The effects of three phonological therapy treatments on increased sound production for children with phonological disorders

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Introduction

- Phonemic awareness is the ability for a person to organize and distinguish phonemic sounds from one another.
- However, it is difficult to know exactly which intervention to use when beginning therapy for a preschool age child with a phonological disorder.
- Multiple Oppositions, Maximal Oppositions, and Minimal Pair approaches are all interventions used to increase sound production and phonemic awareness for phonological disorders in preschool age children.

Case Scenario

- Kylie is a graduate student studying speech pathology at the University of Nevada, Reno. She serves a 4.7-year-old boy with a phonological disorder.
- The client is seen twice a week for two, one hour sessions.
- The client presents with many phonological processes; metathesis, devoicing of medial and final consonants, decompartmentalization, deaffrication, gliding, voicing, and stopping.
- Along with his phonological processes, the client has multiple phoneme collapse. For example, the phonemes /ʃ/, /ʃ/, /z/ all are produced as /s/. The client’s mother reported that he is often unintelligible to others and is highly unintelligible to unfamiliar listeners.
- The client has low expressive and receptive vocabulary skills and labels items using a few words.
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Method

- Search terms: phonological oppositions, multiple oppositions, minimal pairs, phonological disorders, and multiple oppositions.
- Ten research articles were appraised and evaluated for validity and importance.
- Four articles were used based on interrater reliability and appropriateness to the purpose of this study.

PICO (patient, intervention, comparison, and outcome) framework (Gilliam & Gilliam, 2008) was used to develop the following clinical question:

The purpose of this study was to determine whether Multiple Oppositions therapy, Maximal Oppositions or Minimal Pair therapy approaches led to greater gains in sound production of preschool age children with phonological disorders.

- P: Preschool children with phonological disorders
- I: Multiple Oppositions Therapy
- C: Maximal Oppositions or Minimal Pair Therapy
- O: Greater gains in sound production

References


Discussion

- Of the chosen experimental evidence, the findings indicate that Multiple Opposition therapy, Maximal Opposition therapy and Minimal Pair therapy are all effective in increased sound production. However, there was no statistical difference between the different interventions and all three therapy approaches were efficient approaches to phonological therapy in preschool age children.
- It was noted that Minimal and Maximal Opposition showed greater gains in sound production of the child’s phonetic inventory if the child had a severe disorder or a moderate to severe disorder.
- Furthermore, Multiple Opposition therapy displayed increased sound production in the phonological system and a decreased amount of impaired distance features (Paglieri, Mota, & Keske-Soares, 2009).
- A study that focused on the generalization of each therapy concluded that generalization of sounds to untreated words (children with MMD) and sounds across word positions (children with MSD) was more effective using the Maximal Opposition therapy approach. Nonetheless, the subjects with the moderate to severe phonological disorder displayed the greatest amount of generalization using Multiple Opposition therapy, whereas the subject with the mild to moderate phonological disorder displayed the greatest generalization using Minimal Pair Opposition Therapy (Paglieri, Mota, & Keske-Soares, 2010).
- For further research on the effectiveness of phonological oppositions, it may be beneficial to determine whether a certain severity of phonological disorders presents greater gains in sound production or generalization using the three-contrasting approaches, Minimal Pair, Maximal, Oppositions, and Multiple Oppositions.
- Based on my client’s preferences (see case scenario) to increase overall intelligibility, Multiple Opposition therapy appears to be the most appropriate therapy technique for the severity of the phonological disorder for my client.

Authors/Date | Participants | Purpose | Dependent Variable | Results |
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Ceron, & Keske-Soares (2013) | N = 5 | To analyze the phonological changes resulting from the application of the Multiple Opposition approach regarding the Percentage of Correct Consonants-Revised (PCC-R), through the number of phonemes which are acquired in the phonological inventory and the types of generalization. | Percentage of Correct Consonants-Revised (PCC-R) |
Mota, Keske-Soares, Bagetti, Ceron, & Filha (2007) | N = 21 | To compare the changes related to the phonological system of children with phonological disorders using Modified Cycles, Maximal Oppositions and ABAB-Withdrawal and Multiple Probes. | Acquired number of phonemes, Number of sounds established in the phonetic inventory, Impaired distinctive features before and after therapy |
Mota, Keske-Soares (2009) | N = 9 | To compare the efficacy of three contrastive approach models in three different severities of phonological disorder. | Severity of phonological disorder, Number of sounds in the phonetic inventory, Number of phonemes established in the phonetic inventory, The number of altered distinctive features |
Paglieri, Mota, & Keske-Soares (2010) | N = 9 | To analyze structural generalization in three different models of contrastive approach, considering the severity of the phonological disorder. | Initial and initial percent consonants correct (PCC), Untreated words, Other word positions, Generalization within and across sound classes |

Phonemes, Phonetic Inventory, and Distinctive Features
- Based on statistical analysis it was observed that there was no statistical significant difference (p > 0.05) among the therapeutic models researched, which permits to conclude that the three models studied were equally efficient in the treatment of the subjects researched.

Severity
- There was no statistical difference among the models considering the severity of phonological disorder.

Phonetic Inventory
- The Minimal and Maximal Oppositions approaches favored a greater number of sound acquisitions in the phonetic inventory of subjects with MSD and MMD.

Phonological System & Distinctive Features
- Multiple Oppositions favored a better performance of sound acquisition in the phonological system and a decrease in the impaired distinctive features in SD and MSD.

Results
- It was verified the occurrence of different types of generalization across all groups, however, there was no statistical difference between them.

Initial and Final PCC
- The subjects with severe disorder presented the greatest improvement in initial and final percent consonant correct.

Untreated Words
- Generalization to untreated words was more evident in the Maximal Opposition/Empty set model mainly for the MMD.

Other Word Positions
- Generalization to other word position was mainly observed in the children treated with the Maximal Opposition/Empty Set model, with the largest difference found in the child with MSD.

Generalization Within and Across Sound Classes
- In the Multiple Oppositions model the child with MSD exhibited the greatest generalization, while in the Minimal Opposition approach the child with MMD showed the greatest generalization.