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THE IMPACT OF CONGENITAL HEARING LOSS ON THE PSYCHOLOGICAL AND EMOTIONAL DEVELOPMENT OF THE INFANT

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Abstract: The incidence of congenital hearing loss at birth varies, according to different studies, between 1-3/1000 and 1/500 newborns. Recent advances in molecular genetics have established that more than 50% of these cases have a genetic cause and have allowed the determination of the specific genes involved in the etiology of congenital non-syndromic deafness. In Romania, only a small proportion of families are referred to clinical genetics services in order to clarify the etiology of the hearing loss and to provide genetic counseling. This is mostly due to poor economic development and also to misconceptions regarding genetic testing and the importance of genetically transmitted afflictions.

Keywords: congenital, deafness, genetic, psychological, emotional development

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INTRODUCTION

Genetic conditions have long been considered to have social and psychological consequences on the patient but also on the family (worry about the health of the child and of possible future off-springs, feelings of guilt and stigmatization) and all these factors can affect the family's ability to adjust to the condition.[2,5] Congenital deafness is the most common type of sensorineural hearing loss in developed countries (1/750 children develop a potentially debilitating sensorineural hearing loss).[3,4] The etiology of the hearing loss is, in most cases, unclear immediately after birth. Only the obvious cases of perinatal complications (prematurity, ototoxic medication, hypoxia, VLBW – Very Low Birth Weight, ELBW – Extremely Low Birth Weight etc.) can be considered as clear etiology immediately after birth but even than, a genetic cause cannot be rulled out. Studies have shown that such cases can also have one or several genetic mutations that could produce congenital hearing loss.

After the birth of a deaf child, parents aren't usually aware of the cause of the deafness and the majority does not expect a genetic etiology when there was no explicit family history of this condition.[6] These families start an acute research for the cause of this traumatic and unexpected event but it often takes a long time to find accurate information[1], especially in countries like Romania, that have very little development in genetic diagnosis and counceling.

However, regardeless of the cause of the congenital hearing loss, the psychological, social, emotional and economic implications of such a case are far greater than most people imagine. The child must be diagnosed and treated as soon as possible so that he or she can be exposed to language from an early age (1-3 years). Unfortunatelly, in Romania, a great proportion of cases are not diagnosed from birth, but rather after the age of 3 and therefore require expensive hearing devices, special schooling, attention and care so that they can be integrated into society and later on into the work force.

PSYCHOLOGICAL CONSIDERATIONS

From a psychological perspective, we are very interested in the way in which deafness affects the congnitive and emotional development, the capacity of social integration as well as the potential psycho-patological tendencies. Each of these factors represents a well-being indicator of the modern human being which means that an adequate psychological intervention must consider all these variables.

Recent studies such as the one from 2015 from the "Speech Language and Hearing Science" Department of the University of Colorado, reveals how the brain, due to lack of input from its hearing area, will in time, create new neuronal connections with the purpose of compensation. The study also showed that the area that will not be used for decoding auditory messages will be used for visual and tactile inputs. This phenomenon is known as *trans-modal cortical reorganization* and represents a type of manifestation of neuroplasticity which allows the brain to adapt to the loss of hearing. The early loss of hearing can lead to a cognitive decline which cannot be accurately measured. However, recent French studies have proved a significant improvement of cognitive abilities in children who benefited from early cochlear implantation. The connection between the degree of language development and the intellectual level is well known and documented. This means that qualitative and quantitative speech disorders could represent a significant indicator of intellectual deficit but it is very difficult to assess the quantitative impact of the lack of language on the intellect.[13] Unfortunately, most IQ tests also require verbal examinations and this is a major hindrance for a comparative IQ study. We can however assert with certainty that the association between hearing and neurological problems (which tend to be rather a consequence of the hearing loss) create a low intelligence level due mostly to neurological factors rather than loss of hearing per se.

Regarding the development of *emotional intelligence*, which is defined as the ability of an individual to recognize and manage its own emotions as well as those of others and is regarded as an indicator of personal and professional success, studies have shown a decreased level of emotional intelligence in deaf individuals. This can be explained through a lack of verbal communication which alters the connection with other individuals, the quality of the relationships which, in turn, decreases empathic capabilities. (see Suhair Al-Tal, Fuad AL-Jawaldeh, Heyam AL-Taj & Lina Maharmeh - Amman Arab University, Jordan – "Emotional Intelligence Levels of Students with Sensory Impairment", 2017).[8] Communication is considered to be the sap of a relationship, the one that maintains and feeds it. There is a direct relation between the quality of the relationship and the quality of communication. In conclusion, a faulty communication will limit the consistency of the relationship.

This fact has important implications on the level of emotional maturity of deaf children since it entails a predisposition towards emotional instability with inadequate reactions and a mean level of stress which could create the perfect environment for several addictions. A hearing child is familiar to the sound of its mother tongue starting from the womb which aids in the development of the maternal bonding, the basis of relational life. It is well known that during the first months of life, newborns recognize their mother by sound and smell, recognizing the familiar voice they know from the intra-uterine life. A child with congenital hearing loss will not benefit from this first maternal contact and this could lead to fragile emotional security and unstable attachment which is paramount for emotional development. (see J. Bowlby – Theory of Attachment).[11]

In a 1989 study, Calderon, Greenberg & Kusche examined the influence the social and cognitive abilities of families with deaf children. The authors studied how 5 coping factors (health/morality, creeds, social support, problem solving, utilitary resources) have influenced the

development of the child. The results proved that maternal abilities in solving problems affect the emotional insight of the child as well as its cognitive development. Mother's beliefs in chance, luck, destiny have influenced in a negative manner the social development of the child whereas a positive attitude of the parents was correlated with a low level of child impulsiveness, cognitive flexibility and a better social understanding.

However, considering the complex adaptive capabilities of a deaf individual, we cannot state that this handicap affects the profound structure of its personality, although it can be responsible for a high level of stress, especially for those who have a tendency for isolation and refusing active participation in the social life. This high level of stress can appear through anxiety - depression like disorders, sleep disorders, addictive behavior and can go as far as anti-social behavior. These are more frequent in individuals that refuse to admit to having a hearing disorder (Hallberg & Barrenas, 1995; Hetu, Riverin, Getty, Lalande & St-Cyr, 1990; Hetu, Riverin, Lalande, Getty & St-Cyr, 1988), and live their disability as an unsurmountable drama. All this being said, no significant association between loss of hearing and elements of psychopathology has been, thus far, identified.[14]

Regarding the psycho-emotional problems of deaf-mute children, we can distinguish two main cathegories: those from hearing parents and those from deaf parents. Each situation presents pros and cons, such as:

1. **Children from hearing parents:**

Advantages: these children are better socially integrated due to the model of a hearing parent. This can lead to a far more adapted every day life and to developing coping mechanism that can respond more adequately to social standards.

Disadvantages: the parents may not recognize the problem and assume they have a very compliant and quiet child. This can lead to severe delays in child development and missing important evolution stages. Another disadvantage is the child's frustration in seeing it is different from its parents and that they cannot fully understand what it is experiencing. This frustration can become aggressive behavior especially during the teenage period. It is also known that hearing parents tend to be over protective to deaf children which will contribute to maintaining them in an inferior level compared to the child's age and in an underdeveloped socio-psycho-emotional state.

It is mandatory for hearing parents to learn sign language, although some refuse, treating this situation as exclusively the child's problem. This attitude can be felt as a refusal to accept the child's difficulties by the parent. If the parent cannot integrate this type of problem, how could someone else? How could the child? What kind of a message do these parents send? Rejection, devaluation, even total abandonment to the child's own grief. Many times, the responsibility is delegated to social services or to medical care, as a dysfunctional way for the parent to cope with the situation. It is important to understand that when the parents receive the news of the child's deafness, they go through the classical mourning stages (denial, rationalizing, shock, guilt, anger, helplessness, negotiation, acceptance) or at least they should. Unfortunately, they often remain stuck in one of these stages and only professional help can guide them into better integrating the newborn's disability.

2. **Children from deaf parents:**

Advantages: the parents can recognize the handicap from an early stage and can intervene. They can also already communicate through sign language, share with the children their own emotional and behavioral coping mechanism and the child can identify a similar model.

Disadvantages: the children can reproach the parents with their inherited handicap, especially in the teenager period, when anger and parental conflicts are more intense due to hormonal discharge. This moment can significantly affect the parent-child relationship. The guilt of the parents can also provoke emotional distress such as depression or anxiety.

All these factors can only underline the importance of early diagnosis and treatment of congenital hearing loss in order to provide the newborns with real chances of fully developing of their psycho-emotional capabilities.

CONCLUSIONS

The implementation of a national screening system would also benefit the psychological and social development of children with congenital hearing loss, by reducing the rehabilitation and social integration costs. These children who are diagnosed within the first 3 months will be able to have a normal intellectual and emotional development. We should also consider the important psychological impact of this affliction on the families, especially the parents who usually develop feeling of guilt and have great difficulties in coping with the situation. The role of psychotherapy becomes more important in providing the children and their families with the emotional balance they require.

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