Case Report

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Selective Mutism and Comorbidity with Specific Learning Disorders: Evaluation and Multimodal Intervention in a Clinical Case of a Female Child from 7 to 11 Years of Age

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Abstract: Selective mutism (SM) is an "Anxiety Disorder" characterized by a child's "persistent inability" to communicate verbally in some (or all) contexts of social life that is associated with other cognitive-affective disorders. Cognitive-behavioural assessment and psychological intervention may be complex to be performed due to both the difficulty to administered standardized neuropsychological batteries (e.g., language-mediated tests) and the difficulty to involve family and teachers in the intervention program, respectively. Here, a single-case study is described in which a female Filipina child with SM underwent a comprehensive neuropsychological assessment and multimodal therapeutical intervention between the ages of 7 to 11 years. More specifically, the psychological intervention included cognitive-behavioral psychotherapy to both improve social-cognitive skills and learning abilities and to reduce anxiety, and speech therapy. Moreover, the parents and teachers were actively involved in the therapeutic process and they were also administered a psycho-education program. After this specific treatment, at the age of 11 years the girl began to verbalize in both therapy and school contexts, although she still was used to adopt non-verbal strategies. A parallel and gradual improvement in communicative-linguistic skills and school learning was also observed. In conclusion, the present report highlights the importance to apply an "integrated and multimodal intervention" to treat SM in children that includes also psycho-education intervention for both parents and teachers.

Keywords: anxious-dependent attachment—internalizing problems; learning disorder; diagnostic comorbidity; cognitive-behavioral intervention; multimodal therapy

1. Introduction

Selective mutism (MS) is an "anxiety disorder" (DSM V, 2014) characterized by a child's "persistent inability" to communicate verbally in certain social life contexts (one or more) in which verbal communication is required. There seems to be a higher incidence among girls than boys (2:1). The concept of "refusal" has over time been replaced by that of "inability," abandoning the idea that the symptom has a conscious and voluntary valence and focusing on the cognitive processes and emotional states underlying SM (Capobianco, 2009; Capobianco, 2010). Empirical data show different degree of the disorders that ranges from mild to severe. Indeed, in some cases the difficulty to verbally communicate is present in specific contest and/or persons (usually at school with peers or adults) and the child may communicate by using non-verbal strategies. In other cases mutism may be observed in almost any social context different from the family context although, in more severe cases, verbal communication may be reduced to single parent (i.e., more frequently the mother;

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D'Ambrosio & Coletti, 2002; Vecchio & Kearney, 2005; 2006). Although in children with SM general intelligence is in the normal range, the persistence of the disorder during the entire preschool and school age in different social contexts such as, for instance, the school, could cause a reduction of the efficiency of some cognitive processes. As a matter of fact, children with SM are often reported to show difficulties in information processing, abstract reasoning and reduced efficiency of executive processes, working memory and language processes (Oerbeck, B. & Kristensen, H., 2023). Moreover, a comorbidity with specific learning disorder, attention and hyperactivity disorder (ADHD) and behavioral disorders has been documented (D'Ambrosio & Coletti, 2002; Steinhausen et al., 2006; Sloan, 2007; Yeganeh et al., 2003a; 2003b). Aspects above represent factors that may play a role also in maintaining and worsening of SM as they may increase the sense of inadequacy, and non-self-efficacy of the child (Maywormet al., 2015).

In terms of cognitive-affective mechanism underlying the behaviour of individuals with SM, data from scientific reports and clinical obervations outline the following aspects (Capobianco & Cerniglia, 2018; Driessen et al, 2020): 1) inadequacy and inability: the individual experiences discomfort in unfamiliar situations, perceived inability and personal devaluation; 2) fear of the others' judgment: the individual thinks that others judge their actions negatively; 3) shame and meta-shame: the individual is afraid of feeling ashamed and that the others may see such a feeling. Aspects above are related to the following cognitive bias: 1) catastrophizing (of the consequences of own mistakes); 2) overgeneralizing: fear and perception of inability in any unfamiliar area; 3) selective abstraction (about one's own inability); and 4) underestimation of own resources. Accordingly, the individuals with SM is highly sensitive to signals, attention, looks of strangers and may show an hypersensitivity to criticism.

With regard to the evolution of the disorder in preschool and school age a variable course is documented. Indeed, a tendency to the chronicity of the disorder is frequent in a significant proportion of subjects, while in others a gradual remission of pathological manifestations is described (Mercado, N.R., 2024). However, in the latter cases the persistence of clear discomfort in speaking throughout school age and childhood is observed (Bergam et al., 2012; Steinhausen et al., 2006). In general terms, the prognosis related to several factors that include: I) early diagnosis and integrated intervention tailored on the specific characteristics the SM, II) comorbidity with other disorders, III) family resources and potential on the social-relational level and iv) sharing of strategies in the different contexts of the child's life (i.e., within and integrated multimodal intervention model). It should be underlined here that due to the complexity of the cognitive-behavioural profile often observed in the individuals with SM and briefly discussed above, it is very important that the cognitive-behavioral approach is applied within an integrated intervention that is coherent in the differet contexts of the child's life. In particular, the cognitive-behavioral approach should be aimed at increasing communication skills by improving nonverbal strategies, at decreasing of anxiety and alertness states and at decreasing the tendency to generalize and catastrophize of the individual with SM. In this perspective, is very important that family and teachers of the child with SM are aware of both the importance of their involvement in the intervention program and of the specific characteristics of the disorder (Capobianco and Cerniglia, 2018).

2. Objectives of the Study

At the best of our knowledge, few longitudinal studies aimed at investigating the effectiveness of an integrated multimodal intervention model on the course of SM that is based on the specific neuropsychological profile of the individual. Indeed, some factors such as, for instance, the difficulty to administer individual language–mediated tests, the presence of comorbidities and the difficulty to sustain the active participation of the family and of the teachers in the intervention program may have represented important constraints.

This study is aimed at describing the neuropsychological assessment and the intervention process implemented with a female filipina child with SM between the ages of 7 (1st grade) to 11 (5th grade) years to age 11. A comprehensive neuropsychological assessment was carried out before the beginning of the intervention at age 7 (T0) and after the end of the intervention at age 11 (T1). The

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specific characteristics of the integrated intervention model we applied and results will be reported and discussed.

3. Methodology

3.1. Participant

The neuropsychological assessment and intervention process concerns a female child of Filipino origin (henceforth referred to as G) (both Filipino parents for several years in Italy), born in Italy on May 5, 2011, attending grade I of elementary school, with a diagnosis of "Selective Mutism" (MS) in comorbidity with "Mixed Developmental Disorder" (problems also in language comprehension as well as expressive) [ICD-10, F83] of moderate degree, carried in preschool age in Local health authority. The public facility, in collaboration with a "Haealt Association" named "bimbo al centro ETS" that took charge of the female child, requested to be able to undertake psychometric and clinical evaluation as complete as possible -by multidisciplinary team- in order to undertake an integrated and targeted intervention path within a cognitive-behavioral approach, in parallel with a speech therapy rehabilitation oriented primarily on receptive aspects. The history was taken with both parents, in the absence of the female child and in the presence of an Italian family friend who acted as a language mediator. Both parents, in fact, do not understand or speak Italian well, particularly the female child's father. It is reported by the parents that they have both always had a very shy temperament and also for this reason they have great difficulty in communicating and expressing their thoughts, intentions to unfamiliar people. They participate very little in social life events outside the family.

3.2. Anamnestic Data

From the history collection, the parents report that the baby was born at term (39.3 weeks, weighing 3000 grams, adjusted for gestational age AGA) in the absence of pre- or perinatal complications. Breastfeeding and weaning in normal. They report that they primarily spoke Italian with the baby even if incorrect Italian. Exposure to Filipino language would have occurred primarily indirectly through listening and observation of interactions among family members. Development of language stages reported somewhat slow; the child showed verbal production inconsistent with chronological age, although they cannot reconstruct in detail the major developmental stages, nor the use of nonverbal communication or receptive skills. They report that the child has always been very inhibited, shy with unfamiliar figures, even with teachers when she first started attending preschool. Few family social relationships beyond school. For work reasons, they have never taken the child to classmates' birthday parties or other events shared with the school. She does not play sports and stays home after school with her sister and alternating parents. The child speaks only at home with her parents and sister, while at school she does not speak and seems to have significant difficulties in the early processes of acquiring school learning. At school and in unfamiliar contexts, the child exhibits mutacious behavior of significant entity that is not at all spontaneously compensated for by nonverbal communication such as use of gestures, facial expressions, lip-reading, use of spontaneous drawing. The child has an elusive gaze. It is reported that the teachers do not know specifically the characteristics of selective mutism and do not know what strategies to use with the child, since G. manifests significant isolation and no alternative communication with adults and peers. The teachers, in fact, have so far tried to "prompt" verbal expression with explicit requests and questions, even in the presence of peers. This mode of intervention, in fact, seems to be among the most dysfunctional ones considering the emotional and cognitive characteristics underlying mutacic behavior (Capobianco & Cerniglia, 2018).

It is decided, in agreement and with the consent of the parents, to undertake an initial more in-depth assessment in order to better understand the general cognitive functioning, neuropsychological abilities, but above all the specific thought processes and emotions underlying G.'s selective mutism, which are fundamental to undertake a targeted cognitive-behavioral psychotherapy (D'Ambrosio and Coletti, 2002; Capobianco and Cerniglia, 2018). In parallel, the

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emergence of conducting parent training meetings with the parents and interviews with the child's teachers with the aim of explaining the characteristics of selective mutism and the relational and behavioral strategies (as per the Ministry of Health Guidelines) to be used in a shared way with the child at home and at school emerged. Appropriate psychoeducation, in fact, with adults interacting for many hours of the day with the child, is a key element in the intervention process (Capobianco Cerniglia, 2018; Catchpole et al., 2019).

The assessment took place in two steps: an initial assessment at the beginning of the intake (chronological age of 7 years, end of I elementary) (T 1) and another assessment was carried out in V at the age of11 years (T 2), after a constant cycle of rehabilitation type that is described in the intervention part of the paper.

3.3. The Assessment (7 Years-End I Primary):T0

Relational-Behavioral Aspects

G enters the room showing interest in the proposed activities. In order to build a therapeutic alliance and establish a trusting relationship with G., the specialist never referred to the verbal, not forcing her to communicate verbally, encouraging different modes of nonverbal communication through a "neutral" attitude with respect to the type of communication and the creation of a context of acceptance and non-focusing of the speaking problem (behavioral strategy based on symptom extinction). The child answered questions exclusively with gestures (mostly deictic gestures such as pointing and iconic gestures such as yes, no) or through drawing, an activity that G. particularly prefers. In fact, the child shows a very adequate representational and graphic level. It was possible to administer the tests in which it was not necessary to use verbal communication. The child responded with pointing (also mediated by objects), head nods (yes or no) to questions. Sometimes the child drew the answers to the requests. The gaze is present though elusive. She often looks at the operator to express her emotional state during proposed tasks.

General Cognitive Functioning and Underlying Processes

The child shows above-average nonverbal intelligence as scored on Raven's Progressive Matrices (CPM) scales, corresponding to 90th. It was not possible to fully administer the WISC-IV cognitive scales, except for the nonverbal subtests that make up the Visuo-Perceptual Reasoning (RP) and Processing Speed (VE) index, whose weighted scores (WS) for each task are shown below.

Highlighted with asterisks (*) are the trials in which the child obtained a weighted score below the mean (Table 1-WISC-IV:Non verbal Evidence-STEP T0).

Table 1. WISC-IV (nonverbal evidence)- STEP T0 - age 7 years.

Visuo-Perceptual Reasoning (VPR)	Weighted scores (WS)	**INDEX (VPR)**
Reasoning with Matrices	14	Above Average
Drawing with cubes	5*	Below Average
Illustrated concepts	12	Above Average
TOT. QI RV	**31**	**QI 102**
Processing Speed (SP)	PP	**QI- SP**
Cipher	5*	Below Average
Search for symbols	6*	Below Average
TOT. QI SP	**11**	**QI 74***

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As observed in table , the cognitive assessment regarding the visuoperceptive Reasoning (VPR) and Processing Speed (SP) index confirm the results that emerged from the "Raven's Progressive Matrices "(MPR) scales, with respect to the good level of reasoning mediated by visuoperceptive skills, and allowed to add specific information with respect to other underlying cognitive processes that were found to be deficient. The child, in fact, shows significant difficulties in "pencil paper" activities that require reasoning mediated by executive speed of the graphic act (Cipher and Symbol Search), then in activities based on good functioning on the visuomotor plane with respect to fluency, accuracy and speed. Processing speed is found to be deficient. Difficulties are also observed in the skills of reproduction of two-dimensional patterns by means of cubes (Drawing with cubes, PP 5*, below average) or by pencil copying of increasingly complex geometric figures in the "pattern copying" subtest of the Perceptual and Visuomotor Integration Test (IVP) in which the child scores between the 10th and 15th percentile. Ergonomic aspects are borderline: non-dynamic pen prehension and ill-defined stroke with discontinuous pressure. Thus, at 7 years difficulties are evident on the visuomotor, visuoconstructive and executive speed levels in the face of a good level of reasoning mediated by visuoperceptive skills.

Communicative-Linguistic Skills

Expressive, discursive and narrative skills were assessed by the methodology of spontaneous language analysis of a video recording of the child's spontaneous production in the family context. The child presents a morphosyntactic level inconsistent with chronological age, in the presence of complete but not complex nuclear sentences with significant phonological and morphological changes that sometimes affect the general intelligibility of verbal production. Discursive and narrative skills not age-appropriate. Aspects of linguistic prosody and turn alternation not functional for effective communication. Verbal comprehension (assessed by the Morphosyntactic Comprehension Test (PVCM) (Rustioni et Lancaster, 2007) by indication of the child is not age-appropriate chronologically: p. 57.5-"low-medium" level by age 7. The child understands more situations related to contingent reality while she shows difficulties on the metalinguistic level and on the comprehension of decontextualized sentences that have no concrete counterpart.

Learning Abilities

Reading and writing and other aspects of school learning do not appear to be assessable in the clinical setting at this early stage of neuropsychological assessment, and it was decided to gather the most important information about the processes of learning acquisition through interview with the teachers and evaluation of the products of school notebooks. The teachers observe that the child is not progressing, with respect to the acquisition of learning, in line with age and educational exposure, regardless of mutacic behavior. In writing in print and reading it appears that the basic grapheme-phoneme process is not yet automated. Difficulties also in the logical-mathematical area with respect to processes such as "number dictation," "simple operations," enumeration, and "calculating in mind." The teachers report that the child seems to show good attention in class, as well as cooperation in general during the proposed tasks, although they observe a general slowness during the execution of the activities. The child shows at 7 years a high risk of evolving into a specific learning disorder.

Exploration of Thoughts-Emotions-Behaviors (ABC in the Context of Cognitive-Behavioral Therapy)

From the projective test of "The Family Drawing,"(as from clinical observation of behavior and exploration of thoughts and emotional states (ABC-event-thoughts-emotions-behavior) (Vecchio and Kearney, 2006), elements of inhibition, social anxiety, shame and meta-shame, self-perception as inadequate, insecurity and self-evaluation emerge. Specifically, significant aspects of social-emotional distress related to traits of isolation, infantilism and dependence on the family group are revealed from "The Family Drawing." A key goal for therapeutic purposes was to explore the

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prevailing emotions, behaviors (C) and dysfunctional thoughts (B) underlying G.'s fear of talking (ABCs analysis), which occurred mainly through:

Playful simulations with puppets/dolls (characters) and/or through drawing (invented comics) that represented different events of daily life in which the fear of speaking could arise and be stronger (e.g.,teacher's questions at school in front of classmates, encounter with an unfamiliar adult on the street with his mother). Analysis of thoughts and emotions revealed that G. experiences a strong difficulty and "inability" to speak especially at school, when she is asked to perform, is the center of attention, conditions that are perceived by the child as a danger with respect to her effectiveness and self-image. It would seem that G particularly fears judgment from others, is afraid of making mistakes and being laughed at, made fun of ("everyone will laugh"),of being ashamed and of others noticing her shame (meta-shame). Depressive themes of catastrophizing with respect to the consequences on others of one's speech prevail in G., and the fear of being teased seems closely linked to a perception of inadequacy and self-evaluation, of self as incapable, ("I'm afraid of making a mistake"). Language delay and the child's awareness that she did not fully understand the verbal stimuli around her and was producing incorrectly potentiated anxiety, thoughts of inadequacy, and inhibition, becoming a factor in the maintenance of the mutacious behavior. Together with other factors, such as family isolation, they collectively represent maintenance elements that tend to stabilize and chronicle the cognitive biases that are automatically activated in dreaded unfamiliar situations. Similarly, poor use of expressive skills and difficulties in language comprehension affect the likelihood of improving abstraction and intention-expression skills and increase the condition of isolation and fear of making mistakes. As per the scientific literature, the odds of acquiring learning skills (read-write and logical-mathematical area) are higher among children with a prior and/or current language disorder, and the correlation is greater if the specific language disorder is of mixed type (Capobianco, 2010; Ponzurick, 2012).

4. Methodology and Multimodal Intervention Program

According to the guidelines for the intervention with children with SM, a "multidisciplinary" and "integrated" intervention based on cognitive-behavioral strategies was applied that involved also with the family and school context, with the main objective of sharing strategies of interaction and to enhance the awareness of the clinical, cognitive and emotional characteristics of G.'s disorder. The individual rehabilitation program with the child involved a course of cognitive-behavioral psychotherapy and later speech therapy was also included in order to work in parallel on the receptive aspects of language, enhancing lexical and morphosyntactic comprehension. During speech therapy, the specialist worked with the child to also enhance her praxic-executive skills in order to improve visuomotor and visuoconstructive skills. After a cycle of individual psychotherapy lasting about two years on a single-weekly basis (about 1 hour), the child was placed in a workshop with a peer in order to work on cognitive and emotional aspects within the relationship with the other. The laboratory meetings with the other child were held on a single-weekly basis of about 1 1/2 hours. During psychotherapy in interaction with the other child, the same nonverbal communication strategies were always used, based on the use of pictures, spontaneous drawings, use of writing (even single words).

The workshop is still ongoing. The child has attended the clinical center consistently, with few absences.

The main and basic aims of psychotherapy have been:

1.Decrease the level of generalized anxiety; 2.Modify rigid and automatic thoughts by operating a cognitive restructuring of interpretation of daily life situations in which mutacic symptomatology occurs, playfully proposing alternative strategies with different resolutions.

Below are some cognitive-behavioral strategies used with the child based on processes of acceptance and reflection on alternative interpretations of events:

1. Decrease anxiety and modify dysfunctional thoughts of:

A. "catastrophizing" and "overgeneralizing" with respect to the consequences of speaking and judging others: speaking will not necessarily result in "negative judgments" from others. Hence reflect

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on alternative assumptions of others' judgment and the fact that speaking can result in different consequences and is often more "convenient" and "useful" than not speaking. Reflect also on the fact that it is "normal" that it happens that others may not like us, but this does not harm our personal value and ability. Also reflect on shame as a natural emotion that may occur at certain times: work on the "basic theme" "We are not ashamed, nor should we show shame" with which is associated a meaning of "not self-value "and the primary compromised purpose of always maintaining a good image. B. "Self-value" and sense of "inability" to speak: promotion of autonomy and self-confidence. Others don't always laugh at what we say, and if it happens that a person doesn't agree with our speaking, it doesn't mean we don't have "value": process of accepting the other person's thinking and decreasing the cause-effect relationship between others' judgment and self-value.

2. Promoting and prompting attribution, expression, description and reflection of emotions:

By repeatedly asking G. during simulated events (game and drawings) to indicate the emotion she thought the character was feeling at that moment (by pointing to faces, each of which represented a specific emotion, or by writing). Promote reflection on the relationship between events-emotions and consequences.

During therapy, the child was presented with alternative thoughts, emotions, actions, and consequences of the events simulated in the game and/or drawing compared with those described by G. through acting out the simulated events and/or through written dialogue. To this end, promote reflection on: a.the usefulness of speaking and the cost/benefit of not speaking; b. acceptance that someone may not "like" what we say: independence of self-value from the negative or positive evaluation of contingent situations (e.g., questioning, speaking in front of strangers etc.); c.acceptance of shame: shame is a natural emotion we all have, it does not have an exclusively negative meaning. Below is an example of simulated situations with invented characters used in therapy: simulations with the child of alternative hypotheses about how the story might end with respect to different characters (thoughts, actions, emotions):

- simulated situation with puppets: a mother with her child meets a friend of the mother (adult) with her child. The child asks the little girl if she would like to go to her house one afternoon to play: What does the little girl think? What does the child do? What does the child reply, "How does the child feel?" (B: child, G: therapist). To enable the child to communicate best, colorful pictures within Augmentative Alternative Communication (AAC) were also used, including PECS (Picture Exchanges Communication System). The pictures can represent simple responses such as YES and NO, emotions, simple sequences of action. The paper images were used in conjunction with short videos on the computer, or drawing, so as to give the child many different nonverbal modes for communication and for answers to my questions (Table 2).

Table 2. Event (A), Thoughts (B) and Behaviors-Emotions (C).

A	B	C
The child asks the child if she wants to come and play with him at his house.	*I just say nonsense...I can't talk..he sees it, what if he doesn't want me home anymore?*	-shame - is red in the face -looks at mom and doesn't answer
T: How does it end? What happens next? G: He takes the child's puppet and makes him walk far away with his father. T: What does the child think? G. He points to the NO symbol. T: Why is he sad?		

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G. takes the image of the child playing with the other ("he wanted to play").
T: What about the child?
G. writes on the board: yes (with !!)
T: ah! The little girl wanted to play too!
T. so, let's see what happens if....(simulation different situation, where the little girl responds to the child's request) (Table 3).

Table 3. Alternative thoughts (B) of an event (A).

A	
The child asks to the little girl if she wants to come and play with him at her house	
B (alternative thoughts)	**B (alternative thoughts)**
"That's great, I'd like to go and play at his house. We're going to have a blast."	*"What if you don't like me?" "It doesn't matter, I'll try..." "I can't be nice to everyone. I'll try anyway."*

The story ends that the child is happy to have found a new friend to play with and goes home happy. The child thinks, "She's really nice, that little girl!"

Main Aims of the Intervention in the Family Setting

It was essential to hold psychoeducational meetings on the problem of selective mutism: in particular to explain that G. does not speak because she refuses or throws tantrums or is oppositional, but because she has a "discomfort" that makes her unable to speak. Underlying this inability to verbalize is a very important anxiety. These meetings served primarily to change the parents' interpretation of G's changing behaviors and thus the burden of responsibility on the child.

- -General suggestions on how to deal with G.:

1.Adopt a neutral attitude with respect to not talking: do not emphasize it often as a problem, nor show a punitive attitude. 2) Do not replace G. in daily activities and relationships. When any person asks her a question leave room for the child, do not immediately insist on urging her to answer verbally and do not anticipate or answer instead of her. More like involving her in the discourse by accepting other modes of communication. Do not replace G. in doing homework, anticipating her answers, but help her to think more, to make herself more aware of her own study strategies. 3) Home working/promote autonomy: gradually start getting her to do small daily actions: e.g., pay the newsagent, make a phone call, ask for 'information, etc. 4) Increase social gatherings with G.'s peers outside the home for class events or by accepting invitations to other children's homes or inviting classmates, friends to the home.

Main Aims of the Intervention in the School Setting

Importance to have a common line of behavior with G. at home and at school to enhance the effects of the intervention:

Psycho-education to teachers with respect to: neutral attitude with respect to not speaking by reinforcing nonverbal communication with them and among peers; use of alternative materials (drawing, writing, multiple choice questions, pc, IWB, Interactive Whiteboard); promote and create activities in small groups where there is at least one partner with whom the child speaks or with whom she is better off; avoid situations that might embarrass-shame the child; gratify communication situations whether nonverbal or, possibly verbal, but avoid explicitly and blatantly emphasizing the eventual use of verbal. For learning acquisition difficulties, various compensatory and dispensatory strategies functional to her difficulties were gradually used: concept maps, captions with pictures, voice reader.

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5. Follow-up Assessment and Results of Intervention (11 Years Old—V Primary: STEP T1)

At the end of Primary V, a new assessment was executed. The following profile emerged with respect to the specific domains mediated by nonverbal skills. Visual-Perceptual Reasoning (RPV): 108 (P.34) (60th); Processing Speed (SP): 75 (10th)**. Here are the beatings to individual subtests (SW: Weighted Scores): 1. Drawing with cubes 11; Reasoning with matrices: 14; Illustrated concepts 9; Cipher: 4*; Symbol search: 8*. A good level of general cognitive functioning is confirmed, with falls in Processing Speed compared to good functioning in visuoperceptive channel-mediated reasoning. After the course of speech rehabilitation (as illustrated in the description of the first cycle of intervention), there is evidence of improvement in more specifically visuoconstructive skills, while a fragility in processing speed is confirmed for "pencil-paper" activities in which executive functions are involved. In general, in all tests, the aspects of executive slowness, fatigability, which increase during the time spent on the activities, are confirmed.

After the rehabilitation cycle, G.'s participation in the different relation dynamics appears to have significantly improved through of spontaneous communication use of nonverbal strategies: especially writing on paper or on a blackboard) to express her thoughts and emotions appear to be significantly improved Indeed, a more spontaneous use of nonverbal communication is generally observed, especially toward teachers and adults in general. The increased richness in spontaneity and communicative behaviour is likely related to a significant reduction of generalized and selective anxiety and to reduced cognitive biases related to the fare of others' judgment.

Teachers reports that G., although slow in processes, has become more autonomous and communicates more spontaneously the most important needs with gestures and facial expression and writing. She seeks peer interaction more. She has also begun to respond verbally exclusively with some teachers when they go outside the classroom to do teaching activities. Thus, the use of verbal production has appeared, in the school context although exclusively with some teachers outside the classroom.

With respect to learning skills, it was possible to administer several tests without the help of family members because the child responded with nonverbal mode, writing and sometimes verbally with short sentences. This allowed for an in-depth assessment of the writing skills achieved, after the rehabilitation cycle, between the ages of 7 and 11 with a lowe voice.

The Battery for the Assessment of Writing and Orthographic Proficiency in Compulsory Schooling-3, BVSCO-3 (Patrizio, Tressoldi, Cesare Cornoldi, 2012) is administered: tests of dictation, narration and writing speed. The child makes a mixed number of errors that generally highlight a "Demand for Attention." Cursive writing results in poor fluency and slowness. Below is the table with the results (Table 4).

Table 4. Writing tests: handwriting, dysorthography, writing speed (T1).

TRACK DICTATION*	
	Phonological errors: 5 -0.95 ds REQUEST FOR ATTENTION
	Non-phonological errors: 4 -0.87 ds ATTENTION DEMAND
	Doubles/accents: 3 -0.90 ds REQUEST FOR ATTENTION
	errors: 16 -0,60 ds

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	15° REQUEST FOR ATTENTION
PRODUCTION OF WRITTEN TEST– NARRATION*	
	Words: 33 -0,70 ds 15° ATTENTION DEMAND
	Errors: 6 Percentuale totale errori: 18,18% -2,66 ds <5° REQUEST FOR IMMEDIATE ACTION
SPEED OF WRITING*	
"le"	Graphemes: 45 -0,30 ds 15° ATTENTION DEMAND

Reading

The child agreed to read aloud to the specialist. MT Reading Tests are administered (Cornoldi, C. and Colpo, G. (2004) (End of 4th grade "Proverbs," with mediator help at home): reading results below average for correctness ("Request for immediate intervention") and speed ("Request for attention"). Aspects of intonation and punctuation not in standard. Narrative text comprehension (informational passage end of 4th grade"). The child answers 4 out of 10 questions placing on "Demand for attention".There is evidence of difficulty in reading comprehension.

Communicative-Linguistic Area

BVL 4-12 Battery for Language Assessment in children aged 4 to 12 years (Marini, Marotta, Bulgheroni, Fabbro, 2014). Only the verbal comprehension test is administered. There is evidence of improvement in the area of verbal comprehension with a score in the normal limits for chronological age,compared with a deficit level in the first stage of assessment.
The analysis of expressive and narrative skills was carried out also in this second step by analysis of spontaneous production collected at home by video recording.
The analysis of spontaneous production still shows a morphosyntactic level not in lieu with chronological age, although a significant improvement in discursive and narrative skills is observed when comparing with stage I assessment (end of elementary I). Spontaneous speech (assessed by video recordings made at home) is still not very rich with grammatical structures not yet adequately used on a morphological and syntactic level in Italian, but the child at home uses significantly improved expressive skills compared to the first assessment. In parallel, the assessment of lexical and grammatical comprehension skills are more adequate although not yet consistent with chronological age. The scores obtained with the BVL battery show a borderline but not completely deficient level as in the first assessment.

Logical-Mathematical Area

In the second phase of assessment, it was possible to administer a standardized test in order to test skills in the mathematical area, while in the I phase of assessment the teachers informed of the child's acquisition processes at the end of I grade. The AC-MT-3 test is administered (Cornoldi, C, Mammarella,I.C., Caviola, S., 2020), which assesses calculation and mathematical reasoning skills

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During the second evaluation, it was possible to make an updated diagnosis with respect to a comorbidity with a Specific Learning Disorder of mixed type (SLD). The child shows appreciable difficulties in the logical-mathematical area: for procedures in written operations, transcoding numbers, judging numerosity and sorting numbers.

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6. Summary of Results

This study illustrates, in a longitudinal perspective between the ages of 7 and 11 years, the assessment before (T0) and after (T1) a course of integrated, mutimodal intervention in a girl diagnosed with selective mutism in comorbidity with a specific language disorder (SLD). After an initial neuropsychological evaluation (T1), the child was exposed to a parallel treatment rehabilitation of communicative-linguistic (speech therapy) and visuomotor skills, in association with cognitive-behavioral psychotherapy individually and with another child, work in the family context (parent training), and school intervention (psychoeducation of teachers on the most functional strategies). Treatment has been constant, on a single-weekly basis with the child and monthly with the school.

From the first assessment around the age of 7, before the longitudinal cycle of integrated intervention, the child showed a major expressive and receptive language disorder and a cognitive profile with major falls on visuomotor, visuoconstructive skills and processing speed. The mutacic behavior was very pervasive, and the child was not using any alternate communication strategy, so no further standardized testing for school learning could be used, even by nonverbal communication. Assessment of underlying thoughts and emotions revealed a very significant level of generalized anxiety, fear of being evaluated as inadequate, and shame. The child's parents mostly led a life isolated from social relationships. Teachers were not aware of functional relational strategies, as per scientific literature, to be used with children with MS.

Psychotherapeutic work based on cognitive restructuring of dysfunctional thoughts and decreasing generalized anxiety and shame was essential because it gradually led the child to decrease her level of social anxiety and to participate more in interactions through nonverbal communication strategies that she accepted and were shared at school. At the age of 11 (T1), in V grade, it was also possible to take advantage of the neuropsychological assessment of school learning and make a clearer and more complete clinical diagnosis, whereby selective mutism was associated with a mixed learning disorder with difficulties in the logical-mathematical and reading area (in decoding than in text comprehension). In grade V, the child began talking to some teachers and taking oral questions, albeit outside the classroom. In the second assessment (T 2), after treatment, she showed an improvement in communicative-linguistic skills, especially receptive, and a noticeable decrease in levels of anxiety, shame, and fear of others' judgment, which allowed for an increase in participation in social interactions through nonverbal communicative strategies with peers and nonfamiliar adults.

7. Critical Discussions and Application Conclusion

Clinical and research reports suggest a close similarity between SM and social anxiety and/or social phobia and, as a matter of fact, SM is retained to be a subtype of the anxiety spectrum disorders (DSM V, 2014; Cunningham et al. 2006, Yeganeh et al., 2003; 2006). The description of G.'s case confirms consideration above and also highlights that SM is related to the interaction of different biological, psychological and environmental components which are intertwined in the different contexts of the individual’s life. In this perspective, the involvement of the parents and teachers is essential in order to reconcile the objectives of the intervention and the needs of the child in her different contexts. The present report clearly documents the importance of early diagnosis and comprehensive neuropsychological assessment. Indeed, the identification of cognitive and emotional processes underlying SM as well as the detection of comorbidities or specific difficulties that may represent maintenance factors of the disorders, are critical to plan an intervention program that is

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more clearly tailored on the specific characteristics of the disorder. For instance, at the first observation G. presented with a specific mixed-type language disorder and, in a following assessment, a specific learning disorder was detected. This allowed to better define the extent of the child's SM. However, as for the neuropsychological evaluation, the difficulty in administering standardized language-mediated tools should be taken into account. In this regard, the use non-verbal tests and the involvement of family members and teachers for the purpose of the analysis of spontaneous behavior should be carefully considered.

The primary goal of the intervention program with G was to decrease generalized anxiety. Accordingly, during the simulated events in the game and/or by drawing, reflection and restructuring of biases underlying SM was proposed on the following issues: i) The usefulness of speaking and the cost/benefit of not speaking; ii) Acceptance of others' judgment and independence of self-value from the negative or positive evaluation in contingent situations (e.g. public speaking, answering a teacher's question, etc.); c. Recognition and acceptance of emotions such as, fear and shame. G. when faced with unfamiliar situations primarily responds with avoidance and withdrawal approach (both physical and verbal behavior) likely as a defense strategy to the perceived distress. It is frequently observed that a dependent attachment style, the social isolation of the family and the parents' behavior may exacerbate the child's anxiety and maintain his/her inhibiting actions (Allison K. M et al., 2023). Therefore, The psychoeducational program here proposed to parents - and teachers - was essential in order to both improve the parents' and teachers' knowledge on the phenotypic manifestation of SM and to apply more effective and shared relational and communicative strategies. In fact, parents and teachers at first, thought that the G. could "choose" not to speak and retained that continuously stimulating her to verbalize with adults and peers was the best strategy. In this case, it was important to discuss with parents and teachers the evidence that, in certain situations, G. was actually "unable" to speak and the emotional and cognitive processes underlying such an inability. The improved awareness of the parents and teachers on the characteristics of disorder (i.e., unintentionality) made it possible to change their interpretation of G.'s behaviors and, thus, this allowed modification of the way they responded and communicated with G. in everyday reality (Shorer et al, 2023; Wang and Monga, 2023). As a matter of fact, G. began to verbalize in front of new teachers and peers in some circumstances, for instance, at the transition, from primary to secondary school. Most likely, this behavior is related to a gradual decrease of anxiety underlying the inability to speak. Changes in classmates and teachers could also have played a role. Indeed, in elementary school, children with SM could face a sort of "label," "prejudice," that is the "self-representation as shy and fragile", representation that has been self-perceived over time. Therefore, the decrease of anxiety levels and, in particular, of the fear of being judged negatively by others, due to the restructuring of one's generalized and absolutist thoughts about self and the others as a result of the cognitive treatment, could give the opportunity to build a new self-representation and to improve self-efficacy.

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