Assessing Speech-Language Skills in Children with Selective Mutism

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Abstract

Evaluating children with selective mutism (SM) is challenging because they rarely volunteer to talk in most situations. However, in order to receive needed professional services in the schools with an individualized educational plan (IEP), standard test results are required. This study investigated a novel approach to obtain needed test results for speech, auditory memory, and receptive and expressive language. Twenty-nine children (ages 4 to 12) previously diagnosed with SM tested in this study. Suggestions for the testing of unfamiliar people, and since more direct and systematic language assessments are needed, parents were trained in testing procedures. Children were randomly assigned to either 'parent first' or 'professional first' testing order when a counterbalanced design was used. During testing, parents were viewed by project staff via a one-way mirror and videotaped for later analysis. Each child was scored on multiple speech and expressive vocabulary, narrative language skills, and auditory word memory. Speech articulation and fluency were also evaluated. In addition, parents and teachers completed questionnaires providing information about each child's behavioral functioning. Of the 29 children assessed, the new testing procedure identified 12 with an expressive language disorder and 5 with a receptive-expressive language disorder. Children with SM who exhibited expressive language deficits performed significantly better on tests of receptive language and vocabulary than on expressive language formulation measures when assessed by their parents. The finding that 59% of the children tested in this new format had a language-based disorder (expressive or receptive-expressive) and 41% of the sample had a speech disorder (articulation or fluency) suggests that a Communication Disorder could be used as a variable to help in the diagnosis of children with SM. This research supports the benefits of guided parent involvement for evaluating children with SM.

Background

Selective Mutism (SM) is an anxiety disorder that affects children in select social settings. It affects approximately 7 out of 1,000 children. Onset generally occurs before 5 years of age and is usually evident in preschool. Anxiety, especially social anxiety, and language deficits are hallmarks of SM (McHale, Fung, Manassos, Fishman & Tannock, 2004). Children with SM require early intervention otherwise they generally become isolated and non-communicative. It is critical that children with SM receive formal assessment using well-standardized assessment protocols. Problems remain with children who rarely speak to unfamiliar adults and therefore standard tested measures cannot be considered. Formal assessment is rare (Cluett & Hand, 2001). Children with SM present in unique social settings, usually at home, where they feel secure and comfortable but fail to speak when there is an expectation to do so, such as at school. To receive a diagnosis of this disorder, SM must be present for at least 1 month (excluding the first 5 months of life) and interferes with educational or occupational achievement and/or social communication. The failure to speak (not due to lack of knowledge and is not better accounted for by a communication disorder (American Psychiatric Association, 2000). Current research indicates a decreased threshold of excitability in the amygdala. The amygdala senses danger in the setting and a protective reaction of mutism occurs (Donaway, 2006). Some children, in the most severe non-communicative stage, show motionlessness and self-expressiveness and avoid eye gaze. They seem frozen and appear to be ignoring the person who is trying to communicate with them. It is important for children with SM to be evaluated by a Speech-Language Pathologist in a setting such as a Communication Disorder exists. Rotting (2002) found that narratives provide a clinically useful way of measuring children's social and communication skills and are considered one of the most valid ways to measure communicative competence. According to the work of CDI (Communicative Developmental Inventory), Bub (2002), and Bub & Fairchild (2000), children with SM were likely to have a communication delay and/or mild behavior problem in addition to social anxiety. Testing children who have SM often relies upon informal audios or videotapes of children's conversations in home at interaction (McHale, Fung, Manassos, Fishman & Tannock, 2004). Home administered speech-language samples are often inadequate and do not provide standardized, norm-referenced results. To help gather information about children's speech and language skills, parents received training in how to administer selected measures under the guidance of a speech-language pathologist. Parents were monitored throughout the testing and scoring was conducted by the professional.

Research Questions

This purpose of the study was to answer the questions:

1. Can parents effectively administer speech-language tests to their children with Selective Mutism (SM)?
2. Was there a significant difference in speech-language test results of children with SM when evaluated by parents and professionals?
3. What were the results of speech-language testing for children diagnosed with SM?

Methods

Participants

Twenty-nine (29) children participated in a free study after their parents gave permission for them to be evaluated for speech-language and behavioral concerns. Information about the study was made available through a website [selectivemutismcenter.org] and through the medical practice of a treatment professional specializing in children with SM.

- Families came from many states in the U.S.
- Parents registered for the testing at the Jinkemask, PA office where children took part in testing that lasted approximately two hours.

Table 1. Means and Standard Deviations for Age & Weight

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>7.16 yrs. (1.58 yrs.)</td>
</tr>
<tr>
<td>Birth Wgt.</td>
<td>7.31 lbs. (1.62 lbs.)</td>
</tr>
<tr>
<td>Range from 4.06 lbs. to 10.5 lbs.</td>
<td></td>
</tr>
</tbody>
</table>

- Gender: 15 females and 14 males (all Caucasian)
- 35% were on medication for anxiety
- 38% were on medication for allergies/asthma
- 66% had anxiety in the immediate family
- 52% were first-born in their family

Table 2. T scores on BASC-2

<table>
<thead>
<tr>
<th>Domain</th>
<th>BASC-2 T scores (40–60 mean; 50 SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANXIETY</td>
<td>T = 66.4 (SD = 13.18)</td>
</tr>
<tr>
<td>WITHDRAWAL</td>
<td>T = 73.2 (SD = 13.56)</td>
</tr>
</tbody>
</table>

Note: Average T score = 40 – 60; mean = 50; SD = 10.

Procedures

- Parents of children with a prior diagnosis of SM volunteered to be in the study.
- Parents completed questionnaires during the time they were not testing (Cognitive Forms, CELF-4 Observation Scale, Behavior Assessment System for Children (BASC-C, Parent Relationship Questionnaire, and Developmental History Forms).
- Children were randomly assigned to either ‘parent first’ or ‘professional first’ testing order when a counterbalanced design was used. During testing, parents were viewed by project staff via a one-way mirror and videotaped for later analysis. Each child was scored on speech and expressive vocabulary, narrative language skills, and auditory word memory.
- Speech articulation and fluency were also evaluated. In addition, parents and teachers completed questionnaires providing information about each child's behavioral functioning. Of the 29 children assessed, the new testing procedure identified 12 with an expressive language disorder and 5 with a receptive-expressive language disorder.
- Children with SM who exhibited expressive language deficits performed significantly better on tests of receptive language and vocabulary than on expressive language formulation measures when assessed by their parents. The finding that 59% of the children tested in this new format had a language-based disorder (expressive or receptive-expressive) and 41% of the sample had a speech disorder (articulation or fluency) suggests that a Communication Disorder could be used as a variable to help in the diagnosis of children with SM. This research supports the benefits of guided parent involvement for evaluating children with SM.

Table 4. Means (average of both 1st and 2nd testing events) and SD for Test Scores by Parent and Professional

<table>
<thead>
<tr>
<th>Test</th>
<th>Parent (N=14)</th>
<th>SD</th>
<th>Professional (N=14)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT-4 Parent</td>
<td>111.40</td>
<td>11.70</td>
<td>107.14</td>
<td>13.60</td>
</tr>
<tr>
<td>PPVT-4 Prof</td>
<td>113.80</td>
<td>11.40</td>
<td>108.54</td>
<td>13.60</td>
</tr>
<tr>
<td>EVT-2 Prof</td>
<td>104.50</td>
<td>15.40</td>
<td>105.00</td>
<td>15.00</td>
</tr>
<tr>
<td>EVT-2 Parent</td>
<td>105.30</td>
<td>15.40</td>
<td>104.50</td>
<td>15.40</td>
</tr>
<tr>
<td>TNL Comp. Parent</td>
<td>63.40</td>
<td>11.50</td>
<td>62.00</td>
<td>11.70</td>
</tr>
<tr>
<td>TNL Comp. Prof</td>
<td>59.70</td>
<td>11.50</td>
<td>59.00</td>
<td>11.50</td>
</tr>
<tr>
<td>Wd. Mem. Prof.</td>
<td>4.50</td>
<td>0.50</td>
<td>4.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Wd. Mem. Parent</td>
<td>4.60</td>
<td>0.50</td>
<td>4.50</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Discussion

Differences in expressive and receptive language test results were found between children with SM tested by their parents or professionals. Children who were tested by professionals scored more than 5 scaled score points higher on receptive language testing (M=8.76, SD=3.38) than they did on expressive language (M=3.65, SD=2.09), Cohen's effect size = 1.82. Overall, 41% of the children in this study exhibited an expressive language disorder and 17% exhibited a mixed receptive-expressive language disorder. The remaining 42% with SM had language skills difficult to determine because of the condition's severity. These 42% of children exhibited notable speech articulation errors or starting/stop-like dysfluencies. Limitations to this study relate to the smaller sample size available for testing. In addition, it may be that parents who brought their children for evaluations were more concerned about speech language. It is also possible that children scored more poorly as they would have if testing took place in the "safe and comfortable" environment of their home. A follow-up study is in the planning stages.

Receiving a diagnosis of SM, according to the DSM-IV-TR, specifies that the disturbance is not better accounted for by a Communication Disorder. The results of our study suggest that the diagnosis of SM should not be exclusive of a concurrent Communication Disorder since this occurred in more than half of our sample. A Communication Disorder may be an underlying reason why children develop SM. The testing results used in this study hold promise as a new paradigm for testing children with SM. (See references on separate page.)
References:
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ASHA 2008 Presenters:
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