

# Selective mutism and autism spectrum disorder: a bidirectional and self-reinforcing relationship

## Abstract

Selective mutism is an anxiety disorder characterized by a persistent inability to communicate verbally in specific social situations, despite preserved speech in other contexts. Frequently diagnosed in early childhood, this condition may be confused with communication difficulties observed in Autism Spectrum Disorder (ASD), particularly in children with intact or high cognitive functioning. The increasing prevalence of ASD diagnoses, combined with the high incidence of anxiety disorders in this population, underscores the importance of understanding the intersections, distinctions, and self-reinforcing mechanisms linking selective mutism and autism. This narrative literature review aims to analyze contemporary evidence regarding the relationship between these conditions, addressing neurobiological, cognitive, sensory, and psychosocial dimensions, as well as clinical implications for diagnostic assessment and therapeutic management.

**Keywords:** selective mutism, autism spectrum disorder, anxiety disorders, social anxiety, communication disorders, neurodevelopmental disorders

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## Introduction

Pathological anxiety represents one of the most prevalent psychiatric comorbidities in individuals diagnosed with Autism Spectrum Disorder (ASD), manifesting from childhood through adulthood and exerting a substantial impact on global functioning, social adaptation, and quality of life. Meta-analyses and longitudinal studies indicate that approximately 40% to 80% of individuals with ASD experience at least one anxiety disorder during their lifetime, with greater functional impairment observed among those classified as requiring level 1 support.<sup>1,2</sup>

From a neurobiological perspective, ASD is associated with structural and functional alterations in brain regions involved in emotional regulation, particularly the amygdala and prefrontal cortex. Evidence demonstrates amygdala hyperactivation, a structure central to fear and threat processing, which contributes to exaggerated stress responses and increased vulnerability to anxiety.<sup>3</sup> Dysregulation of neurotransmitter systems, especially serotonin and gamma-aminobutyric acid (GABA), further compromises emotional modulation and stress tolerance.<sup>1</sup>

Within this context, selective mutism (SM) emerges as an underdiagnosed yet highly prevalent anxiety disorder among autistic children, particularly females. Understanding the relationship between selective mutism and ASD is critical, as both conditions may coexist and mutually reinforce one another, intensifying communicative, social, and emotional impairments.

## Discussion

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5 and DSM-5-TR), Autism Spectrum Disorder (ASD) is a neurodevelopmental condition defined by persistent deficits in social communication and interaction, along with restricted and repetitive behaviors, interests, or sensory reactivity. Diagnosis requires impairments across all core social domains and at least two types of restricted or repetitive behaviors. Symptoms must be present from early development, cause clinically significant functional impairment, and not be better explained by intellectual disability

alone. Severity levels are specified based on the degree of support required.<sup>4,5</sup>

Selective mutism is defined as a persistent pattern of failure to speak in specific social situations in which speech is expected, despite preserved communicative ability in environments perceived as emotionally safe, such as the home. This condition cannot be attributed to language disorders, intellectual disability, or lack of knowledge of the spoken language.<sup>2,3</sup>

Since 2013, selective mutism has been formally classified as an anxiety disorder and is often conceptualized as an early manifestation of social anxiety disorder. Symptom onset typically occurs between 2 and 6 years of age and becomes more evident upon school entry, when communicative demands increase substantially.<sup>6</sup> The etiology of selective mutism is multifactorial, involving genetic vulnerability, inhibited temperament, family history of anxiety disorders, and environmental influences. Recent studies also highlight a significant association with neurodevelopmental disorders, particularly ASD.<sup>7</sup>

## Relationship between selective mutism and autism spectrum disorder

The intersection between selective mutism and ASD represents an emerging area of research. Although both conditions involve communication difficulties, their underlying neuropsychological mechanisms differ markedly. In selective mutism, silence is directly linked to intense, situation-specific anxiety, whereas in ASD, communicative impairments are broader, persistent, and context-independent.<sup>6,7</sup>

Evidence suggests that children with ASD may develop selective mutism as a comorbidity, particularly those with elevated social anxiety, heightened awareness of interpersonal expectations, and increased sensitivity to external evaluation.<sup>8,9</sup> In such cases, silence functions as an emotional self-regulation strategy in response to social stress, establishing a self-reinforcing cycle in which speech avoidance temporarily reduces anxiety but strengthens mutistic behavior over time.

## Social interaction difficulties and the reinforcement of silence

Deficits in interpreting subtle social cues—such as facial expressions, vocal prosody, and body language—are core features of ASD and contribute to insecurity and fear during interpersonal interactions. This social unpredictability fosters pathological anxiety and promotes selective mutism as an adaptive response to emotional distress.<sup>10</sup>

The greater the communicative avoidance, the fewer opportunities for social learning, which consolidates silence and exacerbates relational impairments. Evidence indicates that children with isolated selective mutism often show marked improvement in social engagement when anxiety is adequately treated, whereas individuals with ASD tend to exhibit more persistent social difficulties even in emotionally secure contexts.<sup>11,12</sup>

## Cognitive rigidity, repetitive behaviors, and anxiety

Cognitive rigidity, commonly observed in ASD, is characterized by resistance to change, excessive need for predictability, and difficulty tolerating uncertainty. This cognitive profile is strongly associated with the development and maintenance of anxiety disorders, including selective mutism.<sup>5</sup> Concurrently, anxiety may intensify repetitive and stereotyped behaviors, which serve as emotional self-regulation strategies. Although these behaviors may provide temporary relief, they can interfere with academic, social, and therapeutic engagement, thereby limiting the acquisition of new skills.<sup>7</sup>

## Adverse experiences, social trauma, and sensory processing

Individuals with ASD are disproportionately exposed to adverse life experiences, including bullying, social rejection, and academic or occupational challenges. Such experiences increase the risk of social trauma, chronic anxiety, and persistence of selective mutism.<sup>1</sup>

Sensory processing dysfunction, widely documented in ASD, also plays a central role in this process. Hyper- or hyporeactivity to environmental stimuli—such as noise, light, or textures—can lead to sensory overload, heightening arousal and anxiety. Studies indicate that sensory avoidance significantly mediates social anxiety and selective mutism symptoms in autistic children.<sup>8</sup> Furthermore, the frequent association between elevated anxiety, food selectivity, and food neophobia complicates dietary expansion and negatively affects both physical and emotional health.<sup>4,12</sup>

## Therapeutic interventions and multidisciplinary management

Managing selective mutism in children with ASD requires an integrated, individualized, and multidisciplinary approach. Cognitive Behavioral Therapy (CBT), emphasizing gradual exposure, systematic desensitization, and positive reinforcement, constitutes the cornerstone of selective mutism treatment. In the context of ASD, combined strategies are often necessary, including behavioral interventions, augmentative and alternative communication, sensory integration therapy, and specialized educational support. Cognitive rigidity and sensory alterations common in ASD may hinder the application of traditional behavioral techniques, necessitating tailored adaptations.<sup>9,12,13</sup>

The use of visual supports, communication boards, pictograms, and assistive technologies is essential to ensure functional communication, even when initially nonverbal. In more severe cases, pharmacological

treatment may be indicated as an adjunct, particularly when functional impairment is significant.

Within educational settings, teacher training, implementation of Individualized Education Plans (IEPs), and access to specialized therapies are critical for promoting inclusion and communicative development. Parental involvement emerges as one of the most influential factors for therapeutic success in both neurotypical and neurodivergent children.<sup>9,12,13</sup>

## Conclusion

Selective mutism and Autism Spectrum Disorder are distinct yet frequently co-occurring conditions that establish a complex, anxiety-mediated self-reinforcing cycle of silence. Early recognition of this overlap is crucial for implementing effective interventions and preventing long-term emotional, social, and academic impairments.

The scientific literature underscores the need for comprehensive, multidisciplinary assessments capable of distinguishing primary communicative deficits associated with ASD from anxiety-driven manifestations. Families, educators, and healthcare professionals play a pivotal role in fostering emotionally safe environments that support the restoration of communication, autonomy, and overall quality of life for affected children.

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## Conflicts of interest

The author declares that there is no conflicts of interest.

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