



Emergent Language and Literacy Skills in Preschool

Children with Hearing Impairments

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Introduction

- During early childhood years, spoken language development is the precursor to adequate literacy skill development during preschool years (3-5 years old) and into elementary school. It is well-documented that *interruptions in the normal development* of spoken language will result in delayed or impaired literacy development.
- Children with hearing impairments include children who are unable to hear at levels commensurate with peers or at industry accepted standards (ASHA, 1981; U.S. Department of Education, 2004; Welling & Ukstins, 2019). Due to the advances in technology and practice, children with hearing impairments receive Hearing Assistive Technology such as hearing aids or cochlear implants that allow them to perceive acoustic signals (i.e., to hear sound) at levels that can support spoken language development at a younger age.
- By nature of their hearing impairments, these children are at risk for difficulties acquiring literacy skills regardless of the age at which the hearing loss was identified or the age at which Hearing Assistive Technology was introduced. Thus, preschool children with hearing impairments who use Hearing Assistive Technology are considered at risk for language and literacy difficulties.
- One skill that is important for preschool children to support literacy acquisition is Beginning Sound Awareness that may not be directly taught even in the highest quality Tier 1 learning environment. Therefore, Beginning Sound Awareness instruction is an important instructional target for preschool children with hearing impairments.
- Because the intervention approach under study has been validated for improving language and literacy outcomes in low-income preschool children when provided in small groups (Koutsoftas et al. 2009), we expect that in a more academically challenged sample, such as preschool children with hearing impairments, we could expect gains in language and literacy outcomes. The specific research questions were:

- 1) Do preschool children with hearing impairments demonstrate gains on Beginning Sound Awareness probes administered individually during baseline, treatment, and post-treatment phases?
- 2) Do preschool children with hearing impairments demonstrate gains, as a group, from pre-test to post-test on the PALS-PreK Beginning Sound Awareness test?

Sample

Group	Participant	Age in Months	# of Absences
1	400	49	3
	401	45	0
	402	51	0
2	403	64	2
	404	53	1
3	405	51	1
	406	47	4
4	407	57	0
	408	51	0

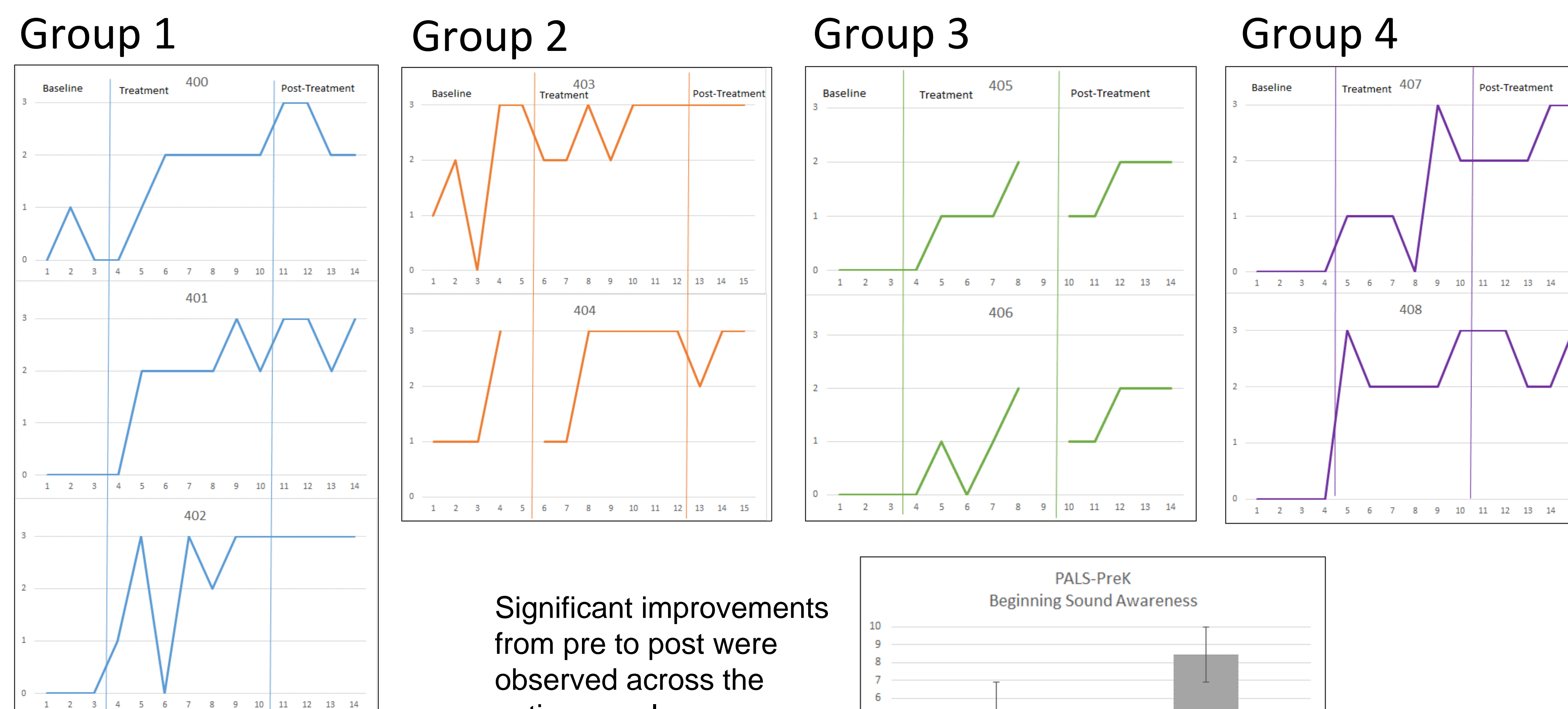
Procedures

- This research took place at Summit Speech School, New Providence, NJ, in the preschool program for children with hearing impairments. This is considered a high quality center for speech and language instruction, thus Tier 1 instruction was in place, allowing for this Tier 2 approach to BSA.
- Students were grouped together by school personnel according to classroom schedule and to ensure compliance levels. Groups were randomly assigned to a pre-determined intervention sequence consistent with multiple baseline single-case research designs.
- The intervention took place twice per week for six weeks in a location separate from the classroom.
- Assessment probes designed and validated in the Koutsoftas et al. (2009) study were used as weekly assessment probes in addition to the PALS Pre-K, Beginning Sound Awareness subtest (Invernizzi et al. 2004).

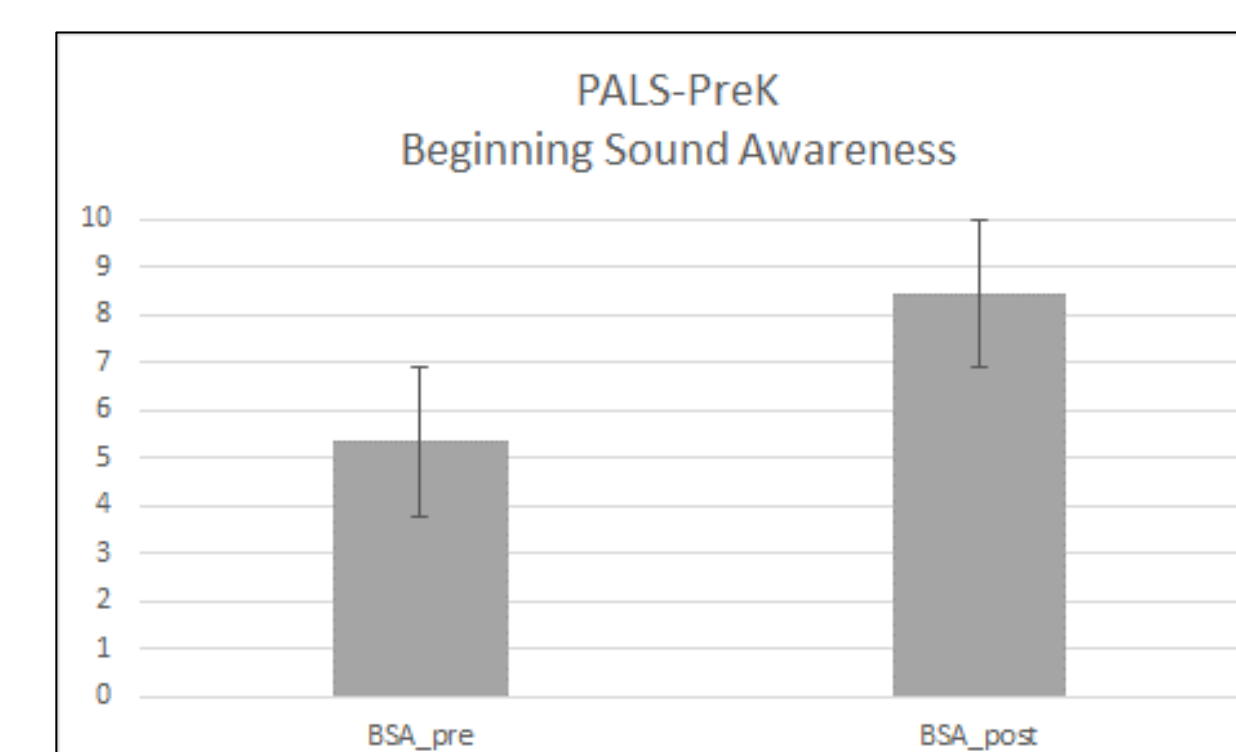
Discussion

- This investigation determined that if preschool aged children with hearing impairments received focused instruction on beginning sounds awareness then they would display gains, with the following key findings:
 - All students within the sample benefitted from the intervention and displayed significant improvements in overall beginning sound awareness skills, both individually and as a group, as measured by Beginning Sound Awareness probes and the PALS-PreK Beginning Sound Awareness test.
 - Younger children (group 3) demonstrated minimal effects as a result of the intervention. This group also had the most absences from treatment.
- Developing basic skills of sound discrimination and the concept of “first/beginning” as part of the intervention was necessary to support Beginning Sound Awareness.
- Two important contributors to the success of this intervention were:
 - (1) the high quality Tier 1 instruction provided at Summit Speech School; and
 - (2) the matching of students into groups of similar compliance, age, and hearing levels.

Results



Significant improvements from pre to post were observed across the entire sample, $t(8) = -3.14, p = .01$, Cohen's $d = .85$



- Future directions for this research include:
 - Increase the sample size and implement a group design.
 - Examine the effects of individual verse group treatment or repeating treatment to support improved outcomes.
 - Develop protocols for targeting additional emergent language and literacy skills such as print referencing.
 - Scale up to provide the intervention as a Tier 1 or Tier 2 support within the preschool classrooms.

Acknowledgements

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- A copy of this poster is available for download at: <http://blogs.shu.edu/row/lab/>
- Correspondence about this project should be directed to: anthony.koutsoftas@shu.edu
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