

Verbal development dysontogenesis in children
with velopharyngeal incompetency

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Children with velopharyngeal incompetency make up one of the most severe forms of speech pathology. Linguistic and psychological-pedagogical study of the defect suggests development of advanced correction methods. Interactions of articulation and receptive mechanisms in verbal activity are described.

Children with velopharyngeal incompetency resulting from cleft lip and palate (speech therapy diagnosis: rhinolalia) belong to one of the most severe forms of speech pathology. We undertook investigation of the defect structure in linguistic and psychological-pedagogical aspects in the frames of the system approach. This study showed that the children with two given disorders do not make up a homogenous group. Most common characteristics of speech deficiency in this case are found in acquisition of phonetics which is developing in abnormal anatomical physiological conditions. Children with rhinolalia are characterized by changes in oral sensitivity in mouth cavity as well as impairments in stereognosis caused by sensory-motor conduction tract dysfunction (what results from deficiency of feeding in infant age). These children were found to have certain specific characteristic in pre-lingual development, insufficient activity

of babbling, late appearance of speech, long laps between appearance of the first words and phrase speech. Peripheral defects of articulation organs result in development of compensatory changes of articulation organs positions when sounds are pronounced: high position of the tongue root and its backward shift in the oral cavity, lips insufficiency in labial vowels, bilabial and labio-dental consonants, excessive activity of the tongue root and larynx, tension in mimic muscles. The most essential defect of oral speech phonetics is that of impairment of all this oral sounds, resulting from changes in aerodynamic conditions of phonation and involvement of nasal resonator.

Besides regular nasalization children with rhinolalia are characterized by some specifically coloured consonants (often velar ones): what is the effect of participation of pharyngeal resonator. Pharyngealization, i.e. excessive articulation resulting from tension in the walls of pharynx, appears as a compensatory means. There are also additional articulations in larynx what furnishes the speech of rhinolalics with a specific "clicking" on-glide.

Besides these mentioned tendencies in adaptive changes of speech, there are found many more particular articulatory defects. The latter depend greatly on positional changes in a word, phrase, text. The most typical are:

1. Omission of initial consonants
2. Neutralization in the manner of production
3. Multiple various substitutions of sounds
4. Abrupt discontinuance of sounding (fricatives in the final position)
5. Pronunciation of hushing sounds is accompanied by hissing noise and v.v.
6. Sonorous sounds in the final position are strongly devaluated
7. Manner of sound production is changed: explosives are substituted by fricatives

8. Vibrant /r/ is either missing or substituted by the second /i/ in strong breath
9. Additional noise in nasalized sounds (hushing, hissing, aspiration, hoarseness, laryngeal on-glide etc.)
10. Backward shift of articulation focus (as a result of high position of the tongue root and insufficient participation of lips in articulation)
11. Children having regular lessons with speech therapy teacher are sometimes characterized by hyper correction phenomena, i.e. forward shift of articulation. E.g. /s/ (frontal dorsal) is substituted by /f/ (labio-dental) without changing the manner of articulation.

Interconnections between nasalization and distortions in separate sounds articulation are rather multifold.

It's impossible to establish an immediate correlation between the degree and form of palate defect and extent of phonetic impairment. Compensatory modes children use for speech production are too various, very much also depend on relations among resonators and on diversity of individual differences in the configuration of mouth and nasal cavities. Besides that there are other less specific factors also influencing the degree of distinctness (developmental, individual-psychological characteristics, social-psychological factors and many others). The described characteristics of phonetics in children with rhinolalia suggest the conclusion about "phonetic uncertainty" of speech sounds and developmental backwardness of prosodic elements.

Speech legibility varies from 28,4% to 55,6%. It brings around serious bounds over speech as a means of communication. Disorders of acoustic aspects may be grouped in the following way:

1. Disorders directly relating to anatomy defects
 - a) articulatory disorders
 - b) aerodynamic disorders
 - c) phonatory disorders
2. Disorders related to motor control defects
 - a) eurhythmic-syllabic disorders
 - b) disorders in consonant confluence

The described characteristics of pronunciation in children with rhinolalia result in disappearance of distinctive features and delayed or distorted phonological development. The functions of distinction and identification of language sounds are disturbed, what impairs phonological aspect of acoustic functional system. Disorder of interaction between auditory and speech motor analysis-

tor affects acquisition of written speech. In writing substitutions are found: /m/ for /b,p/, /n/ for /t,d/ and v.v. What is due to absence of the oppositions in oral speech. There are also other types of substitutes of vowels, hushing and hissing, voiced and surd sounds, what proves disorder of the whole phonematic system.

The degree of writing disorder is defined by combination of factors: defect of articulatory system, character and terms of speech therapy, compensatory capabilities of a child, influence of verbal environment. The children need specially organized correction in disgraphia performed simultaneously with modification of child's phonological system. These data were taken into consideration of the reform in principles of organization of verbal material, used for correction goals.

Study in other aspects of verbal activity of children with rhinolalia of different age groups revealed a certain dynamics in interaction of pathogenic factors, differing in its nature, degree and turn of influence. In preverbal and early verbal period the greatest negative effect is produced by anatomic-physiological defects influencing development of phonetics (I stage). In the period of active development of verbal activity deficient conditions of speech generation, deprivation of motor component of speech trigger psycholinguistic factors. They cause diversity of deficiencies in speech generation and perception (II stage). On the III stage when the language system has to be acquired social-psychological factors are added which hinder communication and information exchange (education). Use of such a model supplies a speech therapist which a means for defining correction strategy and ways for prophylactics of secondary aftereffects of the defect.