

Speech therapy screening project in the islands of Lampedusa, Linosa and Ustica

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ABSTRACT

In the general population of 5-year-old children, those with Specific Language Disorders represent about 7%. The difficulties, which are more evident in the first years of life, often continue into school age, for this reason, it is of crucial importance to promptly intercept these health needs to guarantee the management and resolution of linguistic difficulties which, if not treated, will transition to the area of school learning. This work aims to identify children at risk concerning language development. The screening program involved all classes of nursery school and the first and second year of primary school, evaluating possible linguistic problems in the 6-8 age group. The speech therapy screening involved the administration of the Articulation Test. From the analysis of the data, it emerged that 12% of the participants, i.e. 21 children (11 children resident in the municipality of Lampedusa and Linosa, 10 children resident in the municipality of Ustica) were identified as at risk for language delay. For children identified at risk, an in-depth clinical-diagnostic investigation was requested. From this experience of prevention and awareness at an early age for language disorders, the importance of identifying risky situations early on is evident to support the correct evolution of verbal production and avoid that a late intervention could make the most serious situation. Nursery school represents a crucial place and moment for recognizing a possible difficulty. Unfortunately, attention to children's language is not yet optimal and is often directed only to those cases that show obvious signs of delay. This is why early identification of difficulties and timely management by the speech therapist is so important.

INTRODUCTION

Language acquisition presents itself as the unfolding of a series of stages that follow one another in a specific order, shared by many children, but at the same time characterized by a wide variability regarding the times, ways and learning strategies. It may happen that the child finds himself in difficulty, is unable to reach the various developmental stages of language or does not speak at all; in many of these cases a real slowdown in development occurs which does not always resolve spontaneously and which, sometimes, develops into a real disorder. Nursery school represents a crucial place and moment for recognizing a possible difficulty, because it is precisely the children of this age group who send us unequivocal predictive signals on how the phases of their language development are evolving. Unfortunately, attention to children's language is not yet optimal and is often directed only to those cases that show clear signs of delay, while other less obvious, but equally atypical situations are neglected, believing that, sooner or later, the difficulties will be overcome spontaneously. Adults' concerns often begin to emerge close to primary school, but taking charge at this age, although positive, may be insufficient to carry out an effective speech therapy program, due to the short time available for recovery and because many er-

rors in pronunciation and sentence structure have now consolidated and transformed into real linguistic habits, with the consequent need for more prolonged intervention.

Although current, the interest in children who, without an obvious cause, show difficulties in learning language is rooted in the past. According to 2019 epidemiological data, in the general population of 5-year-old children, those with Specific Language Disorder represent as many as 7% [1,2]. The difficulties, most evident in the first years of life, often continue into school age. If these data and this perspective are worrying and urgent in favorable social, cultural, and geographical conditions, consider this criticality in disadvantaged conditions. For this reason, it was decided to undertake a survey that would investigate the linguistic abilities of children living on the smaller islands of Sicily, Lampedusa, Linosa and Ustica.

The smaller islands represent an important and peculiar territorial portion which differs considerably from the rest of Sicily due to its naturalistic, cultural, and historical characteristics. In Italy there are 30 islands considered as smaller islands, distributed in 36 municipalities where approximately 200 thousand inhabitants reside. Overall, they occupy a portion equal to 0.3% of the national territory, with a population also equal to 0.3% of the total inhabitants residing on Italian territory. Compa-



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red to larger islands, smaller islands differ in their smaller territorial ex-tension and lower number of residents.

According to the 2020 document “Estimate of the costs of insularity for Sicily”, edited by the Evaluation and Verification Unit of Public Investments of the Sicilian Region [3] and by the Statistics and Economic Analysis Service of the Department of Economy of the Sicilian Region with the support of the Prometeia Research Institute, insularity also represents an important topic of political, economic and social debate, and is first and foremost a limiting factor of growth opportunities as it produces delays in social and economic development [4,5]

The prevention activities of the Provincial Health Authority of Palermo include screening and, in this context, screening aimed at pediatric age plays a crucial role. In fact, the possibility of identifying children at risk for the development of certain pathologies represents the necessary condition to allow early management and intervention, which allows for greater symptomatic re-mission with a wider margin of recovery and the effective possibility of achieving a personal, clinical, and social journey.

The Republic recognizes the peculiarities of the islands and promotes the measures necessary to remove the disadvantages resulting from insularity. The constitutional law of 7 November 2022, n. 2, containing “Amendment to article 119 of the Constitution, concerning the recognition of the peculiarities of the Islands and overcoming the disadvantages deriving from insularity”, was published in the Official Journal no. 267 of 15 November 2022. For these reasons, during the month of June 2023, the Provincial Health Authority of Palermo promoted a speech therapy screening campaign on the islands of Lampedusa-Linosa and Ustica.

The word “screening” is a term commonly used in current medicine which literally means: “to choose carefully” (Oxford languages definition). Screening represents a filter to be used in the population to identify people who have a greater risk for a certain disease. This type of health check is performed on a population or on individual groups or categories to allow the early diagnosis of certain diseases and pathological conditions.

This screening campaign involved the use of speech therapists who conducted screening protocols, simple and easy to administer, both in schools and in clinics, in order to identify any subjects at risk for linguistic and communication disorders in a population aged between three and eight years [6].

Language is a complex cognitive function, specific to the human species, the main vehicle of thought. Language develops without difficulty in most children. For others, language delay is one of the first symptoms of broader developmental disorders and requires early, specialized management.

The diagnostic phase is preceded by an identification and screening phase, the aim of which is to identify those cases that deserve attention, benefiting from the activation of early management. Early diagnosis, although fundamental, is not always easy, due to the very variable time-scales

with which language develops, different from child to child, even if the development of linguistic skills follows a relatively constant process and chronology. It is therefore important that a phase of identification of any difficulties of the child takes place early, usually reported by teachers, parents or doctors, since access to writing and learning at school age will depend on language development. In fact, oral language disorders cause very important and potentially serious consequences not only in the acquisition and mastery of reading and writing skills, but also in the psychological impact due to the difficulties encountered in the scholastic and social context.

Any delay that children may present in linguistic development often constitutes a cause of concern for parents and of uncertainty in the opportunity to consult expert personnel who can guide them towards an attitude of waiting - of an immediate recovery - or in deciding to follow a intervention program appropriate to the situation.

The role of the speech therapist is fundamental, both from a prevention and promotion perspective, identified as “the healthcare worker who, in possession of the qualifying university diploma, carries out his/her activity in the prevention and rehabilitative treatment of speech and language pathologies”. communication in developmental, adult and geriatric age.” It is also specified in the same article that “ the activity of the speech therapist is aimed at the education and re-education of all pathologies that cause disorders of the voice, speech, oral and written language and communication handicaps.” The Speech Therapist therefore has both an educational and rehabilitative, preventive, and training role, and collaborates with various professional and family figures who revolve around the child, creating a therapeutic alliance, in a climate of mutual trust.

According to recommendations from the World Health Organization (WHO), screening programs, to be effective, should include tests capable of detecting the most common conditions that may represent signs of serious health problems.

The choice to carry out these screenings directly at school was dictated by the convenience of being able to evaluate a large number of subjects, by the desire to involve teachers more closely with specialists in the health professions. Nursery school contributes to the harmonious education of children, respecting and enhancing the identity, abilities, and developmental rhythms of each one. It constitutes the environment that accompanies the transition to primary school: an important moment in the life of the little ones which must be the object of attention and sensitivity. From this perspective, it represents an “ ecological “ context and a privileged place to observe the regular appearance of language prerequisites and possibly take preventive action on any linguistic and psychological difficulties.

MATERIALS AND METHODS

The present work, conducted by speech therapists, required tools that allowed a sensitive but at the

same time simple, rapid, and easy-to-administer investigation.

This work is aimed at identifying children at risk with respect to language development and allows for early educational or rehabilitative intervention, laying the foundations for an effective improvement in the quality of life, resolving or limiting the manifestation of future communicative pathologies.

The aims of this work were:

1. Identify language disorders early through a territorial epidemiological analysis;
2. Carry out secondary prevention interventions to avoid pathologies secondary to language disorders;
3. Avoid the crystallization of linguistic deficits and consequently avoid late and less effective rehabilitation interventions.

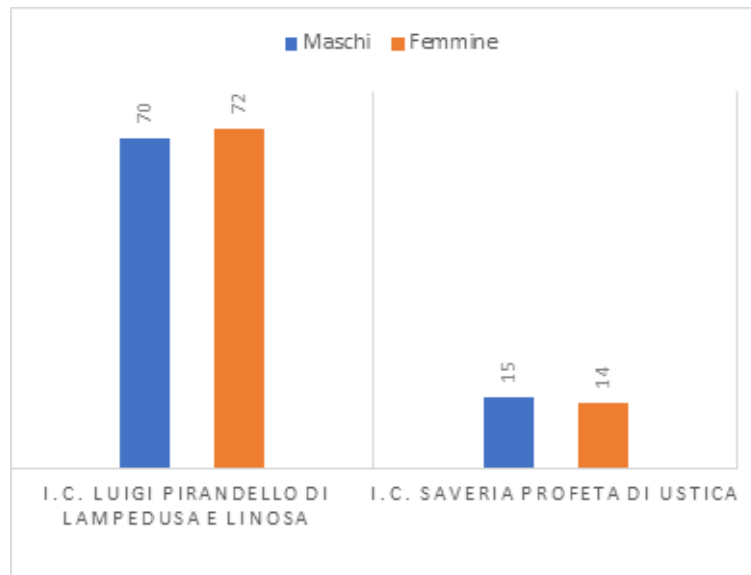
The project was implemented during the month of June 2023 by Dr. Federico La Tona and Dr. Alberto Bua, speech therapists of the Provincial Health Authority of Palermo at the UOS of Child and Adolescent Neuro-Psychiatry – Area 3. The project was addressed to children aged between three and eight years of age, residing on the islands of Lampedusa, Linosa and Ustica. This project involved the IC Lu-

igi Pirandello of Lampedusa and Linosa and the IC Saveria Profeta of Ustica.

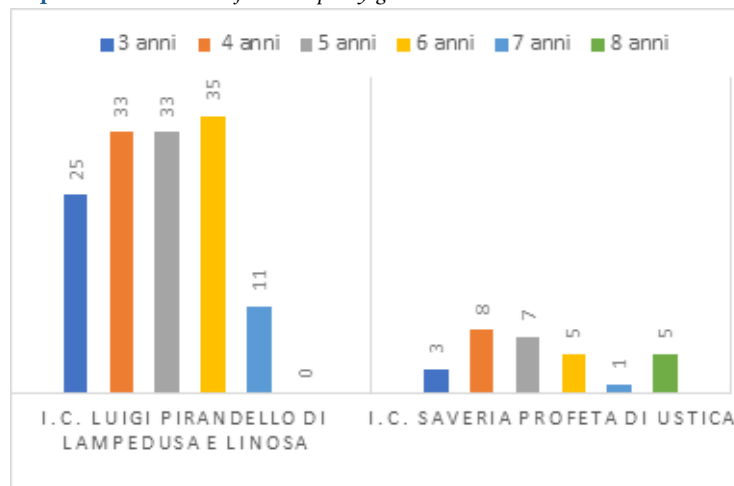
171 children participated in the screening: 142 children from the Luigi Pirandello IC of Lampedusa and Linosa; n. 29 children from the IC Saveria Profeta of Ustica. Below is a graphical representation of the distribution of the sample by gender (Graph 1) and by age (Graph 2).

The screening program involved all classes of nursery school and the first and second year of primary school of the participating comprehensive schools, evaluating possible linguistic and visual-perceptive problems even in the 6-8 years age group, in order to implement prevention of any related disorders, such as DSA. Children with Specific Language Disorder in fact have a probability estimated at around 40-60% of presenting a DSA during their school career [7]. Furthermore, those who present phonological alterations after the age of 4 have an 80% chance of developing a DSA [8,9].

Of the 142 children belonging to the Luigi Pirandello IC of Lampedusa and Linosa and subjected to screening, 37 children (26%, of which 20 M, 17 F), attend the first two classes of primary school. Of the 29 children belonging to the Saveria Profeta IC of Ustica and subjected to screening, n. 6 chil-



Graph 1 – Distribution of the sample by gender



Graph 2 – Distribution of the sample by age



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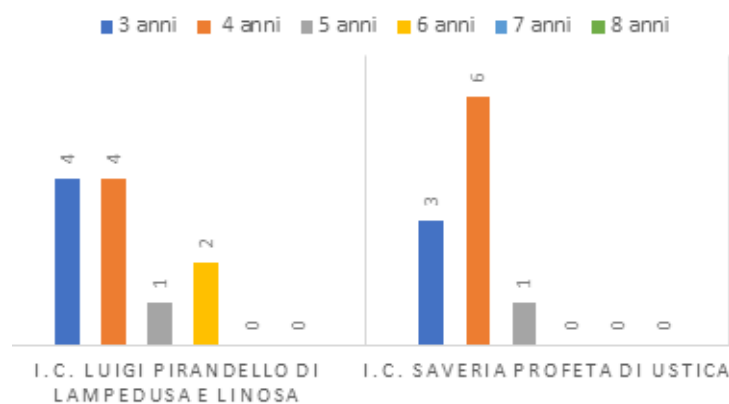
dren (20%), all male, attend the first two classes of primary school.

The speech therapy screening involved the administration of the Articulation Test [10]. This test involves the child naming or repeating 117 stimulus figures; the speech therapist carries out the transcription of the words produced which allows the individual phonemes of the language to be analyzed in the various positions within the word (initial, median, within the consonant group) and, therefore, to carry out an initial assessment of phonetic and phonological characteristics of the child: in the evaluation table it is noted whether the phoneme was articulated correctly, whether it was replaced, omitted or produced in a distorted manner.

The test was administered individually, taking approximately ten minutes for each child.

RESULTS

This work reports the data obtained following the implementation of the language screening program which involved the children under study. 12% of the participants, or 21 children (11 children resident in the municipality of Lampedusa and Linosa, 10 children resident in the municipality of Ustica) were identified at risk for language delay. Below is a graphic representation of the distribution of subjects testing positive for the screening test (Graph 3).



Graph 3

The average chronological age of children who tested positive was 3.95 years, with a median of 4 (range: 3-6 years). These children, although capable of articulating many phonemes, demonstrated processes of phonological simplification at the level of the phonological system and at the level of the structure of the syllable and the word. Analyzing the registration protocols of subjects identified at risk, it emerged that:

- 28.6% (n = 6) of children identified at risk had stopping at the level of the phonological system;
- 14.2% (n = 3) of children identified at risk had anteriorization at the level of the phonological system;
- 9.5% (n = 2) of children identified at risk had deafening at the level of the phonological system;

tem;

- 24% (n = 5) of children identified at risk had reductions in consonant clusters at the level of syllable and word structure;

- 9.5% (n = 2) of children identified at risk had deletion of the weakest syllable;

- 14.2% (n = 3) of children identified at risk had frication at the level of the phonological system.

For children identified at risk, an in-depth clinical-diagnostic investigation was requested. Examining the linguistic skills of the children identified at risk during the speech therapy evaluation revealed that the children showed a language disorder that affected only the expressive component and was not associated with other developmental disorders. For these children, prompt care has been provided for by the Child and Adolescent Neuropsychiatry Unit at the clinics on the smaller islands. Specifically, the following were performed: a) speech therapy treatments and pre/post treatment assessments; b) Periodic follow-ups. The direct treatments were conducted by speech therapists and were offered to the individual child, including counseling activities for the families. Periodic follow-ups, generally quarterly, were conducted by the neuropsychiatrist and speech therapists. The children's parents were provided with precise guidance on effective strategies to adopt at home that would promote the development of their children's communication and language skills.

DISCUSSION

In conclusion, 12% of participants (with an average age of 4 years) tested positive in the screening test. This figure appears significantly higher than what was highlighted by the 2019 epidemiological data according to which 7% of children had a Specific Language Disorder, even if on that occasion reference was made to the general population of 5-year-old children. The results of the study seem to confirm the concerns

linked to a foreseeable greater risk of difficulties in linguistic skills in children who grow up in conditions of greater socio-cultural disadvantage [11]. In summary, from this experience of prevention and awareness-raising at an early age for language disorders carried out on the smaller islands of Lampedusa-Linosa and Ustica, the importance of early identifying risk situations, i.e. cases that deviate too much from the physiological development of language, not only to support the correct evolution of verbal production but also to prevent late intervention from making the situation more serious [12]. It is now established that the chances of recovering from language delay (including specific language disorder) are high, provided however that action is taken as soon as possible and with adequate professionalism [13,14]. screening should be carried out in all nursery schools starting from the age of three; in this way both

teachers and parents could receive suggestions and indications for promoting children's linguistic development, keeping in mind that the latter necessarily interferes in other areas of the child's life, including the social area, behavior, learning.

It is an easy project to carry out, which provides us with a lot of information on the child's verbal skills in different linguistic areas. Particular attention must be directed to Specific Language Disorders; language acquisition disorders that manifest themselves with a delay in the development of verbal function, in children with normal non-verbal intellectual development and in the absence of neurological pathologies or significant psychosocial problems [15,16]. The language disorder makes its debut as a language delay but differs and is defined as a disorder between the ages of 3 and 5. This is

why early identification of difficulties and timely management by the speech therapist is so important.

Let's not forget that Specific Learning Disorders (DSA) are frequently present in those children who have had a language delay or disorder. Attention in nursery school, and, in particular, towards 4/5 years old children, takes on primary importance as, in this developmental phase, there are greater possibilities for recovery; the early identification of subjects "at risk" and the implementation of specific recovery and strengthening programs can facilitate the subsequent acquisition of reading and writing skills and thus limit the possibility of future school failure.

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