Selective mutism: Unwilling to speak or scared silent?

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SELECTIVE MUTISM: UNWILLING TO SPEAK
OR SCARED SILENT?

by

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ABSTRACT

Selective Mutism: Unwilling to Speak or Scared Silent?

by

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To examine the relationship between selective mutism and anxiety, 15 children with selective mutism (SM) were compared to 15 children with anxiety disorders (AD) and a control group of 15 nonclinical children (CN). The study included children age 4-10 years and relied on information from multiple informants. Each participant was assessed by the Anxiety Disorders Interview Schedule for Children for DSM-IV, Child Behavior Checklist, Teacher Report Form, Behavioral Style Questionnaire, and the Family Environment Scale. Results indicate that SM children closely resemble AD children. The SM and AD groups substantially differed from the CN group with regards to internalizing behavior problems. There were no differences among the groups with regards to externalizing behavior problems and reports of externalizing problems were low among all groups. 100% of SM children received a diagnosis of social phobia and 53% received an additional anxiety diagnosis. These results support that selective mutism is anxiety based.
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CHAPTER 1

INTRODUCTION

Everyone has certain expectations of how their children will develop and behave. They expect them to crawl, stand, and walk. They look forward to hearing them laugh, babble, and talk. It is expected that they will eat, play, and sleep. As children grow, they are supposed to make friends and go to school. Parents demand their children to listen to them, respect them, and comply with their rules. Children are also expected to respect others and follow rules in other situations (e.g., school). More specifically, people expect for children to speak when spoken to and socialize with others their age. When one or more of these expectations are violated, serious disruptions in the family can occur and hinder a child’s developmental progress.

A failure to speak in social situations can drastically interfere with both the social and educational development of a child. A silent child in the back of the classroom most likely receives little attention from the teacher, especially because he or she never needs to be told, “Please be quiet.” Furthermore, if a child refuses to speak when called upon, he or she will probably be overlooked the next time around. Additionally, if a child is unable or unwilling to communicate to teachers what he or she has learned, he or she may be retained or placed in a special education program. Therefore, violating the expectation to speak can significantly interfere with a child’s education.
Non-speaking may also interfere with the social development of a child. Children who do not talk are likely to be ignored by fellow classmates who do not find it much fun to play with a child that never speaks. Furthermore, these children are often ridiculed and ostracized by their peers (Black & Uhde, 1992). One can imagine the detrimental effects that not speaking can have on a child's self-esteem. When children do not verbally communicate with others, they are unable to acquire appropriate skills needed to develop socially (e.g., starting a conversation, making friends). Furthermore, the extended periods of time in which the child does not speak may halt his or her speech and language development (Kumpulainen et al., 1998). Thus, when the expectation to speak is violated, a child's social communication is also hampered.

**Classification**

By definition, selective mutism is a disorder that interferes with a child's educational functioning or social communication. Selective mutism, classified in the DSM-IV-TR under disorders usually first diagnosed in infancy, childhood, and adolescence, is defined as the persistent failure to speak in social situations (where speech is expected) despite speaking in other situations (American Psychological Association, 1994). To meet the diagnosis of selective mutism, the symptoms must last for more than one month. However, a diagnosis should not be given during the first month of school or if language barriers exist (APA, 1994). Furthermore, the mutism must not be due to communication disorders or solely occur during a pervasive developmental disorder or schizophrenia. Children with selective mutism may be given a comorbid anxiety disorder diagnosis (e.g., social phobia) if both disorders are present. (APA, 1994).
The current classification of selective mutism in the DSM-IV-TR has been questioned. There is an ongoing debate as to whether the disorder is anxiety-based or an oppositional behavior (Anstendig, 1999). Historically, documented recognition of selective mutism dates as far back as 1877 when the terms voluntary mutism and aphasia voluntaria were used to describe children capable of speaking, yet silent of their own will (Porjes, 1992). In the 1930s, the term elective mutism was coined to define the behavior of children who spoke only to certain people (e.g., close friends or relatives), but not others (Louden, 1987). The term is a direct translation of the German phrase “electiver mutismus” used by Tramer in 1934 to describe a boy who did not speak at school (Dummit et al., 1997). The classification of this disorder was changed to the term selective mutism with the publication of the American Psychiatric Association’s (1994) DSM-IV-TR. This change indicated that the condition is no longer conceived as primarily controlled by the child (Kaduson et al., 1997). Thus, even though the child may refuse to speak to certain people and/or in certain situations, the child is not necessarily electing to be mute. This change from “elective” to “selective” further supports the notion that mutism is not an oppositional behavior of a manipulative child, but rather the result of a child’s anxiety (Dow et al., 1995).

Epidemiology and Etiology

Selective mutism is rare, with prevalence rates of less than 1% reported in the literature (Wright et al., 1994). However, it is believed that the actual prevalence of this disorder may be higher, for selective mutism is often underreported in isolated families and is usually not recognized until school entry because the child usually speaks freely at
home. Parents can also conceptualize it as a shyness that the child will outgrow. Thus, it is often the case that the mutism is not perceived to be a problem. Selective mutism occurs slightly more often in females than males with a ratio of 1.6 to 1. The age of onset is typically 3 to 6 years, and the average age of first intervention is 6 to 8 years (Ford et al., 1998).

In this population, mutism predominately takes place in the school environment while a child usually speaks freely at home. Children with selective mutism have commonly been characterized as shy, timid, overly sensitive, inhibited, anxious, phobic, socially withdrawn, stubborn, and fearful of new situations. Others have characterized the selectively mute child as manipulative, negativistic, controlling, and oppositional. Further, a family history of shyness in the selectively mute child is frequently reported in the literature (Black & Uhde, 1995; Ford et al., 1998; Steinhausen & Juzi, 1996).

There is no known etiology for selective mutism. Historically, the behavior was seen as a response to a traumatic event or intrapersonal conflict. Other theories include family pathology, family dynamics, and the fear of hearing one's voice (Labbe & Williamson, 1984). Recently, selective mutism has been considered a manifestation of an anxiety disorder or a symptom of another childhood disorder. However, researchers do not agree on any one etiology that would explain this disorder. There is an understanding though, that no matter what the cause of the disorder, the behavior almost always results in a secondary gain for the child (e.g., others speaking for the child), which reinforces the pattern of mutism (Anstendig, 1998).
Treatment

Because a clear diagnostic understanding of selective mutism is lacking, there is no clear direction for the treatment of selective mutism. While most attempted interventions are similar to treatments for anxiety-based disorders, there is no consensual treatment of choice. However, there is consensus that the prognosis of selective mutism is better for children who receive early intervention, for it reduces the secondary gain and difficulties associated with this disorder (Hooper et al., 1992). Further, there is little known about the treatment of persistent selective mutism, except that it is often intractable to treat and spontaneous recovery is considered extremely rare.

Future Directions and Purpose of Study

The current literature on selective mutism suggests a promising future, for many studies have illustrated effectiveness in the treatment of this disorder. As previously mentioned, many studies employed anxiety-based interventions, as the current classification of selective mutism has shaped the way researchers and professionals have treated this disorder. Recent research has suggested that a change in classifying selective mutism in the DSM is needed to provide a better understanding of this unusual phenomenon. Instead of being classified under “other disorders of childhood,” it has been posited that selective mutism should be classified as an anxiety disorder (Anstendig, 1999). Although a reconceptualization like this will provide more concrete methods for assessing and treating selective mutism, there is currently not enough evidence to warrant this change.
This paper will: a) review the literature on selective mutism, b) investigate conceptual issues in the classification of selective mutism that affect its assessment and treatment, c) provide a more accurate representation of the nature of selective mutism, and d) suggest future research questions. Much of the literature on selective mutism has consisted of single case reports with very small sample sizes (N<6). The majority of these articles focus on interventions, which are predominately behavioral or psychodynamic approaches. Many articles address the debate regarding the classification of selective mutism, though none have provided conclusive results. There is a lack of controlled studies in the research. To gain a more accurate representation of selective mutism, a relatively large controlled study is needed to compare children with selective mutism to children with anxiety disorders.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Historical Overview

In 1877, Kussmaul first identified the reluctance or refusal to speak as aphasia voluntaria (Dummit et al., 1997). The term described people who had forced themselves into mutism for no disclosed reason. This phenomenon was later described as elective mutism in 1934 when Tramer coined the term to describe a group of verbally intact children who spoke only with select peers and family members (March et al., 1995). Children with elective mutism fail to produce any speech in specific situations, and this behavior typically occurs in school (Kolvin & Fundidis, 1981; Wright, et al., 1994).

In addition to elective mutism, there have been other terms to explain this behavior, such as speech shyness, speech phobia, speech avoidance, speech inhibition, thymogenic mutism, ideogenic mutism, neurotic mutism, and functional mutism (Hooper et al., 1992). The most recent phrase used to describe this behavioral presentation, selective mutism, was established in 1994 with the publication of the DSM-IV. Elective mutism was replaced with selective mutism to remove the notion that the child controlled the mutism, for it is not known if a child is “electing” to be mute or unable to speak (APA, 1994).

Mutism has been defined as the inability or unwillingness to speak. Thus, there are many different forms of mutism, which are either biologically or psychologically
based (Hooper et al., 1992). Mutism with a biological basis is often associated with profound deafness and hearing loss, profound mental retardation, infantile autism, akinetic mutism, or children with severe neuromuscular involvement. Psychological mutism occurs when a child remains mute, despite having the ability to speak, without any known neurological or biological cause. Traumatic mutism and selective mutism are the two types of mutism with a psychological basis. Traumatic mutism is considered to be a hysterical phenomenon, for it has a sudden onset immediately following a traumatic event. Reports of traumatic mutism in children are extremely rare. Selective mutism refers to a child who speaks freely with intimates but is silent around others for no apparent reason. While selective mutism is more prevalent than traumatic mutism, it is still atypical (Kolvin & Fundudis, 1981).

The term progressive mutism was introduced in 1987 and can perhaps be considered an extreme form of selective mutism or a separate form of psychological mutism. In progressive mutism, a child has the ability to speak but progressively becomes silent over time and eventually does not speak at all, even to close family members (Paniagua & Saeed, 1988). Like traumatic mutism, there are very few cases of progressive mutism reported in the literature. There has also been a distinction made between persistent and transient mutism. Unlike persistent selective mutism, transient selective mutism spontaneously disappears within a few months and may be a form of "adaption reaction." It is not uncommon to see transient mutism at school entry, so the DSM-IV diagnosis is limited to mutism that occurs after the first month of school (Andersson & Thomsen, 1998; APA, 1994).
Characteristics of Selectively Mute Children

The defining feature of children with selective mutism is their reluctance to speak. Selectively mute children usually speak freely at home, with family members, and to a select cohort of friends. The mutism typically occurs in the school setting. There is usually an insidious development of shyness during the preschool years, with parents reporting that their children were always like this (Dow et al., 1995; Kolvin and Fundudis, 1981). There have been cases of sudden onset reported in the literature, although this mutism usually began after a traumatic event (e.g., loss of loved one, school entry). In the latter example, selective mutism may have existed and remained unnoticed because the child had not yet been exposed to an environment where he or she was required to speak. This further explains why the average age of onset of selective mutism is in the preschool years although the diagnosis isn’t typically made until the child enters school.

There have been many common descriptors of children with selective mutism reported in the literature. The selectively mute child has been described as shy, timid, reticent, anxious, depressed, withdrawn, fearful, and inhibited (Black & Uhde, 1995; Ford et al., 1998; Kopp and Gillberg, 1997). In an analysis of 100 cases of selective mutism, Steinhausen and Juzi (1996) found that an overwhelming majority of the children were shy and anxious. However, only 19 children were personally assessed. The remaining data were obtained from 81 clinically referred cases from 1978 to 1992. Thus, parental reports, using the Child Behavior Checklist, were only available on the nonreferred sample. Wilkins (1985) further showed mute children as more anxious, depressed and manipulative than children with emotional disorders. Similar to the above
analysis, this study was merely a comparison of case notes. The data were obtained for clinical use and not originally intended for research purposes.

In another retrospective case-control design, Andersson and Thomsen (1998) compared 37 cases of selective mutism with 37 cases of children referred for emotional/anxiety disorders. Children with selective mutism were often described as sensitive, weepy, sulky and stubborn. However, no statistical comparisons were made between the two groups regarding child characteristics because the information was not available on the controls. In another study of case notes, Kolvin and Fundudis (1981) compared 24 children with selective mutism to 84 speech-retarded children and 102 controls. Common descriptors of selectively mute children were submissive, moody, easily distressed, and stubborn. The children were all socially withdrawn with 8 (33%) of the children being more withdrawn from peers than adults. However, the information analyzed was originally intended for clinical purposes and no controlled measures were used.

Black and Uhde (1995) on the other hand, studied 30 nonreferred children with selective mutism and collected data from both child and parent interviews, the Teacher Rating Scale (TRS), and the Parent Questionnaire (PQ). Not surprisingly, the results indicated that children are most reluctant to speak at school and to unfamiliar non-family members. Further, selectively mute children are more reluctant to speak when away from home than at home, more reluctant to speak to adults than to children, and more reluctant to speak to familiar non-family members than to immediate family members. The authors posited that selective mutism may be a symptom of social anxiety because 97% of the subjects met diagnostic criteria for social phobia or avoidant disorder and because
anxiety severity correlated with mutism severity. Unfortunately, there was no control group from which to draw comparisons and no reliability data were available (e.g. only one interviewer).

The reluctance to talk is a definite indicator of behavioral inhibition, as many children with selective mutism also experience difficulty adapting to change or approaching novel stimuli. Researchers have proposed a link between selective mutism and temperament due to the approach/withdrawal and adaptability temperament qualities of selectively mute children. The “slow to warm” characteristic of “socially inhibited” selectively mute children further supports the notion that selective mutism is a symptom of social phobia (Ford et al., 1998; Kumpulainen et al., 1998). However, future research is needed to make this distinction because both studies (Ford et al., 1998; Kumpulainen et al., 1998) lacked control groups, so no comparisons were made.

Externalizing characteristics of selectively mute children are less commonly reported in the literature. Such traits include oppositional, aggressive, or hyperactive behaviors (Steinhausen & Juzi, 1996). Many have argued that selective mutism is an oppositional behavior, although links between selective mutism and externalizing behaviors are far less common than internalizing symptoms. In a systematic study of 50 children with selective mutism, Dummit et al. (1997) found only one instance of comorbid oppositional defiant disorder and attention deficit hyperactivity disorder. In their analysis, Andersson and Thomsen (1998) found no difference between selectively mute children and controls with respect to oppositional defiant disorder. Furthermore, Steinhausen and Juzi (1996) reported little evidence in parents’ ratings to support the notion that aggression and delinquent behaviors contribute to a child’s mutism.
On the other hand, Kolvin and Fundudis (1981) found a higher rate of behavioral problems and enuresis and encopresis in children with selective mutism than children with speech retardation. The children in this study displayed evidence of immaturity of development and had excessive speech abnormalities. Other associated symptoms of children with selective mutism reported in the literature include depression, difficulties with articulation, eating disorders, sleeping disorders, and tics (Andersson & Thomsen, 1998; Krohn et al., 1992; Steinhausen & Juzi, 1996; Wilkins, 1985).

The above findings suggest that children with selective mutism are characteristically shy, anxious, socially withdrawn, and inhibited. There is also a high incidence of delayed speech acquisition and poor articulation in these cases (Andersson & Thomsen, 1998; Kolvin & Fundudis, 1981; Wilkins, 1985). These symptoms suggest that there is more to the disorder than simple refusal to speak. The findings on characteristics of children with selective mutism support anxiety-based explanations. However, the methodologies of the above studies are all lacking. Future research is needed to systematically compare selectively mute children to non-clinical populations and children with anxiety disorders to gain a more accurate representation of this disorder.

**Familial Characteristics**

Familial characteristics also support the association of selective mutism and anxiety disorders. Characteristics most commonly reported in families of children with selective mutism include shyness, depression, anxiety, and social phobia (Anstendig, 1999; Black & Uhde, 1992). The above-mentioned analyses by Andersson and Thomsen (1998) illustrated the overwhelming presence of shyness in families of selectively mute
children. In 59% of cases, parents reported shyness and difficulty speaking in social situations. Furthermore, familial psychopathology was found in 35% of cases and another instance of selective mutism was reported in three families (Andersson & Thomsen, 1998). In their retrospective study of selective mutism, Kolvin and Fundudis (1981) also discovered major personality disorders, psychiatric problems, serious marital disharmony, or a combination of these in 58% of cases. However, both studies analyzed data from case reports initially obtained for clinical purposes only.

In support of one proposed etiology that selective mutism is a manifestation of family dynamics, selectively mute children have been characterized as having unhealthy parent-child relationships. Parent-child enmeshment and overdependence are reportedly strongly related to a child’s selective mutism (Anstendig, 1999). In the above-mentioned study, Kolvin and Fundudis (1981) found a relentless mother to child bond of interdependence. They also reported that selectively mute children have difficulty separating from their parents.

Furthermore, an association has been made between marital discord and selective mutism. One belief is that a child remains silent to punish the family, and another belief is that parental violence causes a child’s mutism. However, more evidence is needed to support a cause and effect relationship between familial discord and selective mutism (Wilkins, 1985). Consistent with Goll’s etiological theory of the socially isolated “ghetto family,” Andersson and Thomsen (1998) found parental distrust of the social system in 37% of the selective mute cases analyzed. Other familial patterns cited in the literature on selective mutism include frequent silence in the household and language polarities of bilingual families (Sluzki, 1983).
The above familial characteristics (e.g., shyness, social isolation, fear) are very similar to the nature of families with anxiety disorders, which further suggests that selective mutism is a symptomatic expression of an anxiety disorder and not a distinct entity. Further, there is no concrete evidence of familial characteristics that support the notion that selective mutism is an oppositional behavior. Many familial characteristics (e.g., mistrust, enmeshment) have been used to propose an explanation for the child’s unusual behavior; however, an etiology of selective mutism is not known.

Differential and Comorbid Diagnoses

In addition to the debate whether selective mutism is a form of an anxiety disorder or an oppositional behavior, a few researchers believe that selective mutism is a specific developmental delay or a symptom of a more severe psychiatric disorder (Anstendig, 1998). The issue is further complicated because many disorders can present themselves in a similar way and many disorders can coexist with selective mutism (Wright et al., 1995).

Common comorbid diagnoses of children with selective mutism include elimination disorders, anxiety disorders, and developmental disorders and delays (Black & Uhde, 1995). A high frequency of comorbid enuresis and encopresis has also been reported (Kristensen, 2000). Anxiety disorders commonly found in children with selective mutism include social phobia, separation anxiety, and obsessive-compulsive disorder. In a study by Kristensen (2000), 54 children with selective mutism and 108 control children were evaluated and systematically assessed for comorbid diagnoses. Most (74.1%) of children with selective mutism met diagnostic criteria for an anxiety
disorder compared to only 7.4% in the control group. Dummit et al (1997) presented a study that further supported the association between anxiety disorders and selective mutism. Systematic assessment of 50 children with selective mutism revealed that all 50 met DSM-III-R criteria for social phobia or avoidant disorder. In addition, 24 met diagnostic criteria for another anxiety disorder (Dummit et al., 1997).

Language disorders and delays occur in 30-65% of reported cases of selective mutism, while motor disorders and delays have been reported in 18-65% (Kristensen, 2000). Difficulty with articulation and delayed speech are the most frequently reported language disorders among selectively mute children (Kristensen, 1997). Studies have illustrated instances of chromosome 18 abnormalities in selectively mute children with developmental disabilities. This deletion of the short arm of chromosome 18 has been associated with children with autism and mental retardation (Grosso et al., 1999; Simons et al., 1997). While the association between autism and selective mutism has been discounted, a few case studies have reported the presence of selective mutism in children with mental retardation (Klin & Volkmar, 1992; Kristensen, 1997; Kristensen, 2000; Simons, et al., 1997).

Although the DSM-IV-TR specifically excludes pervasive developmental disorders from the classification of selective mutism, researchers have still argued that selective mutism is an association of Asperger's syndrome (Kristensen, 2000). Kopp and Gillberg (1997) and Andersson and Thomsen (1998) reported cases of selectively mute children who met diagnostic criteria for Asperger's disorder. Likewise, there has been a hypothesized relationship between selective mutism and schizoid personality as schizoid children with selective mutism are shy and socially withdrawn. However, there are no
concrete conclusions regarding this association (Schopler, et al., 1998). Furthermore, Eldar et al. (1985) presented the only known case in which a child’s selective mutism developed into full-blown schizophrenia. The authors suggested that this coexistence of symptoms might indicate that selective mutism is an “atypical antecedent of schizophrenia.”

Selective mutism has also been proposed to be an antecedent of dissociative identity disorder. Jacobson (1995) presented the case of a 15 year old boy with selective mutism who had been abused and traumatized during infancy and childhood. It is believed that the adolescent developed several different identities to adapt to the traumatic events in his life. In this extremely rare case, he had witnessed murders when he was a child. Like one proposed etiological explanation of selective mutism, the boy was told to keep quiet. Thus, the child repressed his memories of the event and refused to talk to others for fear of revealing the secret. Because of this case, the author argued that selective mutism might be a manifestation of dissociative identity disorder. In this case, the identities were believed to be the cause of his mutism for they “had forbade him to talk” (Jacobson, 1995).

Others associate selective mutism with oppositional defiant disorder, which is also classified under other disorders of infancy, childhood, or adolescence in DSM-IV-TR. In oppositional defiant disorder, the child overtly expresses negativistic behavior, which is usually focused toward the family. On the other hand, the child with selective mutism is uncooperative and often passively resistant to persons outside the family (Kestenbaum et al., 1988). However, there is less evidence for an association between oppositional defiant disorder and selective mutism. In fact, in the above-mentioned study...
by Dummit et al. (1997), only one of the 50 selectively mute children met diagnostic criteria for oppositional defiant disorder.

Similarly, selective mutism has been associated with selective inactivity in which the child displays a general pattern of selective non-responding. For example, Hill and Scull (1985) presented the case of a 9 year old selectively mute boy who remained still when asked to perform various behaviors (e.g., run, tie his shoes, play soccer), despite the ability to carry them out. Likewise, he would not emit behaviors (e.g., riding a bike, drawing) if attention was focused on him. However, on the opposite side of this selective inactivity, selective mutism has been associated with stranger anxiety. Shreeve (1991) described a 4 year old girl who displayed a sudden stillness whenever exposed to strangers. Thus, selective mutism is seen as a “freezing” response to reduce a child’s anxiety related to fearful stimuli. It is believed that the child’s selective inattention to the discomforting object (e.g., strangers) allows the child to cope with the unwanted aspects of his or her environment (Shreeve, 1991).

These proposed associations further challenge the classification of selective mutism and add to the debate as to the whether the disorder is a form of another disorder. The various associations (e.g., chromosomal 18 abnormalities, trauma) are consistent with different proposed etiologies (e.g., genetics, traumatic events), none of which have been substantially accepted as the known cause. The above theories of associated disorders are attempts to shorten the gap between what is known and unknown about the nature of selective mutism. However, because the majority of the above studies are merely single case reports or case studies with a very small sample size (N<6), there has not been any conclusive evidence that selective mutism is a form of another disorder.
The associations between selective mutism and developmental disabilities, mental retardation, schizophrenia, and dissociative identity disorder have all been presented. However, at this point, they are only associations. There is no evidence that selective mutism is an antecedent of any of these disorders. Thus, a controlled study that systematically compares characteristics of children with selective mutism to children with one of the above disorders is needed to further support these associations. A study of this sort would provide a more accurate representation of the nature of selective mutism, which will assist in differentiating and diagnosing this disorder.

Currently, differential diagnosis of selective mutism is complicated because many of the above disorders can coexist with and/or present in a similar manner to selective mutism. Despite the above associations, a diagnosis of selective mutism can only be made if other major psychiatric disorders are not the cause of the mutism. Thus, a dual diagnosis can occur if the disorders merely coexist without any causal relationships (APA, 1994). Yet, with the exception of the one selectively mute child who developed schizophrenia later on, when two disorders coexist it is often difficult to differentiate which occurred first and what caused the silence. Thus, when assessing a silent child the clinician must be aware of other possible conditions that may be causing the mutism (Eisen, et al., 1995).

Since the clinical introduction of selective mutism, there have been many transformations in the way the disorder has been classified. Various terms have been used to describe a child’s inability or unwillingness to speak, yet none have been able to fully explain this behavior. Most of the terms have tried to take on an etiological basis (e.g., traumatic mutism), but even in the DSM-IV-TR there is no apparent explanation for
a child to remain mute in selective situations. In the following section, proposed theories that have attempted to provide an understanding for this unique disorder are reviewed.

Theories of Selective Mutism

Selective mutism is currently referred to as a persistent failure to speak instead of an inability or unwillingness to speak because it is not known which is the case. Many theories have been proposed to explain a child’s mute behavior, though none are well-supported empirically (March et al., 1995). Thus, it is not known if the behavior is a willful act of defiance or if a child is, for some reason, simply unable to speak.

In the early literature, hereditary, psychiatric, social, and medical explanations were given for a child’s mute behavior. More recently, psychodynamic and learning theories to explain mutism have predominated. Common psychodynamic theories of mutism have included a response to a traumatic event (e.g., school entry), a manifestation of family dynamics, and a change in environment such as immigration (Beck & Hubbard, 1987).

Waterink and Vedder (1936) posited a multidimensional conceptualization of mutism by classifying it into six types. “Hysterical mutism” was usually observed in adults and elective mutism represented what selective mutism is today. “Heinzian mutism” was the result of an overly sensitive child reacting to changes in his or her environment and “ideogenic mutism” described individuals who believed their speech mechanism was not working properly. The final types, neurotic mutism and thymogenic mutism, were both anxiety-based. Neurotic mutism was an expression of anxiety...
neurosis and thymogenic mutism was seen as a reaction to a traumatic event (Hooper et al., 1992).

Hayden (1980) proposed five subtypes of mutism with the belief that mutism may serve distinct functions for different children. “Biological mutism” results from another disorder such as autism or deafness, and does not meet the diagnostic criteria for selective mutism. “Symbiotic mutism” results from an enmeshed mother-child relationship in which a child is manipulating and controlling his or her environment. “Passive-aggressive” mutism refers to a child who defiantly refuses to speak as an expression of anger. “Reactive mutism” is a response to a traumatic event (e.g., sexual or physical abuse, a significant loss, starting school). Finally, Hayden described “speech phobic mutism” in which the child doesn’t speak because he or she is afraid of hearing his or her own voice (Holmbeck & Lavigne, 1992).

Psychodynamic explanations of mutism are varied and state that a child is mute to punish a family member, that the child is orally fixated, that the child is regressing to earlier stages of development, or that the child is mute to maintain some form of balance in the family system (Beck & Hubbard, 1987). One belief is that mutism is a reaction to a traumatic event that releases previously repressed anxiety (Hesselman, 1983). It should not be surprising that the most common event thought to trigger selective mutism is the first day of school, for that is where the behavior is most likely to occur. The fact that selective mutism usually occurs in the school setting, where many expectations are placed on a child (e.g., to learn, to speak in class, to socialize with other children, etc.), is perhaps further indication that the behavior is anxiety-based.
The most prominent psychodynamic explanations for mutism involve family
dynamics and familial characteristics. In general, children with selective mutism live in
socially isolated, closed, disharmonious families with an absent or “distant” father
(Shvarztman et al., 1990). Parental shyness and reservation, familial histories of not
speaking, and disturbed mother-child relationships (e.g., disturbed, enmeshed) have all
been linked to children with selective mutism.

Furthermore, some view the child’s silence as neurotic, originating from such
elements of family psychopathology as dependency and separation (Subak et al., 1982).
Steinhausen and Adamek (1997), in the only extended family history study of children
with selective mutism, provided preliminary evidence that genetics contribute to the
etiology of selective mutism. Parental personality disorders and marital discord have
been further hypothesized to contribute to, if not cause, mute behavior (Steinhausen &
Adamek, 1997). For example, a child whose parents have recently divorced may become
fearful, anxious, and distrustful of others. As a defense mechanism against anxiety-
arousing stressors, he or she may become selectively mute (Oppawsky, 1999).

In addition to family dynamics, family role structures and subcultures of children
with selective mutism have been hypothesized to cause a child’s mutism. Goll (1979)
hypothesized that a “ghetto family” is needed to maintain mutism. A “ghetto family” has
little confidence in society and distrusts its representative officials. Characteristics of
“ghetto families” typically include poor education, cultural gap, immigration, and low
socioeconomic status. However, the “ghetto family” doesn’t need to be uneducated or
poor as long as they have distrust in society. The child reacts from the mistrust modeled
by the parents and thus develops mutism (Goll, 1979).
A related theory behind selective mutism is the fear of revealing family secrets, thus the child does not speak to anyone outside of the family to ensure privacy (Hesselman, 1983). In many cases, there are explicit rules of silence in the family in which the child is taught “Whatever is not mentioned does not exist.” A classic instance of this is when an injunction is placed on children not to tell anyone about their parents’ lifestyle. In fear of violating this injunction, the child becomes selectively mute. A perfect example of a child sworn to secrecy is the case of a “Lesbian Stepfamily.” Baptiste (1995) presented the case of a 9 year-old girl who stopped speaking at school after her mother and stepmother imposed a “vow of secrecy” not to reveal their homosexual relationship. Once the injunction was removed, the mutism ceased (Baptiste, 1995). This injunction has also been illustrated in bilingual families (Sluzki, 1983).

Another fear-related issue that may contribute to a bilingual child’s mutism is the language polarity in the family. In this case the child may be afraid to speak out of fear of offending or betraying one or more family members. For instance, in a case report by Sluzki (1983) of a nine-year-old girl with selective mutism, there was a significant language polarity between her parents. If the girl spoke Spanish, per her mother’s preference, she betrayed her father’s injunction. However, if she spoke English, she betrayed her allegiance to her stepfather. A symptomatic solution is perhaps the only way out of this “no win” situation. Thus, the child’s mutism develops to avoid choosing a language and offending either parent (Sluzki, 1983).

Language differences alone may lead to mutism, especially in bilingual families of immigration. Shvarztman et al. (1990) presented three illustrative cases of immigrant children with selective mutism. The families of each child had emigrated from one
country to another and had lived in social isolation, a common characteristic of families with selectively mute children (Shvarztman et al., 1990). Hesselman (1983) posited that an emigrant child’s mutism is a reluctance to adapt stemming from the mother’s pessimistic attitude toward the new country.

Learning theorists believe that mutism is a learned pattern of behavior that is maintained by social reinforcement from significant others. Specifically, when a parent stops placing demands on a child to speak, the mutism is negatively reinforced (Porjes, 1992). Others believe that children learn the behavior through social modeling of anxious and shy family members, which is consistent with the increasing incidence of siblings with selective mutism (Cunningham et al., 1983).

Instead of answering the “unwilling or unable” debate, some researchers have suggested that there are two subgroups of children with selective mutism. Using behavioral theory, they hypothesize that the first group uses mutism to control and manipulate their environments (to gain attention) while the second group is mute to reduce their anxiety (Lesser-Katz, 1988). More recently, though, selective mutism has been conceptualized as a manifestation of an anxiety disorder, for selectively mute children are characteristically shy, timid, and reserved. Others hypothesize that selective mutism is a symptom of, or related to, other anxiety disorders such as social phobia, panic disorder, and obsessive-compulsive disorder (March et al., 1995). Still others have theorized that selective mutism is a form of, or associated with, other disorders such as language disorders, autism, schizoid personality disorder, and Asperger’s syndrome.
Assessment

A thorough assessment is needed before any child is given the diagnosis of selective mutism, for there are many possible explanations for the mute behavior (e.g., biological, pervasive developmental disorder). Furthermore, a comprehensive evaluation is needed to assess for any of the comorbid disorders mentioned above. Assessment of selectively mute children is particularly important because children may present with different symptomatology and contributing factors. Thus, each case needs to be thoroughly assessed so that treatment plans can be individually tailored for that child (Dow et al., 1995; Schill et al., 1996). Despite the above findings and the need for comprehensive evaluations, little has been published regarding the assessment of selective mutism.

Dow et al. (1995) suggested that a comprehensive evaluation of children suspected to have selective mutism should assess neurological, psychiatric, audiological, social, academic, and speech and language concerns. Thorough assessments of selective mutism would include separate clinical interviews with parents and children, physical exams to rule out neurological causes for the disorder, and various checklists (e.g., Child Behavioral Checklist) to identify any comorbid diagnoses. Because the selectively mute child may not speak to the clinician, a parental interview can provide an excellent source of useful information. The clinician should assess the child’s symptoms, social interactions, family history of psychopathology, and the child’s developmental temperament. Furthermore, the child’s medical history, school reports, and speech and language histories should be obtained during the diagnostic interview (Dow et al., 1995)
The child interview provides the clinician with the opportunity to observe the nature of the child's mutism. The interview should assess the child's symptoms, social interactions, family history of psychopathology, and the child's developmental temperament. The assessment of the child should also include a medical examination that rules out any possible neurological or biological causes of the mutism (Dow et al., 1995). Prerecording a videotape of the child speaking freely at home can assess the child's speech and language abilities. Furthermore, a few checklists have been employed that can assist in assessing speech and language abilities. Checklists, such as the CBCL, have also been used in the case of selective mutism to identify the presence of possible comorbid behaviors. Currently there are no assessment techniques specifically used for identifying selective mutism, although structured interviews such as the Anxiety Disorders Interview Schedule for Children for DSM-IV (ADIS) have separate sections for assessing selective mutism.

Another means of assessing selective mutism is through analogue assessment (Schill et al., 1996). Here, a functional analysis of the mute behavior provides a better understanding of the variables maintaining the disorder. Further, functional analyses can identify any known relationship between environmental events and selective mutism (Schill et al., 1996). Analogue assessments can indicate the function of a child's behavior and assist in developing treatment plans. While the proposed assessment protocol has better treatment utility, further research is needed regarding its use with selective mutism. In general, more research and specific measures are needed for assessing and successfully treating selective mutism. This is especially the case because
many children spend years in silence before their mutism is recognized as a problem and the longer they are left unnoticed, the more intractable the disorder is to treat.

Issues with the Current Classification System

One reason for the lack of quality assessment measures in this area is an unclear diagnostic understanding of selective mutism. As previously mentioned, the current classification of selective mutism in the DSM-IV-TR under "other disorders of childhood not otherwise specified" has prompted much debate. The associations between selective mutism and various disorders have led researchers to pose such questions as: "Is selective mutism a manifestation of dissociative identity disorder?" And, "Is selective mutism an atypical antecedent of schizophrenia?" The most prominent theories posed have been whether selective mutism is an anxiety disorder or an oppositional behavior.

Behaviorists have argued that selective mutism is an oppositional behavior used by children to control or manipulate their environment. However, others have conceptualized selective mutism as a defense mechanism for coping with anxiety, as a variant of social phobia, or a component of obsessive-compulsive disorder. Still others argue that the etiology of selective mutism is too complex to be classified under an anxiety disorder (or any other disorder) and should remain under its current classification in the DSM-IV (Anstendig, 1999).

Because many children diagnosed with selective mutism also meet criteria for one or more anxiety disorders, it is believed that selective mutism is either an anxiety disorder or a symptom of one (e.g., social phobia, posttraumatic stress disorder, obsessive-compulsive disorder). Further, the symptoms of selective mutism are similar to the
symptoms of anxiety disorders (e.g., shyness, phobia, inhibition), and anxiety pathology is also common in families of selectively mute children (Anstendig, 1999).

Despite the above findings, selective mutism remains listed under “other disorder of childhood.” The current classification is perhaps maintained because little is known about selective mutism. Thus, without an explanation or a clear understanding of the nature of selective mutism there is nowhere else to classify this disorder.

Treatment

Because a solid diagnostic understanding of selective mutism is lacking, there is no clear direction for treatment. While many studies have illustrated effectiveness in the treatment of this disorder, researchers have yet to agree on specific treatment approaches. Thus, selective mutism has been considered difficult to treat. Some have even referred to the disorder as “intractable.” However, many different approaches have been employed to treat this disorder (Dow et al., 1995). From the behavioral to the psychodynamic approach, from individual to group therapy, most researchers have used anxiety-based interventions to treat selective mutism. Thus, the current conceptualization of selective mutism has shaped the way researchers and professionals have attempted to treat this disorder.

The majority of successful treatment approaches for selective mutism have included behavior therapy techniques such as reinforcement, token procedures, shaping, prompting, response initiation, stimulus fading, contingency management, self-modeling, and systematic desensitization. Other interventions for selective mutism have included psychodynamic play therapy, group therapy, and family systems approaches. Techniques
less commonly discussed in the literature include speech therapy, social skills training and, most recently, psychopharmacological interventions (Giddan et al., 1997; Kehle et al., 1998; Rye & Ullman, 1999).

**Psychodynamic Interventions**

According to psychodynamic theory, mutism is a manifestation of intrapsychic conflicts. Thus, psychodynamic treatments for selective mutism focus on identifying and resolving these conflicts. Before the introduction of behavioral techniques in the treatment of selective mutism, insight-oriented psychodynamic therapy was the intervention of choice for treating the selectively mute child. Psychodynamic therapy can be very time consuming, especially when a child will not speak. Psychodynamic therapy for selective mutism involves art or play therapy to expedite therapy (Dow et al., 1995).

There are many rationales for using play therapy with selectively mute children. A major advantage is that there is no reliance on verbal communication from the child. Furthermore, play is a natural situation in which the child is accustomed to and feels comfortable. There is no demand of speech; instead social communication is developed through play. In addition, play therapy enhances the selectively mute child’s social interaction, social perspective, and problem-solving skills (Kaduson et al., 1997). Psychodynamic play therapy should be viewed as direct communication from the child. Therapy needs to be long-term and nonintrusive, for the child with selective mutism needs to feel comfortable and safe. Thus, the therapist should be patient and understand that the child will find the words when he or she is ready to speak (Lesser-Katz, 1988).

A few studies have shown that play therapy has been effective in the treatment of selective mutism. Weininger (1987) reported two case studies in which individual play therapy...
therapy successfully treated a 5- and a 6-year-old girl with selective mutism. In both cases, play therapy resulted in the generalization of speech to the school setting (Weininger, 1987). Lesser-Katz (1988) argued that play therapy is perhaps the only option a therapist has when treating a young silent child.

Play therapy has also been shown to be effective when used in group settings. Bozigar and Hansen (1984) reported a group treatment approach that successfully incorporated group play therapy into the treatment plan. The results indicated that play therapy successfully improved the children’s speech and social behavior in the classroom (Bozigar & Hansen, 1984). Furthermore, Barlow et al. (1986) showed that sibling group play therapy was successful in generalizing speech to other environments within two to nine months of treatment. Group or sibling play therapy is perhaps successful in treating selective mutism for it creates a pressure-free environment in which a child feels safe to talk (Barlow et al., 1986). Thus, if the clinician believes that the function of the child’s mutism is to cope with anxiety, he or she might employ play therapy to alleviate the anxiety attached to speaking.

**Group Therapy**

One consensus found in the psychotherapeutic literature for selective mutism is that individual psychotherapy with the child alone is the least effective of the psychological interventions (Krolian, 1988). Group interventions have been more successful in treating selective mutism than individual psychotherapy. For example, psychodynamic play therapy was shown to be more effective when employed in a group setting. Group treatment focuses on the child’s verbal and nonverbal reactions to the therapist that are generalized to other situations and people. Group interventions help to
reduce the child’s anxiety and provide them with the confidence to speak (Bozigar & Hansen, 1984). Although the rationale for using group treatment is supported, it has rarely been employed due to the low prevalence rates of this disorder. Because a therapist is unlikely to encounter multiple cases of selective mutism, it is unlikely that he or she will have the opportunity to use this treatment modality (Bozigar & Hansen, 1984).

**Family Therapy**

Historically, family dynamics and psychopathology were viewed as the cause of one’s mutism, so family therapy was employed to resolve the conflicts within the family (Meyers, 1984). Now that selective mutism is not necessarily perceived as a result of family discord, clinicians mainly involve the family in the implementation and design of the treatment plan. If known problems exist within the family and impact the child’s symptoms, the psychodynamic family approach may be taken (Dow et al., 1995).

There are no systematic reports on the effectiveness of family therapy as the primary intervention in the treatment of selective mutism. Thus, when family therapy has been employed, it has usually been concurrent with individual therapy. For example, Carr and Afnan (1989) presented the case of a child who had been selectively mute for 4 years. After 18 sessions of both individual and family therapy over a seven-month period, the child’s symptoms were successfully alleviated (Carr & Afnan, 1989). Powell and Malky (1995) further presented a case in which individual and family therapy were successfully integrated into the treatment plan of a selectively mute child. After six months of treatment, the child’s speech had generalized to the school environment and the 6-year old girl was speaking in front of her class. These studies suggest that family therapy is successful when used concurrently with individual therapy. Furthermore,
involving the family in therapy can decrease the length of treatment (Afnan & Carr, 1989).

There are a few case reports in which family dynamics were identified as maintaining the child’s mutism and thus treatment was based on a structured family systems approach (Atoynatan, 1986; Baptiste, 1995; Tatem & DelCampo, 1995). For example, in the case of a selectively mute child from a lesbian stepfamily, Baptiste argued that the child was electing to be mute to keep her parents’ lifestyles secret. The treatment involved both family and individual therapy focused around the family dynamics. Once the parents removed the vow of secrecy the child’s mutism ceased (Baptiste, 1995).

Treatment in the above cases were based on historical etiologies that selective mutism is caused by family problems, in which the child either has an enmeshed relationship with the mother or is forced to keep family secrets. They were further based on the notion that the child was electing to be silent due to family dynamics. However, with the change in the DSM-IV-TR and the current conceptualization of selective mutism as either an anxiety-based or oppositional disorder, it is unlikely that the treatment of selective mutism will adhere to an insight-oriented therapy approach.

**Behavioral Interventions**

The interventions most commonly used to treat selective mutism are behavioral techniques, based on the principles of learning theory (Dow et al., 1995). Many argue that behavioral treatment programs are the most successful in alleviating symptoms of selective mutism (Cunningham et al., 1983; Sluckin et al., 1991). The behavioral management approach to selective mutism initially focuses on getting the child to speak.
Because it is believed that the mutism is a learned behavior, techniques like reinforcement and stimulus fading should be able to elicit a response from the selectively mute child. Positive reinforcement and modeling may be used to shape the child’s speech using a behavioral hierarchy approach. In stimulus fading, new individuals are gradually introduced into the setting in which speech has already been established, or children and persons they speak to in one setting are gradually moved into another setting in which speech is nonexistent. Escape and avoidance procedures may be used in which children are allowed to “escape” from after school detention, are isolated from activities that they enjoy, or are not allowed to go home unless they speak. In response cost techniques (e.g., time-out), a child loses opportunities for reinforcement by failing to speak. Once the child is speaking in the environment, the contingencies for speaking must be maintained (Baldwin & Cline, 1991; Cunningham et al., 1983; Labbe & Williamson, 1984).

Many researchers and clinicians believe that using any one technique alone is insufficient in treating selective mutism. Therefore, behavioral interventions that are most effective in treating selective mutism employ a multimethod approach that includes one or more of the above-mentioned techniques (Ciottone & Madonna, 1984; Labbe & Williamson, 1984; Watson & Kramer, 1992). For example, contingency management approaches use positive reinforcement for verbal behavior and extinction for nonverbal behavior. However, due to the complexity involved in treating a selectively mute child (e.g., they do not speak at all in certain situations or to certain people), other techniques (e.g., shaping, stimulus fading) need to be combined with contingency management to
initiate speech in the targeted environment (Cunningham et al., 1983; Labbe & Williamson, 1984; Richburg & Cobia, 1994).

For example, Richburg and Cobia (1994) presented the case of a 5-year-old girl with selective mutism who was first treated using stimulus fading. This approach was largely unsuccessful. However, a combination of contingency management and stimulus fading was effective and the child was speaking in social situations, including school, within six months of the combined treatment (Richburg & Cobia, 1994). Lipton (1980) reported another case in which treatment of a 6-year-old girl using contingency management was unsuccessful until a stimulus fading procedure was added to the treatment plan. Within ten sessions of combining these treatments, the child was speaking in school and other social situations (Lipton, 1980). Several studies reviewed by Labbe and Williamson (1984) also involved a combination of contingency management and stimulus fading.

Lysne (1995) reported the case of a 14-year-old boy who had been silent outside of his home for ten years. Contingency management using reinforcement sampling, response cost, and stimulus fading were not effective until an escape procedure was implemented (Lysne, 1995). It is often the case that aversive or escape procedures are needed to produce the initial verbalization. However, these procedures can be a very painful experience for the child, for they place a lot of pressure on him or her to speak. Thus, aversive and/or escape procedures should not be used as the first method of treatment nor on a very young child (Labbe & Williamson, 1984; Lysne, 1995).

Contingency management combined with shaping and self-modeling produced audible speech in the case of a 13-year-old Mexican-American boy after 11 therapy
sessions (Albert-Stewart, 1986). Masten et al. (1996) presented the case of an 8-year-old Mexican-American boy who was treated with shaping, positive reinforcement, and stimulus fading. The therapy lasted three years and was successful in helping the client speak in certain settings. However, the results did not generalize to the classroom setting (Masten et al., 1996).

Contingency management is frequently used to treat selective mutism when it occurs in the school setting (Lysne, 1995; Porjes, 1992; Lazarus et al., 1983). In this environment, an effective individualized treatment plan could be implemented with the combined efforts of parents, teachers, and clinicians. The goals of this treatment program include decreasing the child’s anxiety, increasing both verbal and nonverbal communication, and increasing social interaction. Cognitive-behavioral interventions such as desensitization and relaxation are used to decrease anxiety and structured behavioral modification plans are implemented to increase verbal communication. Dow et al. (1995) emphasized that the child’s speech should not be forced. The authors suggested the following for reducing the child’s anxiety: (1) the child should remain in a regular classroom unless special needs beyond mutism exist, (2) less emphasis should be placed on verbal performance (e.g., nonverbal games should be played), (3) relationships with peers should be encouraged, and (4) the school-based program should be coordinated with any individual and/or family therapy. In addition, small-group situations can be established to increase nonverbal communication and social interaction. Speech and language therapy may also be used in the school setting to increase the child’s verbal communication by helping him or her to develop better linguistic skills (Dow et al., 1995).
Classroom-based contingency management programs have also been employed in cases of children with selective mutism (Brown & Doll, 1988; Lazarus et al., 1983). Brown and Doll reported on the case of a 6-year-old mute girl whose target behavior was to produce audible speech in her kindergarten classroom. The intervention was divided into three phases and included teacher prompts to speak loudly, a token reinforcement system, and a talk light that lit when her speech was loud enough. Initially, the entire class was able to choose a prize from the prize box every time the child spoke to another student. After five weeks, only the selectively mute child and the student she spoke to were able to choose a prize. Once this prize distribution changed, she began to speak to most students on most days, for if another student wanted to receive a prize, they needed to prompt her to speak. Another intervention employed in this case was the talk light. The talk light alone was not effective in increasing the child’s audible speech. However, the combination of the talk light and reinforcement effectively modified her speech habits. At the end of the school year, the intervention program was discontinued and the child continued to speak in her resource classroom in an audible voice without the use of the talk light or artificial reward contingencies (Brown & Doll, 1988).

Lazarus et al. (1983) discussed the treatment of two cases of mutism within the school setting. The first case illustrated the effectiveness of contingency management techniques (e.g., shaping and successive approximations) in eliciting speech from the child. The second case study successfully combined contingency management, using reinforcers, successive approximations and shaping, and family therapy. Follow-up data revealed that the child continued to speak to the children in her classroom and to the
teacher throughout the school year and that her speech was progressing in other situations (Lazarus et al., 1983).

Porjes (1992) developed a four-stage intervention plan for the treatment of selective mutism using a contingency management approach. The four stages included: (1) an ecological analysis, (2) establishment of reinforcement menus, (3) initiation of speech, and (4) generalization of speech across new situations and with new people. Success was shown in both examples. However, contingencies were still in place at the end of treatment (Porjes, 1992). Porjes further emphasized the need for a systemized, coordinated approach for increasing the verbal speech of a selectively mute child in the school setting. The need to intervene as soon as selective mutism is identified was also stressed. This is particularly due to the fact that chances of obtaining successful treatment outcomes increase when the child is younger and just starting school. Furthermore, the longer the child is selectively mute in school, the more academic difficulties and problems the childhood is likely to encounter (Porjes, 1992). There is also the threat of compounding socialization problems that can occur after prolonged periods of mute behavior (Austad et al., 1980).

Other behavioral techniques that have been shown to be effective include the use of multiple reinforcers and the use of reinforcement in multiple situations. Austad et al. (1980) presented the case of a 7-year-old girl with selective mutism whose speech was maximized with the use of multiple reinforcers within a three-week course of intensive therapy. The child was seen for 90 minutes five days per week for the first two weeks; every other day for 60 minutes during the third week; and once more for 60 minutes (Austad et al., 1980). While this is one of the most rapid cases of successful treatment
using multiple reinforcers reported in the literature, it should be noted that it is also the most intensive.

Lachenmeyer and Gibbs (1985) reported the case of a 4 year-old-boy whose speech was rewarded in multiple settings by a variety of people. The authors argued that this treatment plan focuses on the multiple functions of reward. They posited that rewards not only motivate a child to speak but have a feedback component that leads to attributions of competence. The use of rewards across multiple situations encourages a child to evaluate his or her performance and effectiveness, and leads to behavior change (Lachenmeyer & Gibbs, 1985).

Another behavioral technique with reported efficacy is self-modeling, defined as the positive change in behavior and attitude that results from repeated viewings of oneself on edited videotapes that solely depict desired behaviors (Kehle et al., 1998; Kehle et al., 1990). In the case of the selectively mute child, the videotape is edited to portray the image of a child speaking in a social situation (e.g., a classroom, girl scout meeting, etc.). It is believed that self-modeling is superior to modeling because it provides the child with the confidence that he or she could successfully speak in these social situations (Kehle et al., 1998; Pigott & Gonzales, 1987). Kehle et al. (1990) presented a case study in which a selectively mute child began speaking in all social situations after only five, five-minute treatment sessions. The authors argued that self-modeling is perhaps the most effective short-term treatment for selective mutism because it is relatively inexpensive, non-intrusive, simple, and able to be implemented in the school setting in a short period of time (Kehle et al., 1990).
As previously stated, a combination of behavioral techniques is usually preferred over the use of any one technique in isolation. Holmbeck and Lavigne (1992) presented the case of a 6-year old Filipino girl who was treated with self-modeling and stimulus fading. The child, who had previously been mute in school for 1½ years, began speaking in therapy and in various social situations (e.g., birthday parties) after 12 treatment sessions. Stimulus fading was replaced with contingency management to generalize the child’s speech to the classroom. By the end of the school year, the child was consistently whispering in class and could read from a book during reading group (Holmbeck & Lavigne, 1992). Thus, the combination of the above treatments was successful in this particular case.

A variation of videotaped self-modeling is a behavior technique known as audio feedforward. This intervention involves having the selectively mute child listen to edited audiotapes to depict him or her speaking in various situations in which the child has been mute. Blum et al. (1998) reported the successful treatment of three children with selective mutism using the audio feedforward intervention. The children had all resisted change from previous behavioral treatments and did not begin speaking until the audio feedforward component was added to their treatment plan. However, because the parents continued to offer rewards for speaking, the treatment effects could not be solely attributed to the audio feedforward intervention. The authors also reported three cases in which the child had refused to make an audiocassette, suggesting that this technique may not work with oppositional children. Furthermore, the efficacy of both audio feedforward and video feedforward interventions is not known (Blum et al., 1998).
Despite the above findings, the extent to which behavioral therapy is effective in the treatment of selective mutism is still questionable. Louden (1987) argued that the chronic case of mutism is difficult to treat and that there is no distinct evidence for the effectiveness of behavior therapy. The author examined a case study of an 8-year-old who underwent many sessions of behavioral therapy with minimal gains and whom remained in control of the situation throughout therapy. Louden argued that using simple contingency management procedures is not sufficient when treating selective mutism. As previously mentioned, a combination of contingency management and stimulus fading is often required to generalize speech to other situations. However, stimulus fading is impossible if the child will not speak to anyone involved in the early stages of treatment. Louden further concluded that systematic desensitization was most effective when treating the anxious child only if his or her mutism was interpreted as a fear-reducing mechanism (Louden, 1987).

The argument that selective mutism can only be treated effectively once the mutism is conceptualized as anxiety-based was further supported by Croghan and Craven (1982). In a case study of an 8-year-old girl with selective mutism, the authors tried several behavioral techniques including modeling, positive reinforcement, avoidance-training, and systematic desensitization. However, treatment was not successful until it was formulated that the anxiety was attached to the act of speaking itself. Once this was established, systematic desensitization was able to address the problem directly (Croghan & Craven, 1982).

This case illustrates that the lack of a clear diagnostic understanding of selective mutism negatively affects treatment outcome. Without a clear distinction of the nature of
this disorder, there is no clear direction for treatment. Perhaps if the disorder was conceptualized as an anxiety disorder, treatment would be more effective. In this case, the attention would be removed from the child’s mute behavior and instead the focus of intervention would be the child’s anxiety. Because anxiety is attached to the act of speaking, treating the underlying anxiety should enable the child to speak.

On the other hand, clinicians who believe that oppositional behavior is the underlying cause of the mute behavior are most likely to employ the Hawthorn Center approach developed by Wright (1968). This is a response initiation approach in which a child is informed that he or she may not leave the therapy session until he or she says at least one word to the therapist. Most children usually speak within 1 to 4 hours, and the session should not be ended unless both therapist and child are exhausted. Once the child speaks, he or she is rewarded and allowed to leave the session. Within a month, similar steps are taking to generalize the verbal behavior in school (Eisen, et al., 1995; Giddan et al., 1997; Krohn et al., 1992). In the Hawthorn approach, the child is sent the message that, unlike others in his or her life, the therapist will not give into the child’s mutism and that it is necessary for him or her to speak. Many argue that forcing speech may produce overwhelming anxiety in the selectively mute child. However, Krohn et al. (1992) reported that there were no detrimental effects from challenging 20 children with selective mutism to speak. In fact, 17 of these children reported excellent results and the remaining three had fair treatment outcomes. However, the study was retrospective in nature and, due to ethical concerns, systematic follow-ups were not conducted (Krohn et al., 1992).
Other Interventions

Other techniques less commonly discussed in the literature include speech therapy, social skills training and, most recently, psychopharmacological interventions. Speech therapy has been used in schools in conjunction with behavioral modification techniques as part of a multidisciplinary intervention program. In speech therapy, the mutism is viewed as a speech or language problem and the goal is to rebuild language through a series of speech tasks. Furthermore, speech therapy provides a place for a child to speak in a safe environment (Schmerling & Kerins, 1987). Similar to speech therapy, an adapted language training strategy was used in the treatment of a 7-year-old boy's selective mutism. The intervention focused on nonverbal attending, verbal imitative responding, and functional language responding to a series of questions posed by the therapist. This intervention was highly effective in generalizing the child's language to the school and other social environments (Pecukonis & Pecukonis, 1991). However, the study was based on a single case and there are no other studies available to support this program's effectiveness.

While research has suggested that children with language disorders have social skills deficits, social skills training is another intervention that is rarely discussed in the literature for treating selective mutism. Although, selective mutism is not classified as a language disorder, children who are mute in school and other social situations lack opportunities to socialize with their peers and consequently may not develop appropriate social skills. Rye and Ullman (1999) reported on the successful treatment of a 13-year-old boy who had been selectively mute since kindergarten. His treatment plan included systematic desensitization, consultation with school personnel, and social skills training.
The child made several improvements in speech, but because the study lacked an experimental design, his progress couldn't be explicitly linked to any one of the interventions. Still, the authors purported that therapists may need to teach their clients social skills and how to respond to certain peer reactions, especially when the child has been mute for many years (Rye & Ullman, 1999).

The last resort for treating a child's mutism is via pharmacotherapy. A survey of child and adolescent psychiatrists revealed that only 14% of reporting psychiatrists believe that pharmacotherapy is the most effective treatment for selective mutism. When drug interventions were endorsed, the psychiatrists most often reported that antidepressant drugs that have antianxiety effects were the most useful in the case of selective mutism (Carlson et al., 1994). Furthermore, all six available case reports on the pharmacological treatment of selective mutism used selective serotonin reuptake inhibitors; medications that have been successful in treating social phobia and other anxiety disorders.

Golwyn and Weinstock, (1990) reported successful improvements in the speech of a selectively mute girl after only six weeks of phenelzine treatment. Golwyn and Selvie (1999) further demonstrated the efficacy of phenelzine treatment in the case of four children with selective mutism. However, because of the possibility of serious food and drug interactions, the authors argued that this treatment should only be used if a child does not respond to behavior modification and other selective serotonin reuptake inhibitors, such as fluoxetine (Golwyn & Selvie, 1999). Fluoxetine has been shown to safely reduce the symptoms associated with selective mutism (Black & Uhde, 1994; Dummit et al., 1996; Wright et al., 1995). Another type of selective serotonin reuptake
inhibitor, sertraline, was shown effective in improving the symptoms of 5 selectively mute children. Two of the participant's symptoms were completely gone after 10 weeks of treatment and a third participant's symptoms were gone after a 20-week follow-up. However, there were many treatment complications and the authors argued that the use of SSRIs in the treatment of selective mutism should be further investigated and that behavior modification should be employed as an adjunct to drug treatment (Carlson et al., 1999).

Although the research on the use of pharmacotherapy in the treatment of selective mutism is in its early stages of development, selective serotonin reuptake inhibitors are clearly the drugs with the most use and support. These findings suggest that physicians believe that anxiety is the underlying cause of the child's mutism for they are prescribing drugs frequently used in treating anxiety disorders. On the other hand, SSRIs may be used because they are the only available option. It could be that there is no pharmacological treatment for selective mutism as there are few drugs to treat oppositional defiant or conduct disorder.

Summary

Selective mutism is a rare disorder with an atypical presentation. While there are many proposed theories, an etiology for this disorder is not known. The current classification of selective mutism in the DSM-IV-TR as an "Other disorder of childhood not otherwise specified" has been the topic of debate for many years. Many argue that selective mutism is a symptom of another disorder and should not be classified as a separate entity. Most argue that selective mutism is a form of an anxiety disorder while
some argue that it is an oppositional behavior. The literature supporting the former predominates the latter. However, there is not enough evidence to warrant a change in the current classification system of selective mutism. Because a clear diagnostic understanding of selective mutism does not exist, there is also no clear direction for assessment and treatment.

Researchers and clinicians have yet to agree upon a treatment of choice for selective mutism. Without a clear direction for intervening, selective mutism has been considered difficult to treat. Interventions commonly used include behavioral therapy, psychodynamic play therapy, group therapy, family therapy and, most recently, pharmacotherapy. Behavioral modification has been the most successful treatment for selective mutism. Most of the researchers and clinicians believe that using any one technique alone is not sufficient in treating selective mutism. Therefore, behavioral interventions that are most effective in treating selective mutism employ a multimethod approach. The literature reviewed reported many cases in which these interventions have been shown to be effective for treating this disorder. However, the methodologies of these studies were often weak and most were single case studies or of very small sample size (n <6).

There is little known about the treatment of long-term selective mutism, except that it is often intractable. Furthermore, there have not been any reports on the progress of children who have not undergone treatment, although spontaneous recovery from selective mutism is considered extremely rare. The most effective treatments for selective mutism were those effective in treating anxiety disorders. Even the psychopharmacological interventions employed have effectively treated anxiety-based...
disorders. Thus, if the treatments for the disorder are anxiety-based it is most likely that the disorder itself is anxiety-based. However, this explanation doesn’t work for all kids, thus it is too early to dismiss the notion that the mutism is an oppositional act.

Suggestions for Future Research and Purpose of Present Study

Future research is needed to more closely examine and confirm a relationship between selective mutism and anxiety disorders. Specifically, there is a need for a controlled study that systematically compares children with selective mutism to children with anxiety disorders and a control group. This may involve an examination of personality characteristics (e.g., shyness, sulkiness, stubbornness) and temperament (e.g., inhibited, withdrawn) of selectively mute children. Children with selective mutism may also be assessed to see if they meet criteria for an anxiety disorder. If selective mutism can be more definitively conceptualized as a symptom of an anxiety disorder, then treatment would be more effective. In this case, attention could be removed from a child’s mute behavior and underlying anxiety could be addressed.

The purpose of the present study is thus to examine anxiety and oppositional characteristics of children with selective mutism. First, this study aims to rule out externalizing behavior problems in children with selective mutism. This will confirm that selective mutism is not an oppositional act of defiance. Instead, preliminary indications are that children with selective mutism are shy, timid, anxious, withdrawn, fearful, and inhibited (Black & Uhde, 1995; Ford et al., 1998; Kopp & Gillberg, 1997; Steinhausen & Juzi, 1996). Research also indicates that children with selective mutism
have common comorbid diagnoses (e.g., anxiety disorders, elimination disorders).

Given this, the present study will look at comorbid diagnoses and predispositional factors for anxiety (e.g., family environment and temperament). Past studies have been unable to definitively conceptualize selective mutism as a symptomatic expression of anxiety because research methods were not standardized. Furthermore, most studies involved single case reports or very small samples and researchers often relied on reviews of case notes for information. Using more standardized procedures (e.g., semi-structured interview, behavioral checklists), a larger sample size, and multiple sources of information (e.g., parents, teachers, children, and clinician reports), this study will seek to confirm that selective mutism is truly anxiety-based.

Hypotheses

Three groups of children were evaluated. Group one consisted of 15 children with selective mutism (SM), group two consisted of 15 children with an anxiety disorder but not selective mutism (AD), and group 3 consisted of 15 children without an anxiety disorder or selective mutism (i.e., control group, CN). It was hypothesized in this study that the selective mutism group would resemble the anxiety group. Specifically, it was hypothesized that children in the selective mutism and anxiety groups would have a comparable number of comorbid diagnoses (e.g., obsessive compulsive disorder, social phobia, enuresis, encopresis, etc.), score comparably on various measures of anxiety-related predispositional factors, and score significantly higher than the control group on these measures (i.e., internalizing T scores of the Child Behavior Checklist and Teacher Report Form, Approach scale of the Behavioral Style Questionnaire, and Cohesion,
Expressiveness, and Independence scales of the Family Environment Scale).

Furthermore, to rule out oppositional behavior, it was hypothesized that there would be no significant difference among the groups in regards to externalizing T scores of the Child Behavior Checklist and Teacher Report Form.
CHAPTER 3

METHODOLOGY

Participants

Twenty-eight (28) participants were recruited from public and private elementary schools and 13 participants were recruited from preschools/daycare centers in Las Vegas and Henderson, Nevada. Four child and parent participants were recruited from the State of Nevada Division of Child and Family Services. Forty-five (45) children aged 4 to 10 years and their parents voluntarily participated in the study. Fifteen (15) children who met diagnostic criteria for selective mutism comprised the selective mutism group (SM), 15 children who met diagnostic criteria for an anxiety disorder but not selective mutism comprised the anxiety disorders group (AD), and 15 children without selective mutism or an anxiety disorder comprised the control group (CN). The sample was 66.7% Caucasian, 24.4% Hispanic, 6.7% Asian, and 2.2% African-American. Mean age of the entire sample was 6.58 years, 53% were female, 73% of parents were married, and the self-reported mean annual family income was $54,978.

Parent Measures

Family Environment Scale (FES; Moos & Moos, 1981). The FES is a widely used inventory for assessing family environment. It contains 90 true/false items that assess organizational structure, personal growth, and interpersonal relationships within
the family. The FES contains 10 subscales for evaluating the following dimensions of family functioning: Achievement, Active-Recreational Orientation, Cohesion, Conflict, Control, Expressiveness, Independence, Intellectual-Cultural Orientation, Moral-Religious Emphasis, and Organization. All subscales were evaluated in this study.

Moos and Moos (1986) reported an average internal consistency across the ten subscales of .75, with a 12-month test-retest reliability of .80. In addition, the FES has demonstrated the ability to generalize scores from one family member to another. The FES was normed on 1,125 families that met “distressed” or “non-distressed” criteria (Moos & Moos, 1986). Furthermore, many studies have supported the sound psychometric properties of the FES (Karoly & Rosenthal, 1977; Moos, 1990; Moos & Moos, 1981).

Behavioral Style Questionnaire (BSQ; McDevitt & Carey, 1997). The BSQ is a behavioral rating instrument for assessing temperamental characteristics in children aged 3 to 7 years. The BSQ contains 100 items measuring nine temperament characteristics: activity level, rhythmicity, approach-withdrawal, adaptability, intensity, mood, persistence, distractibility, and sensory threshold. Each item is rated on a six-point scale of frequency ranging from almost never to almost always. The BSQ yields a category scale for each of the nine temperament areas. Data were collected on all temperament areas and all category scores were evaluated in this study.

The BSQ was standardized on children aged 3 years to 7 years 4 months. Clinical experience has indicated the BSQ to be effective in children at the end of their 8th year; however, supporting data were not available to standardize its use with this age range (McDevitt & Carey, 1997). The BSQ has a one-month test-retest reliability of .81 and an
internal consistency (alpha) of .70. The approach category of the BSQ has an internal consistency of .80 and a test-retest reliability of .94, the adaptability category of the BSQ has an internal consistency of .72 and a test-retest reliability of .85; the distractibility category of the BSQ has an internal consistency of .70 and a test-retest reliability of .82; and the threshold category of the BSQ has an internal consistency of .47 and a test-retest reliability of .67 (McDevitt & Carey, 1997).

Child Behavior Checklist (CBCL; Achenbach, 1991). The CBCL is a broadband measure for parents to rate a child's behavioral problems and competencies. The CBCL contains 118 items regarding current behaviors, thoughts, and emotions over the past 6 months. The CBCL yields a total problem behavior score, eight subscale scores (including anxious/depressed), and internalizing and externalizing behavior scores. Scores evaluated in this study included the internalizing T, externalizing T, and total T scores. In addition, six individual items were evaluated (i.e., “shy or timid,” “sulks a lot,” “secretive, keeps things to self,” “withdrawn, doesn’t get involved with others,” “demands a lot of attention,” and “stubborn, sullen or irritable”).

The CBCL is one of the most widely used standardized measures for assessing behavioral and emotional problems in children. It has demonstrated adequate validity and reliability with a test retest reliability of .88 (Achenbach, 1999; Wadsworth et al., 2001). The CBCL was normed on a sample of 2,368 nonreferred children. It was standardized separately for boys and girls aged 4-11 and 12-18 years. The CBCL can discriminate children with emotional and behavioral disorders from nonreferred children (McConaughy & Achenbach, 1996).
Teacher Measures

Teacher’s Report Form (TRF; Achenbach, 1991). Like the CBCL, the TRF is a broadband measure for teachers to rate a child’s behavioral problems and competencies. The TRF contains 118 items, 93 of which have counterparts on the CBCL. The TRF covers current behaviors, thoughts, and emotions over the past 2 months. The TRF yields a total problem behavior score, eight subscale scores (including anxious/depressed), and internalizing and externalizing behavior scores. Scores evaluated in this study included the internalizing T, externalizing T, and total T score. In addition, six individual items were evaluated (i.e., “shy or timid,” “sulks a lot,” “secretive, keeps things to self,” “withdrawn, doesn’t get involved with others,” “demands a lot of attention,” and “stubborn, sullen or irritable”).

The TRF was normed on a sample of 1,391 nonreferred children from the same sample used to derive norms for the CBCL. It was standardized separately for boys and girls aged 5-11 and 12-18 years. The reliability and validity of the TRF has also been well-established with a test retest reliability of .91 (Achenbach, 1999; McConaughy & Achenbach, 1996). Furthermore, the TRF has demonstrated the ability to discriminate children with emotional and behavioral disorders from nonreferred children (McConaughy & Achenbach, 1996)

Clinician Assessment Measures

The Anxiety Disorders Interview Schedule for Children for DSM-IV Child Version (ADIS-C; Silverman & Albano, 1996). The ADIS-C is a widely used semistructured interview for assessing anxiety disorders in children and adolescents. The
ADIS-C permits differential diagnoses among the anxiety disorders. In addition, subsections are available for assessing selective mutism, school refusal behavior, and various other disorders affecting children and adolescents (e.g., attention deficit hyperactivity disorder, oppositional defiant disorder, enuresis, depression).

The ADIS-C is composed of yes/no questions that address symptom severity, frequency, and duration. The ADIS-C accommodates children with selective mutism, and other young or nonverbal children, by utilizing fear thermometers. Fear thermometers are visual rating scales that help children report the presence, frequency, and duration of symptoms. In addition to providing a means for children with selective mutism to nonverbally communicate symptoms, the ADIS-C provided comorbidity data.

The Anxiety Disorders Interview Schedule for Children for DSM-IV Parent Version (ADIS-P; Silverman & Albano, 1996). The ADIS-P is the parent version of the ADIS-C. It is a semi-structured interview that parallels the format and content of the child version. Administering both versions allows for comparisons between child and parent perceptions of the child’s symptomatology. This is particularly useful because children often report more anxiety and affective symptoms than parents.

The ADIS-C and the ADIS-P have demonstrated sound psychometric properties. Silverman and Nelles (1988) found interrater reliabilities for the ADIS-C and the ADIS-P of .84 and .83, respectively, and a diagnostic composite of child and parent interviews of .78. Pearson product moment correlations of .71 on the ADIS-C, .76 for the ADIS-P, and .74 for the composite data were found regarding agreement on symptom severity ratings.

Furthermore, Silverman et al. (2001) demonstrated that the ADIS-C and the ADIS-P are reliable instruments for deriving DSM-IV diagnoses and anxiety disorder
symptoms in children. Kappa coefficients obtained for separation anxiety disorder, specific phobia, social phobia and generalized anxiety disorder ranged from .63 to .80 on the ADIS-C and from .65 to .88 on the ADIS-P. Test-retest reliabilities of the separation anxiety disorder, specific phobia, social phobia and generalized anxiety disorder scales ranged from .78 to .95 on the ADIS-C and from .81 to .96 on the ADIS-P (Silverman et al., 2001).

Procedure

Directors of private schools, daycare centers, and preschools in Las Vegas and Henderson were contacted. The directors were informed of the nature and purpose of the study. They were asked to distribute letters describing the nature of the study to parents of all children aged 4-10 years in their school/center. Permission was obtained from the directors, and flyers about the study were posted in the center. Permission to interview and distribute the questionnaires at the center/school was also obtained from the directors. Parents who were interested in participating in the study were directed to contact the primary researcher directly.

Therapists who work for the State of Nevada Department of Child and Family Services’ Early Childhood Division provided parents of children aged 4 to 10 years with information regarding the study. Parents who were interested in the study signed a parental permission form authorizing their therapist to provide the primary researcher with contact information. In addition, the public was informed of the study via a press release sent out from the University of Nevada, Las Vegas (UNLV) to the campus directory, local media, and the Clark County school district. Interested parents were
informed to contact the primary researcher via e-mail or telephone to receive further information. Participants were screened over the phone and, if their child was eligible for the study, an assessment was scheduled.

Parents who decided to participate in the study were given the option to have the assessment conducted at the child’s school/daycare, at their therapist’s office (if applicable), or in their home. Thirty-five assessments were conducted in the child’s home, 9 at the child’s daycare/preschool, and one at a therapist’s office. Parents/guardians were provided with a consent form detailing the nature of the study. Informed consent from the parents/guardians and assent from each child were obtained prior to data collection.

Children and their parents were interviewed and parents completed questionnaires in either one or two sessions (three parents with limited time needed a second session to complete the questionnaires). The primary investigator conducted a structured diagnostic interview with each child individually. Twelve children (10 SM and 2 AD) declined to participate in the diagnostic interview, so interview data were obtained solely from parent report in these cases. A structured diagnostic interview was also conducted individually with the child’s parent(s) by the primary investigator. For reliability purposes, an additional graduate student was in attendance for approximately 22% of the interviews, yielding 100% interater agreement on clinical diagnoses.

Additionally, parents completed three randomly ordered questionnaires and a demographic information form, which took approximately 45 to 60 minutes to complete. The demographic information form included questions pertaining to parental marital status, ethnicity, religion, and family income. Each child’s primary teacher or daycare
provider was also asked to complete the TRF. Teachers were given the questionnaire along with a self-addressed stamped envelope and asked to return it to the primary researcher.

Children, parents/guardians, teachers, and daycare providers were provided with contact information for the researchers in case questions arose or to obtain assessment results. To ensure participant anonymity, questionnaires, interview data sheets, and consent forms were number coded.
CHAPTER 4

DATA ANALYSIS

Demographics

To identify possible differences among group demographics, comparisons were made across age, gender, ethnicity, parent’s marital status (i.e., married, separated, divorced), and income. No significant differences were found among the groups with respect to these variables.

Primary diagnosis of each group

Selective mutism was the ADIS-P primary diagnosis for all participants in the SM group. The ADIS-P primary diagnoses for the AD group were social phobia (9 participants), separation anxiety disorder (5 participants), and generalized anxiety disorder (1 participant). The ADIS-P primary diagnoses for the CN group were attention deficit hyperactivity disorder (1 participant), oppositional defiant disorder (1 participant), and no diagnosis (13 participants).

Selective mutism was the ADIS-C primary diagnosis for 5 participants in the SM group. Ten children in the SM group were not interviewed. The ADIS-C primary diagnoses for the AD group were social phobia (4 participants), separation anxiety disorder (3 participants), and specific phobia (2 participants). Two children in the AD group were not interviewed and 4 children in the AD group did not receive any ADIS-C
diagnosis. All children in the CN group did not receive any ADIS-C diagnosis. Table 1 summarizes these results.

Table 1  Frequency of Primary Diagnoses

<table>
<thead>
<tr>
<th>Primary Diagnosis</th>
<th>SM</th>
<th>AD</th>
<th>CN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADIS-P Selective Mutism</td>
<td>15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Social Phobia</td>
<td>0</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Separation Anxiety Disorder</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Generalized Anxiety Disorder</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Attention Deficit Hyperactivity Disorder</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ADIS-P Oppositional Defiant Disorder</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>No ADIS-P Diagnosis</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>ADIC-C Selective Mutism</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ADIC-C Social Phobia</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>ADIC-C Separation Anxiety Disorder</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>ADIC-C Specific Phobia</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>No ADIS-C Diagnosis</td>
<td>0</td>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>

Group Comparisons

Diagnoses

To determine if the SM and AD groups had a comparable number of comorbid diagnoses, analyses of variance were computed to compare the number of comorbid anxiety diagnoses and number of total comorbid diagnoses between the SM and AD groups. Because it was a criterion for the CN group to be “without an anxiety disorder,” this group was excluded from these comparisons. Because selective mutism was the primary diagnosis for all participants in the SM group, selective mutism was not included in comorbid diagnoses. Accordingly, the primary diagnosis for participants in the AD group was not included in comorbid diagnoses. ADIS-P comorbid anxiety diagnoses for the SM group were social phobia (15 participants), separation anxiety disorder (6
participants), specific phobia (3 participants), and generalized anxiety disorder (1 participant). ADIS-P comorbid anxiety diagnoses for the AD group were specific phobia (7 participants), separation anxiety disorder (6 participants), generalized anxiety disorder (4 participants), social phobia (3 participants), and obsessive-compulsive disorder (1 participant). Table 2 summarizes these results.

Table 2  Frequency of Comorbid Diagnoses

<table>
<thead>
<tr>
<th>Comorbid diagnosis</th>
<th>SM</th>
<th>AD</th>
<th>CN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADIS-P Social Phobia</td>
<td>15</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Separation Anxiety Disorder</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Specific Phobia</td>
<td>3</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Generalized Anxiety Disorder</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Obsessive Compulsive Disorder</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Encopresis</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Enuresis</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Attention Deficit Hyperactivity Disorder</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-P Oppositional Defiant Disorder</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-C Social Phobia</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-C Specific Phobia</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-C Separation Anxiety Disorder</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-C Generalized Anxiety Disorder</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>ADIS-C Attention Deficit Hyperactivity Disorder</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The mean number of ADIS-P comorbid anxiety diagnoses was 1.67 for the SM group and 1.40 for the AD group. This difference was not statistically significant. Additional ADIS-P comorbid diagnoses included encopresis (2 SM group), attention deficit hyperactivity disorder (1 SM group, 1 AD group), enuresis (1 SM group, 1 AD group), and oppositional defiant disorder (1 AD group). The mean number of total ADIS-P comorbid diagnoses was 1.93 for the SM group and 1.60 for the AD group. This difference was not statistically significant.
Analyses of variances were also computed to compare the number of comorbid anxiety diagnoses and total comorbid diagnoses between the SM and AD groups from the child interview (ADIS-C). Again, the primary diagnosis (e.g., selective mutism) was not included in the comorbid diagnoses. ADIS-C comorbid anxiety diagnoses for the SM group were social phobia (5 participants), specific phobia (3 participants), separation anxiety disorder (1 participant), and generalized anxiety disorder (1 participant). ADIS-C comorbid anxiety diagnoses for the AD group were specific phobia (4 participants), social phobia (2 participants), generalized anxiety disorder (2 participants), and separation anxiety disorder (1 participant). The mean number of ADIS-C comorbid anxiety diagnoses was 2.00 for the SM group and 0.69 for the AD group. Analysis of variance indicated that this difference was statistically significant ($F = 11.27; p < .01$). The only additional ADIS-C comorbid diagnosis was attention deficit hyperactivity disorder (1 SM group). Thus, the mean number of ADIS-C total comorbid diagnoses was 2.20 for the SM group and 0.69 for the AD group. Analysis of variance indicated that this difference was statistically significant ($F = 13.73; p < .01$). Table 3 summarizes these results.

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>SM</th>
<th>AD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADIS-P Comorbid Anxiety Diagnoses</td>
<td>1.67 (.724)</td>
<td>1.40 (.828)</td>
</tr>
<tr>
<td>ADIS-P Total Comorbid Diagnoses</td>
<td>1.93 (1.03)</td>
<td>1.60 (1.06)</td>
</tr>
<tr>
<td>ADIS-C Comorbid Anxiety Diagnoses</td>
<td>2.00 (.707)*</td>
<td>.692 (.751)</td>
</tr>
<tr>
<td>ADIS-C Total Comorbid Diagnoses</td>
<td>2.20 (.837)*</td>
<td>.692 (.751)</td>
</tr>
</tbody>
</table>

Figures represent means and standard deviations are in parentheses. *$p < .05$
Anxiety-related predispositional factors

Analyses of variance were conducted on the internalizing, externalizing, and total T scores of the CBCL and TRF, all subscales of the FES, and all category scores of the BSQ. Additional analyses of variance were conducted on six individual items (i.e., shy, sulks, withdrawn, secretive, demands attention, and stubborn) from the CBCL and TRF. Because multiple tests of significance (i.e., multiple ANOVAs) were computed, the Tukey Honestly Significantly Different (HSD) test was used to correct for Type I error.

Prior to conducting analyses of variance on the internalizing, externalizing, and total T scores of the TRF, missing values were replaced with group means to correct for the unequal N (i.e., 14 selective mutism, 11 anxiety, 13 control). The missing value in the SM group was replaced with the means for SM (i.e., 58.21 internalizing T, 45.43 externalizing T, and 52.72 total T). The four missing values in the AD group were replaced with the means for AD (i.e., 57.27 internalizing T, 48.80 externalizing T, and 53.42 total T). The two missing values in the CN group were replaced with the means for CN (i.e., 47.69 internalizing T, 50.54 externalizing T, and 46.54 total T).

Results indicated significant differences among the groups with respect to CBCL internalizing T scores, CBCL total T scores, TRF internalizing T scores, and FES active-recreational orientation, BSQ approach-withdrawal, BSQ adaptability, BSQ distractibility, and BSQ sensory threshold subscale scores. More specifically, the SM and AD groups scored significantly higher than the CN group with respect to CBCL internalizing T scores ($F = 19.03; p < .001$), CBCL total T scores ($F = 9.04; p < .01$), TRF internalizing T scores ($F = 4.76; p < .05$), and BSQ approach-withdrawal ($F = 16.63; p < .001$). No significant differences were found between the SM and AD groups on the
CBCL internalizing T, CBCL total T, TRF internalizing T, and the BSQ approach-withdrawal scale. Results indicated no significant differences among the three groups with respect to the externalizing T scores of the CBCL or TRF.

The results further indicated that the CN group scored significantly higher than the AD group for FES active-recreational orientation (F = 5.62; p < .01) and that the AD group scored significantly higher than the CN group for BSQ adaptability (F = 5.19; p < .01). Results indicated that the AD group scored significantly higher than both the SM and CN groups with respect to BSQ distractibility and BSQ sensory threshold (F = 8.16 and 8.20; p < .01). No significant differences were found between the SM group and the AD group with respect to FES active-recreational orientation and BSQ adaptability. Table 4 summarizes these results.

CBCL and TRF individual items

Additional analyses of variance with Tukey correction were conducted to compare groups on six individual CBCL and TRF items (i.e., shy, sulks, withdrawn, secretive, demands attention, and stubborn). Missing TRF values were replaced with group means prior to conducting analyses of variance to correct for the unequal N (i.e., 14 SM group, 11 AD group, 13 CN group). The missing value in the SM group was replaced with the means for SM (i.e., 1.50 shy, 0.29 sulks, 0.71 withdrawn, 0.57 secretive, 0.0 demands attention, and 0.50 stubborn). The four missing values in the AD group were replaced with the means for AD (i.e., 1.18 shy, 0.27 sulks, 0.27 withdrawn, 0.36 secretive, 0.45 demands attention, and 0.36 stubborn). The two missing values in
the CN group were replaced with the means for CN (i.e., 0.38 shy, 0.31 sulks, 0.23 withdrawn, 0.31 secretive, 0.23 demands attention, and 0.23 stubborn).

Results indicated significant differences among the groups with respect to CBCL shy, CBCL withdrawn, TRF shy, and TRF demands attention. More specifically, the SM and AD groups scored significantly higher than the CN group with respect to CBCL shy (F = 25.64; p < .001), CBCL withdrawn (F = 8.22; p < .01) SM and (F = 8.22; p < .05) AD, and TRF shy (F = 11.43; p < .001) SM and (F = 11.43; p < .01) AD. The AD group scored significantly higher than the SM group with respect to TRF demands attention (F = 3.58; p < .05). No significant differences were found between the SM and AD groups on CBCL shy, CBCL withdrawn, and TRF shy. Table 4 summarizes these results.
Table 4  Group Comparisons Anxiety Related Predispositional Factors

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>SM</th>
<th>AD</th>
<th>CN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalizing T CBCL</td>
<td>64.27 (12.93)</td>
<td>65.47 (8.45)</td>
<td>45.00 (8.57)*</td>
</tr>
<tr>
<td>Externalizing T CBCL</td>
<td>54.27 (12.79)</td>
<td>51.93 (11.35)</td>
<td>47.80 (15.15)</td>
</tr>
<tr>
<td>Total T CBCL</td>
<td>60.60 (12.86)</td>
<td>61.40 (10.32)</td>
<td>44.60 (13.24)*</td>
</tr>
<tr>
<td>Internalizing T TRF</td>
<td>58.21 (8.95)</td>
<td>57.27 (12.36)</td>
<td>47.69 (9.35)*</td>
</tr>
<tr>
<td>Externalizing T TRF</td>
<td>45.43 (4.92)</td>
<td>48.80 (9.70)</td>
<td>50.54 (9.06)</td>
</tr>
<tr>
<td>Total T TRF</td>
<td>52.71 (6.67)</td>
<td>53.42 (13.02)</td>
<td>46.54 (9.77)</td>
</tr>
<tr>
<td>FES Cohesion</td>
<td>59.33 (11.18)</td>
<td>54.50 (11.68)</td>
<td>54.80 (10.95)</td>
</tr>
<tr>
<td>FES Expressiveness</td>
<td>49.80 (9.12)</td>
<td>53.71 (11.88)</td>
<td>51.20 (14.15)</td>
</tr>
<tr>
<td>FES Conflict</td>
<td>47.00 (10.09)</td>
<td>49.50 (12.02)</td>
<td>47.60 (9.83)</td>
</tr>
<tr>
<td>FES Independence</td>
<td>45.47 (12.15)</td>
<td>40.00 (12.48)</td>
<td>46.47 (10.71)</td>
</tr>
<tr>
<td>FES Achievement</td>
<td>50.13 (8.54)</td>
<td>48.07 (8.09)</td>
<td>50.40 (7.79)</td>
</tr>
<tr>
<td>FES Intellectual-Cultural</td>
<td>48.33 (11.51)</td>
<td>49.64 (10.38)</td>
<td>47.87 (15.21)</td>
</tr>
<tr>
<td>FES Active-Recreational</td>
<td>48.67 (11.96)</td>
<td>43.14 (9.20)*</td>
<td>55.07 (6.90)</td>
</tr>
<tr>
<td>FES Moral-Religious</td>
<td>56.93 (12.48)</td>
<td>53.71 (10.87)</td>
<td>51.53 (11.72)</td>
</tr>
<tr>
<td>FES Organization</td>
<td>56.93 (10.42)</td>
<td>52.14 (10.26)</td>
<td>48.80 (11.91)</td>
</tr>
<tr>
<td>FES Control</td>
<td>54.40 (9.06)</td>
<td>56.93 (9.90)</td>
<td>60.07 (10.38)</td>
</tr>
<tr>
<td>BSQ Activity Level</td>
<td>3.52 (0.49)</td>
<td>3.51 (0.63)</td>
<td>3.51 (0.92)</td>
</tr>
<tr>
<td>BSQ Rhythmicity</td>
<td>3.38 (0.89)</td>
<td>3.38 (0.59)</td>
<td>2.82 (0.54)</td>
</tr>
<tr>
<td>BSQ Approach-Withdrawal</td>
<td>4.28 (0.85)</td>
<td>4.52 (0.79)</td>
<td>2.95 (0.77)*</td>
</tr>
<tr>
<td>BSQ Adaptability</td>
<td>3.15 (0.77)</td>
<td>3.52 (0.82)*</td>
<td>2.64 (0.65)</td>
</tr>
<tr>
<td>BSQ Intensity</td>
<td>3.89 (0.81)</td>
<td>4.37 (0.84)</td>
<td>4.19 (0.63)</td>
</tr>
<tr>
<td>BSQ Mood</td>
<td>3.41 (0.99)</td>
<td>3.63 (0.91)</td>
<td>3.00 (0.80)</td>
</tr>
<tr>
<td>BSQ Persistence</td>
<td>3.34 (0.67)</td>
<td>3.33 (0.63)</td>
<td>2.95 (0.53)</td>
</tr>
<tr>
<td>BSQ Distractibility</td>
<td>3.32 (0.65)</td>
<td>4.20 (0.81)*</td>
<td>3.39 (0.48)</td>
</tr>
<tr>
<td>BSQ Sensory Threshold</td>
<td>3.29 (0.87)</td>
<td>4.22 (0.65)*</td>
<td>3.38 (0.53)</td>
</tr>
<tr>
<td>CBCL Shy</td>
<td>1.67 (.488)</td>
<td>1.73 (.594)</td>
<td>.400 (.633)*</td>
</tr>
<tr>
<td>CBCL Sulks</td>
<td>.533 (.640)</td>
<td>.467 (.516)</td>
<td>.267 (.594)</td>
</tr>
<tr>
<td>CBCL Withdrawn</td>
<td>1.13 (.916)</td>
<td>.800 (.676)</td>
<td>.133 (.352)*</td>
</tr>
<tr>
<td>CBCL Secret</td>
<td>.733 (.884)</td>
<td>.600(.910)</td>
<td>.267 (.594)</td>
</tr>
<tr>
<td>CBCL Demands Attention</td>
<td>.667 (.617)</td>
<td>1.20 (.676)</td>
<td>.667 (.817)</td>
</tr>
<tr>
<td>CBCL Stubborn</td>
<td>.933 (.704)</td>
<td>.733 (.594)</td>
<td>.600 (.737)</td>
</tr>
<tr>
<td>TRF Shy</td>
<td>1.50 (.732)</td>
<td>1.18 (.635)</td>
<td>.384 (.602)*</td>
</tr>
<tr>
<td>TRF Sulks</td>
<td>.286 (.589)</td>
<td>.272 (.547)</td>
<td>.308 (.584)</td>
</tr>
<tr>
<td>TRF Withdrawn</td>
<td>.714 (.700)</td>
<td>.272 (.395)</td>
<td>.231 (.555)</td>
</tr>
<tr>
<td>TRF Secret</td>
<td>.571 (.821)</td>
<td>.363 (.570)</td>
<td>.308 (.584)</td>
</tr>
<tr>
<td>TRF Demands Attention</td>
<td>.000 (.000)</td>
<td>.453 (.693)*</td>
<td>.231 (.406)</td>
</tr>
<tr>
<td>TRF Stubborn</td>
<td>.500 (.732)</td>
<td>.363 (.570)</td>
<td>.231 (.555)</td>
</tr>
</tbody>
</table>

Figures represent means and standard deviations are in parentheses. *p < .05
CHAPTER 5

DISCUSSION

This study is the first to compare selective mutism (SM) to both an anxiety group (AD) and a control group (CN) utilizing systematic assessments derived from standardized measures and multiple sources of information (i.e., children, parents, teachers, and clinicians). The results indicate that children with SM closely resemble children with AD. Overall, the SM and AD groups scored comparably on various measures of anxiety-related predispositional factors. Furthermore, the SM and AD groups differed from the CN group with respect to internalizing behavior problems as reported by parents and teachers. On the other hand, no differences were found among the three groups with respect to externalizing behavior problems as reported by parents and teachers. In fact, levels of externalizing problems were low among all groups. Only one child with SM met diagnostic criteria for an externalizing behavior problem (i.e., attention deficit hyperactivity disorder), while all children with SM received at least one comorbid anxiety diagnosis (i.e., social phobia, separation anxiety disorder, specific phobia, and/or generalized anxiety disorder). These results support the contention that selective mutism is anxiety-based and correspond with prior research emphasizing the association between selective mutism and anxiety disorders (Black & Uhde, 1995; Dummit et al., 1997; Ford et al., 1998).
As hypothesized, the SM and AD groups received a comparable number of comorbid anxiety diagnoses and a comparable number of total comorbid diagnoses from parent interviews. All SM children received a comorbid diagnosis of social phobia, while 93.3% of AD children received at least one comorbid anxiety diagnosis (e.g., social phobia, separation anxiety disorder, specific phobia, etc.). Only one child in each group received a diagnosis of attention deficit hyperactivity disorder. Thus, parents in both the SM and AD groups reported similar comorbid symptoms, supporting the relationship between selective mutism and anxiety. Furthermore, these findings correspond to Dummit et al. (1997) in which all 50 children assessed with selective mutism met diagnostic criteria for either social phobia or avoidant disorder, while only one child met diagnostic criteria for attention deficit hyperactivity disorder. These results are also similar to the findings of Black and Uhde (1995), in which 97% of children assessed with selective mutism met diagnostic criteria for social phobia, avoidant disorder, or both. Another similar finding is that, in addition to receiving the diagnosis of social phobia, 53% of SM children in this study received another anxiety diagnosis while 48% of the children in the study conducted by Dummit et al. (1997) had additional anxiety disorders.

According to information obtained from child interviews, the SM group received a greater number of comorbid anxiety diagnoses and greater number of total comorbid diagnoses than the AD group. Thus, SM children reported more comorbid anxiety and more total symptoms than AD children. Perhaps youth with SM represent a subsection of anxiety disorders that is more severe than symptoms seen in clinically anxious youth. Children with SM may report greater symptoms of anxiety because their anxiety is
generalized and interferes more with aspects of their lives. Of course, any conclusions must be tempered by the limited sample size that was obtained.

These findings conflict with information obtained from parent interviews in which SM appears to be similar to AD. A possible explanation for the discrepancy between parent and child results is the age difference between the children interviewed in the SM and AD groups. While no significant age differences were found between the two groups as a whole, only 5 SM and 13 AD children were interviewed. The SM children interviewed were older (9.35 years) than the AD children interviewed (6.83 years). Furthermore, the younger children may not have fully understood many of the interview items (e.g., interference, rating scales, etc.), which may have contributed to the underdiagnosis of anxiety disorders from AD child interviews. Unfortunately, however, no comparable results exist within the literature because this is the first study to assess SM children with semi-structured child interviews. Black and Uhde (1995) and Dummit et al. (1997) attempted to use the Diagnostic Interview for Children (DISC), but stated they were unable to do so because the children were mute in the clinic.

Many have posited that SM is an oppositional behavior, although associations between SM and externalizing behaviors are far less common than internalizing concerns. Kristensen et al. (2001) found only low to moderate reports of externalizing symptoms, while no SM child with pure externalizing problems was found. Dummit et al. (1997) found only one instance each of comorbid oppositional defiant disorder and attention deficit hyperactivity disorder. Similarly, Andersson and Thomsen (1998) found no difference between SM children and controls with respect to oppositional defiant disorder. Correspondingly, the present study found no difference among SM, AD, and
CN children with respect to oppositional defiant disorder or attention deficit hyperactivity disorder. In fact, one child in each group received a diagnosis of attention deficit hyperactivity disorder, while diagnostic criteria for oppositional defiant disorder was met in only two cases (1 AD child and 1 CN child).

Results from the CBCL and TRF are consistent with information obtained from parent interviews showing the SM and AD groups to be similar. Furthermore, the SM and AD groups were considerably different from the CN group with respect to internalizing problems as reported by parents and teachers. As hypothesized, no differences were found among the three groups regarding externalizing behavioral problems. In fact, the externalizing values reported were low. Thus, differentiating children with SM from other populations based on externalizing behavior problems may not be feasible. On the other hand, internalizing levels were elevated, indicating that SM is more of an internalizing disorder than an externalizing one. These findings correspond to previous studies that emphasize the internalizing nature of SM. For example, Kristensen (2001) found that SM children differed substantially from control children with respect to internalizing behavior problem scores on the CBCL and the TRF, while externalizing problems were reported in low to moderate levels by parents only. Furthermore, Black and Uhde (1995), Dummit et al. (1997), Ford et al. (1998), and Steinhausen and Juzi (1996) reported that SM children have predominantly internalizing symptoms with low rates of externalizing behavior problems. Thus, SM appears to be more a symptomatic expression of anxiety than an externalizing behavior problem.

Data from individual items of the CBCL and TRF are consistent with the above findings and support the idea that children with SM have more internalizing than
externalizing symptoms. More specifically, the items indicate that children with SM are more shy and withdrawn than matched controls. Parent and teacher reports show that SM and AD children are substantially shyer than the CN group. Parent report also reveals that the SM and AD groups are more withdrawn than the control group. These results are consistent with Kristensen’s (2001) findings that children with SM scored substantially different from matched controls on the “shy or timid” and “withdrawn, doesn’t get involved with others” items. Shy, timid, and withdrawn are characteristics that have been commonly reported in the SM literature (Dummit & Uhde, 1995; Ford et al., 1998; Kopp & Gillberg, 1997; Steinhausen & Juzi, 1996). Shyness is also a possible symptom of social anxiety, as children may appear markedly timid in unfamiliar social situations (APA, 1994). Thus, the findings that the SM and AD groups scored comparably on shy and withdrawn items further supports the association between SM and anxiety. More specifically, these results favor a relationship between SM and social anxiety.

The CBCL and TRF “demands attention” item further supports that SM is more of an internalizing than externalizing behavior problem. The AD group scored significantly higher than both the SM and CN groups on the “demands a lot of attention” item from the TRF. Data from the CBCL were consistent with the TRF, although differences were not statistically significant. Perhaps the children with separation anxiety in the AD group contributed to this difference, for children with separation anxiety may be more demanding of parental attention than children with SM (Kearney, 2001). It is possible that the SM group is less bothersome and parents do not recognize it as a problem because such children speak freely at home. Perhaps SM children do not
demand much attention from their teachers because they silently sit in the classroom hoping to be unnoticed. Speaking is an act that draws attention to oneself, especially in classrooms where children often speak out of turn. Because children with SM do not speak in the classroom, they are not seen as demanding much attention. SM children may not only exhibit non-speaking behavior, they may also be avoiding any possible evaluative interactions. Similar to children with social phobia, SM children are often inhibited, withdrawn, and avoidant in social settings (e.g., the classroom). Perhaps children with SM do not speak in class because they fear the negative evaluation (attention) that could result; likewise, they avoid any other behavior that would result in negative attention. The “demands attention” item is an externalizing behavior problem that was not endorsed by any teacher in the SM group.

Prior studies have described SM children as characteristically stubborn, manipulative, and sulky (Andersson & Thomsen, 1998; Kolvin & Fundudis, 1981; Wilkins, 1985). However, these studies did not systematically compare their findings to an anxiety or control group. One possible explanation for why children with SM have been characterized as stubborn is because they fail to speak consistently in social settings (e.g., school). Nonetheless, the current study found no differences among the groups with respect to CBCL and TRF stubborn, sulks, and secretive items. This suggests that children with SM are no more stubborn, secretive, or sulky than their peers. This further supports the notion that externalizing behaviors are far less common than internalizing symptoms in SM children.

The current study is the first controlled study of SM to employ a standardized inventory for assessing family environment (i.e., the FES). The literature has often

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regarded SM as a manifestation of family dynamics, for SM children have been characterized as having unhealthy parent-child relationships. Marital discord, parent-child enmeshment, and overdependence have all been linked to SM in children (Anstendig, 1999; Kolvin & Fundudis, 1981; Steinhausen & Adamek, 1997). Families have further been characterized as socially isolated, silent, closed, and disharmonious with an absent or “distant” father (Shvarztman et al., 1990; Sluzki, 1983). The present study, however, does not support these familial patterns. In fact, no difference was found among the groups with respect to marital status and only one child in the SM group had an “absent” father. Furthermore, no differences were found among the groups with respect to FES conflict, FES cohesion, FES control, FES expressiveness, or FES independence.

The only significant difference found on family variables was that the AD group scored substantially lower than the CN group on FES active-recreational orientation. The SM group scored comparably to the CN group on this subscale. This suggests that while AD children avoid social situations, SM children endure them without speaking. Thus, a possible coping mechanism for the anxiety group is to avoid these situations, while the SM group may cope by failing to speak in social settings. Therefore, SM children may remain socially active, but do not verbally participate in these situations. The current finding that SM children are as socially active as their peers is consistent with the research of Ford et al. (1998), who found that families of SM children were moderately socially active.

Perhaps few specific family dynamics or characteristics largely differentiate SM children from their peers. Perhaps variability exists within the SM and AD groups.
Thus, it is possible that enmeshed families contribute to the manifestation of SM in some children, whereas other family types (e.g., discord, control) contribute to SM in others. Furthermore, some dimensions of family functioning may affect children differently. For instance, lack of expressiveness in the home may contribute to SM in some children because they have learned to be less talkative. However, children from expressive family environments who speak openly in the home but are more reserved in public may still exhibit SM by modeling their parents' behavior. Thus, the hypotheses were not supported with respect to FES cohesion, FES expressiveness, and FES independence perhaps because different family environments can lead to the same diagnosis. Perhaps an integrated model applies to the manifestation of SM such that different pathways or a combination of family dynamics, environmental influences, and child temperament contribute to SM.

Researchers have proposed a link between SM and temperament due to the approach/withdrawal and adaptability qualities of this population (Ford et al., 1998; Kumpulainen et al., 1998). However, previous studies addressing temperament have lacked comparison groups. The present study is the first to systematically assess temperamental characteristics of children with SM utilizing a standardized measure of temperament (BSQ). Results indicated that children with SM and AD were more withdrawn than children in the control group. Thus, SM and AD children both have difficulty approaching novel stimuli (e.g., people, situations, places, etc.). Failure to speak is a definite indicator of behavioral inhibition; consequently, children with SM are seen as socially inhibited. This further supports the notion that SM is a symptom of
social anxiety and corresponds with previous findings (Ford et al., 1998; Kumpulainen et al., 1998).

Ford et al. (1998) found that many children with SM also experience difficulty adapting to change. Results from the present study indicated that AD children had greater difficulty adapting to change than CN children. The SM group scored in the same direction as the AD group, indicating that children with SM have some difficulty adapting to change. Perhaps the nonsignificant difference between the SM and CN groups was due to variability within the SM group. Perhaps some SM children struggle with change while others adapt without great difficulty. As Ford et al. (1998) found, children with SM may have difficulty adapting to new situations and/or difficulty adapting to change. These “slow to warm” and behaviorally inhibited characteristics strengthen the proposed relationship between SM and anxiety.

Significant differences were found for two other temperament characteristics as well. The AD group scored substantially different from both the SM and CN groups with respect to both distractibility and sensory threshold. Results indicated that AD children were more distracted than SM and CN children. Similarly, the AD group had a lower threshold for sensory stimulation than the SM and CN groups. Thus, the AD group may be more hypervigilant than the other groups, reacting more to changes in sensory stimuli (e.g., lights, sounds, touch) and becoming more easily distracted by environmental stimuli. Perhaps the SM group does not have the opportunity to become distracted because they are not interacting with others. Perhaps children with SM are also unable to react to changes in sensory stimuli because they fail to speak in these situations.
Overall, findings from the BSQ, CBCL, and TRF are consistent with information obtained from parent interviews and support the hypotheses that selective mutism closely resembles anxiety. This study deemphasized behavior problems and emphasized the internalizing symptoms of SM. The findings support the idea that selective mutism is anxiety-based and correspond with prior research (Black & Uhde, 1995; Dummit et al., 1997; Ford et al., 1998).

The implications of this research highlight a possible need to change the conceptualization of SM. The current classification of SM in the DSM-IV-TR under "other disorders of childhood not otherwise specified" has prompted much debate as to whether SM is an anxiety disorder or an oppositional behavior. Previous studies support the relationship between SM and anxiety disorders (Black & Uhde, 1992; Black & Uhde, 1995; Dummit et al., 1997; Ford et al., 1998; Kristensen, 2001), and little empirical support exists for the relationship between SM and oppositional behavior. Still, the current diagnostic classification leaves clinicians uncertain about the nature of SM, for there is no mention of anxiety in the diagnostic criteria. However, social avoidance, social anxiety, or social phobia may be associated features of this disorder (APA, 1994). Because a relationship between SM and anxiety has been established, improving upon the current DSM criteria would provide a more lucid diagnostic understanding of this disorder.

The next question to be addressed is whether SM should be listed as a symptom of an anxiety disorder (e.g., social phobia or separation anxiety disorder) or remain a distinct diagnosis. Perhaps SM is a symptom of social phobia or a more severe form of this disorder. Often, children with SM receive a diagnosis of social phobia (APA, 1994;
Anstendig, 1999; Black & Uhde, 1995), perhaps because the diagnostic criteria of social phobia closely resemble the symptoms of SM. For instance, the diagnostic criteria of social phobia include (1) persistent fear of social or performance situations, (2) anxiety when exposed to feared social situations, which may take the form of crying, tantrums, freezing, or shrinking from social situations with unfamiliar people, and (3) avoidance of performance situations or feared situations endured with intense anxiety or distress. The act of speaking alone can be both a performance and a social situation, especially when it occurs in a social setting (e.g., school). Failure to speak in SM children can be seen as a “freezing response” or a way of “shrinking” from the situation. Children with SM may withhold speech to avoid the anxiety attached to social and performance situations or they may fail to speak as a way of coping with the intense anxiety and distress they experience in these situations. Furthermore, the current study shows that SM children are characteristically shy and inhibited, both of which are associated features of children with social phobia (APA, 1994; Anstendig, 1999). Thus, SM can either be listed as a symptom of social phobia or the current diagnostic criteria can be expanded upon to include features of social anxiety. Additional diagnostic criteria of SM may include persistent fear of social or performance situations, anxiety when exposed to feared situations, and avoidance of performance situations.

On the other hand, perhaps two subtypes of SM exist, one driven by social anxiety and the other a response to a child’s separation anxiety. The SM children in this study could be divided into two groups of children. Eight children received comorbid diagnoses of SM and social phobia without comorbid separation anxiety while 7 children received comorbid diagnoses of SM, social phobia, and separation anxiety. The variant
degrees of mute behavior noted in the literature (Ford et al., 1998; Kratochwill, 1981) and encountered during the interview portion of this study could be related to this social phobia/separation anxiety distinction. Of the SM children who participated in the interview process, four verbally gave their responses, whereas one child relied solely on nonverbal communication. Social phobia was the most severe comorbid diagnosis for all five children interviewed, and the nonverbal child had self-reported separation anxiety. All children were interviewed in their home environment, which may have alleviated their social anxiety and allowed them to participate in the interview. Perhaps the children with comorbid social phobia and separation anxiety were unable to speak because their anxiety was more severe.

Variety also existed in clinician interactions with the children who did not participate in the assessment. Seven children remained silent during the course of the visit, while three children verbally communicated to a minimal degree. Furthermore, 5 of the children who didn’t speak in the presence of the investigator failed to participate in nonverbal interactions (e.g., waving goodbye, head nods, etc.). In fact, these children went to their rooms or hid behind their parents during the assessment process. The other two children interacted with the clinician and communicated nonverbally by head nods and gestures. It could be that the children with only comorbid social phobia were able to communicate in their home environment because that is the setting in which they feel most comfortable. Children with separation anxiety do not necessarily feel safest in their home environment for they still may fear being separated from their parents. Thus, 5 children with comorbid separation anxiety in addition to social phobia were unable to communicate verbally in the assessment, and some were unable to interact with the
clinician. Furthermore, two of these children had greater severity ratings for separation anxiety than social phobia. Therefore, it is possible that SM is not a homogenous group and that subtypes of these children exist. This theory is consistent with the family variables data in that certain family subtypes may contribute to SM in some children while other family subtypes lead to SM in others. For instance, high cohesion families may contribute to SM with a separation anxiety basis, while low expressiveness families may lead to SM with a social phobia basis. It could be that SM primarily due to social phobia, SM primarily due to separation anxiety and social phobia, or a combination of the two exists. However, it is also possible that social anxiety or separation anxiety occur because of the SM and that social or separation anxiety are merely symptoms of SM.

The strong relationship between SM and anxiety is apparent. Therefore, the current DSM classification should be modified to include the anxiety component of SM. Conceptualizing SM as anxiety-based will improve the assessment and treatment of this disorder. Presently, a lack of standardized assessment measures exists for SM, perhaps due to the current conceptualization of this disorder. Instruments should be developed to assess anxiety symptomatology (e.g., social avoidance, feared situations, separation anxiety, etc.), variant talking patterns, and social interactions of SM children. Such instruments will provide more accurate assessments and diagnoses of SM.

Conceptualizing SM as anxiety will perhaps have the greatest impact on the treatment of children with this disorder. It is important for clinicians, parents, and teachers to stop viewing an SM child as oppositional simply because he/she fails to speak in social settings. Instead, one should recognize that anxiety is contributing to the child's mute behavior. It is especially important for teachers, parents, and clinicians to have the
same understanding of this behavior because the treatment of SM often relies on parent
and teacher cooperation. Furthermore, the treatment of SM will be most effective when
attention is removed from a child’s mute behavior and underlying anxiety is addressed.
Thus, it is important for a clinician to consider possible subtypes of SM (i.e., SM with
predominant social anxiety or SM with predominant separation anxiety) because
treatment approaches will be different depending on the type of anxiety present. The
treatment of SM children with social anxiety should focus on exposing children to feared
social and performance situations while treatment of SM children with separation anxiety
should first aim to reduce separation anxiety.

The major limitation of this study is the small sample size. The low prevalence of
this disorder contributed to the difficulty in recruiting participants. Another possible
contributing factor was the lack of awareness of SM in the general population. Parents
often do not recognize the problem behavior because their children speak freely at home,
while others may see SM as shyness that children will outgrow. Thus, it is possible that
some parents of children with SM did not volunteer to participate in the study because
they were not aware of the problem. Also, parents may not have been aware of the study
because they did not have access to the media sources that advertised it. Another
problem with the sampling was that three children with SM were excluded from the study
because their parents did not speak English and a bilingual clinician was not available to
conduct the assessments. Furthermore, many of the assessment measures did not have
Spanish versions or normative data available. This is a problem that needs to be
addressed because SM does exist in the Spanish-speaking population. In fact, 5 children
in the SM group spoke Spanish and English in their homes. Future studies should
address the prevalence of SM in the Hispanic population, assess for acculturation, standardize assessment measures on this population, and create valid and reliable culturally sensitive instruments for assessing bilingual children with SM.

A further limitation was that the study did not address parental personality characteristics, family psychopathology (i.e., anxiety diagnoses, depression) and family history of shyness or SM. Many parents reported a family history of SM, anxiety, or shyness, but no interpretations could be made from this information because these items were not directly measured.

Future research should replicate the current study with a larger sample size and include more assessment measures to address family history, psychopathology, and personality characteristics. Further research needs to examine the relationship between SM primarily associated with social anxiety and SM primarily linked to separation anxiety. Possible subtypes of SM should also be examined by making comparisons within a large group of children with SM. Future research should also examine cultural variables that may influence the development of SM. Furthermore, a great need exists for relatively large controlled outcome studies to provide empirically supported interventions for the treatment of SM. Treatment studies evaluating predictors of treatment success and dropout would contribute significantly to the literature on SM.

While the research on SM has increased over the past ten years, this is an area of clinical psychology that demands more attention. Clinicians, teachers, and parents need to be better informed about the nature of SM and available treatment options. Future research would benefit the field of psychology and will ultimately help children with SM overcome their anxiety, allowing them to speak in social settings. This is extremely
important because without treatment children suffer socially, developmentally, and academically.
REFERENCES


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European Child and Adolescent Psychiatry, 10, 135-142.


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