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Treatment of Stuttering in Children

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Abstract

Introduction: Stuttering is a communication difficulty that creates problems in speech freedom. It contains uncontrollable, reflexive stuffs, elongations, repetitions of sounds, syllables, or words. At the same time, it is accompanied by feelings of frustration, fear, shame and low self-esteem.

Aim: The aim of this review was the investigation the treatment of stuttering in children.

Material-Methods: Extensive review of the recent literature was conducted in electronic databases (Medline, Scopus and Google Scholar) through the Association of Hellenic Academic Libraries (HEAL-Link) using the appropriate key words: stuttering, health, disease as well as a combination of them.

Results: Symptoms of stuttering are accompanied by non-verbal behavior, such as lack of eye contact and blinking; these symptoms are not observed in children with normal speech difficulties. It is particularly important the general level of child's speech development be assessed throughout the diagnostic process in order to ascertain whether there are additional difficulties such as articulation or phonological difficulties. The existence and degree of severity of such speech difficulties is usually taken into account so as therapeutic interventions to be ranked and classified when designing any treatment.

Conclusion: The stuttering child makes an effort to stop or avoid stuttering; it causes the child an intense psychological stress and affects his whole life. Each and every person who stutters has to cope, to a greater or lesser extent, with a symptomatological ensemble.

Keywords: Treatment; Stuttering; Children

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Introduction

Stuttering is reported to have existed since antiquity, and it was known in all cultures. Hippocrates reported that stuttering is due to a type of dysfunction of the speech organs or articulators (Respiration, Phonation, Resonance and Articulation), as well as owing to the delayed development of inner speech or verbal thinking [1]. Aristotle believed that stuttering is due to anatomical malformation of speech organs or articulators and especially of the tongue [2].

Indeed, Ancient Egyptians had a symbol for stuttering, which depicted a tremble that started from the ground and ended in

the mouth. This symbolic representation of an earthquake was the moment of stuttering [3].

The most widespread theories, between Antiquity and the Renaissance period, were those that considered that stuttering resulted from an anomaly or a disorder associated with the structure and/or the function of the tongue [4].

At the beginning of the 19th century, the first papers were published. The problem was then scientifically examined and the stimulus for the formation of pedagogical and medical methods for its reduction or even elimination was provided. Jean Marc Gaspard Itard, a French physician, supported the view that

stuttering was a result of the general weakness of the nerves that stimulate the tongue and the larynx. The Itard's report was one of the first researches to incriminate the function of the larynx for stuttering. Many researches were carried out in the 1970s and 1980s so as to delve into that potential probability [5].

During the second half of the nineteenth century, the tendency to incriminate the structure and functioning of the speech organs for the occurrence of stuttering continued to prevail. Nevertheless, special emphasis was laid on psychological mechanisms involved in the event of stuttering and its persistence. According to a widespread view at the beginning of the 20th century, the psychological stress that left-handed children were under in order to learn to use their right hand may be responsible for the onset of stuttering [6].

Asperger (1952) supported the view that serious cases of stuttering resulted from encephalitis. Additionally, it was supported milder symptoms are the result of poor manipulations and interventions of the child's surroundings when he/she encounters difficulties in the flow of speech during the period of language development [4].

Nowadays, specialists dealing with stuttering attempt to approach people with difficulties holistically in the flow of speech for it are increasingly accepted that the causes of stuttering are not just limited to the dysfunction of the organs of speech.

Stuttering should be considered as a speech disorder with different etiology in each and every case [7]. As a direct result, the preferential therapeutic treatment today does not focus solely on improving the verbal ability of the person stuttering, but it is based on improving people's overall functionality. It is essential the way the child experiences stuttering as well as its impacts on him/her be externalized [8].

However, timely evaluation and diagnosis, as well as information provided by parents or other experts, will greatly assist to properly trace the symptoms, the type and severity of this disorder. Some medical history of speech disorders will be a valuable tool that will help the therapist to approach the problem in a versatile manner [9].

Purpose: The purpose of this paper is to provide general information regarding the nature of stuttering in children such as its etiology and diagnosis. Furthermore, this manuscript is to evince the evolutionary course and the treatment of stuttering in children.

Methodology

A review of Greek and international literature was carried out, focusing on the views onetiopathogenesis, diagnosis and treatment of stuttering in children. The material and methods of the study included articles on stuttering searched via Greek and international databases such as: google scholar, mednet, pubmed, Medline and the Association of Hellenic Academic Libraries (HEAL-Link), using keywords: stuttering, children and treatment. The exclusion criterion for the articles chosen was the language apart from the Greek and The English language. The articles and studies assessed were primarily accessible to the authors.

Talking about Stuttering

In 1964, Wingate defines stuttering as a disorder in the flow of verbal expression which is characterized by involuntary repetitions and prolonged speech, whether or not it is vocally expressed; since they are some verbal units, namely syllables or monosyllabic words. These disorders occur at a constant frequency and are very difficult to control [10].

The World Health Organization (1977) describes stuttering as a speech disorder in which the person knows exactly what he wants to say, but at that moment he is unable to verbalize it because of an involuntary repetitive prolongation or a cessation of a sound [11].

The evolution of stuttering goes through four phases [4]:

- The first phase covers pre-school age. In this phase, stuttering is occasional and occurs every time the child is scared or hurried to say a lot.
- The second phase covers school age. Stuttering is now considered a chronic condition. It appears to be more persistent and can be manifested in many situations.
- In the third phase, the individual believes that particular sounds, syllables or words can create particular difficulties, so he avoids their use. Moreover, the person is rather irritable when his problem is reported [12].
- In the fourth phase, the individual avoids situations due to which he can be challenged to speak. He is dominated by fear and his problem is increasingly embarrassing.

Symptoms and Causes of Stuttering

The causes of stuttering have been categorized as organic, psychogenic, genetic and environmental ones [7,13]. Studies have attributed the injury to the existence of one or multiple organic, genetic, psychological and environmental factors; the symptoms and causes are as follows [14]:

- Micro-like brain lesions in the kinetic contours in the brain, which are responsible for the synchronization of the muscles and taking an active part in speech
- Genetic predisposition
- Endocrine disorders
- Psychosomatic disorders
- Parents' attitude towards the anxiety of their children (stress, sovereignty, perfectionism, overprotection, etc.)
- Linguistic incompetence of the child

Diagnosis of Stuttering

It is particularly important the general level of child's speech development be assessed throughout the diagnostic process in order to ascertain whether there are additional difficulties such as articulation or phonological difficulties. The existence and degree of severity of such speech difficulties is usually taken into account so as therapeutic interventions to be ranked and classified when designing any treatment [15].

The first step in assessing stuttering in children is to interview the child along with his parents. Information on the general developmental history of the child is collected. The information about the possible existence of other people stuttering in the congenital environment and the development of stuttering in these individuals are most important factors [4,16].

The second stage in the assessment of the child is the clinical observation of the child. Information gathered by the parents and the specialist's evaluation of various speech samples of the child in different contexts along with the recording of the child's speech are integral parts of the diagnostic procedure of stuttering [17,18].

Symptoms of stuttering are also accompanied by non-verbal behavior, such as lack of eye contact and blinking; these symptoms are not observed in children with normal speech difficulties [19].

Additionally, the overall assessment of the child's personality is of particular importance. Low self-esteem, feelings of insecurity, reduced tolerance to failure, and difficulty in decentralizing of thinking may contribute to stuttering consolidation and hamper the effort to tackle it [4].

Therapeutic Treatment of Stuttering

The treatment of stuttering is a multidimensional and individualized process that draws clues from cognitive-behavioral theory and it is adapted to the needs of the child and the family in every case. During the therapeutic process, the therapist must flexibly alternate his approach amongst roles in which the specialist actively hears, guides, counsels, supports, encourages and demands [20].

Raming & Bennett (1997) point out that the specialist must show commendable sensitivity and take into consideration not only the child's feelings and emotions regarding stuttering but also the impacts these feelings and emotions have on the child's daily life, regardless of the therapeutic approach adopted [21].

According to Bernstein Ratner (1995), there are four therapeutic approaches designed for children's cases, in which stuttering coexists with a phonological disorder [22]:

- The mixed approach, in which both disorders are treated simultaneously during the same session.
- The circular approach, in which the focus of treatment between stuttering and phonological disorder alternates.
- The sequential approach, in which one disorder is treated first and then, the next treatment plan comes.
- The simultaneous approach, in which both disorders are treated at the same time but to the lower level of phonological requirements.

In recent years, there has been increasing interest in the implementation and evaluation of new methods for treating stuttering during childhood [23]. Direct intervention methods involve the child's own inclusion in a treatment program and various techniques that aim for the child to exert himself so as to control and reduce, as much as possible, both the symptoms of

stuttering and the related forms of dysfunctional verbal behavior. Speech therapy and the use of behavior modification techniques belong to this type of intervention [24].

Indirect intervention methods do not necessarily involve the child's own integration into a program but they are usually focused on education of the child's parents. Furthermore, they include any therapeutic effort that does not directly interfere with the child's speech but it focuses on altering the behavior of the child's parents as well as the change of other environmental factors [25].

Cooper & Cooper (1996) supported the view that parent counseling as the most important part of timely intervention for stuttering. Besides, both the child's development and the life of his family are influenced by the existence of stuttering [26]. Conversely, changes in the child and his/her family seem to influence the way the problem is evolved. Therefore, methods that take into account this potential, when applied, increase the chances of success in the treatment of stuttering [27].

In the context of "parental counseling", specialists pursue to modify certain elements for the child's surroundings so as to reduce, as much as possible, anxiety agents that can trigger or exacerbate the occurrence of stuttering. The main goal of parental counseling is to modify their behavior towards criticism, corrections and negative reactions to the difficulties encountered in the child's speech. In addition, the therapist helps parents to be less intrusive and perfectionists in their relationships with the stuttering child, guiding them to understand the needs and abilities of their child in order to adapt their expectations and demands of him/her accordingly [28].

In addition, parents can be instructed to reduce their speech rate and use a simpler language when interacting with the child. Finally, parents are instructed to formulate the child's living conditions in such a way as to provide the child with as many opportunities as possible to experience success in his/her verbal communication with others. In addition, parents are trained to help the child recover improved speech rate at time periods of extreme difficulty in speech flow [4].

In other therapeutic plans, the therapist acts as a model of proper speech to the child without requiring the child to adopt the mode of speech that shows him. Concurrently, the specialist serves as model of proper behavior for parents to modify their behavior themselves towards the child who stutters [29].

Once a valid diagnosis of developmental stuttering is made, the treatment can be applied. The main two goals of the child's treatment are to reduce stuttering and the predicted anxiety [30]. Nowadays, it is widely argued that under no circumstances is it possible for stuttering to be treated immediately at an early stage unless the child has already reached 5 years of his or her life. Therefore, the child must reach starting school age [31].

Rules Boosting Speech Fluency

Understanding the nature of stuttering and familiarizing the child with the mechanism of the problem is the first step towards the successful outcome of this effort. The child has to be trained to

adopt verbal behavior that promotes the flow of speech. This exercise is based on the processing of specific ways that each child handles his or her difficulties while they have already been identified at the previous stage [32].

The expert helps the child to adopt [33]:

- Slower speech rate
- Reduced intensity rate with which he/she moves speech organs (lips, tongue, teeth, alveolar ridge, hard palate, velum etc.)
- Appropriate speech breathing. The patient is instructed not to concentrate on inhaling, but instead to focus on exhaling
- Appropriate speech production with the least effort

The specialist can also identify moments in which the child forgets his/her problem and does not mind about the way he/she speaks during free conversations. As a result, the expert is able to realize what the child does or does not do at that time [4].

In these cases, the opportunity is usually offered for the child to see that the flow of his/her speech improves when he is calm and he/she need not have to focus his/her attention on what he/she says. The specialist must develop appropriate conditions during the session in order to achieve it so that the child feels comfortable and is interested in what it is being said or done. In this way, the child is not constantly trying to control his speech in order to avoid stuttering. In other words, the therapist must find ways to encourage the child to turn his attention from the way he speaks to what he says [10].

Moreover, the specialist helps the child exercise the basic rules of the dialogue such as [4,16]:

- Maintaining eye contact with the interlocutor
- Avoiding the interlocutor's interruption
- The child must learn not to talk over the interlocutor but he must wait for his turn to talk

Particularly, it is essential the right conditions be ensured for younger children, who are usually more impatient and impulsive, in order for them to comply with the above rules; and then, the discussion starts. The specialist also helps the child to alter his secondary verbal reactions often accompanied by stuttering symptoms such as strange variations in voice tone and intensity. Generally, the child believes that using his own subjective "rules", he is helped avoid stuttering [34].

More often than not, in case a child changes those verbal elements, he may experience a considerable improvement in speech. The child

is simultaneously relieved of the constant agony of finding ways to intervene in automatic flow of speech [4].

Finally, the possibility of regression is the most concerning factor of all for specialists, limiting the effectiveness of a therapeutic intervention in the case of stuttering. Given the above difficulties in the definition of regression, it is roughly estimated that about one third of children who undergo therapeutic treatment are always regressing, while the other one third of children do not complete the therapeutic approach or they are not available for evaluation once the program is completed [35].

Many such programs include the final phase, the maintenance phase, in which regression attempts to be prevented, and maintenance in progress achieved during treatment due to the increased regression probability after completing the treatment plan [36]. At the stage of maintaining progress, the person can periodically return to the surgery where his treatment took place for some sessions in order the specialist to evaluate his progress and revise or refresh some of the positive changes that occurred in the main phase of the treatment plan [37].

However, the specialist should warn the person suffering from stuttering, in any case, about the possibility of regression and provide him with the necessary cognitive skills to deal with it.

Epilogue

Stuttering is a difficulty regarding the flow of speech while it can decisively influence the way the child communicates.

Each and every child who stutters has to cope, to a greater or lesser extent, with a symptomatological ensemble. Although there is no complete cure as regards stuttering, there are different therapeutic approaches including both merits and drawbacks (this study does not focus on those ones) which fit to different individuals.

The therapist is the person who evaluates each occurrence and designates the appropriate treatment. The choice is not always feasible for many reasons, so the expert is to decide what therapeutic intervention he will follow in order to make the best possible benefit for the child, and he must always decide on a separate basis and after weighing a number of factors concerning each person.

Children, therefore, with speech flow disorder need to be helped by experts, and of course, be supported by parents, relatives, and friends. Continuous awareness of the problem, guidance, counseling and cooperation between experts and parents is an integral part of the treatment for stuttering; and it is the only way for successful treatment.

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