

DEVELOPING SPEECH LANGUAGE THERAPY FOR CLEFT LIP AND PALATE IN PAKISTAN

ABSTRACT

Cleft lip and palate is a congenital craniofacial anomaly of the oral cavity, where in a structural malformation in the upper jaw including the lip, teeth, alveolus, bony hard palate, soft palate and/or uvula, critically interfere with functions of feeding and speech development. The condition is defined according to its presentation, which may be unilateral or bilateral, with a partial or total cleft, having higher incidence in the Indian sub-continent, including Pakistan, as compared to the rest of the developed world.

A cleft lip/palate warrants early intervention through a multidisciplinary team of health care professionals, namely: pediatrician, plastic surgeon, otorhinolaryngologist; maxillofacial surgeon, dentist, orthodontist, prosthodontist, nutritionist, speech language therapist, and psychologist. Appropriate feeding strategies along with specialized tools may be employed soon after birth to ensure good health in preparation of surgery as early as possible. Speech-language therapy is an essential aspect of intervention, which helps the child develop effective verbal communication skills which is crucial for social and emotional well-being, as well as for a successful academic career.

Keywords

Cleft lip, Cleft palate, Early Intervention, Phonological Development, Speech–language Development, Metaphonological and Metalinguistic Skills.

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INTRODUCTION

Cleft Lip and /or Palate has high incidence in Pakistan, with a larger prevalence in the lower socioeconomic strata of society. The two conditions may occur in isolation as only cleft lip or only cleft palate in some children, or they may co-occur as cleft lip and palate. It is said that half of the babies born with a cleft lip are likely to have a cleft palate as well. Cleft lip and/or palate is often seen to occur non-syndromically¹. However it could be seen as features of a syndrome, wherein there may be other comorbid conditions along with the cleft lip/palate. Amongst the most common conditions is said to be Deletion syndrome, also known as the velocardiofacial syndrome^{2,3} which presents with distinct characteristic facial features, with oral structural defects and a cardiac anomaly. In addition the children may also present with a cognitive deficit and unmanageable behavior.

Cleft lip / palate can be classified as partial or total and unilateral or bilateral. Veau's classification divides types of clefts into 4 groups: the first group classifies clefts of the soft palate only, the second group classifies the clefts of the soft and hard palate, the third group classifies clefts according to defects from the soft palate to the alveolus and may involve the lip whilst the group four classifies complete bilateral clefts⁴.

IMPACT OF THE CLEFT LIP/PALATE ON SPEECH & LANGUAGE SKILLS

A baby born with a cleft lip/palate must receive immediate intervention from a speech language therapist who can teach and train the mother to breast feed the baby, so as to prepare him for early surgery. Specialized long teats and spoons may also be used with infants who are unable to suckle at the breast⁵.

Surgical intervention is critical for babies with a cleft palate, and should ideally be

performed by the end of the first month or at least within the first three months of life; whilst lip surgeries may also ideally be performed between 2-6 months of age or at least before the first birthday⁶.

The primary outcome of a repaired cleft lip/palate is the baby's intelligible speech or phonological development. Every human baby has a biological predisposition for the acquisition of speech and language skills with the care givers nurturing or stimulating it through their verbal interaction since the baby is born. Speech and language skills feature the development of phonological, semantic, morphological, syntactic and pragmatic skills in human babies. They usually utter their first words around the age of 12-18 months, but have a larger lexical store at this young age, hence their understanding of spoken language precedes their expressive repertoire. The auditory feedback loop helps the babies match their utterances to those being spoken by people in the surroundings, developing meta-phonological and metalinguistic skills responsible for their adult like speech and language proficiency⁷.

Children with cleft lip/palate, may or may not present with a delay in acquisition of language skills, but are likely to present with a speech disorder. Speech defects are characterized by disorders of resonance, and unclear speech or mis-articulations.

Phonological errors or errors in the production of speech sounds are commonly seen in babies and young children through the first 6 years of life, which usually correct themselves, and are therefore called natural or phonological processes. The predominantly noted natural processes in the speech of children with cleft lip/palate, were the assimilation process (bilabials being assimilated with nasals) and backing of front consonants (/k/, /g/ for the linguadentals, alveolar and palatal stops)⁸. Misarticulations in the speech of a child with cleft lip/palate are classified into two

groups: (1) an obligatory error of articulation occurs when there is a structural malformation resulting from an incompletely repaired cleft and would require further surgical repair prior to speech therapy for establishing intelligible speech, (2) a compensatory error of articulation is said to occur when the mis-articulations persist in the child's speech despite a complete correction of the structural defect. The common errors noted are "pharyngeal and glottal stops, backing to uvular and backing to velar consonants, active nasal fricatives, the absence of pressure consonants, nasal realizations, and weak nasalized consonants". Orthodontic intervention may be required specially to improve the production of fricatives and affricates. Dental correction also facilitates the acquisition of intelligible speech⁹.

In a disorder of resonance, the nasal air stream is more pronounced than the oral air stream causing hyper nasality of voice, which manifests as nasal emission or nasal turbulence on the production of consonants sounds, with or without a nasal or facial grimace, usually caused by a wide velopharyngeal port, manifesting as velopharyngeal insufficiency (VPI). This would require further surgical remediation, or an obturator (such as one given to occlude a fistula or a speech bulb to reduce VPI). Contrarily hypo nasality may be observed when there is an oral air-stream on the production of nasal sound /m/, /n/⁹.

Several different methodologies have been adopted for speech therapy of the young child with cleft lip/palate post surgically. Some are based upon the traditional approaches in articulation therapy, whilst others employed speech correction with oro-motor exercises. Evidence for any one method being regarded as the best, is yet to be reached, however, all approaches do emphasize that the clinician must have good auditory perceptual skills, who must 'ear train' the patient to identify errors in one's own speech¹⁰. It is here that we see

the importance of metaphonological skills, because, every human baby acquires the correct production of speech sounds through his own auditory feedback loop which teaches him to discriminate between the correct versus incorrect production, and finally acquires all speech sounds in conversation with native like proficiency, by the age of 6 years.

The protocols of working with a child having cleft lip/palate include the entire multidisciplinary team. The assessment pre and post therapy includes an analysis of the child's speech using lists of a standardized sample of words, phrases and sentences repeated by the child after the speech language therapist; a nasometry, a nasendoscopy and a video fluoroscopy to assess the VPI, followed by an evaluation of the efficacy of therapy provided to the child¹¹.

CONCLUSION

The College of Speech Language and Hearing Sciences, along with the College of Dentistry and the Medical College, at the Ziauddin University have endeavored to establish a Cleft Lip/Palate (CLP) clinic at their venue, to provide early Intervention in speech language therapy through a multidisciplinary team consisting of a plastic surgeon, maxillofacial surgeon, ENT, pediatrician, psychologist and psychiatrist, audiologist, dentist, orthodontist and prosthodontist, speech-language therapist and nutritionist to bring intelligible speech to the cleft lip/palate child, leading to good social adjustment with family, and peers, as well as ensures a healthy and productive academic career¹².

This article aims to increase and enhance awareness about early and complete intervention of cleft lip/palate children and adults, in Pakistan. The author is the Pakistan representative at the 'South Asia Regional Cleft Lip/Palate network.'

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