Establishing Benchmarks for Linguistically Diverse Populations
Treatment Time for the Lidcombe Program

Rosalee C. Shenker & Kristy Findlay
March 2014

European Symposium on Fluency Disorders 2014
Onset of Stuttering

- Typically in preschool years
- 5 – 8.5% incidence
- 75% natural recovery
- Early treatment can avoid negative consequences
Lidcombe Program

- Behavioral treatment
- Developed for preschool age
- Parents provide feedback
- Structured/unstructured conversations
- Stage 1 – continues until zero/near zero stuttering
- Stage 2 – maintenance for at least 1 year
Lidcombe Program

- Studies support effectiveness

- Randomized Control Trials
  - results more efficacious than natural recovery

- Best evidence for effective intervention for CWS under 6 years of age \(^3\)
Clinical Benchmarking

**Definition:**
- Collecting & reporting data on clinical process & outcome
- Used to identify & track progress to the goal
- Compared to similar measures of peers
- Part of the process of identifying best practice

**Benefits:**
- Contributes to clinical process
- Helps compare treatment delivery to standard
- Useful in allocation of funds/management of services
- Little published on stuttering
Can treatment duration be predicted?

- 3 studies; Australia, UK, North America
  - 4-6

- 430 monolingual children

- Median sessions to Stage 2 LP = 11

- Pre-treatment severity (%SS) significant predictor of treatment time
Goal of this study

Replicate previous audits with a linguistically diverse sample
Subjects

- 54 children
- Aged 33-71 months (median 50 months)
- 45 males 9 females
- All treated at MFC
- No co-morbid speech/language factors
- English/French speaking predominately
All exposed to an environment where 2 + languages spoken

Exposure prior to age 4
- In school
- At Home

Language exposure reported by parents during initial assessment
Methodology

- Jones et al (2000) procedures replicated
- Retrospective file audit
- All treating clinicians had completed 2-day LP workshop
- Children attended MFC 1998-2013
- All < 6 years at onset of treatment
- All completed Stage 1; met criteria for Stage 2
- Files excluded when these criteria were not met
Variables

- **Dependent**
  - Number clinic visits to Stage 2

- **Predictor Variables**
  - Gender
  - Age at first treatment visit
    - younger/older than 4 years
  - Onset to treatment interval
    - Less than 12 mths/12 mths or more
  - Stuttering severity (%SS) at first treatment visit
    - +- 5%
### Results: Descriptive

<table>
<thead>
<tr>
<th></th>
<th>Onset to treatment (months)</th>
<th>Stuttering Severity at 1st clinic visit (%SS)</th>
<th>Clinic Visits to Stage II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>15.0</td>
<td>5.0</td>
<td>12</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.9</td>
<td>4.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Range</td>
<td>4 - 43</td>
<td>0.5 - 19.6</td>
<td>6 - 44</td>
</tr>
</tbody>
</table>
RESULTS: Descriptive Comparison

<table>
<thead>
<tr>
<th></th>
<th># Visits to Stage 2</th>
<th>Severity at 1st visit (%SS)</th>
<th>Age (mths)</th>
<th>Onset to Tx (mths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ling. Diverse n=54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. America n=134</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unite Kingdom n=66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia n=250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Ling. Diverse n=54
- N. America n=134
- Unite Kingdom n=66
- Australia n=250
### RESULTS: Univariable Logistic Regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Austalia, UK and NA Cohort</th>
<th>Linguistically Diverse Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds Ratio</td>
<td>95% Confidence</td>
</tr>
<tr>
<td>%SS at 1st Clinic Visit</td>
<td>&lt;5%</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>5% +</td>
<td>2.3 (5-9.9%SS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.2 (10%+SS)</td>
</tr>
<tr>
<td>Onset-to-Tx</td>
<td>&lt;12mths</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>12mths+</td>
<td>0.76</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0.70</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;4 years</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>4 years +</td>
<td>0.87</td>
</tr>
</tbody>
</table>
RESULTS: 90th Percentile comparison

- Linguistically Diverse (North America)
- United Kingdom
- Australia
Replicated monolingual findings on a linguistically diverse population

- Median # visits to Stage 2 similar
- Pre-treatment stuttering severity a significant predictor of treatment time for a bilingual sample
- Median (central tendency representing 50th%) similar in all three studies
First benchmarking data for treatment time to Stage 1 of the LP for a linguistically diverse population

Replicates studies with monolingual children

First step in comparing outcome for bilingual children

Useful when planning and delivering early stuttering intervention
Future studies

- Similar methodology from other treatments
- Do trained clinicians get the same results?
- Languages other than English/French
- Impact of choice of treatment language on treatment time; e.g., mother tongue/L2
- Long term outcome for bilinguals
- Importance of severity as a predictor