on frequency of reading and the other strategies focused on more interactive parent-training approaches. Most of the studies were based on English-speaking children, however two of the studies included Cantonese (Chow et al., 2008) and Spanish-speaking (Pratt et al., 2015) children. There were also two studies that looked at children with developmental language disorders (Dale et al., 1996; Pratt et al., 2015). The studies ranged from having children that were 6-months old to 6-years old. As a result, it is difficult to compare across studies since there are many variables to consider at this point in the research.

Regarding ROR, mothers that participated in the program had improved mental health, as noted by the Beck Depression Inventory-Revised (BDI-IA) that was completed again at post-test. Improved mental health may lead to more interaction time with their children,

which may improve their child's language and literacy skills.

Even though some of the studies yielded compelling or somewhat compelling evidence, there were many studies with somewhat suggestive or equivocal evidence which shows the need for more research to be able to provide a strong recommendation for a specific parent-training approach.

Recommendations for future research include developing studies that include larger clinical trials and that are longitudinal to continue to determine the effectiveness of parent-child shared book reading over time. This could be done by comparing similar aged children on different parent-training approaches. However, at this point, research suggests that parent training should focus on frequently engaging young children through traditional story-book reading and including conversational discussions beyond the book itself to foster narrative skills.

Clinical Implications

Parent training on shared storybook reading can be effective in improving language and literacy skills in young children, however due to the limited strength of evidence gathered from these studies, clinicians should be cautious when implementing the findings from these studies. The studies yielded inconsistent evidence and looked at many different measures.

While this clinical review did not identify the most effective parent-training approach, clinicians must understand the importance of parent involvement in promoting early literacy. More research needs to be completed to strengthen the level of evidence and help clinicians to determine what parent-training approach should be recommended and implemented.

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