

2012

Selective Mutism: Identification of Subtypes and Influence on Treatment

Christy A. Mulligan

Philadelphia College of Osteopathic Medicine

Follow this and additional works at: http://digitalcommons.pcom.edu/psychology_dissertations



Part of the [Psychology Commons](#)

Recommended Citation

Mulligan, Christy A., "Selective Mutism: Identification of Subtypes and Influence on Treatment" (2012). *PCOM Psychology Dissertations*. Paper 210.

This Dissertation is brought to you for free and open access by the Student Dissertations, Theses and Papers at DigitalCommons@PCOM. It has been accepted for inclusion in PCOM Psychology Dissertations by an authorized administrator of DigitalCommons@PCOM. For more information, please contact library@pcom.edu.

Philadelphia College of Osteopathic Medicine

Department of Psychology

SELECTIVE MUTISM: IDENTIFICATION OF SUBTYPES AND
INFLUENCE ON TREATMENT

By Christy A. Mulligan

Submitted in Partial Fulfillment of the Requirements of the Degree of
Doctor of Psychology

May 2012

**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY**

Dissertation Approval

This is to certify that the thesis presented to us by Christy Mulligan
on the 8 day of June, 2010, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

Committee Members' Signatures:

James Brad Hale, PhD, Chairperson

Diane Smallwood, PsyD

Dr Elisa Shipon-Blum

Robert A DiTomasso, PhD, ABPP, Chair, Department of Psychology

Acknowledgements

There are many people who have supported and helped me through the process of writing my dissertation; however, Dr. James B. Hale has truly gone above and beyond in providing his time and patience so generously. I am doubtful I could have completed the dissertation without his guidance and support; he truly is a gifted teacher and mentor. I feel extremely fortunate to have been his student and have learned so much from his teaching and scholarly articles. In addition, his research and other professional contributions to the field of school psychology are endless. Therefore, it is with extreme gratitude and my deepest appreciation that I thank him.

I thank Dr. Diane Smallwood for her contributions to this dissertation process. I am thankful to have had Dr. Smallwood as a member of my committee and am grateful for her support and flexibility with her time and schedule.

I thank Dr. Elisa Shipon-Blum, who is a true pioneer in the treatment and understanding of selective mutism. Without her and the Selective Mutism Anxiety Research and Treatment Center, this dissertation would not have been possible. It has been an honor to have had her support in this important area of research.

Lastly, a huge thank you to my husband, Tom, who watched me work through the years and has always been a positive force with encouraging words. I thank my children, Jackson and Henry, and hope that I instill the same love of education and learning in them as my parents and grandparents instilled in me. Finally, a special thank you to my cousin Zoe, who has struggled with selective mutism and has inspired me to help other children end their silence.

Abstract

Selective Mutism (SM) is a psychiatric disorder with a relatively low incidence that impairs social communication in some settings. There are many characteristics that appear similar in some children but are absent in others. Therefore, it was hypothesized that there may be distinct SM subtypes that warrant differential diagnosis and treatment strategies. In this study, 442 Selective Mutism Comprehensive Diagnostic Questionnaires (SM-CDQ) were analyzed to help identify children with specific characteristics that made their SM unique. Participants ranged in age from 3 to 18 years old and met criteria for SM. The data were coded based on 203 variables and were compared to develop profiles of SM subtypes. The variables were divided into three categories, descriptive (D), characteristics of mutism (CM), and mutism behavior ratings (MBRS). Cluster analysis of CM variables using a within-groups linkage cluster method, which is a variant of the unweighted pair group method using arithmetic averages, was used with a Phi 4-point correlation for binary data as the distance measure. An ANOVA was used with the (Mutism Behavior Rating Scale) subscales as dependent variables. Only subtypes that have more than 10 participants were included and compared on the demographic and MBRS variables. It was hypothesized that through the cluster analysis of the CM variables, subtypes would emerge.

List of Tables

Table 1. Demographic Characteristics of the Sample	49
Table 2. Zero-Order Correlations Among MBRS scales for the Total Sample	52
Table 3 . Participant Characteristics by Selective Mutism Subtypes as Percentage of the Sample	57
Table 4. Parents' Mutism Characteristics by Subtype	65
Table 5. ANOVA for MBRS Scales Comparing Selective Mutism Subtypes	71

List of Figures

Figure 1. MBRS ratings for selective mutism subtypes	64
--	----

Table of Contents

Acknowledgments	iii
Abstract	iv
List of Figures	ix
List of Tables	x
Chapter 1 Introduction	1
Chapter 2 Literature Review	5
Overview: Selective Mutism Identification and Intervention	5
Temperament and Development of Selective Mutism	9
Comorbid Cognitive and Psychosocial Problems	11
Family Characteristics of Children with Selective Mutism	15
Environmental Determinants of Selective Mutism	17
Theoretical Explanations for Selective Mutism	18
Treatment Methods for Children with Selective Mutism	22
Cognitive Behavioral Therapy	30
Conceptualizing Selective Mutism and Potential Subtypes	31
Purpose of the Study and Research Questions	46
Chapter 3 Method	48
Participants/Source for Data	48
Inclusion and Exclusion Criteria	50
Instrumentation	51
Procedure	61
Analyses	61

Chapter 4 Results	64
Descriptive Statistics	64
Global Mutism	79
Anxiety/Language Mutism	79
Low Functioning Mutism	80
Sensory Pathology Mutism	80
Emotional/Behavioral Mutism	81
Chapter 5 Discussion	82
Subtype Differentiation and Clinical Implications	83
Implications for Assessment and Intervention	88
Limitations and Future Research	94
References	96

Chapter 1

Introduction

Selective mutism is a rare disorder that falls under the American Psychiatric Association (APA, 2000) diagnostic entity known as “disorders usually first diagnosed in infancy, childhood or adolescence.” Those children with selective mutism will speak normally in one setting (usually home) and will not speak in other environments, such as school. The prevalence in the general population is so low that school psychologists, physicians, and other treating professionals may know little about the disorder or even have the opportunity to work with children with selective mutism (Kolvin & Fundudis, 1981; Kopp & Gillberg, 1997; Kumpulainen, Rasanen, Raaska, & Somppi, 1998). As a result, more research in selective mutism is needed to develop appropriate guidelines for assessment and intervention of this potentially debilitating disorder.

The criteria for and essential feature of selective mutism, according to the *Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; DSM—IV—TR, APA, 2000)*, are the child’s persistent failure to speak in specific social situations where speaking is expected and, at the same time, the child does speak in other situations; therefore, their problem is selective and inconsistent across environments, which makes diagnosis challenging. Instead of communicating by standard verbal expression in these selectively mute situations, children with this disorder may communicate by gestures, nodding or head shaking, pulling or pushing, or, in some cases, by short monosyllabic or monotone utterances or in an altered voice. As a result, selective mutism often interferes with educational or occupational achievement and/or with social communication or adjustment. The *DSM—IV—TR* (APA) stipulates it must last for at least 1 month, but not

be limited to the first month of school. SM should not be diagnosed if the child's failure to speak is due solely to a lack of knowledge of or discomfort with the spoken language required in a social situation (APA). It is also not diagnosed if the disturbance is better accounted for by embarrassment related to having a language or communication disorder or if it occurs exclusively in the presence of a pervasive developmental disorder, schizophrenia, or other psychotic disorder (APA).

Although selective mutism is a relatively rare disorder, reports estimate that between .2% and .7% of children have the condition (Kolvin & Fundudis, 1981; Kopp & Gillberg, 1997; Kumpulainen et al., 1998), and a more recent teacher-identified school-based sample yielded a prevalence of .71% (Bergman, Piacentini, & McCracken, 2002), suggesting that selective mutism may not be as rare as previously reported, and may even be slightly more prevalent than autism (Blanchard, Gurka, & Blackman, 2006). SM will typically afflict more girls than boys with a gender ratio of 1.5:1 to 2.1:1 (Black & Uhde, 1995; Kristensen, 2000). There is also evidence that selective mutism may be underreported due to families living in social isolation, parents not recognizing SM as a problem in need of intervention, and selective mute behavior existing primarily in the school setting (Hayden, 1980).

The selective mutism diagnosis is often overlooked until the child first attends preschool or kindergarten. This is usually the first time it is brought to the parents' attention that their child will not speak. Typically, it is the school psychologist, school counselor, or social worker who is the first to be called to consider possible explanations for why the child is not speaking. Often, parents will believe this was a sudden onset, when in reality it may be the first time demands of speaking were placed on the

selectively mute child from someone other than their parents or other immediate family members. In some cases, parents may believe the problem lies with the classroom, teacher, or school climate because the selectively mute child speaks freely in the home.

Children with selective mutism may have difficulty making friends or may have difficulty effectively communicating with teachers and extended caregivers, such as grandparents, aunts, and uncles. It is not uncommon for these children to become emotional or overly sensitive when speaking demands are placed upon them. Children with selective mutism may suffer from low self-esteem, feeling different from their peers and forcing them into further silence and isolation (Wood, 2006). Often, children with selective mutism have a desire to speak and please the individual who is making the speaking demands upon them, yet are still unable to verbalize. It is imperative that school professionals recognize the distinct symptoms and reasons for the child's lack of oral expression because early intervention is imperative to appropriately treat this socially debilitating disorder. Left untreated, selective mutism can become inadvertently reinforced and subsequently resistant to intervention. Understanding a child's psychosocial issues and patterns may be the key to early, successful intervention.

In this study it was hypothesized that not all children with selective mutism are alike, and there may be distinct selective mutism subtypes that warrant differential diagnosis and treatment strategies. These children may have different clinical presentations and different explanations for the selective withholding of speech. In addition, children with selective mutism may have variable speech utterances, ranging from complete silence to grunts, moans, or animal noises (APA, 2000). The most popular and common theory for the selective mutism condition can be attributed strictly

to a high level of anxiety, closely related to social phobia (Dow, Sonies, Scheib, Moss, & Leonard, 1995). However, some children may also have difficulty controlling emotional states, which interferes with self-regulation of anxiety (Bronson, 2000). Some children with selective mutism may have neurodevelopmental vulnerabilities, which impact communication and language skills (Viana, Beidel, & Rabian, 2009), and this could be related to second language acquisition in some children with selective mutism (Cohen, Chavira, & Stein, 2006). Lastly, a small number of children with selective mutism may refuse to talk due to a tendency toward controlling, demanding, oppositional, and aggressive behaviors (Kumpulainen et al., 1998; Steinhausen & Juzi, 1996). These different presentations lend greater credibility to the potential for distinct subtypes of selective mutism and, if substantiated through empirical investigation, could further advance differential diagnosis, impact treatment strategies, and ultimately improve outcomes for children with selective mutism.

Chapter 2

Literature Review

Overview: Selective mutism identification and intervention.

Toward the end of the 19th century, Kussmaul (1877, as cited in Dow et al., 1995) described a disorder in which individuals would not speak in certain situations, even though they had the ability to speak. He named this disorder “aphasia voluntaria,” emphasizing what he thought was a voluntary decision not to speak. In 1934, when investigating the same symptoms, Tramer called the problem “elective mutism,” because he felt these children were electing not to speak (Dow et al., 1995). In the *DSM—IV—TR* (APA, 2000), selective mutism was the diagnostic label adopted, implying these children do not speak in select situations, which appears to be more consistent with new etiological theories that focus on selective mutism’s relation to anxiety, specifically social phobia (Dow et al., 1995).

The age of onset for selective mutism is usually in preschool, with a mean age of onset ranging from 2.7 to 4.1 years (Cunningham, McHolm, Boyle, & Patel, 2004; Garcia, Freeman, Francis, Miller, & Leonard, 2004; Kristensen, 2000). However, there is often a lag between the onset of the disorder and an initial referral or intervention. Treatment is often delayed until 6 to 8 years of age (Black & Uhde, 1992; Ford, Kratochwill, Sladeczek, & Carlson, 1998). Treatment delay may lead to the entrenchment of symptoms and has important assessment, treatment, and service delivery implications. Earlier identification could lead to faster intervention, which could prevent or limit functional impairment (Schwartz, Freedy, & Sheridan, 2006).

Children with SM do not typically outgrow the disorder (Manassis, Fung, Tannock, Sloman, Fiksenbaum, & McInnes, 2003). In fact, a follow up study of 41 young adults who had selective mutism as children found that 61% continued to struggle with issues related to self-confidence, independence, achievement, and social communication 12 years after the diagnosis of selective mutism (Remschmidt, Poller, Herpertz-Dahlman, Hennighausen, & Gutenbrunner, 2001). Individuals with selective mutism were also described as more dependent, insecure, and immature and less physically healthy. In addition to exhibiting these frequently associated dysfunctional behaviors, these children were predisposed to social isolation and diminished academic functioning (Theodore, Bray, Kehle, & Dioguardi, 2003).

Although the etiology is not well understood, two key factors have been consistently associated with selective mutism. First, children with selective mutism tend to have anxiety, especially social anxiety, and second, children with selective mutism often demonstrate language deficits associated with developmental delays (APA, 2000). The disorder has a variable course, lasting from a few months to a few years (Krysanski, 2003). Selective mutism occurs across cultures and affects children from all social strata, but is more common in immigrant populations (Elizur & Perednik, 2003; Toppelberg, Tabors, Coggins, Lum, & Burger, 2005).

Clinical reports often note shyness and anxiety as prominent traits in children with selective mutism, using descriptors such as anxious, shy, dependent, clinging, fearful, sensitive, and timid (Black & Uhde, 1992; Crumley, 1993; Dow et al., 1995; Kratochwill, 1981; Lesser-Katz, 1988; Wilkens, 1985; Wright, Cuccaro, Leonhardt, Kendall, & Anderson, 1995). In contrast, other reports describe children with selective mutism as

passive aggressive, stubborn, disobedient, angry, oppositional, manipulative, controlling, and having a negative personality (Hayden, 1980; Kolvin & Fundudis, 1981; Krohn, Weckstein, & Wright 1992). Therefore, some have proposed that selective mutism is an act of noncompliance or even overt defiance (Paez & Hirsch, 1988).

Currently, the literature indicates multiple pathways to the development of selective mutism and to the lack of homogeneity in the presentation of this condition (Cohen, Price, & Stein, 2006). The long-term outcomes for individuals with social anxiety is associated with significant impairments, including occupational and productive role impairments, lower educational attainment, lower financial security, and difficulties with social and intimate relationships (Keller, 2001; Kessler, 2003; Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996; Van Ameringen, Mancini, & Farvolden, 2003; Wittchen & Fehm, 2003). In addition, adolescents with social anxiety are more likely to experience comorbid anxiety and depressive disorders and to develop drug, alcohol, and nicotine dependence, which carry through adulthood (Kessler, 2003; Velting & Albano, 2001). Furthermore, retrospective reports of adults who were selectively mute in childhood indicate that while selective mutism often remits by adulthood, individuals experience continued social anxiety and social avoidance (Dow et al., 1995; Steinhausen, Wachter, Laimbock, & Metzke, 2006).

A significant correlation was also found between mutism severity ratings and parent's ratings of anxiety symptoms (anxiety, separation anxiety, and social/performance anxiety), suggesting that the severity of the child's anxiety is an important factor in determining mutism severity. In addition, avoidance or fear of speaking in public or to unfamiliar persons is among the most common symptom

reported by adults with social phobia, who sometimes even report a complete inability to speak in these situations (Black & Uhde, 1995).

Children with selective mutism followed longitudinally provide preliminary evidence of the stability of selective mutism over time (Renschmidt, et al., 2001). In the Renschmidt et al. study of clinically referred patients with ICD-9 and *DSM—III—R* elective mutism, the average age of onset was 3 years, and the average age of referral was 8 years. Twelve years after the initial referral, 12% of patients continued to meet selective mutism diagnostic criteria, 20% experienced mild improvement, 29% experienced partial remission, and 39% no longer met diagnostic criteria. Nineteen percent of those patients who were asymptomatic or significantly improved at follow-up experienced an immediate improvement in mutism following initial treatment; however, the majority (81%) experienced a gradual amelioration, and 19% experienced periods of relapse.

Another study reporting follow-up data on 24 children with selective mutism found that with intervention, nearly 13% showed marked improvement, 33% were moderately improved, and 54% showed little to no improvement in the 5 to 10 years after treatment (Kolvin & Fundudis, 1981). Most important, all but one of the children who improved did so by age 10, suggesting that those who fail to make progress by middle childhood may be experiencing a more persistent form of the disorder. These findings suggest that selective mutism does not remit or improve at the same rates for all children. Moreover, there are some children with selective mutism who experience no improvements, implying a chronic course of mutism.

Temperament and development of selective mutism.

There are many characteristics of selective mutism that warrant consideration in differential diagnosis and treatment. Temperament may be one area needing further examination, given the developmental nature of selective mutism. Temperament is usually seen as a more biologically based set of predispositions that contribute later to personality, but clearly they are interrelated with each other, the environment (Thomas & Chess, 1977), and learning history (Rothbart & Bates, 1998).

Children with slow-to-warm temperaments have difficulties adapting to change and new situations, presenting withdrawal responses (Chess & Thomas, 1989). Leonard and Topol (1993) alluded to a potential relation of temperament to selective mutism for behaviorally inhibited children. Hadley (1994) argued that behavioral inhibition was synonymous with shyness, and that shyness involved social fears. In one group of selectively mute children, nearly 75% identified excessive shyness in their immediate families (Kristensen, 2000).

Individuals with selective mutism often had difficulty responding to new stimuli and handling transitions or changes; these are primary characteristics of slow-to-warm and behaviorally inhibited children (Ford et al., 1998). Children with selective mutism tend to be inhibited in new and social situations, which could be conceptualized as behavioral inhibition to the unfamiliar (Leonard & Topol, 1993). In fact, the behavioral characteristics of children evaluated for selective mutism demonstrate a striking resemblance to the descriptions of behavioral inhibition reported in the Harvard Infant Study (Kagan, Reznick, & Snidman, 1988). Kagan et al. found that inhibited infants tended to withdraw from novel stimuli or strangers, seek a parent, and inhibit play and

vocalizations, whereas other children tended to approach, explore, and remain talkative in new situations. They noted that this inhibited temperament was related to other theoretical constructs, such as fearfulness, introversion/extroversion, and shyness as personality traits. Additionally, inhibited children have been measured to have higher heart rates, and subsequently, children with consistently high heart rates had the greatest number of specific fears, night terrors, and maternal reports of shyness and fear of school (Kagan et al., 1990).

Behavioral inhibition tends to manifest differently at different developmental stages. Toddlers tend to withdraw from unfamiliar people and cling to caregivers, ceasing spontaneous play and vocalization when presented with unfamiliar situations or people (Cohen et al., 2006). Reviewing both laboratory and school studies, Cohen et al. note that preschoolers demonstrate hesitancy and vocal restraint when interacting with unfamiliar people, but by the early elementary period, behavioral inhibition is expressed through shyness and social withdrawal. Interestingly, Kagan, Reznick, and Snidman (1987) found that one of the most sensitive indices of behavioral inhibition in 5-year-old children was lack of spontaneous speech in the presence of an unfamiliar adult. This developmental connection with selective mutism seems especially logical given that once behavioral withdrawal occurs repeatedly, it becomes habituated (Manassis & Bradley, 1994). This avoidance likely leads to a decreased sense of mastery and perpetuates the physiological fear response to new situations because desensitization becomes unlikely (Manassis & Bradley, 1994).

Behaviorally inhibited children often have higher rates of self-concern and anxiety disorders (Hirschfield, Biederman, Brody, Faraone, & Rosenbaum, 1997; Messer

& Beidel, 1994; Rosenbaum et al., 1993), with high physiological arousal traits commonly found in these populations (Leonard & Topol, 1993). Like temperament, behavioral inhibition is also influenced by parental involvement (Manassis & Bradley, 1994). As Manassis and Bradley note, the manner in which a parent or authority figure approaches the behavioral inhibition is critical to whether the child remains inhibited. If the parent tolerates the behavior, the child will be more likely to continue withdrawing. A nonautonomous parent experiences a secondary gain from the increased dependence from the child's inability to face new social situations. In this way, the biologically based behavioral inhibition predisposition is maintained by the enmeshed parent-child relationship (Manassis & Bradley, 1994).

Children identified as behaviorally inhibited in the first 3 years of life are at greater risk for anxiety disorders in later childhood (Rosenbaum et al., 1993) and for social phobia in particular (Biederman et al., 2001). Some researchers suggest that selective mutism and social phobia represent stages in a developmental progression of behaviorally inhibited temperament (Bergman et al., 2002). It was also suggested that selective mutism could represent "the extreme end of a continuum of temperament and social behavior that has a biological basis" (Dummit et al., 1997, p.658).

Comorbid cognitive and psychosocial problems.

Investigators have found that children with selective mutism often have comorbid learning problems secondary to other disorders, with speech and language, fine and gross motor, and attention problems often noted. Language disorders are quite common in children with selective mutism, as the frequency of language disorders or delays is reported to range between 30% and 65% (Kolvin & Fundudis, 1981; Rosler, 1981;

Steinhausen & Juzi, 1996; Wilkens, 1985). However, the nature or extent of language impairments associated with selective mutism needs further investigation. For example, it is unclear whether selectively mute children have pragmatic deficits that extend beyond their avoidance of communicating in specific situations, whether their deficits are primarily expressive in nature, or whether a range of receptive and expressive language deficits can be observed (McInnes, Fung, Manassis, Fiksenbaum, & Tannock, 2004). These language deficits can result in elimination problems because children with selective mutism may be reluctant to ask to use the restroom. As a result, the rate of enuresis in selective mutism varies widely, from 4% to 42% (Black & Uhde, 1995; Dummit et al., 1997; Kolvin & Fundudis, 1981; Steinhausen & Juzi, 1996).

Shipon-Blum (2002) reported that high numbers of children with selective mutism experience comorbid sensory sensitivities and sensory integration disorder, suggesting these problems are clinically relevant to the selective mutism population. Examples of sensory sensitivities include abnormal response to loud noises, labels/tags on clothing, and food textures. Shipon-Blum hypothesized that these children may experience the same types of sensory deficits or overstimulation in response to sensory stimuli that are experienced by children with autistic spectrum disorder (ASD). In fact, a recent study found that one third of children with SM had sensory integration problems (Schwartz, Freedy & Sheridan, 2006).

Motor deficits or delay are commonly reported in large numbers of children with selective mutism (Kolvin & Fundudis, 1981; Steinhausen & Juzi, 1996), both with and without comorbid language disorder (Kristensen, 2002). The language-motor comorbidity should not be surprising, given that they frequently cooccur, even in the

absence of selective mutism (Webster, Majnemer, Platt, & Shevell, 2005). High rates of motor disorders have been noted in selectively mute children, with as many as 18% to 65% experiencing motor disorders (see Kurth & Schweigert, 1972, and Rosler, 1981, as cited in Kristensen, 2000; Steinhausen & Juzi, 1996). Additionally, oral-motor coordination deficits have been demonstrated in two pairs of twins with selective mutism (Gray, Jordan, Ziegler, & Livingston, 2002), and the most prevalent language disorder in SM is found to be articulation disorder (Kristensen, 2000), which also reflects motor problems.

In addition to language and motor impairments, selective mutism is also associated with parent-reported attention deficits (Kristensen, 2001; Steinhausen & Juzi, 1996), which could account in part for some of their academic and social problems (Snowling, Bishop, Stothard, Chipchase, & Kaplan, 2006). Attention problems are not merely a psychosocial phenomenon, however, as one selective mutism twin study found attention problems on a continuous performance test in 75% of the sample (Gray et al., 2002). Studies of anxious/depressed boys and children with selective mutism have found poor attention and executive functioning using the trail-making test, but the authors noted that motor problems and performance IQ could in part account for the findings (Emerson, Mollet, & Harrison, 2005). In addition, anxiety and depression can lead to shyness, a hallmark of selective mutism, which has been found to covary with attention problems in girls (Caspi & Silva, 1995). One large cohort study of preadolescent children found that their attention problems in early childhood predicted later anxiety and depression symptoms (Leech, Larkby, Day, & Day, 2006), so this interrelationship appears to be empirically supported. Other studies have established similar attention problems in

children with anxiety/depression (Kristensen, 2001; Steinhausen & Juzi, 1996), so the association between selective mutism, anxiety/depression, and attention/executive dysfunction seems plausible.

Children with selective mutism almost always experience comorbid anxiety disorder, leading many researchers to suggest selective mutism is best conceptualized as a childhood anxiety spectrum disorder (Dow et al., 1995). Children with selective mutism closely resemble children with anxiety disorder, according to diagnostic schedules in one study (Silverman & Albano, 1996), while another study found that all children with selective mutism had a comorbid social anxiety disorder, with 53% of these children having additional anxiety disorders (Vecchio & Kearney, 2005). Black and Uhde (1995) also reported a connection between selective mutism, anxiety, and social phobia, one of the most common cooccurring psychosocial problems. They found that excessive social anxiety was a universal characteristic of all their selective mutism study participants, with higher familial incidences of selective mutism and social phobia. They concluded that selective mutism may simply represent the most severe end of the spectrum of childhood speech withholding and social anxiety, consistent with other findings in selective mutism populations (Dummit et al., 1997; Kristensen, 2000).

Given that children with selective mutism have such a high rate of comorbidity with social anxiety and social phobia, it is reasonable to believe that these children also exhibit social and emotional deficits. Children with selective mutism typically present as shy, backward, and withdrawn, and these symptoms are also common in children with some level of social maladjustment. This is also supported by evidence from research that links elevated anxiety to impaired social functioning (Wood, 2006). Specific data is

limited in regard to children with selective mutism, but the available research surprisingly suggests that children with selective mutism may not experience higher rates of victimization or related social concerns in comparison to same-age peers. For example, Kumpulainen, Rasanen, Raaska, and Somppi (1998) reported that 16% of a sample of selectively mute children was rejected by peers, while only 5% were bullied. Both rates are consistent with, if not slightly lower than, those identified in nonselectively mute populations. Cunningham, McHolm, Boyle, and Patel (2004) reported that, while children with selective mutism tended to score lower on a measure of social assertiveness (e.g., introducing themselves, starting conversations, inviting friends to their house), they were not victimized more than controls. This may suggest that children with selective mutism are able to make and maintain a small, select group of friends whom they trust and feel comfortable communicating with.

Family characteristics of children with selective mutism.

Several studies have found that family characteristics are similar between children with selective mutism and their first degree relatives. This leads to the possibility that there may be a genetic relationship between certain candidate genes. Of those discussed, there appears to be a stronger association with the serotonergic system, neuroticism, and selective mutism (Schinka, Busch, & Robichaux-Keene, 2004; Sen, Burmeister, & Ghosh, 2004; Stein & Bienvenu, 2004) and the corticotrophin-releasing factor gene and behavioral inhibition (Smoller et al., 2005). Although only a portion of children with such characteristics (e.g., behavioral inhibition) develop later anxiety disorders (Schwartz, Snidman, & Kagan, 1999), the etiology of selective mutism is likely complex,

incorporating both environmental factors and multiple genes (Chavira, Shipon-Blum, Hitchcock, Cohen, & Stein, 2007).

Several studies have found that selective mutism and associated anxiety disorders, such as social phobia, occur in families at a disproportionately high rate (Black & Uhde, 1995). For instance, in one sample of 30 children with selective mutism, a family history of social phobia and selective mutism was present in 70% of immediate family members and 37% of first degree relatives (Black & Uhde, 1995). Another study revealed that children with selective mutism were significantly more likely to have one or both shy parents (51% versus 7%) and to have a sibling with selective mutism as compared to the general population (Brown & Lloyd, 1975). In fact, 38.9% of mothers and 31.4% of fathers of children with selective mutism endorsed shyness and/or social anxiety, compared with only 3.7% of control mothers and 0.9% of control fathers. However, other researchers (Elizur & Perednik, 2003) found no significant differences on self-reported scores in anxiety, depression, or lack of emotional/behavioral control between mothers of children with selective mutism and mothers of controls, which alludes to the evidence being mixed at best.

According to Kristensen and Torgersen (2001), significantly higher rates of psychiatric disorders were found in the relatives of selective mutism children. Parents who had children with selective mutism demonstrated higher rates of psychiatric disorders, such as avoidant and schizotypal characteristics in mothers and anxiety symptoms in fathers, in comparison to typical matched control children (Millon, 1987). Another study (Anderson & Thomsen, 1998) identified additional psychopathology in parents with selectively mute children, such as personality disorders and depression.

These findings further suggest that general psychopathology, avoidance, anxiety, and a preference for being alone may characterize families of children with selective mutism.

A recent study of family psychopathology (Chavira et al., 2007) found that, relative to controls, parents of children with selective mutism had higher rates of lifetime generalized social phobia (37.0% versus 14.1% in control parents) and avoidant personality disorder (17.5% versus 4.7% in control parents), as assessed by the Structured Clinical Interview for DSM—IV Axis I Disorders – Clinician Version (First, Spitzer, Gibbon, & Williams, 1997) and the Structured Clinical Interview for DSM—IV Axis II Personality Disorders (First, Gibbon, Spitzer, Williams, & Benjamin, 1997), respectively. However, these group differences only reflected the fathers. There were no other significant differences in parental psychopathology. Families in this study were recruited through a website (i.e., Selective Mutism Group – Child Anxiety Network) and clinical interviews were conducted by telephone, hence it is possible that the sample may have been compromised in several different ways, influencing the findings. Despite its limitations, these data are important to support a clear connection between familial social anxiety and selective mutism in children (Viana et al., 2009).

Environmental determinants of selective mutism.

Family stress and instability have also been noted as potential environmental factors in selective mutism. For example, children with selective mutism had more frequent moves and/or changes in schools, suggesting transient living status as an environmental factor in the development of mute behavior (Kristensen, 2000). Overt marital conflict has also been found to be higher in families of children with selective mutism relative to control families (Elizur & Perednik, 2003). In addition, parent-child

enmeshment and overdependence is strongly related to the development of selective mutism (Meyers, 1984; Tatem & DelCampo, 1995).

Most researchers have dismissed severe trauma as the main cause of selective mutism, but study results have been mixed in an association between traumatic stress and the onset of some cases of selective mutism. A small sample proportion (8%) of a study conducted by Steinhausen and Juzi (1996) experienced a traumatic event that was associated with the onset of selectively mute symptoms. Black and Uhde (1995) have also documented histories of physical and sexual abuse and neglect in their pilot study of 30 children with selective mutism. Thirteen percent of the sample reported traumatic experiences of this type. The onset of selective mutism preceded the trauma in half of these cases and was unclear for the remaining cases. Consequently, the authors concluded there was no evidence of an immediate causal relationship between traumatic experience and selective mutism. However, a few cases described children with backgrounds of severe abuse and trauma who have become selectively mute (Jacobsen, 1995; MacGregor, Pullar, & Cundall, 1994). Although not as common as other issues, a relationship between selective mutism and posttraumatic stress disorder could be plausible for some cases of selective mutism (MacGregor et al., 1994; Steinhausen & Juzi, 1996).

Theoretical explanations for selective mutism.

There are several theoretical explanations for the development of selective mutism, including psychodynamic, family dynamics/systems, behavioral/operant conditioning, and cognitive/behavioral. Psychodynamic theorists believe selective mutism is a manifestation of unresolved conflict (Dow et al., 1995), most often caused by

severe psychological or physical trauma (Hayden, 1980; Hesselman, 1983; Wright, Holmes, Curraro, Leonhardt, & Tami, 1994). Another theoretical premise is that children who are orally fixated wish to punish their parents. They may be maintaining a family secret, displacing hostility toward the mother, or regressing to a preverbal stage of development (Leonard & Topol, 1993).

Reporting on a case with selective mutism, Jacobsen (1995) noted that this was merely a symptom of a more pathological underlying disorder, dissociative identity disorder. A reintegration of the child's separate identities was the treatment focus, and it was only after the identities were successfully integrated that the selectively mute child began to speak again. In another case study, Atlas (1993) argued that the selective mutism of a young girl was part of a psychotic-spectrum disorder, and the result of a tenuous self-identity (Atlas, 1993). In this study, the child's symptom lessened only through symbolic play, when she acted out her intrapsychic conflicts, thereby achieving catharsis.

The family dynamics/systems theory suggests children with selective mutism are involved in faulty family relationships that lead to mutism symptoms (Anstendig, 1998). Affected children are thought to have unhealthy boundaries and enmeshed parent-child relationships (Kolvin & Fundudis, 1981; Meyers, 1984; Steinhausen & Adamek, 1997; Subak, West, & Carlin, 1982). In particular, families of this population have been characterized as socially isolated, closed, and disharmonious (Elizur & Perednik, 2003; Schvarztman, Hornshtein, Klein, Yechezkel, Ziv, & Herman, 1990; Sluzki, 1983). The family systems theory also explains selective mutism as a result of a neurotic relationship between parent(s) and child, characterized by ambivalence and dependence in the

relationships, with an excessive need to parent control (Subak et al., 1982). This neurotic relationship with the parent then carries over into the child's interactions with others.

These families are thought to have intense attachments, distrust of the outside world, fear and distrust of strangers, language and cultural assimilation difficulties, marital disharmony, and/or withholding of speech practiced by one or more of the parents at home (Meyers, 1984).

The literature supporting selective mutism as an expression of family dysfunction states that the child's silence is the result of two factors. First, the selectively mute child is fearful of inadvertently betraying family secrets (Meyers, 1984). The child's silence protects the family from other people from the outside becoming involved. There is distrust of others outside the family unity, and the head of the family is known as the impoverished leader who unconsciously transmits to the child the distrust he or she has in the others (Goll, 1979). The second factor is understood as oppositional behavior exhibited by the selectively mute child. This is explained by the mother's overdependence on the child, resulting in the child becoming combative and excessive in response to her demands, but this behavior transfers as passive aggressive behavior outside of the home in the form of selective mutism (Subak et al., 1982).

In stark contrast, behavioral theorists view selective mutism as the product of a long series of negatively reinforced learning patterns (Leonard & Topol, 1993) or as a learned response in which the selective mutism ensures the child is in control of the environmental contingencies (Pordes, 1992). Behavioral investigators view the selective mutism child's silent behavior as functional and assert that the environment supports this way of interacting (Anstendig, 1998). Therefore, the selectively mute child's behavior is

seen as adaptive, not pathological (Powell & Dailey, 1995). Within this model, behavior is viewed as being learned through principles based on classical and operant conditioning and observational learning.

Although psychodynamic, behavioral, family systems, trauma related explanations have been proposed, accumulating findings suggest that deterministic views of selective mutism may be inadequate. Rather, it is likely selective mutism is the result of complex individual-environment transactions occurring at multiple levels over time (Cohen et al., 2006), of which cognitions play an important role in the development, display, and maintenance of selectively mute behavior.

The cognitive/behavioral orientation sees selective mutism in relation to other anxiety disorders, especially social phobia, yet this association is not well established (Cohen et al., 2006). There is substantial evidence pointing to faulty cognition, inadequate self-appraisal, and poor self-esteem/self-efficacy in children with anxiety disorders and selective mutism (Zaider & Heimberg, 2003). However, cognitive processes may not be sufficiently developed for cognitive-behavioral approaches to intervention and may overtax the cognitive abilities of very young children, so further exploration into the orientation is necessary (Viana et al., 2009). Developmental research has begun to identify the links between parental and child cognitions, where parent self-blame, especially when there is a genetic or familial association with anxiety, may contribute to the selective mutism in their children (Garber & Robinson, 1997). This may be a factor that leads to greater anxiety and/or depression in parents of children with selective mutism, suggesting that intervention needs to address both parent and child needs.

Treatment methods for children with selective mutism.

There are several different treatment methods used to help children with selective mutism, which is a useful consideration given that these children tend to be resistant to treatment (Kolvin & Fundudis, 1981). A psychoanalytic approach used to treat selective mutism still in use today is play therapy (Anstendig, 1998). The primary goal of play therapy is to focus on the underlying inner conflict, not the mutism itself, as this is thought to merely be a symptom of the underlying intrapsychic conflict (Yanof, 1996). However, the psychodynamic approach is long and difficult and often associated with poor outcomes (Krohn et al., 1992). As a result, this approach to treatment has lost popularity in recent years.

The most effective treatment approaches for selectively mute children should include an in-depth analysis of the child and his or her environment (Anstendig, 1999). Today, the majority of successful strategies include behavior therapy techniques, such as reinforcement, stimulus fading, token procedures, shaping or promoting contingency management, self-modeling, and response initiation procedures (Giddan, Ross, Sechler, & Becker, 1997; Kehle, Madaus, Baratta, & Bray, 1998). A gradual program that develops speech in a quiet area and then focuses on transferring the speech to new activities, locations, and individuals has been supported by Cunningham and McHolm (2001) and Crundwell (2006). Many experts agree that this type of program is best implemented by either a special education teacher or a behavior analyst (Giddan et al., 1997). Similarly, Krohn et al. (1992) reported in their review of selective mutism literature that most investigations employed some form of differential reinforcement designed to reinstate speech in selectively mute children.

Some examples of applied behavioral analysis interventions that have been used to treat selectively mute children include contingency management, stimulus fading, shaping, and desensitization (Albert-Stewart, 1986; Bailey & Hirst, 1991; Kehle, Owen, & Cressy, 1990; Labbe & Williamson, 1984; Masten, Stacks, Caldwell-Colbert, & Jackson, 1996; Pordes, 1992; Richburg & Cobia, 1994). These studies also reported that the single subject research design is the most appropriate design for analyzing the effect of the individualized treatment plans that utilize some form of applied behavior analysis techniques for treating children who are selectively mute. Applied behavior analysis in multiple forms has also been reported in the literature to be the most effective treatment when compared to other commonly used interventions (i.e., family therapy, play therapy, psychodynamic processes, and psychopharmacology) to help promote speech in children who continue to maintain their silence (Kratowill, 1981; Labbe & Williamson, 1984; Loudon, 1987).

Another form of behavioral intervention that is relatively new to the literature in the treatment of selective mutism is the use of social problem-solving strategies (O'Reilly, Cannella, Sigafos, & Lancioni, 2006). This treatment involves teaching the selectively mute child a generic script of verbal rules to prompt him or her to decode or discriminate relevant social stimuli, identify alternative social behaviors and appropriately use the correct social behavior contingent upon the situation, and assess the effectiveness of the social behavior once it has been performed (O'Reilly et al., 2006). Because the selectively mute child is taught a generic set of social rules that can be adapted based on the social situation, this method of behavioral intervention is believed to be an effective way to promote, generalize, and maintain social skills (Gumpel, 1994;

O'Reilly et al., 2006). The social problem-solving interventions have demonstrated promising treatment outcomes for the selective mutism population. A key component to the success of this treatment was the establishment of rapport between the therapist and the selectively mute child, which was significant in lessening anxiety and further facilitating speaking behavior (O'Reilly et al., 2008).

Research has demonstrated that both parents and teachers play an important role in the treatment of selective mutism (Pionek-Stone, Kratochwill, Sladeczek, & Serlin, 2002). Unfortunately, few studies have utilized both teachers and parents together in the roles of assessment, treatment planning, treatment implementation, and treatment evaluation, although current literature supports this conjoint approach to treating selective mutism (Joseph, 1999). Conjoint behavioral consultation (CBC) can be used to promote the incorporation of evidence-based mental health practice in the schools (Auster, Fenney-Kettler, & Kratochwill, 2006). In this approach, parent involvement in the treatment of selective mutism is essential because they may be the only persons with whom the child will speak (Schill, Kratochwill, & Gardner, 1996), and parents are best able to identify reinforcers and implement behavior management techniques (Gortmaker, Warnes, & Sheridan, 2004). Teacher involvement is also seen as a critical component of treatment because most children with selective mutism refuse to speak in school (Auster et al., 2006).

The CBC model of service delivery was found to be an effective approach for the treatment for childhood anxiety disorders (Auster et al., 2006). Research supports the involvement of both parents and teachers in traditional treatment models for multiple childhood disorders, including anxiety. The CBC approach to the treatment of selectively

mute children works to build a connection between home and school, providing parents and teachers with the knowledge, skills, and training needed to serve as effective intervention agents. In addition, CBC promotes a positive working alliance between the child's teacher and parents. This helps foster successful treatment outcomes for the child and future maintenance of treatment effects (Auster et al., 2006).

Self-modeling has been shown to yield positive treatment effectiveness and changes in behavior (i.e., speech) in the treatment of selective mutism. Treatment is implemented using repeated and frequent viewings of oneself on edited videotapes that only show exemplary behaviors (Dowrick & Dove, 1980). Self-modeling is also effective because it alters the child's self-efficacy for speaking. In addition, a complementary effect of self-modeling may act to fade the child's memory of being selectively mute (Kehle, Bray, Margiano, Theodore, & Zhou, 2002). Memories are often easily altered, and with repeatedly exposing a child with SM to edited videotapes that portray exemplary speaking behavior in formerly problematic settings, such as the classroom, this may function to create false memories of not being selectively mute (Loftus, 1997; Braum & Loftus, 1998). The presentation of visual information to the child is perhaps the most powerful strategy to alter memory. Further, the newly acquired memory is static and resistant to subsequent attempts at alteration (Braum & Loftus, 1998).

A modified version of the Social Effectiveness Therapy for Children (SET—C), which is a behavioral treatment for social anxiety, has been shown to have promising results when paired with parent training in the management of child anxiety (Fisak, Oliveros, & Ehrenreich, 2006). Traditionally, the SET—C was used in group treatment;

however, it was adapted to accommodate individual administration, with specific instructions offered in a detailed manual. A notable disadvantage of the individual treatment versus the group treatment was the built-in opportunity to practice skills learned in group treatment with peers. To compensate for the absence of group peers, therapists can use a number of alternative exposure and skill practice strategies (Fisak et al., 2006).

A comprehensive review of research studies on the treatment of selective mutism revealed that behavioral treatment for selective mutism is more effective than no treatment, and no advantage is offered by more complex combined approaches as opposed to using systematic reinforcement (Stone, Kratochwill, Sladeczek, & Serlin, 2002). Further, a recent review of treatment efficacy for selective mutism supported reinforcement regimens as the most effective treatment method, with no other multimodal treatments available that have comparable, replicable effects (Cohen et al., 2006).

Many researchers have called for more studies to test the efficaciousness of pharmacological intervention for anxiety-related disorders, including SM (Freeman, Garcia, Miller, Dow, & Leonard, 2004). Others claim that data supports selective serotonin reuptake inhibitors (SSRIs) as a first line medication treatment for non-OCD anxiety disorders (e.g., generalized anxiety disorder, separation anxiety disorder, social phobia, selective mutism) in children (Seidel & Walkup, 2006). Further examination of this intervention is important due to the difficulties in successfully treating children with traditional psychosocial treatment approaches (Cohan, Price, & Stein, 2006).

Targeting an underlying neurobiological deficit (i.e., serotonergic dysfunction) may be an important part of a comprehensive treatment approach to treat social anxiety

and/or selective mutism by helping to reduce the physiological and biological impact of the perceived or actual threat, such as social situations or expectations. It has been suggested that selectively mute children attempt to self-regulate internal anxiety and other emotional states, which implies that executive functions and regulation may play a significant role in selective mutism (Bronson, 2000). Some selectively mute children present as very inhibited, withdrawn, and mute in social situations; however, in comfortable settings with immediate family, the selectively mute child exhibits traits and behaviors of impulsivity, temper tantrums, overexcitement, and overly silly behavior (Bronson, 2000; Greenspan, 1997). Moreover, these polarities suggest the inability to self-regulate, complicated by the lack of language to negotiate and communicate emotions (Greenspan, 1997).

In a study examining the efficacy of SSRIs in the treatment of multiple-anxiety disorders, the treatment of childhood anxiety is further supported by the promising results obtained from a double-blind placebo-controlled trial of paroxetine with 322 children and adolescents. The subjects were significantly more likely to be rated as much improved or very much improved on the Clinical Global Impression-Improvement Scale than placebo subjects, 77.6% versus 38.3% (Wagner et al., 2004). Given these promising results and the similar clinical presentation, type of impairment, and high comorbidity between social anxiety and SM, medication used successfully to treat social anxiety disorder might reasonably be expected produce similar effects in children and adolescents with SM (Carlson, Mitchell, & Segool, 2008).

Psychopharmacology should never be used as the only treatment method (Kumpulainen, 2002). SSRIs may also be more appropriate for those individuals who

manifest a chronic form of mutism and children who have not demonstrated success with previous attempts at behavioral therapeutic interventions (Yapko, 2001). Even with medication, a sample of children with severe selective mutism only made minimal improvements after 6 to 8 months, and they continued to meet criteria for selective mutism (Manassis & Tannock, 2008). This is consistent with previous reports of high persistence rates in clinical samples (Steinhausen & Juzi, 1996). However, Shipon-Blum (2002) indicates that medication effects are observed even in very small doses and with children as young as age 4. Nevertheless, by maternal report, using serotonergic medications increased the child's degree of overall improvement. Clinicians also concurred, rating medically treated children as demonstrating higher functional gains than nonmedicated children. Previous efficacy trials of fluoxetine in selective mutism showed similar outcomes (Black & Uhde, 1994; Dummit, Klein, Tancer, Asche, & Martin, 1996).

The most common side effect of medication in selectively mute children is disinhibition, which may include silliness, mania, or impulsivity (Boulos, Kutcher, Gardner, & Young, 1992; Dulcan, 1992; Riddle, Hardin, King, Scahill, & Woolston, 1990). If these symptoms arise, the child is overmedicated. In addition, behavioral changes would not be anticipated for a period of time, typically 4 to 6 weeks (Carlson, Kratochwill, & Johnson, 1999; Kehle et al., 1998; Lafferty & Constantino, 1998). Pharmacological treatment is often limited to 9 to 12 months. It should also be noted that children under the age of 11 experienced greater treatment gains than older children (Carlson et al., 2008). Currently, no medications have received Food and Drug Administration (FDA) approval for the treatment of childhood social phobia or selective

mutism (Carlson et al., 2008). Lastly, it should be noted that the inclusion of a black box warning in the package insert and *Physician's Desk Reference* serve as a deterrent to prescribing SSRIs for children under age 18 (Schwartz et al., 2006). In addition, as with other psychological disorders, medical management may not be acceptable to all children with selective mutism, and a risk of using medication treatment-only programs is that contributory environmental factors related to selective mutism may not be identified or altered (Jackson, Allen, Boothe, Nava, & Coates, 2005). Even when medication management is successful, adjunct psychological therapy should not be discounted. In fact, by focusing therapy on a child's rumination of individually based threats and fears, children with SM demonstrate improvements beyond what might be expected from medication alone (Carlson et al., 2008).

In addition, it is important to recognize that selective mutism requires more than just behavioral or psychopharmacological intervention, especially considering its resistance to treatment. The selective mutism characteristic of not talking is often a learned response to anxiety, which has a cognitive and emotional component. This is why early intervention is very important for the child exhibiting symptoms of selective mutism, so the child can learn other ways to cope with anxiety besides not speaking. Shipon-Blum (2002) reports that the main goal of treatment of the selectively mute child is to lower anxiety, increase self-esteem, and increase self-confidence in social settings, all of which emphasize cognition over only overt behavior. Emphasis should never be on making the child speak. Shipon-Blum (2002) suggests that with lowered anxiety and increased confidence, verbalizations will eventually follow.

In their examination of treatment efficacy, Ford et al. (1998) note that the most frequently reported treatment or methods of change for selective mutism were positive reinforcement (77.1%), planned ignoring (56.2%), videotape or audiotape recording (38.6%), psychotherapy (37.9%), behavioral contracting (34.6%), punishment (34%), and timeout (27.5%). The treatments reported to be most effective were positive reinforcement (31.4%), behavioral contracting (13.1%), and psychotherapy (9.8%). None of the treatment methods were effective in 13.1%. The treatment methods reported to be least effective included ignoring (27.5%), punishment (20.9%), and timeout (10.5%). Surprisingly, while some reported positive reinforcement to be quite effective, obviously others did not concur, as 11.1% of the same sample rated positive reinforcement as ineffective.

Cognitive behavioral therapy.

The use of cognitive behavioral interventions has been known to be highly successful when used in the treatment of anxiety disorders, especially social phobia. Certainly, there is substantial evidence of the efficacy of brief cognitive behavioral therapy (CBT) for children and adolescents who suffer from a range of anxiety disorders (Zaider & Heimberg, 2003). Because selectively mute children often exhibit anxiety symptoms, it is likely that CBT would also be successful for children with selective mutism, yet the evidence is less clear (Cohen et al., 2006). Concerns regarding the use of CBT for children with selective mutism include the possibility that cognitive interventions may overtax the cognitive abilities of very young children and that selective mutism is a young child disorder, so CBT methods must be further examined to determine their efficacy (Viana et al., 2009).

There is very little research on selective mutism and the specific effects of CBT; however, there is one study involving a web-based CBT program (Mendlowitz & Scapillato, 1996; Mendlowitz, Manassis, Bradley, Scapillato, Mieztis, & Shaw, 1999) that includes a web-based child workbook and notebook and a downloadable parent/teacher manual that focuses on psychoeducation. Homework is given to the child and is submitted by the child via e-mail, and children see using the computer as enjoyable, so treatment compliance is greater. The treatment focus is on helping the child to recognize the signs of anxious arousal associated with speaking and to use appropriate anxiety management strategies. When using CBT with young children with selective mutism, the cognitive aspect is less utilized, while behavioral techniques and parent training are emphasized. CBT can contribute to parent training by cognitively restructuring parents' thought processes, diminishing the importance of making their child talk. Developmental research has begun to identify the links between parental and child cognitions (Garber & Robinson, 1997).

Conceptualizing SM and potential subtypes.

Through the analysis and review of the literature on selective mutism, there appear to be individual differences and multiple factors in the development of selective mutism in children. This suggests a trend of many comorbid problems in the presentation of selective mutism in children, and these concomitant problems are not evident for all children. Therefore, it is hypothesized that there may be unique characteristics associated with different selective mutism subtypes that may lead to diagnostic distinctions, which could be integral to the treatment of selective mutism.

Many clinical professionals have moved toward a reconceptualization of selective mutism as a form of, or an associated symptom of, generalized or social anxiety. This has spurred some researchers to highlight the possible need to change the diagnostic conceptualization of selective mutism (Garcia et al., 2004). Under the current diagnostic system (APA, 2000), selective mutism is listed under other disorders of infancy, childhood, or adolescence. This miscellaneous conceptualization fails to represent many opinions in the field that selective mutism is more closely related to social and other anxiety disorders than to a heterogeneous set of disorders. Possibilities for reconceptualizing selective mutism include listing the disorder as a subtype of social anxiety disorder, listing selective mutism with separation anxiety disorder under a broader category of childhood anxiety disorders, or expanding the diagnostic criteria for selective mutism to allow for more emphasis on social or general anxiety (Sharp, Sherman, & Gross, 2007; Vecchio & Kearney, 2005). This reconceptualization of the disorder as being closely related to general and social anxiety easily allows clinicians to use structured interviews, self-report questionnaires, and behavioral observations for youth with general and social anxiety (Vecchio & Kearney, 2005).

Selective mutism is etiologically similar to anxiety disorders, especially social phobia, and selectively mute children often experience comorbid symptomatology, including but not limited to anxiety (Anstendig, 1999). Therefore, it is natural to delineate anxiety as a suspected specific subtype of selective mutism. However, there are children who do not fit the specific prototype of an anxious child. For example, some children with selective mutism may score in the nonclinical range for anxiety ratings, yet still exhibit full criteria for a selective mutism diagnosis.

Despite the similarities between social phobia and selective mutism, there are some major distinguishing factors, such as age of onset. Specifically, the age of onset for social phobia is age 10 (Vasey, 1995), whereas onset for selective mutism is usually before age 5 (APA, 1994; Steinhausen & Juzi, 1996). In addition, many children with selective mutism actually enjoy social situations, so they are not fearful of peer or adult interaction per se. They enjoy going to school and actively engage in nonverbal communication with peers and adults across a variety of environmental contexts. Some researchers have attributed this to the possibility that children with selective mutism have found a successful avoidance strategy (e.g., selective speaking behavior) for socially anxious situations, hence their anxiety is lessened during these social situations (Yeganeh, Beidel, Turner, Pina, & Silverman, 2003). This type of child would not have a social phobia, as children with social phobia avoid social situations because of the discomfort they cause. Other researchers believe that selective mutism is a developmental subtype of social phobia with an earlier onset than other symptoms of the disorder (Bergman et al., 2002). The potential to identify these youngsters with selective mutism may help professionals to intervene earlier with the treatment of socially phobia symptoms (Black & Uhde, 1995; Ford et al., 1998).

Manassis and colleagues (2003) found that children with social phobia and children with selective mutism had similar scores on a number of standardized assessments of general and social anxiety. There was a general trend toward greater child-reported separation and physiological anxiety and parent-reported social anxiety for the social phobia group. The fact that the selective mutism group scored lower than the social phobia group on these measures runs counter to the argument that selective mutism

may be a severe variant of social phobia (Anstendig, 1999). Instead, it could be that a child with selective mutism has primarily behavioral avoidance or may underreport anxiety symptoms, consistent with the findings of Kristensen (2001).

Consistent with parent and teacher ratings, children with comorbid selective mutism and social phobia have greater social distress than children with social phobia alone (Yeganeh et al., 2003). In the Yeganeh et al. study, these groups were comparable on self-report measures assessing social anxiety, trait anxiety, and general fears. As a result, it is difficult to draw solid conclusions regarding the inconsistency between clinician ratings and self-report measures of social anxiety found in this study.

Nonetheless, the findings suggest that although children with selective mutism have social anxiety, their perception of their experience of it in comparison to their anxiety as assessed by others is quite different (Yeganeh et al., 2003).

Cunningham, McHolm, and Boyle (2006) further divided children with selective mutism according to whether their mutism was specific or generalized. This study examined factors such as who the selectively mute child would or would not speak to in school and the severity of the mutism. Children with generalized and specific selective mutism had similar parent-reported social phobia, generalized anxiety, and obsessive compulsive disorder symptoms, although children with specific selective mutism spoke in more settings, such as hallways and playgrounds. Verbal and nonverbal social skills were significantly deficient in both selectively mute groups in comparison to controls, as rated by both teachers and parents. Regardless, children with selective mutism did not see themselves as less accepted by peers. Generally, these studies suggest that children

with selective mutism have internalizing symptoms in general and social anxiety in particular.

Interestingly, there were no significant correlations found between ratings on the anxious/depressed scale of the Child Behavior Checklist (CBCL) and duration of selective mutism (Cunningham et al., 2006). Therefore, anxiety may not be a characteristic that increases persistence of selective mutism. It is probable that demand characteristics play an important role here, where anxiety may not be manifested unless demands to speak are placed on the child. In this subtype, silence may serve as an escape response for the child who is experiencing anxiety or discomfort (Hadley, 1994). Because anxiety may not be a component of selective mutism until demands are made of an individual, assessment must include situations and demands in which there is an expectation to speak.

Moreover, to date, few studies exist supporting the hypothesis that children with selective mutism score in the extreme range on measures of social anxiety. It has been found that clinician ratings of social anxiety on the Liebowitz Social Anxiety Scale were in the moderate range for children with selective mutism (Dummit et al., 1997). In other studies, teacher ratings have indicated that although scores of children with selective mutism are higher than the comparison group, their scores are not usually considered in the clinically significant range (Bergman et al., 2002). These findings are inconsistent with the conclusion that selectively mute children are “frozen with fear” (Anstendig, 1998). In actuality, it suggests that while children with selective mutism have higher levels of anxiety, there may be additional cognitive and behavioral factors that are involved in and mediate selective mutism (Mulligan & Christner, 2006).

With the conflicting evidence that selective mutism is a variant of social phobia, and anxiety is the underlying cause, a strict reconceptualization of selective mutism as an anxiety-based disorder should be considered premature and unwarranted. In fact, the lower anxiety scores for large selective mutism samples could reflect the fact that some children with Selective Mutism have considerable anxiety, while others do not have significant levels. Instead, a subtype of selective mutism in which children exhibit primary symptoms of social anxiety, including fears of speaking, fears that others will make fun of them if they speak, worries of others hearing their voices, and any other anxiety-based symptoms could explain these findings.

Communication disorders are commonly found among children with selective mutism. Premorbid ICD-10 speech and language disorders were present in 30.3% of one selectively mute sample (Steinhausen et al., 2006) and in another (Steinhausen & Juzi, 1996), 38.0% of children with selective mutism had speech or language disorders, most commonly expressive language disorders (28.0%) and articulation disorder (20.0%).

An exploratory study comparing narrative abilities of selectively mute children versus socially phobic children indicated that children with selective mutism produced significantly shorter narratives than children with social phobia, despite showing normal nonverbal cognitive and receptive language abilities (McInnes et al., 2004), which could suggest problems with language formulation, retrieval, or expressive language (e.g., Hale & Fiorello, 2004). This finding suggests that both anxiety and mild expressive language deficits may be components of selective mutism, even when speech and language delay has been ruled out on standardized assessments. Furthermore, the potential academic and social outcomes of a combination of weak or subclinical language skills, plus continuing

functional impairment from chronic selective mutism symptoms (including anxiety), may be more serious than those associated with weak language skills alone (McInnes et al., 2004).

Language abilities of children with selective mutism and children with social phobia were directly compared in an attempt to investigate potential differences between the two groups (Manassis et al., 2003). After reviewing the parents' reports of overall communication ability, phonemic awareness via the Lindamood Auditory Conceptualization Test (Lindamood & Lindamood, 1971), and receptive language using the Peabody Picture Vocabulary Test—III (Dunn & Dunn, 1997) and the concepts and directions subtest of the Clinical Evaluation of Language Fundamentals (Semel, Wiig, & Secord, 1995), selectively mute children scored significantly lower on only one task (discrimination of speech sounds) than socially phobic children. This suggests the language problem in selectively mute children may not just be expressive. Group language means were mostly in the average range, but a subgroup (42.9%) of the children with selective mutism scored in the clinical range on at least one of the language measures.

In another comparative study (McInnes et al., 2004), children with selective mutism had normal receptive language and cognitive abilities, but produced shorter, simpler, and less detailed narratives than children with social phobia. This suggests that, although children with selective mutism and social phobia have similar presentations, children with selective mutism may exhibit slight expressive language deficits not seen in children with social phobia, but the small sample size may have limited findings (Viana et al., 2009). Regardless, these findings would be consistent with the hypothesis that

some children with selective mutism avoid speaking due to fear of articulation or expressive language errors, which could result in teasing from peers (Standart & Le Couteur, 2003).

In a replication of the Manassis et al. (2003) study, Manassis, Tannock, Garland, Minde, McInnes, and Clark (2007) examined language abilities (using nonverbal tests), cognition, and anxiety levels in children with selective mutism, children with anxiety disorders, and controls. The results indicated that children with selective mutism scored significantly lower than the other two groups on language measures of phonological awareness, receptive vocabulary, and grammar usage. The percentage of children in the clinical range for language disabilities was also greater among the selectively mute group. Children with selective mutism also had significant visual memory deficits relative to the other two groups and deficits in some nonverbal working memory tests in comparison to controls, but not to children with anxiety disorders. However, in another study, children with selective mutism did not differ from controls on tests of visual memory span and visual memory, while verbal memory span was reduced in SM (Kristensen & Oerbeck, 2006). Language problems are only one indication of neurodevelopmental delay. There are many other markers that can signal problems, such as gross or fine motor delays, physical deformities, or delays in social and emotional development. However, these problems have been far less researched in children with selective mutism (Viana et al., 2009). One study that examined broad markers of developmental delay found that children with selective mutism, regardless of comorbid communication disorder, showed higher rates of fine and gross motor delays, minor physical abnormalities, and prenatal and perinatal risk factors than controls (Kristensen,

2002). Therefore, neurodevelopmental delay may play a role in the development of selective mutism (Viana et al., 2009).

There are some children with Selective Mutism who are reported to display controlling, demanding, oppositional, and aggressive behaviors (Kumpulainen et al., 1998; Steinhausen & Juzi, 1996). Black and Uhde (1995) found that only 10% of children with selective mutism met criteria for oppositional defiant disorder (ODD) and that parent and teacher ratings of conduct disorder and immaturity did not correlate with mutism severity. When scrutinized at the item level, scores on the teacher-rated items describing oppositional behavior were low and also did not correlate with mutism severity. However, in a more recent study (Manassis et al., 2007), 6.8% of children with selective mutism met criteria for ODD, and in another study (Arie et al., 2006), 11.1% had comorbid selective mutism and attention deficit/hyperactivity disorder (ADHD). Therefore, at the diagnostic level, comorbidity between selective mutism and disruptive disorders ranges anywhere from 6% to 10%, which is somewhat elevated in comparison to rates found in the general child population (Barkley, 2003; Lahey, Miller, Gordon, & Riley, 1999).

When comparing parental reports of children with social phobia to those with comorbid selective mutism and social phobia, using responses on the Child Behavior Checklist (Achenbach & Rescorla, 2001), parents of selectively mute children had significantly higher scores on the delinquency subscale and marginally higher scores on the aggression subscale when compared to those with comorbid presentation (Yeganeh et al., 2003). Delinquency and aggression subscale scores observed in both groups were largely in the nonclinical range and generally lower than scores on the internalizing

subscales; the difference in scores found in this investigation corroborates clinical observations of significant parental difficulties managing oppositional behaviors in children with selective mutism, particularly among those without concurrent social phobia symptoms. This, again, argues against viewing selective mutism as an extreme form of social phobia, as some children with selective mutism may exhibit oppositional behaviors (Yeganeh et al., 2003).

Although Ford et al. (1998) found that their sample of children with selective mutism had more internalizing problems (e.g., withdrawal, anxiety) than externalizing problems (e.g., delinquency, aggression), there was some data to support the presence of oppositionality at least among a subsample. Oppositional-defiance/aggression behaviors were found among 26% of a sample of German and Swiss children who met criteria for SM (Steinhausen & Juzi, 1996). Additionally, among a sample of 153 individuals with past or current selective mutism (Ford et al., 1998), the top ranked concerns were avoidance behaviors, shy/withdrawn behavior, toileting problems, and strong-willed (e.g., stubborn, controlling) behaviors. There were many oppositional items that were endorsed, including refuses to talk, is stubborn, sullen, or irritable; argues a lot; is disobedient in school; whines; and has temper tantrums or a hot temper. Although other studies dispute the presence of externalizing symptoms in children with selective mutism (Cunningham et al., 2004), the fact that there is mixed evidence lends credence to the possibility of this potential subtype, and although small, if one exists, could mean important treatment considerations when working with this subset of selectively mute children.

The literature has been quite clear regarding the growing number of immigrant children identified with selective mutism. In fact, the prevalence of selective mutism is nearly four times higher for immigrant children than nonimmigrant children (Elizur & Perednik, 2003). In addition, there are differences in normative social development and neurodevelopmental delays among immigrant children when compared to native children. These differences alone warrant further investigation and replication of study.

The combined circumstance of immigration and second language learning in children who are extremely shy or anxious leads to an elevated risk of selective mutism (Bradley & Sloman, 1975; Elizur & Perednik, 2003). A significant number of children who are bilingual or multilingual experience an initial silent period when they first enter an environment that has a different culture and language. This phenomenon is considered normal during second language development (Chitester, 2005). Children engaged in learning a new language need time in this silent period; however, in consideration of selective mutism, one can begin to appreciate how culturally and linguistically diverse (CLD) children can be at elevated risk of developing selective mutism.

One study compared immigrant and native children with selective mutism to their respective control groups (Elizur & Perednik, 2003). The results revealed consistent differences, suggesting two symptomatic selective mutism clusters. Immigrant children with selective mutism were relatively homogeneous, with an extremely high level of social anxiety/phobia disposition, but otherwise similar to control children. Their normative social skills across scores suggest that at this early age, selective mutism and social anxiety did not impair social development and peer relationships. Children with selective mutism with English as the primary language had a high prevalence of

comorbidity, with high social anxiety/phobic disposition and neurodevelopmental delay/disorder and low social competence scores. Their higher rate of neurodevelopmental delay/disorder, lower social competence, and earlier age of onset in comparison with the immigrant children with selective mutism suggest greater innate vulnerability. Subsequently, their selective mutism could be triggered by a variety of stressors that interact with a more generalized maladjustment, while immigrant children's selective mutism could be more specifically related to language demands (Elizur & Perednik, 2003). This study was also unique in controlling for both educational attainment and socioeconomic class. The immigrant families used in this study came from developed countries and were economically secure, with high educational attainment. This served well in truly distinguishing between immigration and neurodevelopmental delay/disorder effects (Elizur & Perednik, 2003). Although this study demonstrates difference, this is not to negate the fact that educational attainment is not an exclusionary factor to developmental delays.

It is common for clinicians to recommend practicing social communication outside of the school environment, within the community, such as in restaurants, stores, the library, etc. However, for some Hispanic families, there may be limited parental facilitation of exposure tasks and limited compliance with prescribed parent training strategies. This is often because there is minimal social contact outside of the immediate family environment. Thus, the lack of appropriate modeling by family members in the community and the inability to practice skills learned can negatively impact the immigrant child with selective mutism. When resistance occurs within the family, the clinician must be concerned that as a result, the parents are modeling avoidance of

outside social interactions (Fisak et al., 2006). Low acculturation can also contribute to, if not trigger, some social isolation and enhance the severity of selective mutism in the child (Vecchio & Kearney, 2007).

In any anxiety-related case, an understanding of contributing family dynamics and cultural issues is important. It has been found that dynamics in some Hispanic families are marked by cohesiveness and self-reliance. This means that these families are very close and help each other when possible. Although these traits seem quite appealing at first, often this practice can be harmful when attempts are made to address a child's anxiety-related problem (Vecchio & Kearney, 2007). This is because family members can concede to avoidant behaviors, unintentionally reinforce withdrawal, assist in communication for the child in public settings, and fail to seek early intervention when the disorder is at an early stage (Vecchio & Kearney, 2007).

There are complicating factors when treating minority immigrant children. First, many parents of these children may not speak English proficiently. This may spur the requirement for an interpreter or a cotherapist who speaks that child's native language, and the use of a cotherapist may not always be practical in clinical settings (Vecchio & Kearney, 2007). Ideally, the cotherapist would have experience and expertise in anxiety-related disorders or selective mutism, but this may not always be the case. A lack of school referrals for minority immigrant children who are not speaking can also be problematic (Vecchio & Kearney, 2007). The referral made by the school is often during later elementary years, when the behavior is more severe and has been reinforced.

As previously noted, *DSM—IV* criteria state that selective mutism should not be diagnosed if the child lacks sufficient knowledge of or comfort with the language spoken

in their new host country. Therefore, a thorough knowledge of developmental stages in second language acquisition is necessary to correctly identify and diagnose selective mutism in immigrant populations. There have been some guidelines established for the differential diagnosis of selective mutism in language minority immigrant children (Toppelberg et al., 2005). Toppelberg et al. described the normal period of nonspeaking during the acquisition of a new language that is common between ages 3 and 8 years and typically lasts less than 6 months, but may last longer in young children. Children showing normal second language acquisition pass through this nonverbal period and become confident speakers in all social settings. However, children with selective mutism do not show this improvement and remain mute in certain settings (Toppelberg et al., 2005)

When evaluating language minority children for selective mutism, it may be important to observe nonspeaking behaviors over a longer duration than the 1 month required for the diagnosis of selective mutism (Toppelberg et al., 2005). It is also important to understand the stages in new language acquisition identified by Cummins (1979, 1984, 1987) in the examination of basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). Cummings notes that the former can take 1 to 3 years to develop, and the latter can take up to 7 years to acquire. It was hypothesized that bilingual or multilingual children who develop SM are in the BICS stage, and these are the children at greatest risk because they are often innately and temperamentally inhibited. The added stress of speaking a different language and the insecurity with their skills is enough to create increased anxiety and mutism, which extends beyond the normal silent period (Shipon-Blum, 2002).

A possible reason that selective mutism is nearly four times as common than in nonimmigrant children could be that these bilingual children may begin with behaviorally inhibited temperaments that interact with immigration and the stress of second language acquisition to occasion the development of selective mutism (Cohen et al., 2006).

Immigration status and the issues surrounding it, such as acculturation, learning a second language, possible discrimination, and peer ostracism, may also deserve unique attention in the effort to understand selective mutism in immigrant children (Cohen et al., 2006).

The unique presentation and characteristics of immigrant, second language learning children are indeed a specific subtype of children with selective mutism and will likely warrant different treatment methodology, if identified.

The last of the potential selective mutism subtypes is likely related to sensory and self-regulation issues. Self-regulation has been described in two important ways. First, it is viewed as the ability to adjust arousal in an appropriate manner in order to attain goals; second, self-regulation is viewed as the ability to direct how emotions are revealed behaviorally in socially adaptive ways (Bronson, 2000). Selectively mute children have difficulties self-regulating their anxiety and other emotional states. Children with selective mutism have difficulties adjusting their emotions to yield a behaviorally positive or socially adaptive response (Bronson, 2000). These abilities evolve from a complex process involving a dyadic regulatory system. Within this dyadic regulatory system, the cues given by infants and toddlers regarding shifts in their emotional state are acknowledged by their caregivers, who ultimately assist in self-regulation (Fonagy, 1999; Sroufe, 1983). In addition, cultural values, societal expectations, physiology, cognition,

and developing speech and language skills contribute to the organization and the ability to self-regulate (Moldan, 2005).

Greenspan (1997) notes that language usage to negotiate concerns and then to communicate emotions demonstrates that the child is in the stage of organizing emotional concepts or representations. However, for the selectively mute child, Greenspan (1997) notes that organization of emotional concepts is often missing in many environments. For typical children, the use of words minimizes the sense of urgency to act out the feelings, such as saying “I love my mommy.” It also lessens the urgency to cling to the mother and not let her out of sight.

Children with poor self-regulation may present as shy, timid, and mute in some social situations; however, in more comfortable situations, their behavioral presentation is in stark contrast: loud, impulsive, and hyperactive (Cunningham et al., 2004; Greenspan, 1997). In addition, it is hypothesized that many of these children also demonstrate sensitivities to touch, noise, and light and executive function deficits hampering self-control of both sensory processing and motor output demands.

Purpose of the study and research questions.

Given the complexity of the selective mutism diagnosis and the various presenting symptoms and comorbid conditions, it was hypothesized that there are multiple subtypes of selective mutism, and these subtypes could be differentiated based on parent report. The hypothesis was that a cluster analysis of the Selective Mutism Comprehensive Diagnostic Questionnaire (SM-CDQ; Shipon-Blum, 2004) would reveal five different and distinct subtypes of selective mutism. It was predicted that these five

subtypes would subsequently be differentiated on parent ratings of behaviors commonly reported in selective mutism populations, using multivariate analysis of variance.

Six subtypes were expected based on the selective mutism literature. These selective mutism subtypes are: (a) *anxiety mutism*, distinguished by a phobia of speaking, a fear of others hearing their voices, or when the SM child does not demonstrate one of the other subtypes and there is a familial history of anxiety; (b) *expressive language mutism*, distinguished by narrative expressive language deficits; (c) *oppositional mutism*, distinguished by significant challenging behaviors exhibited, regardless of the expectation to speak; (d) *ELL mutism*, distinguishing factors of which would include selectively mute children whose native language was not English or who had cultural differences and mutism beyond the silent period; (e) *sensory/self regulation mutism*, distinguishing factors of which would include selectively mute children with sensory integration dysfunction and/or selectively mute children who demonstrated extreme difficulties with regulation of their emotions during nonmute times and children who demonstrate significant executive dysfunction. It was anticipated that not all mutism would meet the criteria for one category. Moreover, there children may demonstrate a mixture of these symptoms, which would be categorized as (f) *mutism, not otherwise specified*.

Chapter 3

Method

Participants/Source of data.

Permission was granted by Dr. Elisa Shipon-Blum, the Director and CEO of the Selective Mutism Anxiety Research and Treatment Center (SMart-Center), to use an international database, which included 442 children with selective mutism. The SMart-Center, which is located in Jenkintown, Pennsylvania, is a center for both treatment and research of SM. The SMart-Center was chosen as a sample source for two primary reasons. First, the SMart-Center provided a large sample for a low incidence disorder. Second, the database included children from other regions of Pennsylvania and multiple states and countries. Detailed information regarding the socioeconomic status (SES) of the selected children was not available; however, because of the duration, modality, and cost of the treatment, SES was likely to be in the middle to upper middle class range.

The data did not contain any identifiers that could be linked to the subjects. As a result, the ethical considerations for human subjects were minimal due to these precautions and qualified the study exempt from informed consent requirements. This data, along with the review of literature, provided the rationale for selective mutism subtypes. The data at the SMart-Center were first reviewed and analyzed and the justification for the existence of subtypes emerged.

Reported in Table 1 are demographic characteristics of the children whose parents completed the SM-CDQ. The final sample included 186 children with SM of mostly Caucasian children (81%). There was a large number of girls (61%) in the sample.

Table 1

Demographic Characteristics of Sample

Variable	<i>n</i>	%
Gender		
Males	63	34.0%
Females	123	66.0%
Grade		
Prekindergarten	52	28.0%
Elementary school	111	60.0%
Middle school	13	7.0%
High school	7	4.0%
Self-Identified race		
African American	3	1.6%
Asian	7	3.8%
Caucasian	143	77.0%
Latino	9	4.8%
Biracial	22	12.0%

Although ages ranged from three to 18, many of the children were in prekindergarten through first grade (67%). There were a number of children with selective mutism who demonstrated school-related problems. In fact, 10% of the children with selective mutism were retained, while 7% had Americans with Disabilities Act (ADA)/Section 504

services, and another 26% had Individuals with Disabilities Education Act (IDEA) special education services. Although these figures suggest many children with selective mutism had disabilities, a majority of children with selective mutism were without any formal services to accommodate their mutism. Further information about the sample is presented below, categorized by selective mutism subtype.

Inclusion and Exclusion Criteria

The investigator examined the data for all 442 children in the SMart-Center's database. The participants in this database all met criteria and had selective mutism at the time of referral. Individuals in the database were excluded if they were outside the age range of the sample desired, if they had autism, if the questionnaire was incomplete or had missing data, or if it was clear they did not meet the criteria for selective mutism according to the SMart-Center staff who conducted the evaluation.

Although a diagnosis of pervasive developmental disorder is an exclusion criterion for selective mutism in the *DSM—IV—TR*, some authors have reported an association between Asperger's disorder and selective mutism (Andersson & Thomsen, 1998; Gillberg, 1989; Kristensen, 2000; Wolff, 1995). What continues to make the selectively mute child different from those with autism spectrum disorder (ASD) is the fact that the selectively mute child will use social verbal communication with those who they are comfortable with, such as immediate family. Verbal communication continues to be impaired in all situations with children with ASD. As a result, children were excluded if they met criteria for an ASD. In addition, children with known mental retardation or brain injury or a medical condition affecting the child's status at evaluation were also excluded.

Instrumentation.

Shipon-Blum (2004) developed a comprehensive parent report, the measure used in this study, entitled the Selective Mutism Comprehensive Diagnostic Questionnaire (SM-CDQ). The SM-CDQ is an assessment tool for children with selective mutism and is an essential tool to help with treatment (Shipon-Blum, 2004). According to Shipon-Blum, it assists in identification of selective mutism symptoms and a selective mutism diagnosis. It also helps the clinician to recognize the specific settings in which the mutism occurs and the severity and pervasiveness of the symptoms. It is the only available instrument developed to measure a child's frequency of nonspeaking behavior across situations in which children are expected to speak. This is an important first step in obtaining a deeper understanding of selective mutism.

This questionnaire helps professionals gather data that ranges from basic demographic to detailed diagnostic information about the referred child. There are items about socialization and interactions with friends and classmates and how the child with selective mutism communicates, if at all, with other children. There are items about the child's personality, body language, and behavior, in addition to questions on the school environment, the home environment, and the community environment. There is a full developmental history incorporated into the questionnaire and questions related to the parents' (and extended family's) history of anxiety or depression. The SM-CDQ inquires about the child's bladder and bowel control, eating patterns, and any coexisting disorders. The SM-CDQ specifically lists 12 of the most common disorders comorbid with selective mutism and asks the parent to identify whether their child has any of them. There is also an opportunity to list any other disorders which the child may have. There are open-

ended response items regarding speech and language history, sensory issues, anxiety, and whether the child is multilingual or bilingual. The SM-CDQ also addresses issues related to sibling history and the child’s current home life. Dr. Shipon-Blum (personal communication, April 21, 2005) reports a common use of the SM-CDQ is to help determine if the presenting child with selective mutism can be categorized into a selective mutism subtype. As a result, the design and implementation of the SM-CDQ helps lay the foundation for establishing the constructs of selective mutism and their subtypes.

The SM-CDQ has a list of items at the end of the questionnaire that parents are asked to rate on a scale of 1 to 10. These items are part of the Mutism Behavior Rating Scale (MBRS). A low rating on MBRS items indicates the child has few problems, while a high rating would indicate more problems for that item. To help clarify the information on this scale for this study, the author used clinical judgment and grouped the items into categories. This was then evaluated and revised by the doctoral advisor. Table 2 lists the descriptive data for the items for each subscale, and Table 3 provides further descriptive information and correlations on the MBRS subscales.

Table 2

Means and SD for MBRS Variables

MBRS Variable	Mean	SD
Stubborn	6.57	2.59
Tantrums	4.72	2.79

(continued)

Table 2

Means and SD for MBRS Variables

MBRS Variable	Mean	SD
Unpredictable behavior	3.61	2.47
Upset easily	5.66	2.62
Procrastinates	4.81	2.61
Distractible	3.77	2.55
Aggressive	3.08	2.36
Labile	4.22	2.64
Uncooperative	5.12	2.79
Inflexible	4.85	2.74
Adjusts to routines (R)	5.53	2.42
Accepts novelty (R)	5.34	2.46
Accepts new situations (R)	4.32	2.96
Noise sensitive	4.82	3.37
Light sensitive	3.02	2.60
Crowd sensitive	5.27	2.95
Food sensitive	4.33	3.27
Novel food intolerance	5.27	3.35
Hair sensitive	3.97	3.24

(continued)

Table 2

Means and SD for MBRS Variables

MBRS Variable	Mean	SD
Clothes sensitive	4.22	3.12
Assertive (R)	3.96	2.50
Impulsive	3.41	2.32
Organized (R)	4.67	2.57
Expresses emotions (R)	5.01	2.74
Affectionate (R)	7.71	2.28
Empathetic (R)	6.83	2.29
Listens well (R)	7.16	1.79
Positive self image (R)	6.48	2.33
Positive relations (R)	7.10	2.15
Positive self care (R)	6.71	2.24
Independent (R)	6.09	2.35
Feelings intense	6.14	2.51
Disruptive	2.78	2.14
Deceitful	2.59	1.92
Positive affect home (R)	8.74	1.75
Positive affect public (R)	5.97	2.67

(continued)

Table 2

Means and SD for MBRS Variables

MBRS Variable	Mean	SD
Shy	8.60	1.84
Enjoys friends (R)	8.19	2.16
Upset by mutism	6.03	2.71
Wants to speak	7.03	2.73
Enjoys solitary	6.85	2.21
Enjoys playing groups (R)	5.47	2.77
Enjoys art (R)	7.16	2.45
Enjoys music (R)	6.10	2.74
Self view intelligence (R)	7.39	2.35
Enjoys math (R)	6.85	2.75
Enjoys reading (R)	8.28	2.03
Concentration (R)	7.53	2.21
Daydreams	4.47	2.50
Focused (R)	7.08	2.11
Enjoys life (R)	7.85	2.08
Abstract thinker (R)	6.42	2.67
Hyperactive	3.55	2.60

(continued)

Table 2

Means and SD for MBRS Variables

MBRS Variable	Mean	SD
Disorganized	3.84	2.35
Worries excessively	4.85	2.80
Dysphoric	3.34	2.40
Likes self (R)	7.13	2.22
Self deprecation	2.70	2.24
Nervous	5.63	2.57
Cleanliness preoccupation	2.70	2.11
Order preoccupation	2.53	2.32

Note. (R) represents variables that were reverse scored.

Table 3

Zero-order Correlations among MBRS Scales for the Total Sample

MRBS Subscale	1	2	3	4	5	6	7	8
Executive	-	.55***	.59***	.21**	.02	.36***	-.03	-.01
Oppositional		-	.69***	.07	.08	.31***	-.08	-.02
Labile			-	.11	.01	.39***	.23***	.02

(continued)

Table 3

Zero-order Correlations among MBRS Scales for the Total Sample

MRBS Subscale	1	2	3	4	5	6	7	8
Anxiety				-	-.14	.17*	.23***	.36***
Flexible					-	-.07	.19*	-.02
Sensory						-	-.11	.04
Esteem							-	.52***
Academic								-

Note. * $p < .05$. ** $p < .01$; *** $p < .001$.

The first subscale is executive ($M = 41.59$, $SD = 12.56$). It includes items such as *procrastination, distractible, inflexible, impulsive, disruptive, deceitful, concentration, daydreams, hyperactive* and *disorganized*. The means for the individual items in this subscale appeared consistently to have ratings in the low to moderate range; however, *concentration* was the most problematic item on this subscale ($M = 7.50$, $SD = 2.21$). The executive subscale was highly correlated with the oppositional, labile, and sensory subscales. This may suggest a strong relationship between executive problems and mood/behavior problems. It was also correlated with the anxiety subscale, suggesting a possible connection between anxious behaviors, such as nervousness, impacting an executive skill, such as concentration.

The next cluster of items comprised the oppositional subscale ($M = 27.82$, $SD = 8.18$). The items included *stubborn, aggressive, uncooperative, upset by mutism*, and

wants to speak. On the item level, parents indicated that a majority of the sample of children with selective mutism both wanted to speak and were upset by their mutism. Qualitatively, there was a higher mean for the *stubborn* item than for the *aggressive* or *uncooperative* items, suggesting that although many of the children may be somewhat resistant and/or passive-aggressive, this does not immediately translate into aggression and overt noncompliance. The oppositional subscale was correlated with the labile and sensory subscales.

The labile subscale ($M = 30.38$, $SD = 11.26$) consisted of the following items: *tantrums*, *unpredictable behavior*, *upset easily*, *labile*, *feelings intense*, *dysphoric*, and *self-deprecation*. In this category, the items with the highest means were *upset easily* and *feelings intense*. This suggests that subtypes significant on the labile scale may be sensitive, reactive, and intense when experiencing feelings. While this could lead to self-deprecation, children appear to be less likely to externalize these feelings negatively. The labile scale is also highly correlated with the sensory and esteem subscales, which may suggest children with selective mutism who have mood problems also have sensory issues and compromised positive self-evaluation.

The anxiety subscale ($M = 51.35$, $SD = 8.39$) had the following nine items: *positive affect home*, *positive affect public*, *shy*, *enjoys solitary*, *enjoys playing in groups*, *worries excessively*, *nervous*, *cleanliness preoccupation*, and *order preoccupation*. The items characteristic of obsessive-compulsive tendencies were rated as quite low, suggesting these characteristics are not especially problematic for a majority of children with selective mutism. The items with the highest means, suggesting more problems, were related to the child's affect in the home and shyness. Significant ratings would

suggest these children typically prefer to play by themselves than in a group, and although these children tend to be moderately nervous, they are less likely to worry excessively. The anxiety subscale was strongly correlated with both the esteem and academic subscales. It was also correlated with the sensory subscale.

Only three items make up the flexible subscale ($M = 15.19$, $SD = 6.25$). These include *adjusts to routines*, *accepts novelty*, and *accepts new situations*. All three of these items had similar means and standard deviations, with ratings suggesting moderate problems in this category. A child who has significant ratings on the flexible subscale may have more difficulty adjusting to new routines and accepting novelty than accepting new situations. The flexible subscale was correlated with the esteem subscale.

The sensory subscale ($M = 30.90$, $SD = 15.40$) comprises *noise sensitive*, *light sensitive*, *crowd sensitive*, *food sensitive*, *novel food intolerance*, *hair sensitive*, and *clothes sensitive* items. The items in this category had low to moderate means with *crowd sensitive* having the highest mean ($M = 5.27$, $SD = 2.95$). This suggests that a child within the subtype with significant scores on this scale is going to have greater difficulty navigating large crowds or being in large groups, but it does not suggest overt agoraphobia.

There were 11 items that made up the esteem subscale ($M = 72.25$, $SD = 14.68$). The esteem items are *assertive*, *expresses emotions*, *affectionate*, *empathetic*, *positive self image*, *positive relations*, *positive self care*, *independent*, *self view of intelligence*, *enjoys life*, and *likes self*. They were reverse coded in the data set so that higher scores indicated less self-esteem. Overall, at the item level, children in this group appeared to have difficulty with assertiveness and expressing affection and empathy. Their self-esteem

may be somewhat compromised by problems relating positively to others, feeling they are not intelligent, or having a general dislike for themselves. The esteem scale was strongly correlated with the academic scale, implying that with more positive academic performance comes more positive self-esteem.

Lastly, the items in the academic subscale ($M = 53.72$, $SD = 10.85$) are *organized*, *listens well*, *enjoys art*, *enjoys music*, *enjoys math*, *enjoys reading*, *focused*, and *abstract thinker*. A child with SM who has significant ratings on this subscale would have global academic problems. A qualitative item analysis suggests that while children in the sample may not have extensive difficulties in their organizational skills, they do have problems listening well. These children most likely have difficulties with math and reading and may have problems with abstract reasoning and creativity.

Procedure.

Archival records of children identified with selective mutism were used for this study. The primary investigator was the only individual in this study who had direct access to the archival record data. Each archived record that met criteria for this study was assigned a participant code number. The child's name and other confidential information was not examined or included in the data set. Individual archival records were reviewed to ensure they met the inclusion and exclusion criteria for this study. Variables were also divided into three different groups, descriptive variables (D), characteristics of mutism variables (CM), and Mutism Behavior Ratings Scale (MBRS) score. MBRS variables were coded so that higher ratings always indicated greater impairment. The data were cleaned and then entered into the SPSS statistics computer package for statistical analyses.

Analyses

There were three major sections of the SM-CDQ examined in the analyses. First, for the demographic data (e.g., gender, age), descriptive statistics were computed for frequency information and calculation of measures of central tendency (e.g., mean, standard deviation). The two rating scales within the SM-CDQ were used for inferential statistical analyses. The first set of items included characteristics of mutism (CM variables), and the second set of items comprised the Mutism Behavior Rating Scale (MBRS variables). The MBRS variables were categorized into more meaningful subscales for this study and were anxiety, executive, oppositional, labile, flexible, sensory, esteem, and academic subscales. These categorizations were first clinically determined by the principal investigator, and then confirmed with the dissertation advisor. They were not externally validated, which is a limitation of this study.

After all of the data was coded on the 203 variables for the chosen sample, the investigator then used qualitative analysis to identify similarities and differences among children with selective mutism. For example, the investigator reviewed the selectively mute children with a history of sensory sensitivities, then examined how many of these children were also coded as having specific disorders. The investigator also qualitatively examined familial history. It was hypothesized that children who had a first degree relative with selective mutism may have treatment resistance and more severe symptoms of selective mutism. These differences were intended to identify behaviors and symptoms specific to the hypothesized subtypes of selective mutism. This aided in the formulation and development of distinguishing the specific constructs that contribute to the selected subtypes of selective mutism.

The investigator then used cluster analysis of the CM variables using a within groups linkage cluster method, which is a variant of the unweighted pair group method using arithmetic averages. The cluster analysis utilized a within groups linkage variant of the unweighted pair-group method arithmetic average (UPGMA) as the amalgamation of linkage rule. This variant combines clusters so that the average distance between all possible pairs of cases in the resulting cluster is as small as possible, thereby minimizing within group variability. The measure used the phi 4-point correlation for binary data as the distance measure. Analysis of variance (ANOVA) was then used with the MBRS subscales as dependent variables and the CM subtype as an independent variable. Bonferroni and least significant difference (LSD) post hoc tests were utilized for multiple group comparisons. The investigator decided to include subtypes that have more than 10 participants only and compare the final subtypes on the demographic and MBRS variables to guard against a Type I error.

Chapter 4

Results

The selective mutism population has often been considered homogenous in terms of its clinical presentation; however, more recent research has disputed this. Therefore, utilization of cluster analysis can be valuable for discovering the differences in characteristics associated with this possibly nonhomogeneous sample of children with selective mutism. In this study, cluster analysis was used with the purpose of identifying homogeneous subtypes of children with selective mutism, based on subscales from the Mutism Behavior Ratings Scale (MBRS).

The hierarchical cluster analysis utilized the within groups linkage method and used a phi 4-point correlation for binary data as the distance measure. This method combines clusters so that the average distance between all possible pairs of cases in the resulting cluster is as small as possible, thereby minimizing within group variability and increasing homogeneity of the cluster. The results of the within groups linkage variant of the UPGMA revealed 6 SM subtypes, according to the agglomeration schedule coefficient changes from Step 6 (.373) to Step 5 (.362). Group 5 ($n = 7$) was omitted from further analyses due to the small sample size, consistent with the sample size requirements for this study.

Exploring the MBRS means and the descriptive characteristics of the groups of children with selective mutism helped to clarify subtype characteristics in this sample of selectively mute children. Figure 1 shows a plot of the MBRS means for the five subtypes. Although it is important to note that the scales are not directly comparable, given the number of items per subscale varies, within scale comparisons and examination

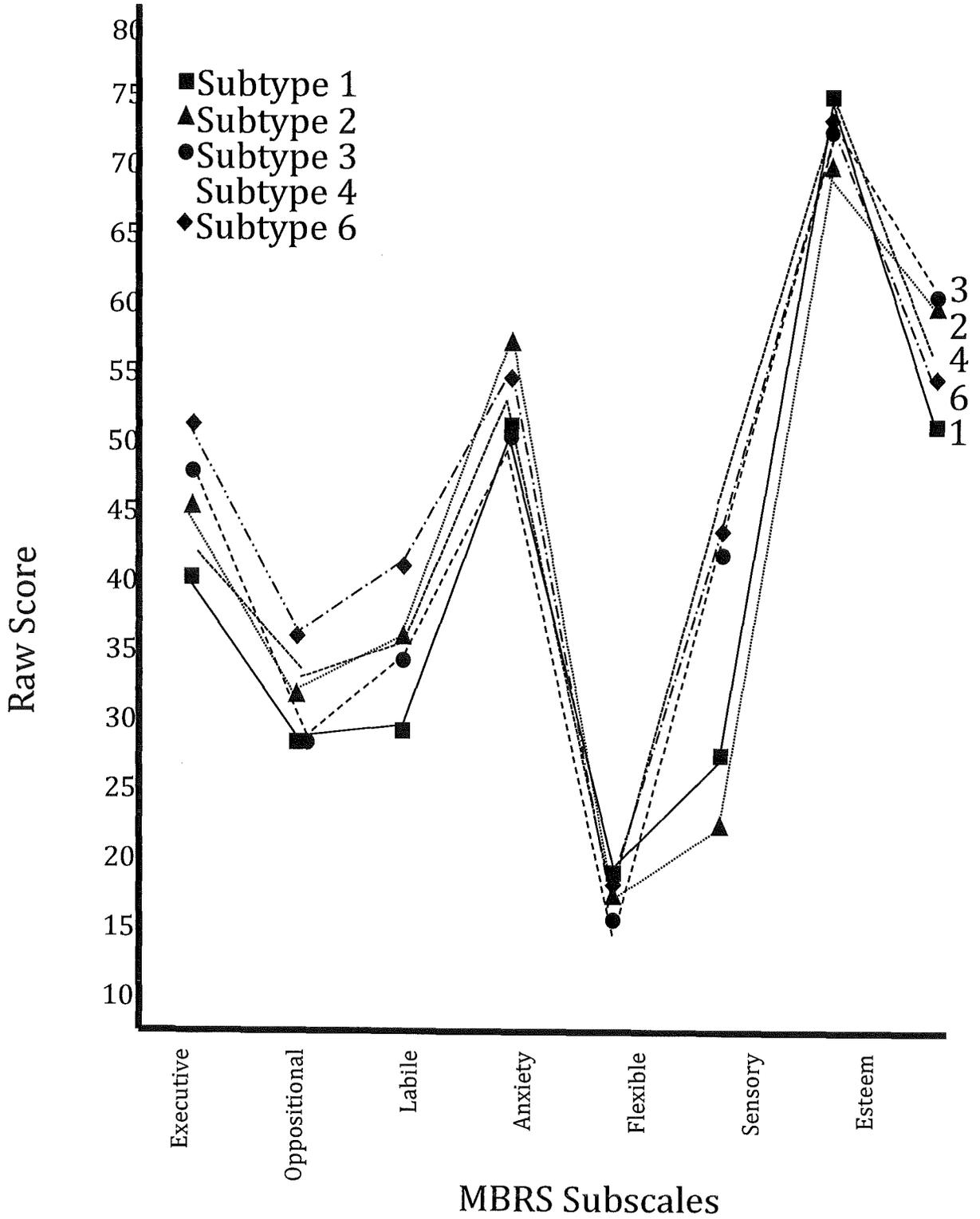


Figure 1. MBRS ratings for selective mutism subtypes.

disorder problems, with the anxiety/language (53%), sensory/pathology (46%), and emotional/behavioral (36%) subtypes having the highest percentages of cases with this comorbidity. A surprisingly large number of children had experienced an environmental stressor in their lives. Unfortunately, this was not defined in terms of the severity or duration of the stressor; however, percentages ranged from 13% in the low functioning group to 53% in the anxiety/language group. The latter suggests that there could be a relationship between high environmental stress exposure and rates of anxiety. Finally, comorbid separation anxiety was exceedingly prevalent compared to typical samples, with the global (59%), anxiety/language (67%), low functioning (65%), sensory/pathology (73%), and emotional/behavioral (82%) groups all having high rates of this comorbidity.

Table 4

Participant Characteristics by SM subtypes as a Percentage of the Sample.

Variable	Cluster				
	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
Gender					
Female	66	67	52	50	91
Male	24	33	48	50	9

(continued)

Table 4

Participant Characteristics by SM subtypes as a Percentage of the Sample.

Variable	Cluster				
	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
Grade					
Prekindergarten	41	20	48	9	27
Elementary	48	73	52	82	73
Middle	.07	7	0	9	0
High	.03	0	0	0	0
Race					
African-American	3	0	0	0	0
Asian	1	7	4	9	0
Caucasian	76	67	83	64	82
Latino	4	7	4	9	9
Biracial	14	20	9	18	9
ADA/504					
Yes	6	13	9	5	0
No	93	87	83	96	100

(continued)

Table 4

Participant Characteristics by SM subtypes as a Percentage of the Sample.

Variable	Cluster				
	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
IEP					
Yes	18	27	30	27	27
No	80	73	61	73	73
Ear infections					
Yes	32	27	39	32	27
No	68	73	61	68	73
Speech impediment					
Yes	3	20	8	14	18
No	67	80	87	86	82
Age first talked					
12 months and younger					
	51	40	30	36	27
13 months and older					
	42	40	65	64	64

(continued)

Table 4

Participant Characteristics by SM subtypes as a Percentage of the Sample.

Variable	Cluster				
	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
Delayed speech					
Yes	94	73	87	82	100
No	6	4	13	18	0
Delayed motor					
Yes	9	7	9	18	0
No	92	93	91	82	100
Bilingual					
Yes	20	27	22	27	9
No	80	73	78	73	91
Speech/Language					
Yes	4	20	9	18	9
No	67	80	91	82	91
Sensory integration					
Yes	6	13	13	22	18
No	97	87	87	77	82

(continued)

Table 4

Participant Characteristics by SM subtypes as a Percentage of the Sample.

Variable	Cluster				
	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
Anxiety					
Yes	21	53	22	46	36
No	79	47	78	55	64
Trauma					
Yes	30	53	13	23	27
No	69	47	87	77	73
Separation anxiety					
Yes	59	67	65	73	82
No	31	33	35	27	18

Note. G = Global; A/L = Anxiety/Language; LF = Low Functioning; S/P = Sensory

Pathology; E/B = Emotional/Behavioral

The parental descriptive statistics for the selective mutism subtypes are reported in Table 5. There were items that were commonly associated and evenly distributed across subtypes. For example, all subtypes had high rates of separation anxiety, although the global mutism subtype had fewer problems compared to the other subtypes in this area and overall on most of the problem scales. All of the subtypes had a history of ear

infections as young children, and bilingualism was evenly distributed among subtypes, with the exception of a lower prevalence in the emotional/behavioral subtype. The percentage of children receiving ADA/Section 504 services ranged from 0% to 13%, but a large number of children relative to typical populations (range 18% to 30%) were receiving special education services. Most had previous histories of ear infections, suggesting that this may be a contributing factor in developing selective mutism.

It appears that across all subtypes, children with selective mutism had mothers and fathers who endorsed shyness (70% and 58%, respectively) and anxiety (39% and 26%, respectively), at higher rates than in the general population. Maternal and paternal histories of mutism as children were also at higher proportions (9% and 5%, respectively) and lastly, maternal and paternal depression rates were also elevated at (21% and 13%, respectively). On all the parent mutism characteristics, more mothers endorsed shyness, anxiety, mutism as a child and depression than fathers. However, in the anxiety/language mutism group, parental mutism characteristics did not appear to be a factor in how anxious these children are, likely supporting the contribution of environmental variables to anxiety.

To further clarify the characteristics of subtypes, each subtype was evaluated separately and in comparison to each other. Results for the ANOVA with the MBRS subscales as dependent variables are displayed in Table 6. Bonferroni post hoc tests for multiple comparisons were also conducted, as were least significant difference (LSD) post hoc analyses for discussion purposes only.

There were significant differences between groups on several MBRS subscales. Although Bonferroni post hoc analyses revealed only the emotional/behavioral subtype

had more executive problems than the global subtype, the least significant difference (LSD) post hoc comparisons revealed that executive problems were more prevalent in the low functioning subtype and the emotional/behavioral subtype compared to the global subtype.

Table 5

Parents' Mutism Characteristics by Subtype.

Variable	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
Maternal shyness					
Yes	75	60	74	64	82
No	25	40	26	23	18
Maternal mutism as child					
Yes	7	0	17	14	0
No	92	100	83	82	100
Maternal anxiety					
Yes	37	40	52	50	55
No	62	60	48	49	45
Maternal depression					
Yes	16	0	39	32	36
No	82	100	61	64	64

(continued)

Table 5

Parents' Mutism Characteristics by Subtype.

Variable	G (n = 71)	A/L (n = 15)	LF (n = 23)	S/P (n = 22)	E/B (n = 11)
Paternal shyness					
Yes	66	47	52	50	36
No	34	53	48	50	64
Paternal mutism as child					
Yes	7	0	4	5	9
No	92	100	91	77	90
Paternal anxiety					
Yes	24	27	35	36	27
No	76	73	57	50	73
Paternal depression					
Yes	9	13	9	32	9
No	92	87	83	55	91

Note. G = Global; A/L = Anxiety/Language; LF = Low Functioning; S/P = Sensory Pathology; E/B = Emotional/Behavioral.

The LSD post hoc analyses also showed that the anxiety/language, low functioning, and sensory/pathology subtypes and emotional/behavioral subtype had more problems on the labile scale than the global subtype. There were also differences on the oppositional scale, with the sensory/pathology and emotional/behavioral subtypes having

more problems than the global and low functioning subtypes. The global subtype had more problems on the flexible scale than the low functioning subtype, and on the sensory scale, the low functioning, sensory/pathology, and emotional/behavioral subtypes had more problems than the global and anxiety/language subtypes. On the anxiety subscale, the anxiety/language subtype had significantly more problems than the global subtype. Lastly, on the academic scale, the anxiety/language, low functioning, and sensory/pathology subtypes had significantly more problems than the global subtype.

Table 6

ANOVA for MBRS Scales Comparing SM Subtypes

MBRS Subscale	G	A/L	LF	S/P	E/B	F	p
Executive							
<i>M</i>	38.69	43.27	45.70	40.23	49.55 ^a	3.18	.016
<i>SD</i>	12.13	13.74	11.41	10.31	9.42		
Oppositional							
<i>M</i>	26.48	29.27	26.48	31.14	33.55	3.24	.014
<i>SD</i>	7.57	7.83	9.06	7.55	7.43		
Labile							
<i>M</i>	27.20	35.00	32.48	33.59	38.09 ^a	4.04	.004
<i>SD</i>	11.23	10.49	9.30	10.43	12.08		

(continued)

Table 6

ANOVA for MBRS Scales Comparing SM Subtypes

MBRS Subscale	G	A/L	LF	S/P	E/B	F	p
Anxiety							
<i>M</i>	50.20	55.93	51.39	51.95	52.82	1.74	.144
<i>SD</i>	8.48	6.94	7.33	7.51	7.45		
Flexibility							
<i>M</i>	16.01	14.47	12.70	14.32	13.73	1.52	.201
<i>SD</i>	6.00	6.49	6.20	5.97	6.15		
Sensory							
<i>M</i>	25.27	20.00	40.57 ^{ab}	44.23 ^{ab}	43.73 ^{ab}	21.14	<.001
<i>SD</i>	12.83	11.41	9.80	11.75	9.07		
Self Esteem							
<i>M</i>	74.65	70.40	72.65	74.36	73.82	.322	.863
<i>SD</i>	14.53	19.49	8.26	13.56	15.36		
Academic							
<i>M</i>	51.61	58.87	59.17 ^a	56.27	54.64	3.51	.009
<i>SD</i>	9.94	10.17	7.47	13.42	9.01		

Note. ^a Greater than G subtype. ^b Greater than A/L subtype. ^c Greater than LF subtype.

^d Greater than S/P subtype. ^e Greater than E/B subtype

The LSD post hoc analyses showed that the anxiety/language, low functioning, sensory/pathology, and emotional/behavioral subtypes had more problems on the oppositional and labile scales than the global subtype. Similarly, the anxiety scale, flexible scale, and academic scale all yielded significant results from the LSD post hoc analyses, where they did not yield significant results on the Bonferroni post hoc test. The Bonferroni is a more conservative post hoc test than the LSD; however, the LSD post hoc test does not control as well for Type I error.

Global mutism.

This subtype was characterized by the largest number of children with SM ($n = 71$). The children with SM in this subtype appeared to be less impaired than the other subtypes. These children may have developmentally moved from a subtype with more significant problems to the global subtype as their needs, such as anxiety and sensory problems, were addressed. Although children in this subtype had problems with self-esteem and flexibility, they were generally academically capable and did not exhibit sensory, emotional, and behavioral problems, as did some of the other subtypes. The global subtype had a 2:1 gender ratio of females to males and was the only subtype to encompass all racial variables. Most likely, the majority of children with SM would be within the global subtype, and this may support why some children with SM are not in need of special education services.

Anxiety/Language mutism.

This subtype was characterized by a significantly higher mean score than the other groups for anxiety, based on LSD post hoc test. Lability and academic success were also problematic for this subtype in comparison to the other subtypes. The

anxiety/language group also had the largest percentage of comorbid anxiety disorder and the largest percentage of environmental stress exposure. This subtype had the smallest percentage in comparison to the other subtypes who met speech developmental milestones and had the largest percentage of speech impediments and speech and language disorders. This subtype had a 2:1 gender ratio of females to males and a slightly elevated number of children with SM with a comorbid learning disability.

Low functioning mutism.

The low functioning subtype has an even gender ratio, with no significant comorbid psychiatric disorders. However, both maternal mutism and depression were prevalent in this subtype, suggesting possible psychopathology in the immediate family. The mean for the academic scale was highest for this subtype. Because this scale is reverse scored, it suggests this subtype has the most academic problems. The academic scale was statistically significant on Bonferroni post hoc tests, indicating a statistically significant problem on this scale in comparison to the other subtypes. Other characteristics pertinent to this subtype are statistically significant sensory and executive problems, as well as lability, according to LSD post hoc analyses. These problems are likely contributors to the academic problems as the hallmark of this subtype. The low functioning subtype had the highest percentage of children with SM in special education, supporting this subtype's academic difficulties.

Sensory/Pathology.

The mean for sensory was highest and statistically significant, according to Bonferroni post hoc analysis. This sensory/pathology subtype also had the largest percentage of selectively mute children with comorbid disorder of sensory integration.

This subtype also appeared to be characterized by oppositional behavior and lability, as mean scores were significant in these areas according to LSD post hoc analyses. The sensory/pathology subtype was the most racially diverse and had a high number of bilingual children. This subtype had the largest number of children with separation anxiety problems and delays in motor skills. Overall, this subtype appeared to be the most impaired in comparison to the other subtypes. With comorbid learning disabilities, ADHD, ODD, and depression, this may suggest that this subtype may be the most difficult to treat.

Emotional/Behavioral.

This subtype had the highest mean scores of all subtypes in the areas of executive, oppositional, and labile. These mean scores were significant, according to Bonferroni and LSD post hoc analyses. This subtype had the second highest mean score for sensory. This subtype is also noteworthy when examining gender differences because the female to male ratio is 10:1, suggesting this subtype is more prevalent in females. Also noteworthy is that this subtype does not appear to have problems academically compared to the other subtypes. This is surprising, considering the statistically significant mean score on the executive scale. Typically, children with executive problems perform less well academically.

Chapter 5

Discussion

Selective mutism has often been thought of as a homogeneous disorder, with the primary characteristic of withholding speech in certain settings and not others being the unifying feature of the disorder. However, subsequent research has suggested that this may not be entirely true, with heterogeneity among children with selective mutism being quite common. This latter position is more consistent with the findings of this study. This study provided evidence that there are characteristics that are distinct to some children with selective mutism and not others or at least distinct to varying degrees. Not only does this research support recognition of SM subtypes for better understanding of the differences among children with selective mutism, it could also have significant implications for best practices in selective mutism treatment for each subtype.

In addition to examining the core features of selective mutism, it is also important to recognize the functional impact of selective mutism on these children. Bergman et al. (2002) noted that children with selective mutism were significantly more impaired than healthy comparison children, particularly in the areas of academics and social functioning. Results from a longer term follow-up study also suggest that significant functional impairment remains over time (Remschmidt et al., 2001), which likely affects the treatment of the core symptoms of selective mutism. It is clear that researchers need to conduct studies that provide the best information on treatment options for children with selective mutism. This suggests it is relevant to explore possible subtypes of selective mutism, so that children with this condition can make faster, more efficacious treatment gains.

A major component of this study was obtaining a large sample of children with selective mutism, then conducting cluster analyses of the characteristics of mutism (CM) variables to determine if meaningful subtypes would emerge. These subtypes were further differentiated on the dependent measures of the Mutism Behavior Rating Scale (MBRS) subscales. In addition, frequency data on descriptor variables was obtained and compared to gain a better understanding of school functioning, comorbidities, and family history of anxiety and other psychological disorders and stressors. The data was also analyzed at the subtype level, examining the descriptor variables and frequencies for each subtype.

Subtype differentiation and clinical implications.

The cluster analyses revealed six subtypes; however, one of the subtypes did not meet minimum sample size criteria. As a result, the data for this subtype were not examined. However, for the remaining participants, there were meaningful subtype differences that emerged in this study. Not surprisingly, most of the subtypes have similar, overlapping characteristics, but there were some unique characteristics worth noting. Shipon-Blum (2010) notes that these subtypes are not necessarily pure and that all subtypes will have some related features. For example, as previously hypothesized by the first author, at least five selective mutism subtypes were predicted to emerge, including anxiety, expressive language, oppositional, English language learner, and sensory/self-regulation SM subtypes. Although these specific subtypes did not emerge as clearly as originally predicted, five subtypes did emerge with some primary distinguishing features, coupled with secondary characteristics that also made each subtype unique.

The literature reports that the female to male ratio is 1.5: 1 to 2.1 (Black & Uhde, 1995; Kristensen, 2000). However, in this study, gender ratios were sometimes as high as 10:1 for girls to boys. This is a significant finding with regard to the emotional/behavioral subtype. It has been reported that some children with selective mutism have difficulties self-regulating their anxiety and other emotional states. Children with selective mutism often experience difficulties adjusting their emotions to yield a behaviorally positive or socially adaptive response (Bronson, 2000). The emotional/behavioral subtype in this study included many similar characteristics. The children in the emotional/behavioral subtype not only experienced sensory problems, but had more MBRS executive, oppositional, and labile subscale problems than other subtypes.

Interestingly, this subtype does not appear to experience academic problems relative to the other subtypes. This may suggest that parents are inaccurately rating their children on the MBRS or that environmental cognitive and/or behavioral factors are indeed maintaining (Mulligan & Christner, 2006) and conditioning SM (Shipon-Blum, 2010). Also noteworthy is that this subtype had the highest rate of maternal shyness and maternal anxiety and of fathers who were mute when they were children, suggesting that possible further exploration into environmental and/or genetic factors is warranted. Additionally, the emotional/behavioral subtype has more preschool, female youngsters, which may imply this is a newly discovered disorder, and teachers are making attempts to compel the child to speak because of their lack of knowledge about the disorder. In addition, young children will typically refuse to speak more often than older children

(Shipon-Blum, 2010). It is during this time that many young children with selective mutism may demonstrate oppositional and labile behaviors.

The sensory/pathology subtype had a fairly equal gender ratio. In consideration and examination of other significant characteristics in this subtype, overall, children appear to experience the most pathology with comorbid learning disabilities, ADHD, ODD, and depression. This is consistent with literature findings that children with selective mutism may have an associated developmental delay or learning problems nearly as often as an anxiety disorder (Cleater & Hand, 2001; Kolvin & Fundudis, 1981).

Externalizing behaviors in children with selective mutism are not as well documented; however, one study concluded that ADHD and ODD were 1 to 10 times more common in the selective mutism population (Ford et al., 1998). Also of clinical interest in this subtype is a factor not often explored: the psychopathology of the father of the child with selective mutism. The sensory/pathology subtype had the highest percentage of both paternal anxiety and depression. This may suggest that paternal psychopathology could negatively impact children with selective mutism, who are already vulnerable for psychopathology themselves. Therefore, as is the case with other subtypes, it may be important to not only address the children with selective mutism during treatment, but family members as well.

There is growing evidence that language disorders, especially in the area of expressive language, are prevalent in some children with selective mutism (McInnes et al., 2004; Shipon-Blum, 2010). Speech and language problems were especially prevalent in the anxiety/language mutism subtype. Children in this subtype had difficulties early on, with delays in speech and language, as this subtype reportedly did not reach

developmental speech milestones on time. Other language markers for this subtype were a high percentage of speech impediments and the largest percentage of children with selective mutism who received speech and language services.

The anxiety/language subtype also had the highest percentage of children with a comorbid anxiety disorder. Although some studies report comorbidities with anxiety disorders as high as 74% (Kristensen, 2000), only 29% of children with selective mutism in this study had a comorbid anxiety disorder. This supports the notion that not all children with selective mutism are anxious, and that it is only in a subtype of selective mutism that anxiety will be found.

The anxiety/language subtype had the highest mean score for anxiety, which could exacerbate their language difficulties. However, surprisingly, when examining questions for parents in regard to their own shyness and anxiety, the anxiety/language subtype had the lowest percentage of parents reporting these problems. In fact, both mothers and fathers in the anxiety/language subtype did not report being mute as children themselves. Although parents could be in denial about their own anxiety problems, children with selective mutism in this subtype were reported to have the highest percentage of environmental stresses, which could be the source of their anxiety. This implies that there may be strong environmental variables, whereas the family history of anxiety may play less of a role in some children with selective mutism (Dummit et al., 1997; Kristensen, 2000).

Often, children with selective mutism experience difficulties in school. Sometimes these are social and other times they are academic difficulties or a combination of the two. Therefore, it is not surprising that a low functioning mutism

subtype emerged. A hallmark of this subtype is more academic problems than the other subtypes. These children also experience higher numbers of both sensory and executive problems and have the largest percentage of IEPs. This subtype comprises as many females as males, with an even gender ratio. This subtype also has the largest percentage of mothers who were mute as children and had maternal depression. This could be a factor in the low functioning children in this subtype, i.e., if the mother is not engaged and does not attend regular school functions or advocate for the child.

Lastly, a global mutism subtype was found, which most likely would encompass the majority of children with selective mutism. The global subtype was the largest group ($n = 71$). This suggests that this profile may be more typical than the other subtypes and that the other subtypes are relatively rare. These children also have the highest percentage of high school students with selective mutism, which may suggest that developmentally, they were in a different subtype as younger children. However, with growth and maturity, problems typical in a different subtype lessened for them, and they transitioned to the global subtype. Not all children with selective mutism are severely anxious, have speech and language problems, are struggling academically, or experience sensory emotional/behavioral problems. The results of this study support the hypothesis that although there are many secondary factors that contribute to each subtype, there are indeed distinctions and characteristics absent in other subtypes. Findings suggest that these children may struggle with their self-esteem, yet executive, behavioral, and sensory deficits appear to be largely absent. As a result, this subtype may primarily have deficits in social anxiety and communication.

This subtype did appear to have some problems with flexibility. Inflexibility is not only a common characteristic of children with selective mutism, but also of many children without selective mutism. However, it should be noted that this subtype was the least impaired in most areas. These children may have an elevated level of anxiety; however, it may not be pervasive in all or even most environments, but rather in social performance situations. This assumption would make sense, given that anxiety is not a hallmark in this subtype, again suggesting that there is a large percentage of children with selective mutism who do not have worry, nervousness, or fear. Instead, their problems may be largely situational.

An additional aim of this study was to examine the parents of children with selective mutism with respect to their own endorsement of having selective mutism when they were children. It was hypothesized that if their offspring developed selective mutism, it would be a more severe and treatment-resistant form. Interestingly, the highest percentage of mothers who were mute as children was in the low functioning subtype and the highest percentage of fathers who were mute as children was in the emotional/behavioral subtype. These two subtypes may demonstrate the greatest variability in symptomatology, and therefore, this may suggest a more difficult to treat form of selective mutism. This does not mean that these two subtypes have more severe forms of selective mutism; rather, treatment strategies may include multiple facets due to the complexity of the symptoms.

Implications for assessment and intervention.

Typically, the role of the school psychologist consists of assessment, intervention, and consultation. Because of the prereferral process for students who are experiencing

academic or emotional/behavioral difficulties, the school psychologist would be one of the first alerted to the failure of speech in a child. Therefore, determining whether a child meets the diagnostic criteria for selective mutism, conducting a functional behavioral assessment to determine the settings in which it occurs and whom the child will speak with is an essential part of the evaluation. However, recognizing that internalizing behaviors pose a conceptual and practical challenge to the conventional functional analysis and, in general, a comprehensive approach to such analysis for selective mutism is not currently possible (Kern, Starosta, Cook, Bambara, & Gresham, 2007).

As direct observation is only one source of understanding children with selective mutism, it is important to gather a comprehensive developmental history and conduct direct evaluations of children with selective mutism, which will help to rule out a different condition that also is characterized by a lack of speech (e.g., autism, aphasia, mental retardation). Gathering information regarding prenatal and perinatal complications suggestive of neurological insults may help to explain language difficulties and delays. Ruling out other conditions that may better account for selective mutism is an essential step in assessment (Viana et al., 2009). It is also imperative to assess the child's global social-emotional functioning, as this will help to make informed decisions regarding additional mental health treatment (Carlson et al., 2008). Surprisingly, 75% to 80% of children with selective mutism do not have poor social skills. This is evidenced by children with selective mutism engaging in social comfort activities (Shipon-Blum, 2010).

The school psychologists' knowledge of the evidenced-based treatment literature is a valuable resource when working with students, teachers, and families of children

with selective mutism. The school psychologist can educate parents about options for treatment, including psychosocial, pharmacotherapy, and combined approaches (Carlson et al., 2008). The school psychologists' skills in treatment evaluation techniques, including the use of observations and rating scales, will allow for the collection of data necessary to better understand the impact that treatment decisions have on a child's school functioning (DuPaul & Carlson, 2005).

The school psychologist is a valuable resource as a consultant to families, school personnel, and medical professionals for children with selective mutism. The school psychologist has a unique opportunity to educate school personnel and the family of the selectively mute child regarding empirically supported treatments (Carlson et al., 2008). Although the role of the school psychologist is often greatly debated (Ross, Powell, & Elias, 2002), addressing the social-emotional needs of children has always been the responsibility of the school psychologist. In working with the selectively mute child, the school psychologist's important role is to support treatment and ultimately aid in the process of the child's voice being heard in the school environment.

School psychologists may also provide support to children and families as they proceed through the treatment process and participate in combination therapies that may include a psychosocial adjunct. In addition, school psychologists can educate parents and school professionals regarding the importance of early identification and intervention of selective mutism by creating awareness of the implications of the disorder when left untreated (Carlson et al., 2008). Reaching out to teachers of the selectively mute child is essential. Teachers provide a valuable source of information in the assessment of selective mutism (Cline & Baldwin, 2004). Teachers may have insight regarding

previously used strategies that were successful in remediating the mutism (Viana et al., 2009).

Another important consideration for school psychologists is school official cooperation when coordinating treatment. Because exposure-based practices are critical and more effective in environments where children are least likely to speak, especially school, heavy reliance on logistical support from school officials is imperative. This involves coordinating schedules, time set aside for exposures, increased involvement of a child's teacher and other school officials, permission for outside therapists to treat the selectively mute child via exposure activities in the school environment. If obstacles arise, then effective treatment is likely to be delayed or stymied (Vecchio & Kearney, 2007). School psychologists can also serve as a liaison between any outside treatment agency or mental health professional and the school. The school psychologist can help to ensure treatment efficacy and model and reinforce modifications or accommodations that would benefit the child with selective mutism.

One of the premises of this study was to identify subtypes of selective mutism and that this could have differential effects on intervention, potentially leading to better outcomes for affected children. For the global subtype, several different modalities may be successful or different techniques within one modality. These children may benefit from social skills training, learning to be more flexible, and activities to boost their self-esteem. The global subtype may also benefit from education about selective mutism, since this subtype is the least impaired overall and academically successful in comparison to the other subtypes. Their selective mutism may be particularly difficult for them,

based on their overall cognitive awareness and feelings of hopelessness that things will get better.

For the anxiety/language subtype, a combination of CBT and language therapy may be successful. Treatment strategies consisting of hierarchical ratings of anxious feelings for different environments or events that may be scary or make the child nervous and systematic desensitization could be one strategy used for this subtype. Efforts for communication could be rewarded through both verbal praise and tangible items. This subtype would also benefit from language evaluation and therapy, which may be provided within the school. After evaluating their verbal output and whether this varies for different situations or environments, these children might benefit from an intervention designed to increase verbal output and fluency, such as improving their mean length of utterance.

The low functioning subtype may benefit from multiple intervention strategies, related to both their selective mutism and other areas, including academic, social, and linguistic deficits. Family work and targeted academic interventions may be required, or they may need specially designed instruction to meet the child's academic needs within the school. It is critical to involve family in support of their child's work to ameliorate symptoms of selective mutism for all subtypes; however, for this subtype, maternal support and engagement may be especially critical. In this subtype, mothers were reported to have the highest percentages of both depression and mutism as children themselves. This factor may be a major contributor to the child's problems academically. However, this does not suggest that other family members should be excluded because

the considerable impairments experienced by this subtype warrant intervention for many individuals using multiple methods and modalities.

The sensory/pathology subtype may be a more treatment-resistant subtype, meaning utilization of different strategies may be necessary before one is successful. This subtype may benefit from a more ecological evaluation, exploring what factors are maintaining the symptoms of selective mutism. The other reason this subtype may be more treatment-resistant is due to the multiple comorbidities found within the subtype. Potentially, there are problems other than the original selective mutism diagnosis that may make this subtype more difficult to treat. If multiple approaches have been tried in the treatment of this subtype, these children may benefit from an adjunctive pharmacotherapeutic approach. This would need close monitoring by a licensed physician, and other treatments should be maintained. Considering the sensory, language, and motor difficulties, as well as academic concerns, many school team members could be involved in the treatment of this subtype, including occupational therapists and speech and language pathologists.

Lastly, the emotional/behavioral subtype treatment may focus on behavioral management strategies. Recognizing the functional determinants of the overt behaviors that this selective mutism subtype displays and other behaviors that interfere with this subtype's adjustment may be useful. A functional behavioral analysis may be particularly useful, then focusing on unimodal behavioral interventions, such as contingency management, stimulus fading, and shaping interventions. Differential reinforcement of social communication and verbal output would be useful. Of course, this is not a homogeneous disorder, and even with the differentiated subtypes, clinicians

should be wary of rigidly employing specific treatments for each subtype. However, this could provide a starting point.

Limitations and future research.

This study utilized a convenience sample of archival data. The data consisted of parent report only, and there was no control group to compare ratings on the MBRS, so normative comparisons and interrater reliability calculations were not possible. The generalizability of this study is limited to children with selective mutism from middle to high socioeconomic status, due to study data provided by the SM-art Center. The archival data did not provide an adequate sample of non-English speaking immigrant families who had children with selective mutism; therefore, the proposed ELL subtype did not emerge, and those who were bilingual were found in several subtypes. The sample consisted of differing numbers of males and females in the overall sample and within the subtypes, which was expected. The higher percentage of females within the subtypes may have factored into the results obtained, and these results may not generalize to a strictly male population. In addition, many of the subtypes had a small sample size, just marginally making the cutoff of $n = 10$ for a subtype. This also decreases the likelihood that the results have external validity.

This study utilized behavior rating scale scales that have not been externally validated at this time. They consisted of a subjective appraisal of children with selective mutism's emotional, psychological, behavioral, sensory, and academic functioning. The ratings were completed by only one parent, and external validity was not established. There was no other validated measure used in this study, so there was no opportunity to compare functioning or determine the validity of the characteristics of mutism variables

or MBRS subscales. Results suggest that this study was exploratory in nature and worthy of replication. It would be interesting to include a true ELL sample to see what, if any, unique characteristics emerge. It would also be of interest to more closely examine the factors that maintain selective mutism and the role that parents and teachers play in the child's progress. Finally, research is needed to determine whether different subtypes respond to different treatment methods, as this important treatment validity issue was not explored in the present study.

Regardless of these limitations and research needs, the results suggest that selective mutism is a socially debilitating childhood disorder that affects children in multiple ways, some of which are unique, based on the child's selective mutism subtype. Selective mutism impairs communication in multiple environments, sometimes due to anxiety, but there are often other cognitive and behavioral factors that maintain the muteness (Mulligan & Christner, 2006). As treating clinicians, the goal is to envision, evaluate, and understand the multiple facets and subtypes of this disorder. This would be a significant accomplishment when conceptualizing and testing treatment options for children with selective mutism.

References

- Achenbach, T. M., & Rescorla, L. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Albert-Stewart, P. L. (1986). Positive reinforcement in the short-term treatment of an electively mute child: A case study. *Psychological Reports, 58*, 571-576.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association [APA]. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Andersson, C. B., & Thomsen, P. H. (1998). Electively mute children: An analysis of 37 Danish cases. *Nordic Journal of Psychiatry, 52*, 231-238.
- Anstendig, K. (1998). Selective mutism: A review of treatment literature by modality from 1980-1996. *Psychotherapy, 35*, 381-390.
- Anstendig, K. (1999). Is selective mutism an anxiety disorder? Rethinking its DSM—IV classification. *Journal of Anxiety Disorders, 13*, 417-434.
- Arie, M., Henkin, Y., Lamy, D., Tetin-Schneider, S., Apter, A., & Sadeh, A. (2006). Reduced auditory processing capacity during vocalization in children with selective mutism. *Biological Psychiatry, 61*, 419-421.
- Atlas, J. (1993). Symbol use in the case of selective mutism. *Perceptual and Motor Skills, 76*, 1079-1082.

- Auster, E. R., Feeney-Kettler, K. A., & Kratochwill, T. R. (2006). Conjoint behavioral consultation: Application to the school-based treatment of anxiety disorders. *Education and Treatment of Children, 29*, 243-256.
- Bailey, S., & Hirst, S. (1991). A child who does not speak at school: The constructive use of a support worker for behavior. *Maladjustment and Therapeutic Education, 9*, 104-110.
- Barkley, R. A. (2003) Issues in the diagnosis of attention-deficit/hyperactivity disorder in children. *Brain and Development, 25*(2), 77-83.
- Bergman, R. L., Piacentini, J., & McCracken, J. T. (2002). Prevalence and description of selective mutism in a school-based sample. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*, 938-946.
- Biederman, J., Hirschfeld-Becker, D. R., Rosenbaum, J. F., Herot, C., Friedman, D., Snidman, N., . . . & Faraone, S. (2001). Further evidence of association between behavioral inhibition and social anxiety in children. *American Journal of Psychiatry, 158*, 1673-1679.
- Black, B. B., & Uhde, T. W. (1992). Elective mutism as a variant of social phobia. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 1090-1094.
- Black, B. B., & Uhde, T. W. (1994). Treatment of elective mutism with flouxetine: A double blind placebo-controlled study. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 1000-1006.

- Black, B. B., & Uhde, T. W. (1995). Psychiatric characteristics of children with selective mutism: A pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 847-855.
- Blanchard, L. T., Gurka, M., & Blackman, J. A. (2006). Emotional, developmental, and behavioral health of American children and their families: A report from the 2003 National Survey of Children's Health. *Pediatrics, 117*, 1202-1212.
- Boulos, C., Kutcher, S., Gardner, D., & Young, E. (1992). An open naturalistic trial of fluoxetine in adolescents and young adults with treatment resistant major depression. *Journal of Child and Adolescent Psychopharmacology, 2*, 103-111.
- Bradley, S., & Sloman, L. (1975). Elective mutism in immigrant families. *Journal of the American Academy of Child and Adolescent Psychiatry, 14*, 510-514.
- Braum, K. A., & Loftus, E. F. (1998). Advertising's misinformation effect. *Applied Cognitive Psychology, 12*, 569-591.
- Bronson, M. B. (2000). *Self-regulation in early childhood nature and nurture*. New York, NY: Guilford Press.
- Brown, B. J., & Lloyd, H. (1975). A controlled study of children not speaking at school. *Journal of the Association of Workers for Maladjusted Children, 3*, 49-63.
- Carlson, J. S., Kratochwill, T. R., & Johnson, H. F. (1999). Sertraline treatment of 5 children diagnosed with selective mutism: A single case research trial. *Journal of Child and Adolescent Psychopharmacology, 9*, 293-306.
- Carlson, J. S., Mitchell, A. D., & Segool, N. (2008). The current state of empirical support for the pharmacological treatment of selective mutism. *School Psychology Quarterly, 23*, 354-372.

- Caspi, A., & Silva, P. A. (1995). Temperamental qualities at age three predict personality traits in young adulthood: Longitudinal evidence from a birth cohort. *Child Development, 66*, 486-498.
- Chavira, D. A., Shipon-Blum, E., Hitchcock, C., Cohen, S., & Stein, M. B. (2007). Selective mutism and social anxiety disorder: All in the family? *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 1464-1472.
- Chess, S., & Thomas, A. (1989). Temperament and its functional significance. In S. I. Greenspan & G. H. Pollock (Eds.), *The course of life: Early childhood, Vol. II* (pp. 163-227). Madison, CT: International Universities Press, Inc.
- Chitester, D. (2005, January). *Theme: Understanding and treating selective mutism*. Workshop presented at the Selective Mutism Conference. Philadelphia, PA.
- Cline, T., & Baldwin, S. (2004). *Selective mutism in children* (2nd ed.). London, England: Whurr Publishers.
- Cohen, S. L., Chavira, D. A., & Stein, M. B. (2006). Practitioner review: Psychological interventions for children with selective mutism: A critical evaluation of the literature from 1990-2005. *Journal of Child Psychology and Psychiatry, 34*, 847-856.
- Cohen, S. L., Price, J. M., & Stein, M. B. (2006). Suffering in silence: Why a developmental psychopathology perspective on selective mutism is needed. *Developmental and Behavioral Pediatrics, 27*, 341-355.
- Crumley, F. E. (1993). Is elective mutism a social phobia? *Journal of the American Academy of Child Adolescent Psychiatry, 32*, 1081-1082.

- Crundwell, R. M. (2006). Identifying and teaching children with selective mutism. *Teaching Exceptional Children, 38*, 48-54.
- Cummins, J. (1987). Childhood bilingualism: Aspects of linguistic, cognitive, and social development. In P. Homel, M. Palić, & D. Aaronson (Eds.), *Bilingualism, language proficiency, and metalinguistic development* (pp. 57-73). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Cunningham, C. E., & McHolm, A. (2001). *COPEing with selective mutism: A collaborative school based approach*. Consultant's manual. Ontario, Canada: Cope Works.
- Cunningham, C. E., McHolm, A., & Boyle, M. H. (2006). Social phobia, anxiety, oppositional behavior, social skills, and self-concept in children with specific selective mutism, generalized selective mutism, and community controls. *European Child and Adolescent Psychiatry, 15*, 245-255.
- Cunningham, C. E., McHolm, A., Boyle, M. H., & Patel, S. (2004). Behavioral and emotional adjustment, family functioning, academic performance, and social relationships in children with selective mutism. *Journal of Child Psychology and Psychiatry, 45*, 1363-1372.
- Dow, S. P., Sonies, B. C., Scheib, D., Moss, S. E., & Leonard, H. L. (1995). Practical guidelines for the assessment and treatment of selective mutism. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 836-845.
- Dowrick, P. W., & Dove, C. (1980). The use of self-modeling to improve the swimming performance of spina bifida children. *Journal of Applied Behavior Analysis, 13*, 51-56.

- Dulcan, M. (1992). Information for parents and youth on psychotropic medications. *Journal of Child and Adolescent Psychopharmacology*, 2, 81-101.
- Dummit, E. S., III., Klein, R. G., Tancer, N. K., Asche, B., & Martin, J. (1996). Fluoxetine treatment of children with selective mutism: An open trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 615-621.
- Dummit, E. S., III., Klein, R. G., Tancer, N. K., Asche, B., Martin, J., & Fairbanks, J. (1997). Systematic assessment of 50 children with selective mutism. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 653-660.
- Dunn, L. M., & Dunn, L. M. (1997). *Peabody Picture Vocabulary Test—III*. Circle Pines, MN: American Guidance Services.
- DuPaul, G., & Carlson, J. S. (2005). Child psychopharmacology: How school psychologists can contribute to effective outcomes. *School Psychology Quarterly*, 20, 206-221.
- Elizur, Y., & Perednik, M. (2003). Prevalence and description of selective mutism in immigrant and native families: A controlled study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 1451-1459.
- Emerson, C. S., Mollet, G. A., & Harrison, D. W. (2005). Anxious-depression in boys: An evaluation of executive functioning. *Archives of Clinical Neuropsychology*, 20, 539-546.
- First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). *Structured clinical interview for the DSM—IV axis II personality disorders (SCID—II)*. Washington, DC: American Psychiatric Press.

- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). *Users guide for the structured clinical interview for the DSM—IV axis I disorders—Clinician version (SCID—CV)*. Washington, DC: American Psychiatric Press.
- Fisak, B. J., Oliveros, A., & Ehrenreich, J. T. (2006). Assessment and behavioral treatment of selective mutism. *Clinical Case Studies, 5*, 382-402.
- Fonagy, P. (1999, May). *Transgenerational consistencies of attachment: A new theory*. Paper presented at the Developmental and Psychoanalytic Discussion Group, American Psychoanalytic Discussion Meeting, Washington, DC.
- Ford, M. A., Kratochwill, T. R., Sladeczek, I. E., & Carlson, J. (1998). Selective mutism: Phenomenological characteristics. *School Psychology Quarterly, 13*, 192.
- Freeman, J. B., Garcia, A. M., Miller, L. M., Dow, S. P., & Leonard, H. L. (2004). Selective mutism. In T. L. Morris & J. S. March (Eds.), *Anxiety disorders in children and adolescents* (2nd ed., pp. 280-301). New York, NY: Guilford Press.
- Garber, J., & Robinson, N. S. (1997). Cognitive vulnerability in children at risk for depression. *Cognitive Emotion, 11*, 619-635.
- Garcia, A. M., Freeman, J. B., Francis, G., Miller, L. M., & Leonard, H. L. (2004). Selective mutism. In T. H. Ollendick & J. S. March (Eds.), *Phobic and anxiety disorders in children and adolescents: A clinician's guide to effective psychosocial and pharmacological interventions* (pp. 433-455). New York, NY: Oxford University Press.
- Giddan, J. J., Ross, G. J., Sechler, L. L., & Becker, B. R. (1997). Selective mutism in elementary school: Multidisciplinary interventions. *Language, Speech and Hearing Services in Schools, 28*(2), 127-133.

- Gillberg, C. (1989). Asperger syndrome in 23 Swedish children. *Developmental Medical Child Neurology, 31*, 520-531.
- Goll, K. (1979). Role, structure and subculture in families of elective mutists. *Family Process, 18*, 55-56.
- Gortmaker, V., Warnes, E. D., & Sheridan, S. M. (2004). Conjoint behavioral consultation: Involving parents and teachers in the treatment of a child with selective mutism. *Proven Practice, 5*, 66-72.
- Gray, R. M., Jordan, C. M., Ziegler, R. S., & Livingston, R. B. (2002). Two sets of twins with selective mutism: Neuropsychological findings. *Child Neuropsychology, 8*, 41-51.
- Greenspan, S. I. (1997). Autism. *New England Journal of Medicine, 337*(21), 1555-1557.
- Gumpel, T. (1994). Social competence and social skills training for persons with mental retardation: An expansion of a behavioral paradigm. *Education and Training in Mental Retardation and Developmental Disabilities, 29*, 194-201.
- Hadley, N. H. (1994). *Elective mutism: A handbook for educators, counselors and health care professionals*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Hale, J.B., & Fiorello, C.A. (2004). *School neuropsychology: A practitioner's handbook*. New York, NY: Guilford Press.
- Hayden, T. L. (1980). Classification of elective mutism. *Journal of the American Academy of Child and Adolescent Psychiatry, 19*, 118-133.
- Hesselman, S. (1983). Elective mutism in children: 1877 to 1981. *Acta Paedopsychiatry, 49*, 297-310.

- Hirschfeld, D., Biederman, J., Brody, L., Faraone, S., & Rosenbaum, J. (1997). Associations between expressed emotion and child behavioral inhibition and psychopathology: A pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 205-213.
- Jackson, M. F., Allen, R. S., Boothe, A. B., Nava, M. L., & Coates, A. (2005). Innovative analyses and interventions in the treatment of selective mutism. *Clinical Case Studies, 4*, 81-112.
- Jacobsen, T. (1995). Case study: Is selective mutism a manifestation of dissociative identity disorder? *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 863-866.
- Joseph, P. R. (1999). Selective mutism: The child who doesn't speak at school. *Pediatrics, 104*, 308-309.
- Kagan, J., Reznick, J. S., & Snidman, N. (1987). The physiology and psychology of behavioral inhibition in children. *Child Development, 58*, 1459-1473.
- Kagan, J., Reznick, J. S., & Snidman, N. (1988). Biological bases of childhood shyness. *Science, 240*, 176-171.
- Kagan, J., Reznick, J. S., Snidman, N., Johnson, M. O., Gibbons, J. L., Gersten, M., . . . & Rosenbaum, J. (1990). Origins of panic disorder. In J. Ballenger (Ed.), *Neurobiology of Panic Disorder* (pp. 77-87). New York, NY: Wiley & Liss.
- Kehle, T. J., Bray, M. A., Margiano, S., Theodore, L. A., & Zhou, Z. (2002). Self-modeling as an effective intervention for students with serious emotional disturbance: Are we modifying children's memories? *Psychology in the Schools, 39*, 203-207.

- Kehle, T. J., Madaus, M. R., Baratta, V. S., & Bray, M. A. (1998). Augmented self-modeling as a treatment for children with selective mutism. *Journal of School Psychology, 36*, 247-260.
- Kehle, T. J., Owen, S. V., & Cressy, E. T. (1990). The use of self-modeling as an intervention in school psychology: A case of an elective mute. *School Psychology Review, 19*, 115-121.
- Keller, M. B. (2001). The lifelong course of social anxiety disorder: A clinical perspective. *Behaviour Research and Therapy, 39*, 273-287.
- Kern, L., Starosta, K. M., Cook, C. R., Bambara, L. M., & Gresham, F. R. (2007). Functional assessment-based intervention for selective mutism. *Behavioral Disorders, 32*, 94-108.
- Kessler, R. C. (2003). The impairments caused by social phobia in the general population: Implications for intervention. *Acta Psychiatrica Scandinavica, 108*, (S417), 19-27.
- Kolvin, T., & Fundudis, T. (1981). Elective mute children: Psychological development and background factors. *Journal of Child Psychology and Psychiatry, 22*(3), 219-232.
- Kopp, S., & Gillberg, C. (1997). Selective mutism: A population based study: A research note. *Journal of Child Psychology and Psychiatry, 38*, 257-262.
- Kratochwill, T. (1981). *Selective mutism: Implications for research and treatment*. Hillsdale, NJ: Erlbaum.

- Kristensen, H. (2000). Selective mutism and comorbidity with developmental disorder/delay, anxiety disorder, and elimination disorder. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*, 249-256.
- Kristensen, H. (2001). Multiple informants' report of emotional and behavioral problems in a nation-wide sample of selective mute children and controls. *European Child and Adolescent Psychiatry, 10*, 135-142.
- Kristensen, H. (2002). Non-specific markers of neurodevelopmental disorder/delay in selective mutism: A case control study. *European Child and Adolescent Psychiatry, 11*, 71-78.
- Kristensen, H., & Oerbeck, B. (2006). Is selective mutism associated with deficits in memory span and visual memory? An exploratory case-control study. *Depression and Anxiety, 23*, 71-76.
- Kristensen, H., & Torgersen, S. (2001). MCMI—II personality traits and symptom traits in parents of children with selective mutism: A case control study. *Journal of Abnormal Psychology, 110*, 648-652.
- Krohn, D. D., Weckstein, S. M., & Wright, H. L. (1992). A study of the effectiveness of a specific treatment for elective mutism. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 711-718.
- Krysanski, V. (2003). A brief review of selective mutism literature. *Journal of Psychology, 137*(1), 29-40.
- Kumpulainen, K. (2002). Phenomenology and treatment of selective mutism. *Therapy in Practice, 16*, 175-180.

- Kumpulainen, K., Rasanen, E., Raaska, H., & Somppi, V. (1998). Selective mutism among second graders in elementary school. *European Child and Adolescent Psychiatry, 11*, 71-78.
- Labbe, E. E., & Williamson, D. A. (1984). Behavioral treatment of elective mutism: A review of the literature. *Clinical Psychology, 4*, 273-292.
- Lafferty, J. E., & Constantino, J. N. (1998). Fluvoxamine in selective mutism. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 12-13.
- Lahey, B. B., Miller, T. L., Gordon, R. A., & Riley, A. W. (1999). Developmental epidemiology of the disruptive behavior disorders. In H. C. Quay & A. E. Hogan (Eds.), *Handbook of disruptive behavior disorders* (pp. 23-48). New York, NY: Plenum Press.
- Leech, S. L., Larkby, C. A., Day, R., & Day, N. L. (2006). Predictors and correlates of high levels of depression and anxiety symptoms among children at age 10. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 223-230.
- Leonard, H. L., & Topol, D. A. (1993). Elective mutism. In H. L. Leonard (Ed.), *Child and adolescent psychiatric clinics of North America: Anxiety disorders* (pp. 695-708). Philadelphia, PA: Saunders.
- Lesser-Katz, M. (1988). The treatment of elective mutism as stranger reaction. *Psychotherapy Theory Research Practice and Training, 25*, 305-313.
- Lindamood, C., & Lindamood, P. (1971). *Lindamood Auditory Conceptualization Test manual*. Hingham, MA: Teaching Resources Corporation.

- Loftus, E. F. (1997). Memories for a past that never was. *Current Directions in Psychological Science*, 6, 60-65.
- Louden, D. M. (1987). Elective mutism: A case study of a disorder of childhood. *Journal of the National Medical Association*, 79, 1,043-1,048.
- MacGregor, R., Pullar, A., & Cundall, D. (1994). Silent at school: Elective mutism and abuse. *Archives of the Disabled Child*, 70, 540-541.
- Magee, W. J., Eaton, W. W., Wittchen, H., McGonagle, K. A., & Kessler, R. C. (1996). Agoraphobia, simple phobia, and social phobia in the national comorbidity survey. *Archives of General Psychiatry*, 52, 159-168.
- Manassis, K., & Bradley, S. (1994). The development of childhood anxiety disorders: Toward an integrated model. *Journal of Applied Developmental Psychology*, 15, 345-366.
- Manassis, K., Fung, D., Tannock, R., Sloman, L., Fiksenbaum, L., & McInnes, A. (2003). Characterizing selective mutism: Is it more than social anxiety? *Depression and Anxiety*, 18, 153-161.
- Manassis, K., & Tannock, R. (2008). Comparing interventions for selective mutism: A pilot study. *Canadian Journal of Psychiatry*, 53, 700-703.
- Manassis, K., Tannock, R., Garland, E. J., Minde, K., McInnes, A., & Clark, S. (2007). The sounds of silence: Language, cognition, and anxiety in selective mutism. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46, 1187-1195.

- Masten, W. G., Stacks, J. R., Caldwell-Colbert, A. T., & Jackson, J. S. (1996). Behavioral treatment of a selectively mute Mexican-American boy. *Psychology in the Schools, 33*, 56-60.
- McInnes, A., Fung, D., Manassis, K., Fiksenbaum, L., & Tannock, R. (2004). Narrative skills in children with selective mutism: An exploratory study. *American Journal of Speech-Language Pathology, 13*(4), 304.
- Mendlowitz, S., Manassis, K., Bradley, S., Scapillato, D., Mieztis, S., & Shaw, B. F. (1999). Cognitive behavioral group treatments in childhood anxiety disorders: The role of parental involvement. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 1223-1229.
- Mendlowitz, S., & Scapillato, D. (1996). *Coping Bear Workbook and Notebook*. Toronto, Ontario, Canada: Hospital for Sick Children.
- Messer, S. C., & Beidel, D. C. (1994). Psychosocial correlates of childhood anxiety disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*(7), 975-983.
- Meyers, S. (1984). Elective mutism in children: A family systems approach. *American Journal of Family Therapy, 12*, 39-45.
- Millon, T. (1987). *Manual for the MCMI—II*. Minneapolis, MN: National Computer Systems.
- Moldan, M. B. (2005). Selective mutism and self-regulation. *Clinical Social Work Journal, 33*(3), 291-307.
- Mulligan, C. A., & Christner, R. W. (2006). Understanding and treating selective mutism. In R. B. Mennuti, A. Freeman, & R. W. Christner (Eds.), *Cognitive behavioral*

- interventions in educational settings: A handbook for practice* (pp. 107-120). New York, NY: Routledge.
- O'Reilly, M., Cannella, H., Sigafos, J., & Lancioni, G. (2006). Social and communication skills interventions. In J. Luiselli (Ed.), *Antecedent assessment and intervention: Supporting children and adults with developmental disabilities in community settings* (pp. 187-206). Baltimore, MD: Paul H. Brookes.
- O'Reilly, M., McNally, D., Sigafos, J., Lancioni, G., Green, V., Edrisinha, C., . . . Didden, R. (2008). Examination of a social problem-solving intervention to treat selective mutism. *Behavior Modification, 32*, 182-195.
- Paez, P., & Hirsch, M. (1988). Oppositional defiant disorder and elective mutism. In C. J. Kestenbaum & D. T. Williams (Eds.), *Handbook of clinical assessment of children and adolescents* (pp. 800-811). New York, NY: University Press.
- Pionek-Stone, B., Kratochwill, T. R., Sladeczek, I., & Serlin, R. C. (2002). Treatment of selective mutism: A best-evidence synthesis. *School Psychology Quarterly, 17*, 168-190.
- Pordes, M. D. (1992). Intervention with the selectively mute child. *Psychology in the Schools, 29*, 367-376.
- Powell, S., & Dailey, M. (1995). When to intervene in selective mutism: The multimodal treatment of a case of persistent selective mutism. *Psychology in the Schools, 32*, 114-123.
- Remschmidt, H., Poller, M., Herpertz-Dahlman, B., Hennighausen, K., & Gutenbrunner, C. (2001). A follow up study of 45 patients with elective mutism. *European Archives of Psychiatry and Clinical Neuroscience, 251*(6), 284-296.

- Richburg, M. L., & Cobia, D. C. (1994). Using behavioral techniques to treat elective mutism: A case study. *Elementary School Guidance and Counseling, 28*, 214-220.
- Riddle, M. A., Hardin, M. T., King, R., Scahill, L., & Woolston, J. L. (1990). Fluoxetine treatment of children and adolescents with Tourette's and obsessive compulsive disorders: Preliminary clinical experience. *Journal of the American Academy of Child and Adolescent Psychiatry, 29*, 45-48.
- Rosenbaum, J. F., Biederman, J., Bolduc-Murphy, E. A., Faraone, S. V., Chaloff, J., Hirschfield, D., & Kagan, J. (1993). Behavioral inhibition in childhood: A risk factor for anxiety disorders. *Harvard Review Psychiatry, 1*, 2-16.
- Ross, M. R., Powell, S. R., & Elias, M. J. (2002). New roles for school psychologists: Addressing the social and emotional learning needs of students. *School Psychology Review, 31*, 43-52.
- Rothbart, M. K., & Bates, J. E. (1998). Temperament. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (Vol. 3, 5th ed., pp. 105-176). New York, NY: Wiley.
- Schill, M. T., Kratochwill, T. R., & Gardner, W. I. (1996). An assessment protocol for selective mutism: Analogue assessment using parents as facilitators. *Journal of School Psychology, 31*, 1-21.
- Schinka, J. A., Busch, R. M., & Robichaux-Keene, N. (2004). A meta-analysis of the association between the serotonin transporter gene polymorphism (5-HTTLPR) and trait anxiety. *Molecular Psychiatry, 9*, 197-202.
- Schvarzman, P., Hornshtein, I., Klein, E., Yechezkel, A., Ziv, M., & Herman, J. (1990). Elective mutism in family practice. *The Journal of Family Practice, 31*, 319-320.

- Schwartz, R. H., Freedy, A. S., & Sheridan, M. J. (2006). Selective mutism: Are primary care physicians missing the silence? *Clinical Pediatrics*, *45*(1), 43-48.
- Schwartz, C. E., Snidman, N., & Kagan, J. (1999). Adolescent social anxiety as an outcome of inhibited temperament in childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*, *38*, 1008-1015.
- Seidel, L., & Walkup, J. T. (2006). Selective serotonin reuptake inhibitor use in the treatment of the pediatric non-obsessive-compulsive disorder anxiety disorders. *Journal of Child and Adolescent Psychopharmacology*, *16*, 171-179.
- Semel, E., Wiig, E. H., & Secord, W. A. (1995). *Clinical evaluation of language fundamentals* (3rd ed.). Examiner's manual. San Antonio, TX: Psychological Corporation.
- Sen, S., Burmeister, M., & Ghosh, D. (2004). Meta-analysis of the association between a serotonin transporter promoter polymorphism (5-HTTLPR) and anxiety-related personality traits. *American Journal of Medical Genetics*, *127*, 85-89.
- Sharp, W. G., Sherman, C., & Gross, A. M. (2007). Selective mutism and anxiety: A review of the current conceptualization of the disorder. *Journal of Anxiety Disorders*, *21*(4), 568-579.
- Shipon-Blum, E. (2010, April). *Theme: Setting the Stage for Assessment and Communication of Selective mutism*. Workshop presented at the Selective Mutism Conference. Philadelphia, PA.
- Shipon-Blum, E. (2004). Selective Mutism Anxiety Research & Treatment Center. Retrieved on January 6, 2005, from:
http://www.selectivemutismcenter.org/cms/about_dr_e.aspx

- Shipon-Blum, E. (2002, March). *The school psychologist's guide to understanding & managing the selectively mute child*. Workshop presented at the 22nd annual spring conference for the Association of School Psychologists of Pennsylvania (ASPP). Harrisburg, PA.
- Silverman, W. K., & Albano, A. M. (1996). *The anxiety disorders interview schedule for children for DSM—IV, child and parent versions*. San Antonio, TX: Psychological Corporation.
- Sluzki, C. E. (1983). The sounds of silence: Two cases of elective mutism in bilingual families. *Family Therapy Collections*, 6, 68–77.
- Smoller, J. W., Yamaki, L. H., Fagerness, J. A., Biederman, J., Racette, S., Laird, N., . . . Sklar, P. (2005). The corticotrophin-releasing hormone gene and behavioral inhibition in children at risk for panic disorder. *Biological Psychiatry*, 57, 1485-1492.
- Snowling, M. J., Bishop, D. V., Stothard, S. E., Chipchase, B., & Kaplan, C. (2006). Psychosocial outcomes at 15 years of children with a preschool history of speech-language impairment. *Journal of Child Psychology and Psychiatry*, 47, 759-765.
- Sroufe, L. A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool: The roots of maladaptation and competence. In M. Perlmutter (Ed.), *Minnesota Symposium in Child Psychology* (Vol. 16, pp. 41-83). Hillsdale, NJ: Erlbaum Associates.
- Standart, S., & Le Couteur, A. (2003). The quiet child: A literature review of selective mutism. *Child and Adolescent Mental Health*, 8, 154-160.

- Stein, M. B., & Bienvenu, O. J. (2004). Diagnostic classification of anxiety disorders: *DSM—V* and beyond. In D. S. Charney & E. J. Nestler (Eds.), *The neurobiology of mental illness* (2nd ed., pp. 525-534). New York, NY: Oxford University Press.
- Steinhausen, H. C., & Adamek, R. (1997). The family history of children with elective mutism: A research report. *European Child and Adolescent Psychiatry, 6*, 107-111.
- Steinhausen, H. C., & Juzi, C. (1996). Elective mutism: An analysis of 100 cases. *Journal of the American Academy of Adolescent Psychiatry 28*, 279-281.
- Steinhausen, H. C., Wachter, M., Laimbock, K., & Metzke, C. W. (2006). A long-term outcome study of selective mutism in childhood. *Journal of Child Psychology and Psychiatry, 47*, 751-756.
- Stone, B. P., Kratochwill, T. R., Sladeczek, I., & Serlin, R. C. (2002). Treatment of selective mutism: A best-evidence synthesis. *School Psychology Quarterly, 17*(2), 168-190.
- Subak, M., West, M., & Carlin, M. (1982). Elective mutism: An expression of family psychopathology. *International Journal of Family Psychiatry, 3*, 335-344.
- Tatem, D., & DelCampo, R. (1995). Selective mutism in children: A structural family therapy approach to treatment. *Contemporary Family Therapy, 17*, 177-194.
- Theodore, L. A., Bray, M. A., Kehle, T. J., & Dioguardi, R. J. (2003). Contemporary review of group-oriented contingencies for disruptive behavior. *Journal of Applied School Psychology, 20*, 79-101.
- Thomas, A., & Chess, S. (1977). *Temperament and development*. Oxford, England: Brunner/Mazel.

- Toppelberg, C. O., Tabors, P., Coggins, A., Lum, K., & Burger, C. (2005). Differential diagnosis of selective mutism in bilingual children. *Journal of the American Academy of Child Adolescent Psychiatry, 44*, 592-595.
- Van Ameringen, M., Mancini, C., & Farvolden, P. (2003). The impact of anxiety disorders on educational achievement. *Journal of Anxiety Disorders, 17*, 561-571.
- Vecchio, J. L., & Kearney, C. A. (2005). Selective mutism in children: Comparison to youths with and without anxiety disorders. *Journal of Psychopathology and Behavior Assessment, 27*, 31-37.
- Vecchio, J. L., & Kearney, C. A. (2007). Assessment and treatment of a Hispanic youth with selective mutism. *Clinical Case Studies, 6*, 34-43.
- Velting, O. N., & Albano, A. (2001). Current trends in the understanding and treatment of social phobia in youth. *Journal of Child Psychology and Psychiatry, 42*, 127-140.
- Viana, A. G., Beidel, D. C., & Rabian, B. (2009). Selective mutism: A review and integration of the last 15 years. *Clinical Psychology Review, 29*(1), 57-67.
- Wagner, K. D., Berard, R., Stein, M. B., Wetherhold, E., Carpenter, D. J., Perera, P., . . . Machin, A. (2004). A multicenter, randomized, double-blind, placebo-controlled trial of paroxetine in children and adolescents with social anxiety disorder. *Archives of General Psychiatry, 61*, 1153-1162.
- Webster, R. I., Majnemer, A., Platt, R. W., & Shevell, M. I. (2005). Motor function at school age in children with a preschool diagnosis of developmental language impairment. *Journal of Pediatrics, 146*, 80-85.

- Wilkins, R. (1985). A comparison of elective mutism and emotional disorders in children. *British Journal of Psychiatry*, *146*, 198-203.
- Wittchen, H. U., & Fehm, L. (2003). Epidemiology and natural course of social fears and social phobia. *Acta Psychiatrica Scandinavica*, *108*(S417), 4-18.
- Wolff, S. (1995). *Loners: The life path of unusual children*. New York, NY: Routledge.
- Wood, J. (2006). Effect of anxiety reduction on children's school performance and social adjustment. *Developmental Psychology*, *42*, 345-349.
- Wright, H. H., Cuccaro, M., Leonhardt, T., Kendall, D., & Anderson, J. (1995). Case study: Fluoxetine in the multimodal treatment of a preschool child with selective mutism. *Journal of the American Academy Child and Adolescent Psychiatry*, *34*, 857-862.
- Wright, H. H., Holmes, G. R., Cuccaro, M. L., Leonhardt, T., & Tami, L. (1994). A guided bibliography of the selective mutism (elective mutism) literature. *Psychoanalytic Report*, *74*, 995-1007.
- Yanof, J. (1996). Language, communication, and transference in child analysis: Selective mutism: The medium is the message: Is child analysis really analysis? *Journal of the American Psychoanalytic Association*, *44*, 79-116.
- Yapko, D. (2001). Selective mutism: Developmental delays and regressions. *Journal of Developmental & Behavioral Pediatrics*, *22*, 123-126.
- Yeganeh, R., Beidel, D. C., Turner, S. M., Pina, A., & Silverman, W. (2003). Clinical distinctions between selective mutism and social phobia: An investigation of childhood psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry*, *42*, 1069-1075.

Zaider, T. I., & Heimberg, R. G. (2003). Non-pharmacologic treatments for social anxiety