

Phonological Treatment for School-aged Children: A Consideration For the Effectiveness of Maximal and Multiple Opposition Approaches

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Introduction

- School-aged children with phonological disorders are sometimes not understood at school when asking questions and sharing ideas with teachers and peers.
- Children with these disorders are typically seen by a speech-language pathologist to work on their specific phoneme error patterns.
- Therapeutic approaches to phonological disorders, such as Maximal Opposition, Minimal Opposition, and Multiple Opposition approaches have been used in speech-language therapy and have been found to improve phonological disorders in school-aged children.
- Implementing the most effective techniques and approaches during intervention is most beneficial for the client and clinician.
- In order to achieve the maximum benefit from phonological therapy, external evidence was compiled and analyzed to determine which of the oppositional approaches mentioned above can be expected to result in the greatest amount of change.

PICO Question

Are the error patterns produced by school-aged children with phonological disorders (P) significantly reduced or eliminated (O) when presented with therapy targets outlined by a Maximal Opposition approach (I), as compared with the improvements made by implementing other intervention approaches for phonological disorders (C) (i.e., Multiple Opposition and Minimal Opposition approaches)?

Case Scenario

Brittany is a graduate student clinician who anticipates working with school-aged children with phonological language disorders. In a search for the best approaches to phonological therapy, she read multiple articles and spoke with multiple colleagues, and found three therapeutic approaches she might consider to be most effective for future clients. As a new SLP looking for the best approach to therapy for her future clients, Brittany chose to continue her review of research on these three types phonological therapy: Maximal, Minimal, and Multiple Opposition approaches.

Results

Study Author(s) Type of Research	Participants, Age(s), Diagnoses	Purpose	Dependent Variable	Results
Ceron, Pagliarin, & Keske-Soares (2013) Advances in the treatment of children with phonological disorders Case Series Study	N=94 32 females 62 males 3;9-8;5 years Phonological disorders of differing degrees of severity	The purpose of this study was to examine the effect of different therapy models (i.e., Modified Cycles, Maximal Oppositions, ABAB- Withdrawal and Multiple Probes) on therapeutic advances (phonetic inventory, phonological system, and distinctive features) for children with phonological disorders.	<ul style="list-style-type: none"> • Phonetic inventory • Phonological system • Altered distinctive features 	<p>Phonetic inventory: No statistical difference between three models ($p = .89$)</p> <p>Phonological system: No statistical difference between three models ($p = .275$)</p> <p>Altered distinctive features: Statistical difference ($p = .01$) found between ABAB ($M = 9.18$) and other models (Maximal Opposition: $M = 4.88$; Modified Cycles: $M = 4.5$)</p> <p>Each of the included models were found to be equally effective treatment approaches for children with phonological disorders.</p>
Ceron, Keske-Soares, Pereira de Freitas, & Gubiani (2010) Phonological changes obtained in the treatment of subjects comparing different therapy models Multiple Baseline Case Study	N=21 10 females 11 males M = 5;7 years Phonological disorders ranging in severity level	The purpose of this study was to compare the effects of different therapy approaches (ABAB- Withdrawal and Multiple Probes, Modified Maximal Opposition Model, and Modified Cycles) for phonological disorder intervention.	<ul style="list-style-type: none"> • Severity levels (as measured by Percentage of Consonants Correct-Revised (PCC-R)) 	<p>Severity levels</p> <ul style="list-style-type: none"> • Statistical significance ($p = .04$) found between the groups of individuals with severe to moderate-severe phonological disorders and individuals with mild-moderate or mild phonological disorders receiving ABAB-Withdrawal and Multiple Probes Model ($p = .04$), Maximal Oppositions Model ($p = .02$), and Modified Cycles Model ($p = .48$). <p>Each of the models were found to be effective for the treatment of phonological disorders in children.</p>
Pagliarin, Mota, & Keske-Soares (2009) Therapeutic efficacy analysis of three contrastive approach phonological models Multiple Baseline Design	N=9 4 females 5 males 4;2-6;6 years Phonological disorders	The purpose of this study was to compare the efficacy of three contrastive approaches for the intervention of phonological disorders with a consideration of three severity levels.	<ul style="list-style-type: none"> • Phonetic inventory • Phonological system • Altered distinctive features 	<p>Phonetic inventory: No statistical difference reported between three models.</p> <p>Phonological system: No statistical difference reported between three models.</p> <p>Altered distinctive features: No statistical difference reported between three models.</p> <p>Children with severe and moderate-severe phonological disorders were found to:</p> <ul style="list-style-type: none"> • Benefit from a greater amount of sound acquisitions when provided intervention from either Minimal or Maximal Opposition/ Empty Set approaches in therapy. • Benefit from a better performance of sound acquisition and decrease the number of impaired distinctive features when provided intervention from a Multiple Opposition approach in therapy.
Seyhun, & Ozlem (2010) An alternating treatment comparison of minimal and maximal opposition sound selection in Turkish phonological disorders Single-Subject Alternating Treatment Design	N= 2 2 females 6;0 years Significant delay in expressive language/ phonological disorder	The purpose of this study was to examine the sound selecting strategies, as taken from the Maximal and Minimal Oppositions therapy approaches, with regard to the impact they have on the learning skills in young children with phonological disorders.	<ul style="list-style-type: none"> • Unknown, but treated sounds • Comparison sounds 	<ul style="list-style-type: none"> • Unknown but treated sounds: Change observed • Comparison sounds: Change observed <p>Generalization of the treated sounds to other word positions & change in unknown but untreated sounds.</p> <p>This study found that using a Maximal Opposition approach to treat phonologically disordered language in twins, may result in significantly greater changes in a child's language system and increase better learning skills, as compared to the results achieved during intervention from Minimal Opposition approach.</p>

Methods

A comprehensive search of scientific research was conducted for the purpose of locating relevant and reliable external evidence on the efficacy of specific phonological disorder therapy approaches. The articles presented in this review were provided by the electronic databases of PubMed, DOAJ, ERIC, and Informa Healthcare and were located by entering search terms, such as "Multiple Oppositions approach", "Maximal Oppositions approach", and "comparison of phonological treatment approaches".

These searches provided ten articles that were appraised and evaluated for validity and reliability. An inter-rater reliability of at least 80% was achieved. Out of the ten initial articles, five were chosen based on the level of research and importance to this review. The scores given to each article are illustrated in the table below.

From these databases, ten articles topic-relevant articles were located. After the individual appraisal and evaluation of each article, four were chosen based on the highest appraisal points. These studies are listed in the table.

Discussion

External Evidence: Scientifically based research indicated that each of the therapeutic approaches for the intervention of phonological disorders in children are effective means of therapy. However, specific levels of efficacy were not indicated for any one approach.

Internal evidence to clinical practice: Each of the therapeutic approaches addressed in these studies were found to be clinically effective for improving phonologically disordered language in school-aged children.

Clinical Decision: Additional research findings are needed to determine which of these phonological therapeutic approaches is most effective for school-aged clients. In the meantime, clients can be given information on each of these effective treatment approaches in order to make an educated decision on which approach might best suit him or her.

References

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