

Preschool Twins with Selective Mutism: Communication Outcomes at Age 9

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Abstract

Selective mutism may present challenges for the managing clinician. Because it is a rare condition, limited data exists regarding appropriate assessment and intervention practices. Also of interest to speech-language pathologists are communication disorders among twins and multiples as multiple births are becoming more common. This case study presents the speech and language outcomes of a set of 9-year-old identical twins who were identified with selective mutism during preschool. By summarizing test results, speech-language therapy data, and educational/academic records over several years, this study documents their later childhood performance.

Background

Twins and multiple births have increased in recent years due to a number of factors. Among those factors, statistics indicate that women are more commonly giving birth at older ages, and fertility treatments are frequently employed. Consequently, professionals in the fields of public health, education, and communication disorders are increasingly interested in examining trends and behaviors among these children.

For a number of years, the general assumption has been that twins are somewhat delayed or are more susceptible to language impairments than are their singleton counterparts. The origin of this assumption is documented in older literature following the results of several large studies of twins. Among these are the work of Day (1932) and Davis (1937). Subsequent studies have attributed twins' language difficulties to social factors, environmental factors, and genetic/biological factors. The wide array of methods employed in these studies to examine participants' behavior has generally led to outcomes that are not agreed upon. It may be more accurately concluded that a child is not necessarily at higher risk of having communication difficulty due to the nature of being a twin. Rather, a variety of factors may contribute to the observed communication difficulty, not only in twins, but in any child. The list of references provides resources for additional readings regarding studies that have explored speech and language behaviors in twins.

Selective mutism (SM) is a rare condition that may present challenges for the clinician who is providing clinical intervention for the affected child. Effective intervention is multidisciplinary in nature and requires ongoing communication and collaboration with all caregivers of the child. To date, there seems to exist a paucity of data regarding assessment and intervention practices with children who are diagnosed with selective mutism. This may be largely due to the rare occurrence of the condition. Selective mutism has traditionally been classified as a psychological disorder by the American Psychological Association to describe a child who does not speak in situations in which children normally speak (DSM-IV-TR). Etiologies have ranged from severe social anxiety to a complex interaction of genetic, temperamental, psychological, developmental, and environmental factors (Cohan, Price, & Stein, 2006). Thus, therapies have included drugs, behavioral modification, psychotherapy, video or audio self-modeling, and cognitive-behavioral therapy. Within the SLP profession, the condition is viewed as a socio-pragmatic communication disorder (Hungerford, Edwards, & Iantosca, 2003).

Participants

The children presented are a set of identical, female African American twins, Twin 1 and Twin 2. They were born at 35 weeks' gestation via vaginal delivery. The mother experienced gestational diabetes and hypertension during the pregnancy. Twin 1 weighed 4 lbs, 13 oz and Twin 2 weighed 4 lbs, 3 oz. No extended hospital stay was warranted. Per caregiver report, both girls achieved gross motor milestones in a timely fashion. At age 3, the medical history of both girls included asthma and frequent colds. They both wore glasses after being diagnosed with astigmatism.

The children were initially diagnosed with selective mutism and speech sound (articulation & phonology) and language (receptive and expressive) delays in 2003 at age 3. Within a year following the selective mutism diagnosis, both were enrolled in counseling services. They began private speech-language therapy at age 3 and later began therapy at the USC Speech & Hearing Research Center (2005, age 5). They also began therapy in public schools; however, they continued supplemental therapy at the USC Center. Eventually, psychoeducational testing and academic performance prompted their enrollment in special education services. In summary, the children presented in this case study have received intervention from speech-language pathologists for many years; however, teachers, psychologists, and developmental specialists have also been involved in their care.

Method

The investigators examined records which documented the participants' performance throughout several years of their participation in speech & language therapy. The investigators also reviewed other professionals' reports, surveyed teachers, and interviewed parents. The parent interview was conducted using questions from the *Speech Participation and Activity of Children Checklist* (SPAA-C; McLeod, 2004), along with several additional questions that were constructed by the current investigators. In their review of data, the investigators summarized trends in behavior and performance that appeared to be similar among the twins and also reported on differences and distinguishing features of each child's case.

Data Collected/Reviewed

Common/shared speech-language targets (ages 5 to 9)

- Increase mean length of utterance
- Respond to "wh" questions
- Sequence picture scenes
- Retell stories
- phonological objectives to address final consonant deletion and cluster simplification
- follow complex auditory directions
- miscellaneous phonological awareness tasks
- word ordering tasks (syntax)
- articulation objectives to address /r/

A comparison of the twins' performance on similar therapy objectives over time indicated that although common targets for therapy were identified, the progress that each child made was variable and unique. Specifically, each child showed strengths or weaknesses in target areas that the other twin did not necessarily display. Additionally, they did not progress at the same rate for all target areas.

Speech-language targets specific to either but not both children (ages 5 to 9)

- identify comparatives
- label objects
- identify opposites
- articulation objectives for /s/ blends, "ch", and "sh"
- phonological objectives to address liquid simplification
- identify superlatives
- request objects
- label attributes of objects

Therapy strategies/techniques employed (ages 5 to 9)

- Cycles approach (Hodson & Paden, 1991)
- Minimal pairs contrast therapy (Weiner, 1981)
- Phonetic placement techniques (Scripture & Jackson, 1927)
- Traditional stimulus approach (Van Riper, 1978)
- Non-directive play therapy (Cogher, 1999)
- Activity-based intervention (Bricker & Cripe, 1992)
- Child-oriented conversational intervention (Fey, 1986; Yoder et al., 1981)
- Structured, didactic therapy (Cole & Dale, 1986)
- Incorporating “wait time”/periods of silence during therapy for child to initiate verbalizations

Conclusions/Discussion

At the end of data collection (2009), the participants continued both school-based speech-language therapy and private speech-language therapy. Recent therapy targets that are common to both participants included: phonological awareness tasks, sentence construction (morphology & syntax), interpreting idioms, and activities to facilitate expression in conversations (picture description, verbal sequencing, story retelling & discussion, etc.). Both displayed minor articulation problems affecting /r/; however, the levels of production were different for each. Nonverbal communication skills such as eye contact, facial expression, & gestures were appropriate in both clients. They were enrolled in special education services and receive psychotherapy. Teacher reports revealed that neither twin initiated conversations with teachers or classmates but would respond when prompted. Neither would volunteer information in class, and both “avoided speaking, if possible”. They tended to speak “very briefly, talking only when necessary”. In recent surveys, teachers described their verbal tendencies as “limited in words but adequate to convey meaning”. The twins’ reluctance to speak did not significantly impede their literacy skills, according to the teachers’ reports.

In summary, the twins continued to display symptoms of SM following several years of various interventions. Impaired and/or delayed elements of speech and language also persisted. Additional studies exploring SM are needed. However, this data provides evidence that despite documented progress in many areas, symptoms of SM may persist for many years. Successful treatment must be highly individualized and multidisciplinary in nature.

These observations represent an initial step toward better understanding of a rare communication disorder and trends that are noted in a set of twins. By conducting similar studies in the future, one may gain a better understanding of speech language progression and expected outcomes of children who previously display selective mutism during early developmental periods. Such information will ultimately lead to effective assessment and intervention practices. The information that follows includes: a) a selected list of readings that are specific to research in twin children’s language development and b) a selected list of resources to guide clinicians in the assessment and intervention process for children with selective mutism.

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Assessment of Children with Selective Mutism Socio-Pragmatic Approach (Hungerford, 2005)

Need to assess:

- All facets of the pragmatic communication disorder (see below)
 - Parent interview
 - Direct observational assessment: school and home, if possible
- Underlying speech/language disorders
 - If child points, receptive communication skills may be testable (Lindamood Auditory Conceptualization Test, PPVT, parts of CELF-4, etc.)
 - Therapist may go to child's home for testing
 - Analysis of recorded language/speech sample from home
 - Narrative analysis of audiotaped narratives (see McInnis, et al., 2004)
 - Portfolio analysis (artifacts from classroom analyzed)
- Anxiety
 - SLP may assess communication-related anxiety by adapting self-report measures used in stuttering
 - Psychologist may assess anxiety
- Academics
 - Portfolio analysis
 - Achievement testing that requires only nonverbal response

- Cognitive
- Psychological
- Medical

Some of the important variables in assessment are:

- **physical context:** classroom (with peers present, with therapist alone, with teacher...), principal's office, playground, school library, hallway, therapy room, mall, home...;
- type of communication required: **sharing personal vs. non-personal information, sharing known information vs. novel, reading a script or book vs. spontaneous conversation, rote vs. spontaneous, highly communicative (sharing information) vs. less communicative (naming a picture, game context), yes/no answer vs. other;**
- characteristics of communicative partner/others present in vicinity: **familiarity, number present, gender, peer or non peer, age, social role (teacher, principal, therapist);**
- communicative functions: **regulating another's behavior, social interaction, greeting, joint attention, answering questions, requesting information, etc.. Behavioral regulation typically easier than the social functions of language. Answering questions (non-personal first) may be easier than asking questions.**
- interaction/communication modality: **nonverbal turn-taking (e.g., taking a turn in a game), pointing, writing, nodding, whispering, voicing with low volume, voicing with normal volume, playing a toy instrument in a "band" (unvoiced instrument, e.g., guitar, then voiced, e.g., kazoo; or mouth instrument vs. manual instrument), making speech noises in non-communicative contexts ("ch ch ch ch" to go up the ladder, "sssssss" to go down the chute in game; first unvoiced, then voiced)**

Checklist of Communicative Functions and Means

(Items adapted from Prizant, Wetherby & Roberts, 1993)

Child's initials:
 Rater's name:
 Date of sample:
 Context and activity:
 Communicative partner:
 Others present:

**Indicates joint attention
 Nonverbally**

Giving gesture
 Pointing gesture
 Showing gesture
 Other gesture
 (e.g., reaching, raise hand, push away)
 Normal proximity to
 Communicative partner
 Yes/no head nod/shake
 Shoulder shrug
 Shared affect expressed
 through facial expression
 Holds object/toy
 Manipulates object/toy
 Reciprocal play
 Parallel play

Follows a verbal request for action
 Answers Yes/No
 Answers forced choice questions
 Verbalization (*speaking*)
 Communicative Functions (specify): B, S, J, O*
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<u>B = Behavioral regulation</u>	<u>S = Social interaction</u>	<u>J = Joint Attention</u>	<u>O = Other</u>
request object request action protest	request social routine request comfort greeting calling, request permission, showing off	comment request information provide information	
W=writing N=non-verbal (specify)	S=spontaneous R=requested	V=verbal	

Global Measure: # Communicative Acts per Minute/Mode of Communication

**Treatment of Children with Selective Mutism
 Socio-Pragmatic Approach (Hungerford, 2005)**

This is a pragmatic model for therapy that first targets non-communicative, non-verbal reciprocal interaction. Once non-verbal interaction is established, therapy moves on to target reciprocal interaction with greater communicative demands.

The SLP must keep in mind that communicative pressure can be a result of:

- a) type of communication (personal vs. non-personal, sharing known information vs. novel contributions to conversation, reading a script vs. spontaneous conversation);
- b) characteristics of communicative partner (familiarity, gender, social role (teacher, principal, therapist));
- c) communicative functions (regulating another's behavior, social interaction, greeting, joint attention, answering questions, requesting information, etc.);
- d) communication modality (nonverbal turn-taking, pointing, writing, nodding, whispering, voicing); and
- e) physical environment (classroom, therapy room, school library, playground).

Whenever one of these variables changes, the therapist may need to move down the hierarchy – perhaps again targeting nonverbal reciprocal interaction and moving up the hierarchy to target more interactive, and more verbal behaviors. Each therapy activity should be analyzed in terms of each of the above variables to determine the degree of communicative pressure that it may create for the client. Very small increases in difficulty should be used. Though the design is pragmatic, the therapy targets are reinforced using a behavioral paradigm.

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