Stuttering Assessment and Treatment for Preschool-age Children who Stutter

Hayley S. Arnold, Ph.D., CCC-SLP
Kent State University
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Agenda of this Talk

- Assessment of stuttering in preschool-aged children 30 min.
- At risk assessment and follow-up pool 10 min.
- Indirect treatment strategies 20 min.
- Direct treatment strategies 20 min.
- Q and A: 10 min.

Challenge of Stuttering Assessment in Preschool-Aged Children

- We know that that a large percentage of children (estimates range from 36 to 79%), who demonstrate clinically significant stuttering, will eventually recover without treatment
- This may mean for every 4 preschool-aged children who demonstrate stuttering, only 1 may persist
- We don't want to treat someone needlessly, but we also don't want to withhold needed treatment.
- So, how can we distinguish between a child who will recover and a child who will persist?

The purpose of the preschool-aged stuttering assessment is to answer the following questions:

1. Does the child exhibit stuttering?
2. Is the stuttering likely to persist?
3. Is treatment appropriate at this time?

Tools of Assessment

- Parent Interview
- Speech disfluency Count – Spontaneous Speech Sample
- Articulation/Phonological and Language Assessment

Does the child exhibit stuttering?

Based on

- Frequency and duration of speech disfluencies
- Severity of physical concomitants
- Presence of child adaptations and avoidances
- Concern from the caregiver or child

Disfluency Types

Disfluencies divided into

- Stuttering-like disfluencies (SLD, also called within-word disfluencies)
    - Sound syllable repetitions (SSR), whole word repetitions (WWR), audible sound prolongations (ASP), inaudible sound prolongation (ISP)
- Other disfluencies (also called non-stuttering-like or between-word disfluencies)
    - Phrase repetitions (PR), interjections (INT), revisions (REV)

Frequency of speech disfluencies

	Concerned if..
% of total words or syl disfluent	10% or higher
% of total words or syl stuttered	3% or higher
% of disfluencies stuttered	66 to 81% or higher
% of stuttering-like reps (SLRs)	25% Having >1 iteration

(Conture, 2001; Curlee, 2007)

Repetition units (Iterations)

- “bu-bu-but” has 2 repetition units (RUs)
- School-aged children who stutter (CWS): mean RUs = 2.45 (Zebrowski, 1994).
- Preschool-aged CWS: mean RUs = 1.72 (Yairi and Lewis, 1984).
- Preschool-aged children who do not stutter (CWNS): mean RUs of 1.16 (80-87% of repetitions had only one repetition unit)

Avoidances and Adaptations

Does the child

- avoid communication situations?
- use a sing-song or silly voice frequently?
- whisper frequently?

The Kiddy-CAT (Vanryckeghem & Brutten, 2006) is the preschool version of the Children’s Attitudes toward Talking (CAT) measure that differentiates preschool CWS and CWNS based on communication attitudes (Do you like talking?).

These could be signs that stuttering is significantly interfering with communication and leading the child to use techniques that increase fluency.

Parental Concern

- How do parents describe the speech disfluencies exhibited?
- How concerned are the parents?

- How concerned are the children?
- Usually parent concern is valid (rarely are parents convinced of a stuttering problem that doesn't exist)
- Once you've established that the child stutters, the next question is

What is the likelihood the stuttering will persist?

- Parent Interview
- Family History of Stuttering – either persistent or recovered – more likely to persist if a family member had a persistent stutter
- How has the stuttering changed since onset, either quantity or quality? More likely to persist if quantity has increased and quality becomes more tense
- Child's sex helps predict recovery and length of recovery course (Ambrose, Cox, & Yairi, 1997) – Boys more likely to persist, girls recover more quickly
- When did the child begin to stutter? Later age of onset (after 33 months) is associated with persistent stuttering
- How long has child stuttered (Time Since Onset)? – Use bracketing procedure – Longer than 12 months is of greater concern

Parent Interview: Time Since Onset: Bracketing procedure (from Yairi & Ambrose, 1992)
Examiner: When did the child begin stuttering?
Parent: Last winter
Examiner: When during winter?
Parent: During Christmas.
Examiner: Before or after Christmas?
Parent: I am sure it was after.
Examiner: Before or after New Year's Day?
Parent: After. He did not stutter on New Year's Day.
Examiner: Was it a few days or weeks later?
Parent: It was a day or two after we returned from vacation and just before I went back to my job at school. I remember this very clearly.
Examiner: When did you go back to work?
Parent: January 5th.
Examiner: So, we are pretty close to pinning it down.
Parent: It must have been between January 3rd and 5th (p. 785)

- Procedures to include in the assessment battery
- Disfluency count over two sessions separated by 3 months or more
- Speech sound assessment
- Language assessment including grammatical and vocabulary skills
- Non-word repetition task
- Disfluency Characteristics
- Increase in stuttering frequency and severity over time is more consistent with persistent stuttering

- 2-3 unit repetitions, relatively effortless changing to more numerous iterations of reps, prolongations (audible and inaudible), and physical concomitants

Bottom line: Need disfluency data over more than just one assessment in order to predict likelihood of persistence.

- Phonological Characteristics associated with persistent stuttering
- Presence of phonological disorders predicted persistence of stuttering in preschool children (Paden & Yairi, 1996; Paden, Yairi, & Ambrose, 1999)
- Articulation abilities (based on the Bankson-Bernthal Test of Phonology – Consonant Inventory) differ between CWS-Recovered (mean SS = 97) and CWS-Persistent (mean SS = 84) (Spencer & Weber-Fox, 2014)
- Non-Word Repetition Skills (Spencer and Weber-Fox, 2014) On the Dollaghan and Campbell (1998) Nonword Repetition Task, CWS who were persistent performed significantly worse than CWS who recovered.

Risk Factor Chart (adapted from the Stuttering Foundation brochure)

Predicting persistence and recovery
- Not in the business of making hard and fast pronouncements on whether the child will persist
- Rather, in the business of assessing risk and managing that risk
- Parents must understand the ambiguities and the treatment options available

Decision streams (Zebrowski, 1997)

Four decision streams based on risk of recovery and persistence, ranging from…
- Low risk stream: information sharing and bibliotherapy (Stuttering Foundation materials, etc.)
- High risk stream: Immediate treatment
- Whatever the decision, at the time of sharing assessment results, provide parent education and teach some interaction strategies to parents

Maintaining an At-Risk Register
- Also called systematic monitoring, this is an alternative to “wait and see” approach
- SLP and parents communicate regularly and re-assess as needed – (every 2-3 months)
- After 3-6 months of continued stuttering symptoms after assessment, treatment is recommended

Indirect Stuttering Treatment
- A method of stuttering treatment for preschoolers that has been used since the 1940s and dominated through the 1960s
- Current methods include the parent-child interaction therapy, which emphasize caregivers changing their style of interacting with the child who stutters

- Stuttering and speech is not modified through direct instruction – rather, it is modified through modeling and decreasing communicative demands
- Why do we use these indirect methods?

Diagnosogenic Theory
- **Wendell Johnson** came to Iowa in the 1930s, a severe stutterer himself. Based on his own experience, Johnson firmly believed that there was no "organic" cause of stuttering
- Theory states that stuttering is a learned reaction to the negative reactions of parents to normal nonfluency in childhood.
- Response of child to the reactions resulted in stuttering (genic = caused by)

Evidence re: Diagnosogenic Theory
- Tudor Study (Iowa) "Monster Study" – Aside from violating ethical standards, this study did not support the diagnosogenic theory (see Ambrose and Yairi, 2002, for an examination data and ethical issues).
- Nature of fluency breaks at onset – Preschool-aged children who stutter DO significantly differ from typically fluent peers in quantity and quality of speech disfluencies.
- Nippold and Rudzinski (1995) literature review – little evidence that parents of children who stutter differ from those of typically developing children.

Bottom line: The idea that reactions to a child's normal speech disfluencies caused a stuttering problem was disproved.

Re-examining the case for indirect treatment
- If the diagnosogenic theory is not supported by evidence, why do we continue to use indirect treatment with preschool-aged children who stutter?
- The treatment strategies are non-invasive and may be a good place to start with incipient stuttering (in lower decision streams)
- It may be that just by decreasing the temporal demands on the child's speech-language planning and production system through environmental changes, we can provide the child more time to form fluent utterances during a vulnerable period of skills acquisition.
- However, we should not be afraid to use direct treatment methods if an initial period of indirect treatment does not significantly decrease stuttering

Example of Indirect Treatment:
Parent-Child Fluency Groups (Conture, 2001)
- Children meet with one clinician while parents meet with a second clinician (does not have to be simultaneous)
- Child's speech modified by ***showing versus telling***
- ***Pragmatics:*** increase child's turn-taking and other fluency-enhancing behaviors
- Parents receive ***counseling*** about how the environment can be changed to enhance fluency.

Goal: Improve ***overall communication***, increased but not total speech fluency.

Treatment Hands-On Practice

Turn-switching pause

Indirect Tx Parent Group

- Parents learn they are not alone
- Mentored by parents further along in the process
- Continue to educate about stuttering
- Teach parents techniques to enhance fluency and discuss parent attempts to implement strategies (parents can select the strategies they'll implement – own goal setting)
- Answer new questions that arise from parents

Child Group Session

First part – circle time

- Teach rules of communication re: turn-taking
- Language stimulation (book reading, etc.)
- Collect 100 word or syllable disfluency count

Next part – clinician interacts with each child one on one during hands on activity (parents observe)

Final part – parents interact with child – ideally this can be videotaped so parents can review later – each take turns looking at fluency data

At home – parents use fluency enhancing techniques and may be asked to track frequency of use (pausing 10 min per day, etc.)

When to move to direct treatment methods

Yaruss and Reeves recommend moving to direct treatment methods if indirect treatment methods have not significantly decreased stuttering after about 3 months of weekly therapy.

What do direct treatment methods look like for preschool-aged children?

- In the past, the main direct treatment methods used with preschool-aged children was the Lidcombe Programme and others which use contingent feedback after fluent ("that was a smooth one") and stuttered ("that was a bumpy one") utterances.
- Yaruss and Reeves have developed methods to use stuttering modification with preschool-aged children (see http://www.stutteringtherapyresources.com for video demonstrations and other materials)
- Clinicians introduce stuttering/fluency modification techniques (pseudostuttering, decreased or flexible rate, etc.) in play-based activities.

Direct Treatment Methods for Stuttering

- Start with exploring the speech mechanism and stuttering – educate the child about his/her speech mechanism
- We can talk with children about how we sometimes accidentally color outside the lines, fall down, and even have trouble getting our words out - this is OK! You can plan related activities such as coloring, stacking blocks, etc., to illustrate these points with preschool-aged children
- Playing with our speech, then using changes to decrease tension and increase time for planning and production
- Introduce the concept that we can change the way we talk can be taught in fun ways – initially, these methods do not have to be fluency-enhancing – the child could try using a soft voice vs. a loud voice – can have different voice changes written on slips of paper and have the child and clinician take turns drawing a technique and practice it.
- After the child has demonstrated the ability to change his/her speech, modification techniques can be introduced – keep this to one technique at a time
    - Easy starts
    - Stretching speech (increasing duration of the first syllable of utterances)
    - Easing out of a stutter

What to do when there is concomitant phonological impairment

- Some efficacy shown for simultaneous treatment of stuttering and phonology (Conture, Louko, & Edwards, 1993)
- Indirect approach to phonological treatment is recommended rather than a drill-based approach
- It may be appropriate to briefly defer phonological treatment until more fluent speech patterns are established

Q and A: 10 min.