

Efficacy and Safety of Psychomotor Approach in Children Affected by Selective Mutism: A Multicenter Study in Italian Pediatric Population

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Abstract

Introduction: Selective mutism is a relative rare disease in children coded by DSM-V in anxiety disorders. No specific treatment were yet coded, although the disabling nature of the disease.

Aims of the present study were to verify the effect of the six months standard psychomotor approach on a population of children affected by selective mutism and the effects on life aspects.

Materials and Methods: The study population was composed of 67 children (39 males, mean age of 7.93 ± 1.05 years) recruited in the Child and Adolescent Neuropsychiatric Center of Second University of Naples. The psychomotor approach was administered by trained child therapists in residential settings three per week, with the same therapist for each child; all therapists shared the same protocol. The standard psychomotor session length was 45 minutes. At T0 and after 6 months (T1) of treatments, the patients underwent a behavioural and SM severity assessment. In order to verify the effects of the psychomotor approach, the CBCL and SMQ were administered to parents of all children.

Results: After 6 months of psychomotor treatment SM children showed a significant reduction in Social Relations, Anxious/Depressed, Social problems and Total problems ($p < 0.001$), Withdrawn ($p = 0.007$) and Internalizing problems ($p = 0.020$) among CBCL scores. (Table 1)

Regarding SM severity according SMQ assessment, our sample showed a reduction of SM symptoms in all situations (School, $p = 0.003$; Family, $p = 0.018$; and Social, $p = 0.030$ situations) and in SMQ total score ($p < 0.001$).

Conclusion: Our preliminary results may suggest the positive effect of the psychomotor approach in rehabilitative program for children affected by selective mutism, even if further researches are needed.

Introduction

As reported by DSM-5 [1], the Selective mutism (SM) may be considered as a relatively rare childhood developmental disorder characterized by the permanent failure to speak in specific social situations, despite correct language competence in other ones, with a worldwide prevalence rates ranging from 0.2% to 2% among elementary school children [2-5]. SM has been reported as accompanied by relevant impairments in academic, social, familial and personal functioning as expression of social phobia [1,6]. Moreover, retrospective studies seem to indicate the early onset of the disease [7], more common in girls, [8] and in general identified as predictive for adult internalizing disorders [7].

SM is probably under-diagnosed [9] with a prevalence probably greater than usually recognized [3]. The onset is generally slow and insidious, [10,11] with decreasing with age, [12] and good remission rates have recently been reported in young adulthood, as reported by Steinhausen in 2006 [11]. On the other hand, the impaired speech is not caused by problems in language comprehension or expression [13, 14].

Moreover, despite the disabling nature of SM with an important negative impact on all life aspects both short- and long-term functioning in pediatric age, the evidence for effective treatments is scarce and limited to isolated case-series [15-19]. Presently, a comprehensive and uniform theory about the etiology, assessment, and treatment of SM does not yet exist [20].

Conversely, treatment options include individual behavioral therapy, family therapy, psychotherapy and pharmacological therapy with antidepressants and/or anxiolytic drugs [20].

On the other hand, as showed by Carbone et al. the social skills training may merit inclusion in the intervention options for children with anxiety disorders as well as children with SM [21].

In fact, about the treatment proposal, the recent literature suggests the positive effects of the 24 weeks of specific Integrated Behavior Therapy for Selective Mutism (IBTSM) program with high rate of treatment responders (75%) and significant improvements in number of words spoken at school compared to baseline [22-24].

Clinical literature reviews indicate that among psychosocial treatments, initial reports emphasize the use of psychodynamic psychotherapeutic models, [25] followed by cognitive and behavioural methods [26,27]. More recent reports have been advocated the benefits of psychopharmacological treatments in children with SM [28-30].

In general, the treatment for the most cases of SM is delayed for several years, however, because these children are simply considered shy by parents or because the children often speak well at

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home, [31,32] but while the disorder progresses, children may experience different disabling problems such as peer rejection, few friendships, incomplete verbal academic tasks, or inadequate language or social skills [33].

In 2007 Sharp et al. have been discussed the etiology of SM, emphasizing it as better included among anxiety-related disorder [32].

Moreover, as remarked by Ford et al. [34], the SM has been linked with a slow-to-warm and shy temperament, suggesting that behavioral inhibition may represent a precursor to onset of the condition [34]. In this framework, the psychomotor approach used for many other disorders in pediatric age, could be considered as promising behavioural therapy for SM children. In fact, the psychomotor approach may tend: 1) to help the child and his parents to put their attention in an appropriate manner within the relationship rather than the outside, in particular by helping them to recognize and manage those situations in which illuminate the anxious mechanisms that maintain the SM; 2) to restore communication and empathic sharing between child and other subjects different from mother or parents; 3) to introduce a greater capacity for recognition and regulation of internal emotional conditions in order to be able to manage them.

To the best our knowledge, there are no specific studies about the feasibility and effectiveness of psychomotor approach for children affected by SM. Therefore, the aims of the present study were to verify the effect of the six months standard psychomotor approach on a population of children affected by selective mutism and the effects on life aspects.

Materials and Methods

The study population was composed of 67 children (39 males, mean age of 7.93 ± 1.05 years) affecting by SM referred between January 2009 to March 2013: to the Child and Adolescent Neuropsychiatry Clinic at the Second University of Naples.

Exclusion criteria were: neurological or psychiatric symptoms, language and/or learning disorders, behavioural problems and/or mental retardation (intelligence quotient [IQ] ≤ 70).

As reported in a previous work, [35] after the baseline (T0) evaluations all subjects underwent a psychomotor approach therapy program for 6 months [35] that was administered by trained child therapists in residential settings three per week, with the same therapist for each child; all therapists shared the same protocol [35]. The standard psychomotor session length was 45 minutes [35].

At baseline and after psychomotor approach therapy program (T1), the SM children underwent a behavioural and SM severity assessment.

All parents gave written informed consent during the first screening visit.

The reported investigation has been carried out in accordance with the principles of the Declaration of Helsinki [36].

The Departmental Ethics Committee of the Second University of Naples approved the study.

Behavioral assessment

As previously reported by Esposito et al. in 2013,35,37 to assess the psychological and social competence of children, the Italian version of the Child Behavior Checklist questionnaire (CBCL) has been used [38].

The parents of children aged 6-18 years filled out the CBCL questionnaire referring to the previous period of 6 months. The eight factors provided (withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention-hyperactive, rule-breaking behaviour, and aggressive behaviour) and three global scores for externalizing, internalizing behaviors and a total behavior score were computed in order to obtain the children behavioural profiles.

Selective mutism severity assessment

In order to evaluate the degree of a child's speech inhibition in various situations the Selective Mutism Questionnaire (SMQ) by Bergman³⁹ was applied. The SMQ was composed by 17 questions regarding situations in which children are expected to speak (e.g., "When called on by his/her teacher, my child would answer") spanning three domains: "at school" (five items), "with family" (five items), and "in social situations" (seven items) [40]. Three overall interference and distress questions supplement the situational statements (e.g., "Overall, how much did not talking interfere with daily living for your child?") [40]. The frequency of each item was rated, using a 4-point scale (1=Always; 2= Often; 3=Seldom; and 4=Never for speaking situations) and the interference/distress items were scored in an independent scale (1=Not at all, 2=Slightly, 3=Moderately, 4=Extremely) [40].

The global scores range from 17-68, with higher scores representing greater SM severity (i.e., not talking behaviors) and SM-related impairment [40].

The SMQ is the sole specific validated tool to assess the severity of the SM in pediatric age.

Statistical analysis

In order to compare the all examined variables, ANOVA analysis was applied. p -values < 0.05 were considered statistically significant.

All data were coded and analyzed using the commercially available STATISTICA 6.0 package for Windows (StatSoft, Inc, Tulsa, OK, USA).

Results

After 6 months of psychomotor treatment SM children showed a significant reduction in Social Relations, Anxious/Depressed, Social problems and Total problems ($p < 0.001$), Withdrawn ($p = 0.007$) and Internalizing problems ($p = 0.020$) among CBCL scores (Table 1).

Regarding SM severity according SMQ assessment, our sample showed a reduction of SM symptoms in all situations (School, $p = 0.003$; Family, $p = 0.018$; and Social, $p = 0.030$ situations) and in SMQ total score ($p < 0.001$). (Table 2).

Discussion

The main finding of the present research could be summarized in education in SM symptoms and in the behavioral improvement after the psychomotor approach for 6 months.

In this perspective, considering the brevity of the treatment, the positive effects must be considered exclusively related to psychomotor therapy and not linked to developmental maturational phenomena or other factors occurred.

	SM at T0 N=67	SM at T1 N=67	p
Activities competence	35.48±8.19	34.12±7.01	0.304
Social Relations	68.59±5.46	58.12±6.90	<0.001
School competence	61.03±5.98	58.96±6.32	0.054
Competence Total	34.42±8.15	35.26±6.37	0.507
Withdrawn	63.18±7.14	59.82±6.97	0.007
Somatic Complaints	52.03±8.15	51.94±9.03	0.952
Anxious/Depressed	72.36±5.66	68.94±6.06	<0.001
Social problems	59.07±8.33	52.98±9.67	<0.001
Thought problems	47.81±9.04	45.52±9.73	0.160
Attention-hyperactive	36.48±9.61	38.93±10.15	0.154
Delinquent	34.59±6.76	36.19±7.83	0.208
Aggressive	41.35±9.72	44.05±8.77	0.094
Internalizing problems	70.82±6.51	68.04±7.19	0.020
Externalizing problems	49.34±11.09	48.01±10.83	0.484
Total problems	72.03±9.14	63.24±8.51	<0.001

Table 1: Description of the Child Behavior Checklist scale scores among children affected by selective mutism at T0 and after six months of psychomotor therapy (T1).

Table 1 shows the differences (mean and SD) of SM children in CBCL items between baseline (T0) and after 6 months of psychomotor treatment (T1). The Chi-square test was used.

p values <0.05 were considered statistically significant

	SM at T0 N=67	SM at T1 N=67	p
SMQ School	20.11±6.47	16.94±5.83	0.003
SMQ Family	12.05±5.83	10.03±3.72	0.018
SMQ Social Situations	28.24±4.19	26.87±2.92	0.030
SMQ Total score	61.03±9.57	52.76±8.79	<0.001

Table 2: Description of the Selective Mutism Questionnaire (SMQ) values at T0 and after six months of psychomotor treatment (T1).

Table 2 shows comparison of SM severity according to Selective Mutism Questionnaire (SMQ) between baseline (T0) and after 6 months of psychomotor treatment (T1) in SM children.

The Chi-square test was used.

p values <0.05 were considered statistically significant.

In general, SM may be considered as still poorly understood condition, and debate continues regarding etiology and classification [32]. Moreover, as highlighted in DSM-51, the psychodynamic factors, family dysfunction, neurodevelopmental problems, childhood social phobia and oppositional behavior may be proposed as etiological factors [1].

In this framework, our results about the efficacy of a psychomotor approach on the behavioural characteristics of SM children could be interpreted as the reason of the reduction in SM severity after 6 months of psychomotor treatment (p<0.001).

On the other hand, yet in 1995 Black et al. has reported that anxiety during childhood could be masked as shyness, timidity and/or social withdrawal as often reported by parents of children suffering by SM. In fact, about 70% of the first degree family members of SM children report social anxiety, and about 37% report selective mutism [41]. Moreover, also delayed speech, articulation speech problems and other communication disorders were described in about 30%-70% of SM cases [42-44].

Conversely, about the behavioural therapies potentially useful for SM, the psychomotor approach may be considered as really promising because the more general effects of improving in postural tone, mobility, anxiety and self-confidence [45].

In another light, some reports have been identified the SM as an oppositional and manipulative withholding of speech, [46] although the findings in clinical literature seem to be contradictory.

In fact, since 1996 Steinhausen and Juzi8 have been reported that approximately one-fifth of a mixed clinical and nonclinical SM population demonstrated oppositional defiant and aggressive behavior [47]. Additionally, children with concurrent SM and social phobia seem to present higher delinquent behavior scores and nearly six times more oppositional defiant disorder diagnosis than children affected by social phobia, [48] while other studies have been found no differences in the ratings of externalizing and oppositional behavior between children with SM and typically developing peers [2,33,47-50]. In this light, our results seem to confirm these data demonstrating low level of externalizing symptoms both at baseline that after 6 months of psychomotor treatment.

Conversely, SM and anxiety disorders are closely related suggesting that SM is seen as a persistent childhood disorder that results in high levels of anxiety, and is also seen as the most extreme form of childhood social phobia [1,41,42].

Although there is no coded gold standard for SM treatment, we could assume that treating anxiety in order to improve speech could appear to be an aetiologically suggestive therapeutic option, [51,52] although the evidence of the pharmacological effect some drugs is undeniable [53,54]. Unfortunately, in pediatric age the pharmacotherapy cannot be recommended as the first choice of treatment and the non-pharmacological approaches could be considered more suitable and more accepted by parents.

Conversely, as reported in many other articles, [55-57] the importance of playing in pediatric age is ascertained for the whole development, including behavioral control, and rules acquisition [47,58-60].

In this light, our results have been highlighted the importance of a naturalistic, child-tailored approach for SM in pediatric age. On the other hand we have to take into account some limitations for the present study such as the small sample size of children, and such the lack of longitudinal evaluation of long-term results.

In conclusion, our preliminary results may suggest the positive effect of the psychomotor approach in rehabilitative program for children affected by selective mutism, even if further researches are needed.

Competing Interests

The author declare that he has no competing interests.

Author Contributions

All the authors substantially contributed to the study conception and design as well as the acquisition and interpretation of the data and drafting the manuscript.

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