Developing Effective Stuttering Intervention Programs: From Assessment to Treatment

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Evidenced-Based Practice

E³BP (Dollaghan, 2007)

• “...the conscientious, explicit, and judicious integration of the best available...
• External evidence from systematic research
• Evidence internal to clinical practice
• Evidence concerning the preferences of a fully informed patient.” (p. 2)

Clinical Expertise

- 1. Understanding fluency
- 2. Understanding stuttering
- 3. Understanding treatment options
- 4. Understanding how people manage stuttering

Clinical Skills

- Implementing specific clinical techniques
- Forming therapeutic relationship with client

Background knowledge

1. Understanding Fluency

After Starkweather (1987)

- Continuity
- Rate
- Effort

Effective, natural sounding utterances

• Fluency is more than the absence of disfluency.
• Consider, for example, a patient with...
  - Great continuity, but excessive effort or unusual rate,
  - Less than great continuity, but effective communication.

2. Understanding Stuttering

• Don’t count on remission
  – Especially if patient has been stuttering for a year or longer.
• Do count on performance variability
  – Take steps to document it accurately.
  – Take steps to help clients accept it and develop strategies for addressing it.
• Remember: “stuttering” implies impairment
  – “Normal fluency” may not be feasible, at least in short term
  – But... “reducing disability” usually is feasible, and it can lead to very satisfactory outcomes.
3. Understanding Intervention Options: Areas to Target

Client's speech functioning
Client's knowledge and awareness
Client's participation in daily activities
Client's attitudes, emotions, and beliefs
General task/environmental factors (e.g., job demands)
Others' behaviors

4. Understanding How People who Stutter Manage Stuttering

1) Successful speech therapy
2) Support from others
   - Professionals
   - Family
   - Friends
   - Support groups
3) Cognitive change
   - Taking risks
   - Reducing fear of failure
   - Taking responsibility
   - Self-awareness
4) Utilizing areas of strength/skill
5) Motivation/determination
6) Self-therapy and behavior change
   - Self-disclosure

Plexico, Manning, & Dilullo (2005)

From Assessment to Treatment

Example

It Helps to Work from a Model

• Functioning (& Disability)
  - Body structure and function (Impairment)
  - Activities (Activity limitations)
  - Participation (Participation restrictions)
• Contextual factors
  - Environmental factors (facilitators and hindrances)
  - Personal factors, e.g., attitudes, coping strategies (facilitators and hindrances)

International Classification of Functioning (ICF)
(World Health Organization, 2001)

“A”: Background History

- Male, current age 10;9
- Diagnosed (elsewhere) at age 2 with expressive language delay and reduced speech intelligibility
- Expressive language problems mostly dissipated by age 4, but phonological concerns persisted
- Stuttering first noted at 3;7. By age 5, it was severe.
- Received stuttering therapy (~ age 5 to 8), including “easy onset,” response contingencies, from two SLPs.

“A”: Background History

- Initial assessments (with me) at ages 7;3 & 8;4
  - At time of first assessment, “A” was receiving services (mostly for stuttering) from 2 SLPs
  - Referred to me by one of the SLPs
  - Parents reported severe stuttering, and concern over child’s worsening stuttering and resistance to attending therapy
  - + history of stuttering on both sides of family
Initial Speech-Language Assessment: Data Collection

- Parent & client interviews
- Consults with previous SLPs
- Case history forms, file review
- Speech samples
  - Test of Childhood Stuttering (TOCS, experimental version; Gillam, Logan, & Pearson, 2009)
  - Informal conversation
  - Informal narration, oral reading
- Rating scales
  - Parent Rating Scale (Logan)
  - Teacher Rating Scale (Logan)
  - Informal 8 pt severity rating scale (Logan) 0 = no stuttering, 1 = very mild, 7 = very severe
- Coping strategies, reactions
  - Interview data and informal observations about avoidance, responses to stuttering, TOCS associated behaviors checklist
- Language
  - Informal analysis of form, content, and use
  - Review of language tests administered recently by other SLPs.
- Articulation probes
  - /r/ distortion, vowelization
- Trial therapy
- Oral mechanism exam

Initial Assessment: Selected Results

- Fluency impairment: severe stuttering
  - % of Syllables Stuttered
  - TOCS Rapid Picture Naming: 63%
  - TOCS Modeled Sentences: 59%
  - TOCS Structured Conv.: 34%
  - TOCS Narration: 36%
- Activity limitations/Participation restrictions
  - Consistent severe stuttering across daily speaking activities
  - Good participation at home and in school, but in initial assessment, brief responses noted for some questions

Coping strategies

- Rhythmic movements to facilitate speech initiation
- Inconsistent sound avoidance (e.g., "hi" → "pi")
- Turns away, gaze aversion
- Occasional word avoidance(??)

Attitudes & feelings

- Mostly positive, but...
- Teacher: reports "...sometimes seems embarrassed by stuttering."
- Mom: "A" is resistant to attending therapy

Environmental factors

- Aggravators
  - Time constraints
  - Competition for speaking turns
  - Input from multiple SLPs (??)
- Facilitators
  - Very supportive family

Other relevant issues

- Parent concern about potential effects of stuttering on academic and social development

Initial Assessment: Selected Results

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1. What to treat?

Stuttering?

- Action: Treat now
- Improve continuity
- Increase speech rate
- Normalize effort
  - Reduce physical effort when disfluent
  - But...Attention needed to implement continuity-building strategies

Articulation? Language?

- Articulation
  - “Questionable residual errors” with negligible effect on intelligibility
  - Treating would add to client’s “speech load.”
  - Action: Monitor functioning
- Language
  - Tests results are WNL.
  - Occasional issues with response relevance (stuttering driven??)
  - Action: Monitor functioning

2. How to Improve Fluency?: Potential Options

- e.g., prolonged speech, slow gentle onset, disfluency modification
  - e.g., Lidcombre, "time out"
  - General task/environmental factors
  - Client’s speech functioning
  - Client’s knowledge and awareness
  - Client’s attitudes, feelings, and beliefs
  - Others’ behavior
  - Client’s participation in daily activities
  - e.g., Avoidance reduction
  - e.g., Alter parents’ communicative behaviors
  - e.g., Purposeful stuttering, self-disclosure, “freezing”
### 2. How to Improve Fluency?: Action Plan

<table>
<thead>
<tr>
<th>Technique</th>
<th>Role</th>
<th>Rational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged Speech (articulation rate mgmt)</td>
<td>Primary strategy</td>
<td>Large &quot;effect size,&quot; good response in trial therapy</td>
</tr>
<tr>
<td>Disfluency Modification (cancellation, pullout, pre- set)</td>
<td>Primary strategy: <strong>BUT... Introduce later</strong></td>
<td>Needs way to manage residual disfluency, after learning prolonged speech</td>
</tr>
<tr>
<td>Slow, gentle onset (altering timing/tension at breath group onset)</td>
<td>Secondary strategy: Teach later, if initiation difficulties noted</td>
<td>Not working presently; may work later as subset of &quot;prolonged speech&quot;</td>
</tr>
<tr>
<td>Task demands (low vs high demand)</td>
<td>Background strategy: Use as needed w/ prolonged speech</td>
<td>Client’s stuttering seems too severe to use it as primary strategy</td>
</tr>
<tr>
<td>Parents’ communicative behaviors</td>
<td>Background strategy: (e.g., limit interruptions, scaffold conversational stories, as needed)</td>
<td>Client's stuttering is severe; this is likely to have a small &quot;effect size&quot;</td>
</tr>
</tbody>
</table>

### 3. How/When to Address Activity Limitations?

**Action:**
- **First,** build capacity for fluent speech in controlled settings (clinic, home-based "drills")
- **Later,**
  - Collect data concerning daily talking routines
  - Counsel: Talk with client and parents about performance expectations

**Rationale:**
- Then, after capacity is well established...
  - Design/Implement structured "outside" practice activities (e.g., "talk times")
  - Systematically manipulate cues, support, scripting, etc., to promote learning and independence
- **Then,** promote independent management
  - Client designed tasks

### 4. Need to Address Participation?

**Frequency and amount of participation?**
- On the one hand...
  - Parents, teachers, client report no obvious participation restrictions
- On the other hand...
  - Client demonstrates a severe fluency impairment
  - There's evidence of brief responses during assessment

**Action: Monitor, for now**
- First, develop child’s capacity for more fluent speech
- Monitor participation issues via parent, teacher reports
- Then, address if needed, in future
- For now, consider accommodations (alternatives) in school, e.g., public speaking assignments in school

### 5. Need to Address Awareness and Background Knowledge?

**Current Status**
- Awareness
  - Child is highly aware of specific disfluencies
- Background knowledge of stuttering
  - Limited, but typical for age

**Rationale:** Laying groundwork for objective attitude, independent problem solving

**Action: Treat**
- During course of treatment,
  - General information about stuttering
  - Anecdotes, books, stories about children who stutter
  - Participation in "Friends" (parent initiated)
  - Incidental instruction during therapy activities
  - Description, self-identification and analysis of disfluency

### 6. If/How/When to Address Personal Factors?

**Coping Strategies**
- Associated behaviors are likely to resolve as fluency capacity improves. **Monitor:**
  - Sound avoidance
  - Word substitution
  - Rhythmic movements
  - Turning away
- Gaze aversion
  - Adaptive when fluency management is very effortful
  - Ignore until very late stages

**Feelings, attitudes, beliefs**
- Desensitizing to disfluency
  - **Action:** Later, as needed during disfluency modification
- Continue to support client’s “can do” attitude. **Actions:**
  - Periodic reminders: Current situation is likely "temporary"
  - Highlight comm. positives
  - Highlight strengths in other domains
  - Build supportive network
  - Counsel parents on "talking about stuttering"

### 7. How/When to Address Environmental Factors?

- **First,** build fluency management capacity in low-demand contexts
- **Then,**
  - Stretch capacity by designing tasks that introduce time pressure, faster conversational pace, and other similar temporal demands; linguistic complexity, dual task activities...
  - Promote parent participation
    - Inform/educate about stuttering; involve in fluency building activities and data collection
    - Liaison with teacher, school SLP
  - Discuss potential outcome scenarios
8. Resolve Roles of Outside SLPs?

- Potential Cons
  - Too much information!?!?
  - Conflicting information?!?!
  - Therapy "burn out"?!?!

- Potential Pros
  - Access to "intervention team"
    - Additional venues for data collection
    - Additional sources for treatment ideas
    - Assistance with practice contexts

- Recommendations/decisions
  - Select one primary SLP
    - Me?
    - School SLP?
    - Private Practice SLP?
  - If me,
    - Switch school-based program to consultative role
    - Use school SLP as partner for skill application in real world settings

Goal area

Intervention Phase (time →)

<table>
<thead>
<tr>
<th>Goal area</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building fluency capacity</td>
<td>Prolonged</td>
<td>PS, Dis.</td>
<td>PS, DM, (slow, gentle onset)</td>
<td>PS, DM</td>
</tr>
</tbody>
</table>
| Activity limitations                | Skill building drills | Structured "talk times" | Structured "talk times" | Unstructured "talk times"
| Participation restrictions          | Monitor     | Monitor     | Monitor     | Monitor     |
| Environmental factors               | Manip. task demands | Manip. task demands | Manip. task demands | Task demands |
| Personal factors                    | Incidental education, self-help support throughout | Freezing, Voluntary stammering, [h] → [p] strategy, Promote proactivity & problem solving

Current Status

- Improved continuity and rate; few "associated behaviors," natural sounding
- Stuttering management still requires attention and some effort
- Speaks with near 100% fluency in conversation when given support (i.e., prompts, cues).
- Stutters moderately (sometimes mild-to-moderately) when talking w/o support
- Speaks very fluently on occasion
- Participates often and well in school
- Leadership roles at school, strengths in academics and sports
- Future: move to monitoring status, give assignments to expand independence in stuttering management.

An Intervention Plan “Score”

References


