

# SELECTIVE MUTISM: A Review of Etiology, Comorbidities, and Treatment

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*Psychiatry (Edgemont) 2010;7(3):23–31*

## ABSTRACT

Selective mutism is a rare and multidimensional childhood disorder that typically affects children entering school age. It is characterized by the persistent failure to speak in select social settings despite possessing the ability to speak and speak comfortably in more familiar settings. Many theories attempt to explain the etiology of selective mutism.

### Comorbidities and treatment.

Selective mutism can present a variety of comorbidities including enuresis, encopresis, obsessive-compulsive disorder, depression, premorbid speech and language abnormalities, developmental delay, and Asperger's disorders. The specific manifestations and severity of these comorbidities vary based on the individual. Given the multidimensional manifestations of selective mutism, treatment options are similarly diverse. They include individual behavioral therapy, family therapy, and psychotherapy with antidepressants and anti-anxiety medications.

**Future directions.** While studies have helped to elucidate the phenomenology of selective mutism, limitations and gaps in knowledge still persist. In particular, the literature on selective mutism consists primarily of small sample populations and case reports. Future research aims to develop an increasingly integrated, multidimensional framework for evaluating and treating children with selective mutism.



**FUNDING:** There was no funding for the development and writing of this article.

**FINANCIAL DISCLOSURE:** The author has no conflicts of interest relevant to the content of this article.

**DISCLAIMER:** The views expressed are those of the author and do not reflect the official policy of the Department of the Army, the Air Force, the Department of Defense, or the US government.

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**KEY WORDS:** selective mutism, elective mutism, social phobia, psychodynamic theory, behavioral theory, family systems perspective, dissociative identity disorder, post-traumatic stress disorder, play therapy, self-reinforcing, stimulus fading, video feed forward, response initiation

## CASE EXAMPLE

Chloe's parents knew something was wrong when they were told by the four-year-old's preschool teacher that she had spoken in school that day for the first time after attending preschool for almost eight months. When Chloe entered the classroom, she appeared hesitant and self-conscious and avoided eye contact. She would engage in an assigned task, but not with other children. Her comfort level dropped in a larger group, and she would not interact with the others in a group. If the other children talked to her, she would turn away.

The evaluation of a patient with selective mutism consists of a comprehensive and multimodal approach.<sup>3</sup> Beyond information from parents and teachers, health professionals, such as audiologists, psychiatrists, psychologists, and speech/language pathologists may be involved in the multidimensional assessment.

She also did not speak in church or with distant family members, but she was a chatterbox at home. In elementary school, it was not until third grade that Chloe spoke to her teacher for the first time after a devoted teacher did behavioral therapy exercises with her in the summer and prior to and after school. Now in fourth grade, Chloe has made much progress and recently read a report on video. Chloe's battle with this disorder is not completely over, but she has made tremendous progress. (*Adopted from actual testimonials from the Selective Mutism Foundation*)

## INTRODUCTION AND BACKGROUND

Selective mutism is a rare childhood disorder characterized by the persistent failure to speak in specific contexts where speech is typically expected, despite hearing and speaking in other contexts. It is classified in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*, under the

category of disorders first diagnosed in infancy, childhood, or adolescence.<sup>1</sup> The social contexts in which the persistent failure to speak occurs are at school and with playmates. In the home with parents and siblings, the child tends to engage in normal conversation.

The *DSM-IV-TR* criteria for selective mutism also specifies that the persistent failure to speak in specific contexts should not be explained by the following:

1. An organic inability rooted in language ability (comprehension and comfort speaking the language)
2. Another communication disorder, such as stuttering
3. Concurrent diagnosis of pervasive development disorder, schizophrenia, or other psychotic disorder<sup>1</sup>

Moreover, the disorder must be present for a minimum of one month and not include the first month of school. The disorder substantially interferes with education, occupational achievement, and social communication.<sup>2</sup> Children with social mutism often appear their age and lack coexisting mental and physical defects and diseases.<sup>3</sup>

The prevalence of social mutism ranges from 0.47 to 0.76 percent of the population based on pooled case studies from Western Europe, the United States, and Israel.<sup>4</sup> Previous prevalence has been reported much lower, at 0.03 to 0.2 percent reported across several epidemiological and cross cultural studies.<sup>3,5</sup> The wide range reflects the lack of uniformity in establishing the diagnosis from chart review and the infrequent use of standardized assessments.<sup>4</sup> Nonetheless, the onset of selective

mutism typically occurs between ages three and six, and diagnosis occurs between ages five and eight, most often discovered after the child enters school.<sup>5</sup> It is slightly more common in girls than in boys, although the difference may be accounted for by research limitations, such as small sample populations and the rare nature of the disorder. The disorder can occur over a few months or persist for several years, although the majority of selectively mute children tend to outgrow the disorder spontaneously for unknown reasons.<sup>3,6</sup> However, despite apparent remission, talking behaviors over time remain lower than average, and residual social phobia and other anxiety disorders may persist.<sup>7</sup>

Although a rare disorder lacking a definite etiology, selective mutism was first identified in the 19th century when Kussmaul named it *aphasia voluntaria* in 1877 to describe the condition where individuals would voluntarily not speak in certain situations (Figure 1).<sup>3</sup> In the early 1930s, the disorder was renamed elective mutism, again emphasizing the elective or voluntary nature of the persistent failure to speak.<sup>8</sup> The current *DSM-IV-TR* diagnosis describes the condition as selective mutism, with the word "selective" emphasizing the select situations characterized by failure to speak rather than the intentional withholding of speech as previous terms implied.

## CLINICAL ASSESSMENT OF SELECTIVE MUTISM

The evaluation of a patient with selective mutism consists of a comprehensive and multimodal approach.<sup>3</sup> Beyond information from parents and teachers, health professionals, such as audiologists, psychiatrists, psychologists, and speech/language pathologists, may be involved in the multidimensional assessment. Early on, a parent interview reviewing the child's comprehensive medical history, including in-depth review of prenatal and perinatal course, helps screen for neurological, speech, and language

difficulties and assess trends in meeting developmental milestones. The clinician's direct observation of the child provides insight into the child's level of social interaction, communication needs, ability to establish friendships, participation in social activities, and the overall extent of inhibition. Details such as whether the child actually does attempt to communicate nonverbally are important to assess. Direct observation by the provider in the clinic and home environments sheds valuable information on the child's behavior in these various settings and enables comparison of the child's behavior and speaking habits. Direct observation also provides the clinician with a sense of the child's overall temperament. Observations recorded by teachers are undoubtedly helpful, although no standardized form for assessing teachers' observations is available at this time.

Second, psychiatric symptoms should be explored through a structured diagnostic interview using tools such as the Diagnostic Interview for Children and Adolescents—parent version. This assessment assists to rule out other conditions, such as schizophrenia or mental retardation, that impede speech but exclude the diagnosis of selective mutism.<sup>3</sup> While complex, the psychiatric evaluation may also involve evaluating shyness in the psychosocial and family history. Further, deeper investigation into possible trauma and neurological injuries should also be considered in evaluating potential language and social impediments.

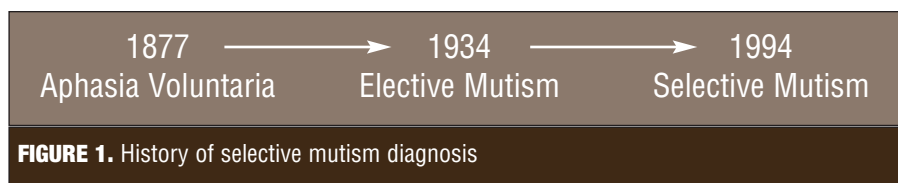
Hearing tests should be performed to assess whether the disorder is rooted in physiological hearing difficulties, which could easily lead to delay in the use of language and manifest as selective mutism. Depending on the individual age, both academic testing and psychoeducational testing may be indicated. For example, tests for

cognitive ability, such as the Wechsler Preschool and Primary Scale of Intelligence (WPPSI-III), the Otis-Lennon OLSAT-8, the Stanford-Binet Intelligence Scales SB5, the Ross Test of Higher Cognitive Processes, and the Cognitive Abilities Test, may be pursued as part of the comprehensive evaluation.<sup>8</sup>

Finally, because difficulties with speech and language fluency may impede language development, these dimensions should be assessed. Useful tools include testing the child with audiotapes for fluency, pitch, rhythm, inflection, and complexity of speech. A nonverbal test, such as the Peabody Picture Vocabulary Test, Third Edition (PPVT-III), may be used to test receptive language in children with selective mutism.<sup>4,9</sup>

Individuals with selective mutism may exhibit broader developmental delays. For example, a 2000 study by Kristensen<sup>11</sup> highlights the way children with selective mutism may show developmental delay as often as they show anxiety disorders (68.5% for comorbid developmental delay compared to 74.1% for comorbid anxiety). Moreover, children with selective mutism may conceal their developmental delay in their silence.<sup>11</sup>

Comorbid psychiatric conditions associated with selective mutism include depression, panic disorders, dissociative disorders, obsessive-compulsive behavior, and Asperger's disorder.<sup>5</sup> Asperger's disorder is a mild form of autism that inhibits social interactions, peculiar speech, and nonverbal communication, such as excessive clumsiness.<sup>3</sup> A study in 1995 by Kopp and Gillberg<sup>12</sup> found that 7.4 percent of children with selective mutism



## COMORBID DISORDERS

Selective mutism is associated with a number of comorbid disorders that complicate the child's clinical presentation. As suggested by the comprehensive clinical assessment, these comorbid disorders include psychiatric or language/speech development disorders. Indeed, the literature suggests that many children with selective mutism have premorbid speech and language problems (38%).<sup>7</sup> This finding is consistent with theories that children with selective mutism avoid speaking out of fear of being teased for mispronouncing a word.<sup>3</sup> Hence, language development deficiencies should be considered ahead of selective mutism, although it is possible for both to present concurrently. Children with selective mutism may also have normal receptive language and cognitive skills, but they show subtle expressive language deficits not attributable to social anxiety.<sup>10</sup> This association further highlights the important component of speech and language assessment in the initial evaluation.

also met criteria for Asperger's disorder. While this association has not been validated in further studies, the 7.4-percent rate is significantly higher than the rate of Asperger's disorder in the general population (0.3%). Clinicians are still urged to investigate Asperger's in children diagnosed with selective mutism.

## DIFFERENTIAL DIAGNOSIS

In addition to the comorbid disorders described above, the following conditions on the differential diagnosis include the following: transient adaptional shyness in an adjustment disorder, intellectual disabilities, pervasive developmental disorders, expressive language disorders, mood disorders, and hearing impairment.

## TREATMENT

Treatment for selective mutism consists of two primary domains: nonmedication- and medication-based interventions. Within the nonmedication-based or psychotherapeutic approaches,

psychodynamic therapy, behavioral therapy, and family therapy are among the most common. Within medication-based options, selective serotonin reuptake inhibitors (SSRIs) (fluoxetine in particular) have been shown to improve mutism and anxiety. It is important to recognize that the literature on treatment for selective mutism is difficult to generalize given the rare nature of the disorder and the limitations of primarily case report-based data. To date, no studies have contrasted outcomes for different treatments but steps are being taken in that direction.

### **Psychodynamic therapy.**

Psychodynamic therapy in children is called individual play therapy.<sup>3</sup> This form of treatment is time-intensive

reinforcement of teachers and others interacting with the child may be challenging to manage, negative reinforcement should be identified and addressed as early and directly as possible.

Self modeling is one approach that involves viewing edited videotapes modeling appropriate behaviors. The child watches himself receive a desired reward (the mystery motivator) for speaking in an audible and clear tone in front of the class.<sup>32</sup>

Self reinforcement involves receiving an award upon demonstrating the appropriate speaking behavior. Stimulus fading involves attenuating the anxiety-provoking stimulus gradually. For instance, new classmates are gradually introduced into settings

emerged as a more economic alternative. Segments of questions and answer sessions were modified to play the child talking in contexts and situations where the child was previously mute. Blum et al<sup>14</sup> also found this method to be effective in specific populations, but was limited in the short duration of the tapes and the need for frequent listening to achieve efficacy.

Another bedrock behavioral approach to selective mutism is contingency management, where the aim is to identify and specifically reward verbal behavior and not reinforce mute behavior.<sup>3</sup> Often, teachers and peers must be involved for the approach to succeed, and this is not always practical. Moreover, the efficacy of this strategy is equivocal.

Another behavioral approach called response initiation involves one-on-one time between the child and the therapist.<sup>15</sup> The two are left alone to spend an entire day together and the child is required to speak before leaving. This is achieved by the therapist rapidly developing rapport with the child using nonverbal play and empathetic statements. The therapist's strategy is to provide empathy and support, clarify feelings, provide encouragement, and clearly state the expectation that the child say a minimum of one word prior to leaving.<sup>15</sup> If the child remains silent, the therapist pretends to ignore the patient and prolongs the encounter. The therapist directly appeals to the drive toward mastery and control and emphasizes how talking empowers them to show teachers how smart they are, to make more friends, to play like other children, and so forth. Upon speaking, the child is rewarded and permitted to go home. Surprisingly, children who have tried this treatment typically respond by speaking within one to two hours, and only rarely is more than four hours required.<sup>15</sup>

**Family therapy.** Family therapy is another treatment option that is especially relevant when family factors play a role in the potential development and perpetuation of selective mutism.<sup>16</sup> While the

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and involves a comprehensive exploration of the individual case history. The focus is on exposing an underlying intrapsychic conflict.<sup>3</sup> Since only a few case studies have been examined, the efficacy of this psychodynamic therapy is unknown.

**Behavioral therapy.** Behavioral therapy is typically a multimethod approach that must account for symptoms in the broader context of the child's environment. Specific techniques including reinforcement, stimulus fading, token procedures, shaping or prompting, contingency management, self-modeling, and response initiation provide more empirical data-substantiating efficacy.<sup>3</sup> Treatment ideally begins with addressing the verbal and nonverbal negative reinforcement that sustains selective mutism behavior. For example, teachers who withdraw requests for children to speak exhibit one form of negative reinforcement that sustains behavior.<sup>6</sup> While the

where the individual will likely speak. The spacing effect describes the process of spacing material out rather than presenting one large novel stimulus. This approach is intended to facilitate better context-specific speaking.<sup>12</sup> Another treatment approach combines self reinforcement, stimulus fading, and spacing effect along with antidepressant medication and self-modeling procedure. Among the small population prescribed this regimen (N=2), the self-modeling procedure was identified to precipitate behavior change.<sup>12</sup>

Other variations of self-modeling employ video technology, such as video feed-forward. This technique videotapes children talking fluently in familiar contexts and then edits the video to show the child talking fluently among strangers or at school. Holmbeck and Lavigne<sup>13</sup> found it to be effective in initiating speech. From video self-modeling, audiotapes

effectiveness of family therapy is unproven, incorporating the family in the therapeutic process can play a vital role in the child's recovery. Cooperation and understanding from parents and siblings helps the child overcome anxiety and avoidance. Collaborating with school staff is another vital component of healing given that the diagnosis is usually made as children become school age. Education about selective mutism should be clearly communicated to teachers and guidance counselors, as teachers can play an invaluable role in breaking cycles of negative reinforcement.<sup>6</sup>

**Medication-based interventions.** Pharmacotherapeutic interventions play a role in treating selective mutism given the association between selective mutism and social anxiety. In a large survey sent to child and adolescent psychiatrists, Carlson et al<sup>17</sup> showed that antidepressants were used most commonly to treat selective mutism. After antidepressants, anti-anxiety medications and other psychotropic interventions are also employed depending on the child's comorbidities.<sup>6</sup> SSRIs (fluvoxamine and fluoxetine in particular), have yielded decreased selective mutism symptoms in selective case reports. The disinhibitory adverse effects of SSRIs theoretically enhance the effectiveness in treating selective mutism, which is considered an inhibitory behavior.<sup>9,17</sup> In a trial by Black and Uhde<sup>18</sup> among six children with selective mutism, children actively administered fluoxetine over a period of 12 weeks showed improved ratings on mutism and anxiety although other symptoms remained unchanged.<sup>18</sup> In a separate case report written by Black and Udhe,<sup>16</sup> a 12-year-old girl who had never spoken at school was treated successfully with fluoxetine. Although other approaches to treatment including psychotherapy, behavioral therapy, and despiramine failed to demonstrate efficacy for this individual, taking fluoxetine for one month resulted in this girl speaking freely with teachers and peers.

Moreover, at seven months, other social communication and interactions were normal after evaluation.<sup>16</sup> To date, no research data shed light on the difference between exclusive serotonin reuptake inhibition versus both serotonin and norepinephrine reuptake inhibition. This individual case report revealing decreased efficacy of the tricyclic antidepressant despiramine compared to a SSRI suggests that norepinephrine may play less of a role in the neurobiology of selective mutism.

In 1996, Dummit et al<sup>19</sup> determined that children with selective mutism taking fluoxetine for nine weeks showed decreased anxiety and mutism in public. These studies appear promising but are limited by a small sample size and ambiguity about whether fluoxetine is more efficacious in treating both anxiety and selective mutism or selective mutism alone. Moreover, the data reflect only a few case studies, as children and adolescents are commonly excluded from clinical trials.

Other case report studies suggest the enhanced effectiveness of combination treatments. For example, Wright et al<sup>20</sup> reported a positive response to treatment with fluoxetine in a combined treatment plan that also included family and behavioral therapy. The four-year-old female patient in the case report at the beginning of this article began talking in familiar surroundings after just five days of medication and continued to improve so that talking in all settings was observed by 20 days.<sup>20</sup>

Golwyn and Weinstock<sup>21</sup> described a case report on the use of phenelzine in a seven-year-old female patient with selective mutism and shyness. After six weeks of phenelzine, the child was observed to respond to the medication. The authors speculate that a positive family history of social phobia in this patient may have played a role in dually treating social phobia and selective mutism.<sup>21</sup>

Since isolated case reports and small sample sizes characterize the current research on pharmacotherapy in selective mutism, it is difficult to draw clinical conclusions, as no large-

scale pharmacotherapy trials have been performed to date. Still, among the pharmacotherapeutic options available, SSRIs are most commonly recommended for selective mutism. Second-line treatment may involve monoamine oxidase inhibitors (MAOIs), although these drugs are associated with more food and drug interactions compared to SSRIs and pose increased risk for the child. Consideration of proper pediatric administration is of utmost importance.<sup>6</sup>

To date, no studies have contrasted outcomes for different treatments, but steps are being taken in that direction. For example, a small, preliminary, nonrandomized study suggested that in patients who were severely mute, medication treatment with SSRIs yielded improvement in symptoms in 6 to 8 months.<sup>22</sup> This improvement was limited to the severely mute population. This improvement was limited to the severely mute population and was not attained by patients who were not medicated (e.g., only received nonmedication-based therapies such as speech therapy or psychotherapy, or who received no therapy at all), without distinguishing between the types of nonmedication-based treatment. Moreover, it lacked outcome data on combination medication and therapy. Still, despite the weak evidence and lack of long-term data derived from this type of a comparative study, medication treatment with SSRIs appears to yield promising data given that nonmedication-based therapies are inherently nonuniform in nature, making them difficult to replicate and objectively compare. Nonetheless, this pilot study illustrates that comparative trials are needed to guide decisions regarding interventions and increase the likelihood these children can develop normally.

## **THEORIES ON THE ETIOLOGY OF SELECTIVE MUTISM**

Many theories attempt to explain the etiology of selective mutism. Etiological perspectives are based in psychodynamic theory, behavioral theory, associations with social phobia

and social anxiety, the family systems perspective, dissociative identity disorder, and the response to trauma. Most recently, the developmental psychopathology framework aims to integrate multiple theoretical perspectives (biological, genetic, developmental, psychodynamic, behavioral, family systems, and ecological).<sup>4</sup>

#### **Psychodynamic theory.**

Psychodynamic theory emphasizes the concept of unresolved conflict. In the context of selective mutism, the assumption is that the child has an oral and/or anal fixation and may be maintaining a family secret, displacing anger toward a parent, or regressing to a nonverbal stage in his or her development.<sup>2</sup> The child's selective mutism is viewed as a coping mechanism for dealing with anger and anxiety, and represents behavior

significant because it frames selective mutism as a symptom of anxiety rather than consciously manipulative behavior.<sup>24</sup>

**Social phobia and social anxiety.** More recently, selective mutism has been explained in the context of social phobia, as proposed by Black and Uhde.<sup>16</sup> They propose that selective mutism is a variant of social phobia characterized by excessive social anxiety. Black and Uhde based this theory on data showing high incidences of selective mutism in families with social phobia. They argue that adults with social phobia report higher rates of avoiding public speaking and behaviors consistent with selective mutism in childhood. Under this model, the persistent refusal to speak is a symptom of anxiety.<sup>16</sup> Hence, Black and Uhde suggest that selective

fall within the same range as those with social phobia.

Moreover, the age of onset of selective mutism does not coincide with the age of onset in individuals with social phobia. Selective mutism occurs between ages three and six but social phobia typically manifests between ages 11 and 13. Since social phobia requires a certain degree of cognitive development, the early onset of selective mutism is inconsistent with the development necessary to be considered social phobia. Instead, Melfsen keenly points out that the age of onset of selective mutism coincides more closely with shyness, a weaker subcategory of social phobia, which manifests on average at age four. Lastly, the argument for why selective mutism does not belong under the social phobia classification relates to prognosis. Most children with selective mutism outgrow the disorder spontaneously, while individuals with social phobia do not outgrow the disorder.<sup>22</sup>

Yaganeh et al<sup>26</sup> pursued another comparison of children with selective mutism and social phobia and children with selective mutism alone. This study found that while individuals with selective mutism show a higher prevalence of social anxiety and social phobia, selective mutism is not simply an extreme manifestation of social distress. Instead, self report data revealed only moderate levels of social anxiety in individuals with selective mutism, a finding consistent with previous studies.<sup>26,27</sup> Hence, this literature suggests that extreme social distress may not fully account for selective mutism.

Moreover, Yaganeh<sup>27</sup> explores the oppositional behavior observed in children with selective mutism. This is reflected in earlier labels, such as aphasia voluntaria and elective mutism, emphasizing that children with selective mutism deliberately choose not to speak out of defiance or in an attempt to manipulate others. In this context, children with selective mutism are construed as disobedient,

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intended to punish the parents.<sup>3</sup> With little empirical data to support this model, this explanation is currently losing validity.

**Behavioral theory.** Behavioral theory offers a different explanation of selective mutism based in negatively reinforced learning.<sup>23</sup> The failure to speak is interpreted as a learned strategy for manipulating the environment in response to a variety of social triggers. Behavioral psychologists argue that mutism is a child's adaptive response rather than pathological.<sup>3</sup> Children with selective mutism appear frozen and inactive due to behavioral inhibition. In novel social situations, the sympathetic nervous system takes inhibitory control over behavior and ability to speak. In this context, selective mutism is portrayed as an unconscious, language-based form of behavioral inhibition or as a defense mechanism. This perspective is

mutism may belong on the spectrum of childhood speech, inhibition, and social anxiety disorders.

While some researchers support this proposal, a more recent study challenges the notion that selective mutism is explained by anxiety and social phobia. Melfsen et al<sup>22</sup> investigated the extent of social anxiety in different mental disorders using the Social Phobia and Anxiety Inventory (SPAIK), the German version of the Social Phobia and Anxiety Inventory for Children (SPAIC). The study's findings did not support the classification of selective mutism as a manifestation of high social anxiety because selectively mute children scored lower on the SPAIK compared to children who had social phobia.<sup>22</sup> Based on this data, Melfsen suggests that if selective mutism is an extreme manifestation of social phobia, the SPAIK score for children with selective mutism should

stubborn, controlling, manipulative, and passive-aggressive.<sup>27</sup> In Yaganeh's study, oppositional behavior was reported by clinician-observers but not reported by parents. This disparity again suggests that the incongruence may be due to both parental bias and/or clinical misinterpretation of observed behavior. On one hand, parental bias occurs when parents reinforce mute behavior by smiling, laughing, or speaking for the child rather than recognize the oppositional component of the behavior. On the other hand, clinicians tended to identify higher rates of speech and language disorders, less developed social skills, and increased social anxiety in selectively mute children despite unproven deficits.<sup>27</sup>

Still, potential differences in speech, language, subsequent social skills, and social anxiety inadequately explain speech refusal behavior in children with selective mutism. Yaganeh warns against over-emphasizing the oppositional nature of selective mutism, wary that the label may itself represent a premature interpretation. Since oppositional characteristics are not observed in a majority of children with selective mutism, the attention given to the oppositional behavior model may be unwarranted.

**Family systems theory.** Another theory for selective mutism is the family systems model. This perspective is based on the observation that many children experience "neurotic" relationships with their parents (most commonly the mother). Typically, parents exhibit an excessive need to control their child along with an associated dependence and ambivalence.<sup>3</sup> As a result, children develop unhealthy intense attachments characterized by extreme interdependency and subsequent fear and distrust of the outside world, fear of strangers, language and assimilation difficulties, and withholding speech.<sup>27</sup>

Indeed, parenting style and the nature of the parent-child relationship play a role in many anxious or inhibited childhood behaviors

**TABLE 1.** Theories on the etiology of selective mutism

| ETIOLOGY                       | DESCRIPTION  |
|--------------------------------|--|
| Psychodynamic theory           | Based on the concept of unresolved conflict. Underlying oral or anal fixation persists. Mutism represents a coping mechanism for anger and anxiety and a means for punishing parents                 |
| Behavior theory                | Learned behavior for manipulating the environment in response to triggers. An adaptive response to sympathetic nervous system arousal that affects behavior including speech.                        |
| Social anxiety and phobia      | Association between selective mutism and excessive social anxiety. Selective mutism falls on the extreme end of the spectrum of social anxiety disorders   |
| Family systems perspective     | Intense attachments to parents lead to extreme interdependency and distrust of the outside world.  |
| Response to Trauma             | Association with posttraumatic stress disorder as a potential, albeit uncommon, cause. Case studies of children exposed to extreme trauma or abuse reveal mutism as an avoidance reaction to trauma. |
| Dissociative identity disorder | Possessing multiple identities inhibits individual from talking to other people of our fear of revealing traumatic conflicts and experiences   |

including selective mutism. Parent-child enmeshment and overdependence is shown to be related to the development of selective mutism.<sup>27</sup> An abnormal parent-child relationship establishes the incorrect notion that the child needs the parent to survive. Hence, the absence of the parent in a context outside the home triggers an intense phobia that manifests as mutism. The origins of this theory lay in behavioral inhibition, a trait that describes the child's tendency to withdraw, seek a parent, and inhibit play and vocalization following encounters with unfamiliar people and events.<sup>29</sup> Recurrent displays of behavioral inhibition can develop into habitual avoidance of novel situations in the form of withdrawal and mutism.<sup>27</sup>

In studying children with social phobia, psychologists speculate that a child's perceived maternal acceptance of socially avoidant behavior limits the persistence of such behaviors.<sup>26</sup> Yeganeh et al<sup>26</sup> compared populations of children with social phobia and children with both social phobia and selective mutism and found that children with both disorders did not differ from normal controls regarding levels of maternal acceptance. However, mothers who expected a child to speak when spoken to and did not tolerate deviation from the normal prevented the development and maintenance of extremely avoidant behaviors. On the other hand, mothers who smiled, laughed, or spoke for the mute child perpetuated the child's mute

behavior.<sup>26</sup> Despite these findings, this theory requires further longitudinal research to elucidate the role of the family environment in shaping mutism.

### **Dissociative identity theory.**

Selective mutism may also be explained in the context of a dissociative identity disorder. Based on a study of a 15-year-old boy with selective mutism, Jacobsen<sup>28</sup> suggests that having multiple identities inhibited the boy from talking to other people out of fear of becoming visible and revealing information about murders he witnessed while assuming different identities.<sup>31</sup> This case is unusual in that the individual exhibited selective mutism for years and was clearly outside the typical age of onset before age five.

### **Posttraumatic stress theory.**

Posttraumatic stress disorder (PTSD) with dissociative features has also been associated as a potential precursor of selective mutism.<sup>29,31</sup> Although it is an uncommon explanation for selective mutism, several cases of children who experienced severe abuse and trauma fit the classification of selective mutism. The 15 year-old patient with dissociative identity disorder in the study by Jacobsen<sup>28</sup> represents one potential example. In most children with PTSD, symptoms include intrusive thoughts, traumatic play, trauma-related dreams, and flashbacks.<sup>30</sup> Children with PTSD may also experience avoidance symptoms, such as avoiding thoughts or feelings associated with the trauma, thus leading to a selective amnesia, decreased interest in activities, and loss of previously acquired developmental skills, such as bowel and bladder control, and communication skills.<sup>27</sup> The cessation of speech with the outside world may be a child's internal coping mechanism for the traumatic event. In these incidences, the child appears to dissociate involuntarily as a result of self defense and display symptoms of PTSD with dissociative features. These include numbness, depersonalization, withholding speech, and displays of restricted

affect, which commonly characterize children with selective mutism. Most often, the connection between selective mutism and PTSD is descriptive and literary rather than linked to actual trauma and highlights the common dissociative characteristics in both disorders.

### **Developmental**

**psychopathology theory.** A relatively new and integrated hypothesis for selective mutism derives from a developmental psychopathology framework that emphasizes that multiple contextual variables interact with potential anxious predispositions in children with selective mutism.<sup>4</sup> This theory notes that children with early speech or language deficits, previously unaware of their deficits, enter school and face teasing from other children with appropriate language skills. For those children with anxious predispositions, teasing from other children ignites a pattern of avoidance and resultant mutism. This model further incorporates familial interactional styles stating that children who observe familial avoidance as a coping mechanism may reinforce mute behavior in an impressionable child. With a strong emphasis on considering contextual variables interacting with predispositions, the developmental psychopathology approach conceptualizes selective mutism as an avoidant behavior rather than a disorder.

Indeed, a wide range of psychological theories and empirical data attempt to explain the etiology of selective mutism (Table 1). However, it is important to emphasize these theories are based on a small set of studies available to date. Given the complexity and rarity of the disorder and the variety of perspectives, a multidisciplinary approach to selective mutism is essential. Theories relating selective mutism and social phobia, anxiety, family history and upbringing, and trauma may intersect as they attempt to explain this disorder, and the developmental psychopathology approach emphasizes the value of a

multidisciplinary approach to selective mutism.

## **CONCLUSION**

A peculiar yet fascinating childhood disorder, selective mutism is multidimensional in its presentation, proposed etiology, comorbidities, and approach to treatment. Although documented in history since the 19th century, much remains to be elucidated about selective mutism today. Because it is a rare disorder, selective mutism remains challenging to study and many theories persist regarding its etiology and association with other conditions such as social phobia and social anxiety. Hence, the majority of the data on selective mutism derives from case reports and small-scale populations that may not provide an accurate representation of selective mutism in the population.

Despite these limitations, much attention has been given to the etiology and comorbidities of selective mutism. These advances ultimately raise awareness of selective mutism as a childhood disorder that can profoundly disrupt the lives of individuals and families. Given the potential impact of this disorder, attention has shifted to the variety of therapeutic approaches to selective mutism, including psychotherapy and pharmacotherapy, both of which show promise especially when employed simultaneously. Undoubtedly, future research is needed to elucidate the biological and psychological components of selective mutism. Ultimately, the goal is to provide patients and families with a comprehensive, empirically proven clinical assessment and treatment options for selective mutism and its comorbidities.

## **ACKNOWLEDGMENT**

The author wishes to thank Edmund G. Howe, MD, JD, Professor of Psychiatry, Uniformed Services University of the Health Sciences.

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