

Phonological Awareness in Children with Dyslexia

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Abstract

Dyslexia is a learning disorder characterized by poor literacy skills affecting 15 - 20% of U.S. schoolchildren. The Phonological Deficit Hypothesis is the prevailing model which posits that the underlying cause of dyslexia is impaired phonological processing, which includes the skill of phonological awareness. The purpose of this presentation is to inform speech-language pathologists of the phonology-based deficit of dyslexia and - as experts in the area of language development - their specialist role in the prevention, identification, assessment and intervention of dyslexia. SLPs should augment learning environments, increase teacher and caregiver knowledge about phonological processing, and implement effective treatment for dyslexia.

Dyslexia

Definition: Dyslexia is a specific reading disorder of neurobiological origin characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.

Prevalence: The International Dyslexia Association (IDA) estimates that 15-20% of the general population experiences one or more symptoms of dyslexia.

Consequences

Primary Consequences:

- Poor spelling and decoding abilities.
- Difficulty with rapid visual-verbal responding.
- Difficulty with phonological awareness tasks.

Secondary Consequences:

- Poor reading comprehension.
- Difficulty learning to read → difficulty reading to learn.
- Impaired growth of vocabulary and background knowledge
- Possible social, emotional, and behavioral difficulties.

Cause

Phonological Deficit Hypothesis:

Widely-accepted belief that the cause of dyslexia is a phonological processing deficit. Phonological processing is the ability to perceive, store, retrieve, and manipulate sounds for language. It includes:

- *Phonological Awareness:* ability to determine the constituent sounds which comprise spoken words, i.e. detecting rhyme & initial/final sounds and separating words into sounds & syllables
- *Pseudoword Decoding*
- *Word Retrieval*
- *Phonological Memory*



Treatment

Phonological Awareness Training

Training Components:

- Identification of rhymes
- Identification of phonemes
- Segmentation of words into syllables
- Onset-rhymes and phonemes
- Syllable blending
- Onset-rhymes and phonemes into words
- Manipulation of syllables, onset-rhymes and phonemes

Phonological awareness training can be implemented in the pre-literacy stage to improve phonological processing skills. At the post-literacy level, both phonological awareness training and visually-based reading training improve reading comprehension. Phonology-based reading training is most effective in improving decoding skills.

Therapeutic Techniques

Systematic instruction:

- *First Level:* Rhyming
- *Second Level:* Isolating and Categorizing Sounds
- *Third Level:* Segmenting and Blending Syllables in Sounds
- *Fourth Level:* Manipulating Phonemes

Evidence-Based Treatments

LiPS - Lindamood Phoneme Sequence Training:

- Multisensory approach to target phonemic awareness by teaching students to discover and label the oral-motor movements of phonemes.
- Students can then verify the identity, number, and sequence of sounds in words.

Wilson Reading System:

- A multisensory phonics-based program which incorporates five teaching elements:
 1. phonemic awareness
 2. direct instruction of word analysis, prosody and comprehension
 3. coordination of reading and spelling instruction
 4. intensive, cumulative instruction
 5. teaching for mastery

Orton-Gillingham Method:

- Multisensory approach (visual, auditory, kinesthetic-tactile) targeting phonemic awareness
- Structured but flexible

Role of the SLP

SLP Knowledge Base

- Nature of Literacy
- Normal Development
- Disorders of Language and Development
- Clinical Tools and Methods
- Collaboration, Leadership, and Research Principles

ASHA Position Statement: SLPs can support those with dyslexia through prevention, identification, assessment, and intervention.

Prevention:

- Predict what child may need intensive instruction based on risk factors, concerns, or performance.
- Communicate these risk factors to teachers and caregivers so they are able to identify potential issues.
- Modify the environment to incorporate rich emergent literacy experiences that are age-appropriate and promote language acquisition and literacy.
- Maintain longitudinal vigilance for those with language-learning risks.

Identification:

- Recognize written and spoken language difficulties in children with disabilities, language disorders, and those with sociolinguistic differences.
- Communicate with teachers about how to recognize spoken and written language successes and difficulties. Also inform teachers about screening/referral procedures.
- Track literacy progress throughout academic progression to identify re-emerging literacy difficulties.

Assessment:

- Implement appropriate assessment materials and methods.
- Gather reading and writing samples to assess relationships among phonological awareness, word-level decoding and spelling, sentence-level comprehension and formulation, and discourse-level comprehension and composition processes.
- Perform non-biased assessments and to explore flexibility, speed, and limits of literacy skills.
- Work with others to assure appropriate accommodations and/or interpretation of district and state-mandated literacy assessments.

Intervention:

- Individualize treatment methods based on current research, student's developmental level and curricular expectations.
- Teach strategic approaches to reading and writing
- Help student apply knowledge of all language systems—phonology, semantics, morphology, syntax, pragmatics—to decode and comprehend written text while reading, and to organize discourse, compose sentences, and spell words while writing.

Other Roles: Assisting and collaborating with educators, advocating effective literacy practices, and advancing the knowledge base.

Future Directions

- Educating teachers about phonological awareness: improving their own understanding of the sounds of spoken language.
- Increased use of phonological awareness training to supplement the phonemic awareness (phonics-based) evidenced-based treatments such as the Orton-Gillingham Method.
- Further research into the cause of dyslexia (i.e. phonological level deficits, auditory processing component, etc)