



Treatment of Adult Stutterers with Cognitive Impairments: Three Case Studies

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Literature Review

- An intellectual disability (ID) is defined by the American Association of Intellectual and Developmental Disabilities as a disability that originates before age 18 that is characterized by:

significant limitations in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills" (AAIDD, 2008).

Literature Review

Examples of the Three Types Adaptive Behavior Skills for Diagnosing Intellectual Disabilities (AAIDD, 2008)

Conceptual Skills	Social Skills	Practical Skills
<ul style="list-style-type: none">○Receptive and Expressive Language○Reading and Writing○Money Concepts○Self-Directions	<ul style="list-style-type: none">○Interpersonal skills○Responsibility○Self-Esteem○Gullibility○Naiveté○Follows Rules○Obeyes Laws○Avoids Victimization	<ul style="list-style-type: none">○Personal Activities of Daily Living (i.e., eating, dressing, toileting)○Maintaining a Safe Environment○Occupational Skills

Prevalence Rates

- Roughly 1% of the population stutters (Bloodstein, 1995).
- Research projects that between 0.8% and 20.3% of individuals with ID stutter (Bloodstein, 1995).
 - Although research varies it is evident that a large percentage of this population stutters during speech (Cooper, 1986).



Research


Relatively little fluency research has been conducted with this population. Lack of research could be due to beliefs that:

- 1) Stuttering may be minor compared to more prominent language disorders
- 2) Traditional stuttering therapy may be too complicated for these individuals
- 3) Perceived lack of negative emotional effects due to stuttering (Preus, 1990).



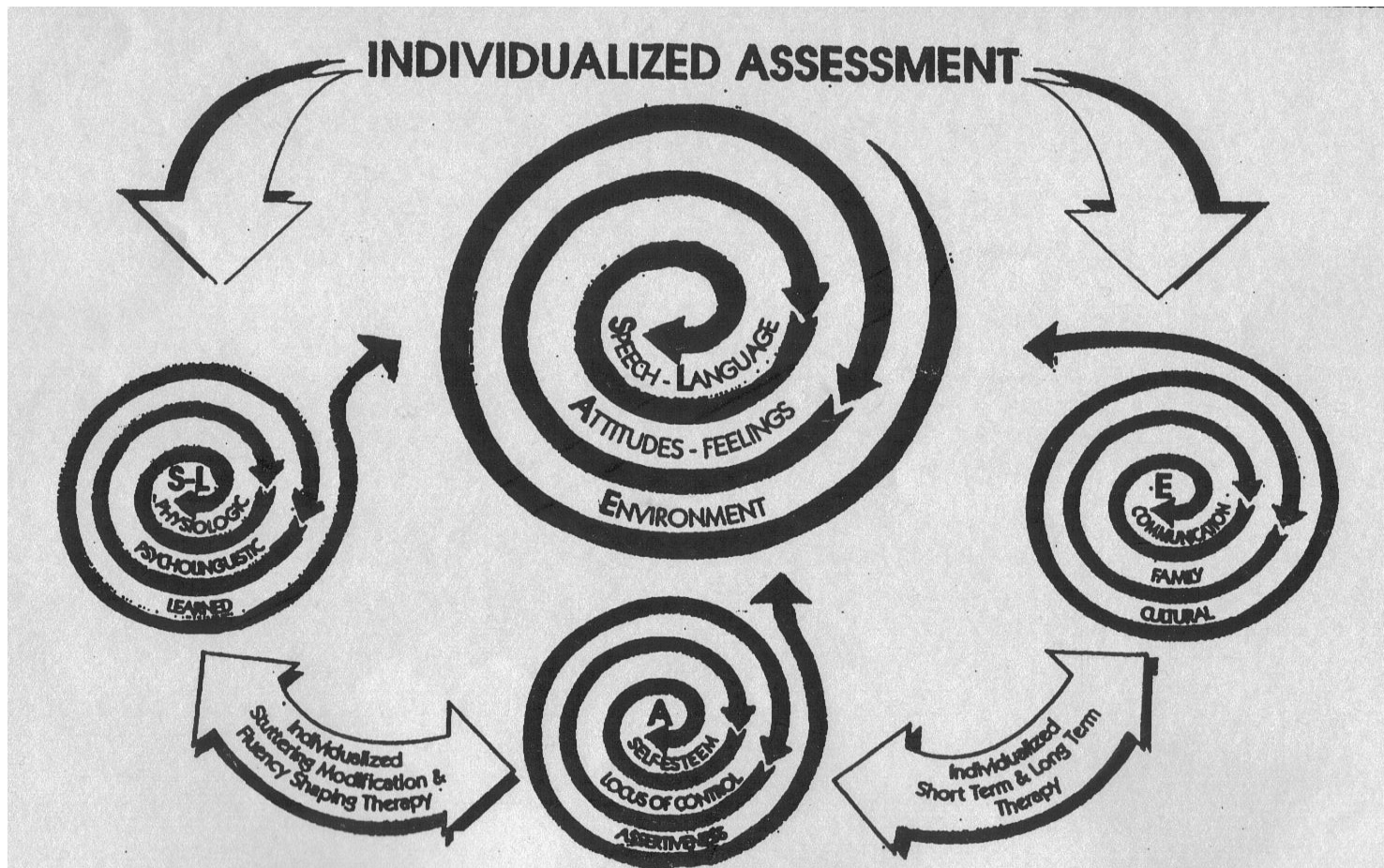
Research Continued

- Previous therapy used a primarily behavioral approach (Cooper, 1986).
- Most research was comprised of quantitative studies gathered during the school aged years.
- Research rarely addressed the emotional impact of stuttering on adults with ID.
- The degree to which participants were affected emotionally by their stuttering was typically subjectively determined by listeners rather than by the participants themselves (Cooper, 1986).

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- It has been suggested by researchers that a holistic approach to therapy addressing speech, attitudes and feelings, and environment would provide effective treatment. (Bloom & Cooperman, 1999; Cooper, 1973; Preus, 1990).
 - This should apply to the ID individual as well as the non-ID individual.

Synergistic Stuttering Therapy: A Holistic Approach (Bloom & Cooperman, 1999)

Figure 1: Diagram of the principles of the Synergistic Approach (Bloom & Cooperman, 1999)



Speech and Language

Specific Target	Definition
<p style="text-align: center;">Full Breath</p> <p>Taught first in vowels and single syllable words, then automatic speech (i.e., counting, days of the week, etc.), phrases, short sentences, reading, monologue, and conversation</p>	<p>Full inhalation through the mouth in a relaxed manner focusing on relaxation of the throat and expansion of the diaphragm. Exhalation is done by relaxing the diaphragm. Phonation is begun at the time of exhalation and ends when the diaphragm is relaxed and returns to its high resting position. (Bloom & Cooperman, 1999; 2007)</p>
<p style="text-align: center;">Gentle onset</p> <p>Taught with vowels (Class I sounds), then one syllable words, two syllable words, phrases, sentences, reading, monologue, and conversation.</p>	<p>Producing sound by bringing vocal folds together gently allowing air to pass through. This is done by demonstrating a low amplitude vibration of the vocal folds, followed by a gradual increase and finally a gradual decrease back to the original amplitude (Bloom and Cooperman, 1999; 2007)</p>
<p style="text-align: center;">Movement</p> <p>Taught in Class II (J,L,M,N,R,V,W,Y,Z,TH) Class III(H,F,SH,CH,TH) Class IV(Voiced G,B,D; Voiceless T,P,K) One syllable words, two syllable words, phrases, sentences, reading, monologue, and conversation.</p>	<p>Learning to recognize the different properties of a sound the client is able to discriminate between class sounds and apply the specific skills of reduced articulatory pressure, reduced airflow; and movement; consciously moving to the next sound (Bloom and Cooperman, 1999; 2006)</p>



Speech and Language

- An understanding of fluency and stuttering
- Full, Relaxed Breath
- Easy Onset
- Movement of the Articulators



Feelings/Attitude and Environment

○ Feelings/Attitudes

- The Synergistic Approach views the attitudes of an individual to be a combination of self esteem, locus of control, and assertiveness.

○ Environment

- The environmental domain may refer to culture, family, work, social settings and more (Bloom & Cooperman, 1999).

Method

○ Participants:

- 3 adult stutterers with intellectual disabilities
- P1 – Male, age 24, IQ=63, Diagnosis of Down Syndrome and Multiply Disabled
- P2 – Female, age 42, IQ=66, Diagnosis of Intellectually Disabled and Anxiety Disorder
- P3 – Male, age 21, IQ=52, Diagnosis of Multiply Disabled

Method

- Provided with 1 ½ semesters of fluency therapy by graduate clinicians
- Two hours of therapy per week
 - One hour individual
 - One hour group
- Pre and post assessments
- Qualitative interviews of participants, parents, & caregivers



Assessments - Speech & Language

- Formal

- Speech and Language
 - SSI-3 (Riley, 1994)

- Informal

- Anticipation, Consistency, & Adaptation
- Patterns of disfluencies

Assessments – Feelings/Attitudes

- Formal
 - Overall Assessment of Speakers Experience of Stuttering (Yaruss and Quesal, 2006)
 - Assessment of the Child's Experience of Stuttering (ACES, Yaruss and Quesal, 2006)
 - Modified Locus of Control Behavioral Scale (Bloom & Cooperman, 2005)
 - Locus of Control Behavioral Scale (Craig, Franklin, and Andrews, 1984)
 - Modified Self-Esteem Scale (Cooperman, Bloom, & Klein, 2007)
 - Rosenberg Self-Esteem Scale (SES) (Rosenberg, 1965)
- Informal (Chmela & Reardon, 2005).
 - Worry Ladder
 - "My Stuttering is like _____."
 - Draw a picture of your stutter.



Assessments - Environment

- Formal

- Genogram (Hayhow & Levy, 1989)
- Eco Map (Hartman & Laird, 1983)

- Informal

- Interviews

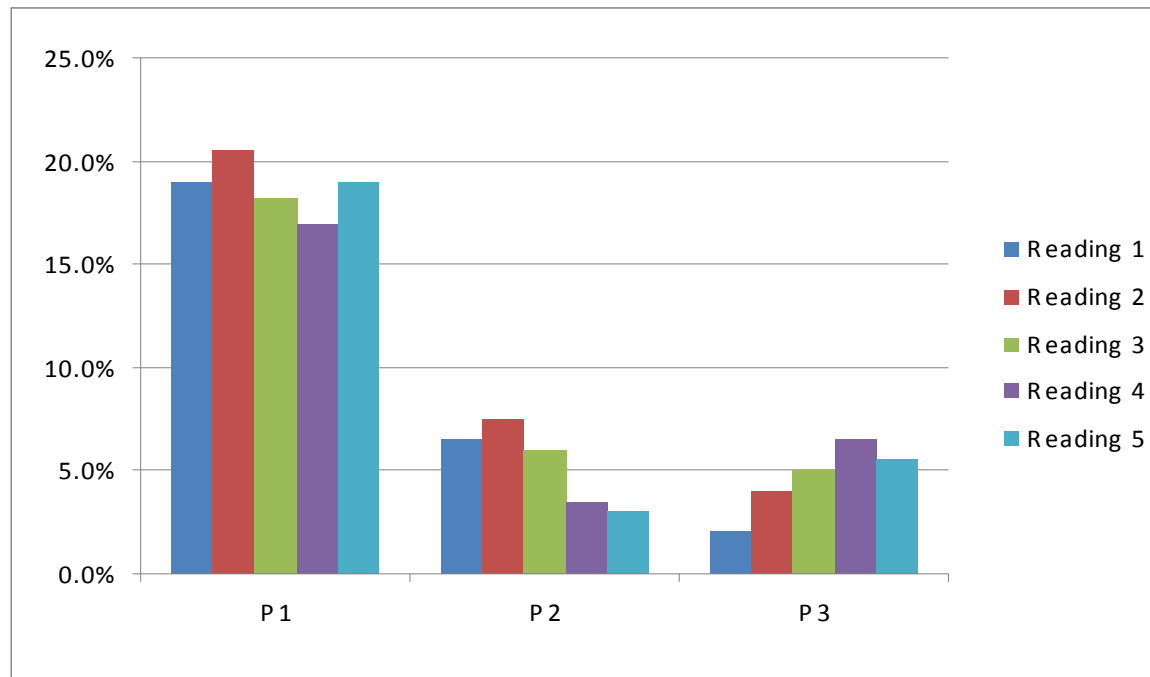
Results – Speech and Language

- Formal
 - SSI-3 (Riley, 1994)

Participant	P1	P2	P3
<i>Frequency Pre</i>	15	12	12
<i>Duration Pre</i>	8	6	6
<i>Physical Concomitants Pre</i>	11	5	3
<i>Overall Score Pre</i>	34	23	21
<i>Severity Pre</i>	Severe	Mild	Mild
<i>% ss Conversation Pre</i>	16.6%	10.5%	11.5%
<i>% ss Reading Pre</i>	10%	4.4%	3.3%
<i>Frequency Post</i>	15	10	12
<i>Duration Post</i>	8	8	4
<i>Physical Concomitants Post</i>	5	2	1
<i>Overall Score Post</i>	29	20	17
<i>Severity Post</i>	Moderate	Mild	Very Mild
<i>% ss Conversation Post</i>	20.8%	6.6%	7.9%
<i>% ss Reading Post</i>	11.6%	2.8%	3.7%

Results – Speech and Language

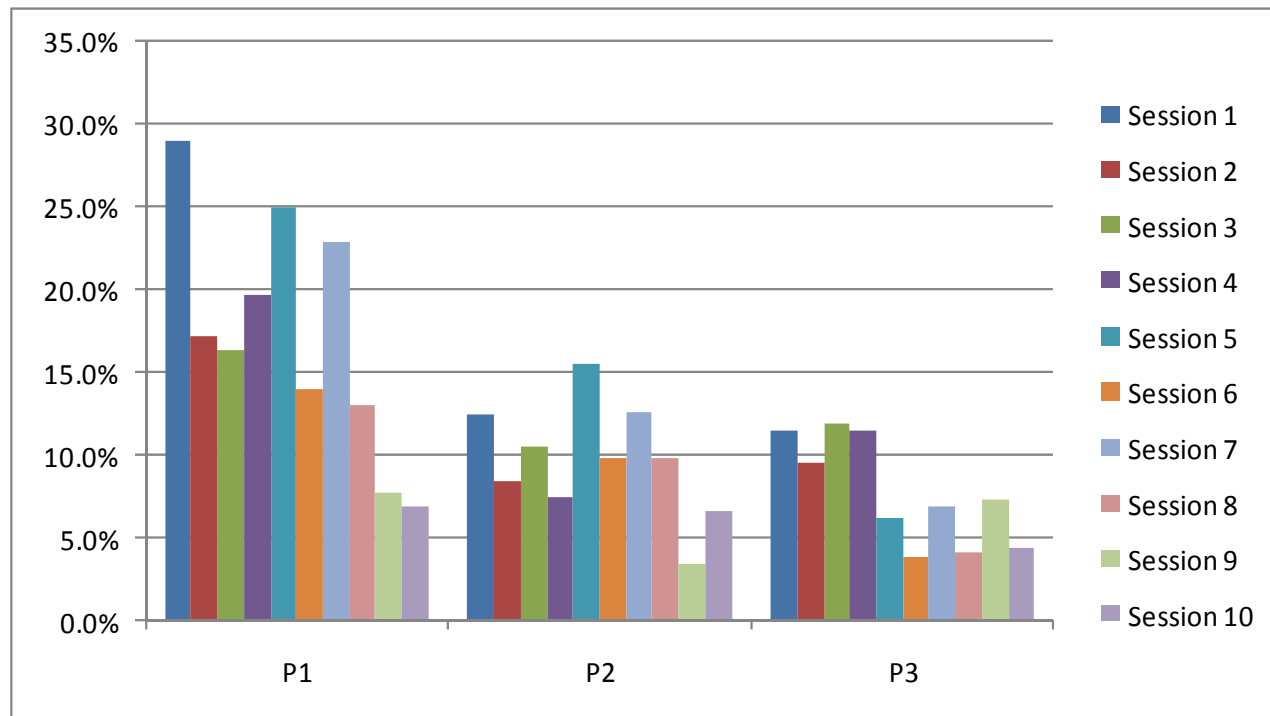
- Informal
 - Anticipation, Consistency, & Adaptation
 - Participants did not anticipate stuttered moments



Results – Speech and Language

- Informal

- Patterns of syllables stuttered over time.





Results – Feelings/Attitudes

- Formal
- Attempts to gather formal measures from the following were made and abandoned during this study:
 - MLCBS (Bloom & Cooperman, 2005)
 - MRSES (Cooperman, Bloom, & Klein, 2007)
 - OASES (Yaruss & Quesal, 2006)
 - ACES (Yaruss & Quesal, 2006)
- Participants demonstrated difficulty answering formal assessment questions in a reliable manner.

Results – Attitudes/Feelings

- Informal
 - P1 – picture of stutter

Sometimes when people are looking at me + I stutter, it makes me nervous. After a while, when I speak in a bigger voice, I feel better about it.



Pre-treatment
Handwritten notes and a signature.

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- Informal
 - P2 – Picture of stutter

fast pace

⊗ (stutter) talking really fast

Results – Feelings/Attitudes

- Informal
 - P3 – Picture of stutter



My cheeks get tense & are red
& that is another person talking

Results – Feelings/Attitudes

- Informal
 - Sentence Completion
 - P1 – “My stuttering is annoying because sometimes it’s hard to say what I want to say because I’m stuttering.” (Post-treatment)
 - P2 – “My stuttering means to me that I go too fast. I have a lot to say in my head and brain.” (Post-treatment)
 - P3 – “My stuttering is when I have a red face. When I get embarrassed.” (Pre-treatment)

Results - Interviews

- Feelings/Attitudes
 - Themes Across all Interviews
 - *Stuttering did not greatly diminish quality of life for participants involved in this study.*
 - *Stuttering was only one small piece in the greater conglomeration of each individual's disabilities.*
 - *Participants experience momentary feelings of frustration connected to their stuttering rather than deep seeded feelings of grief.*

Results - Interviews

- Feelings and Attitudes

- Participant Themes

- *The physical act of stuttering did not impact participant emotions as much as listener reactions to stuttering.*
 - *Participants experience sensations of muscular tensing while stuttering.*
 - *Participants associate feelings of being excited with stuttering.*

Results - Interviews

- Feeling and Attitudes
 - Family and Staff Themes
 - *Participants' stuttering had a much stronger emotional impact on communication partners than participants themselves.*

Results - Interviews

- Environment
 - Participant Themes
 - *Participants expressed the need for assistance and/or protection when struggling with stuttering.*
 - *Parent and Staff Themes*
 - *Fathers expressed feeling more frustration than mothers over participant stuttering.*
 - *Communication partners had a strong desire to assist participants in overcoming a moment of stuttering.*

Implications

- Speech and Language
 - Using fluency targets in a decontextualized setting, was minimally effective, working with individuals with intellectual disabilities may require real world therapy settings.
 - Individuals with intellectual disabilities may need to focus on therapy that does not require anticipation of stuttered moments.

Implications

- Feeling/Attitudes
 - Formal assessments for the typical population are not appropriate for individuals with intellectual disabilities. New assessments that are simplified and concrete may need to be developed.
 - Attitudes and feelings of individuals with intellectual disabilities should be addressed in context.
 - Emotions connected to listener reactions should receive attention during therapy.



Implications

○ Environment

- More clients with intellectual disabilities should be considered for fluency therapy because of the increase of communicative needs due to increased community involvement.
- Contextualized therapy may be imperative for client success.
- The impact of participant stuttering on their families and caregivers should be addressed in therapy.

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