



Specific Characteristics of the Development of Motor Practices of Children with Mild Dysathria of School Age

Muzayyana B. Mamatova¹, Nilufar Z. Abidova², Zukhra M. Akhmedova³

¹Associate Professor, PhD, Speech Therapy Department of Tashkent State Pedagogical University named after Nizomi,

²Associate Professor, PhD, Speech Therapy Department of Tashkent State Pedagogical University named after Nizomi,

³Associate Professor, PhD, Speech Therapy Department of Tashkent State Pedagogical University named after Nizomi, Tashkent, Uzbekistan

Article History	Abstract
Received: 12 June 2023 Revised: 10 September 2023 Accepted: 19 September 2023	<i>In this article, specific defects in the development of the movement field in children with dysarthria, namely gross violations of general movements, difficulties in performing given movements, lack of accuracy of movements, a large number of stereotyped movements and dysrhythmias, a decrease in speed and agility in performing well-defined movements, uncertainty of manual hand movements, and the specificity of general coordination are revealed.</i>
CC License CC-BY-NC-SA 4.0	Key words: Sensory period, motor, praxis, kinesthetic, kinetic, articulatory motor, efferent, afferent impulses, physiological hearing, general, fine motor, locomotor, perseveration.

1. Introduction

Movement is one of the innate human needs. Satisfying this need is very important in childhood. Preschool creates the most favorable conditions for the all-round development of a young child. During this period, which is called the "sensitive period", all the main aspects of the psyche are formed - thinking, memory, attention, motor skills. Also, during this period, intellect and speech, which is its social component, are actively developing.

The brain develops simultaneously with the body. In the early years, movement, mental development, including speech, develop in parallel with physical and sensory development. The child learns things and events in existence, the relationship between space and time, and most importantly - speech with the help of actions. Movement activity at an early age has a positive effect on the development of speech and mental processes.

The main results and findings

In the ontogeny of children, the development of movement functions is very slow and improves over many months and years. In the studies of psychologists, especially American psychologists, a great deal of attention has been devoted to the issue of whether the development of large and small motor skills in a child is the result of naturalization or the result of training. In the initial works in this process, the main attention is focused on the world of natural maturation (Dennis.W), and in some later studies, the issue is raised that the

factors of natural maturation and training are equally important for the formation of the child's motor skills (Halverson H.M, Munn.N).

The German doctor K. P. Becker highlighted the issue of the integral connection between speech activity and motor centers. K. P. Becker and M. Savak have such ideas. "If we look at speech from the point of view of the movement process, then the violation of the speech act can be interpreted as a movement disorder. This disorder sometimes manifests itself as a separate speech disorder, that is, it does not affect gross motor skills. On the other hand, gross motor disorders cause fine motor disorders that manifest themselves in speech disorders.[1] In this case, speech disorders can occur due to functional retardation of normal movement processes, as well as due to damage to motor centers and pathways.

Doctors B.V. Petrovsky, A.A. Baranov [5]; they emphasize that a child cannot grow up healthy without exercise. According to them, movement helps prevent various diseases, especially those related to the cardiovascular, respiratory and nervous systems. In addition, movements are widely used as the most effective means of treatment and correction. Because it is movements that control and regulate the processes occurring in the whole body. Therefore, one of the main criteria in studying the development of children is to study the level of development of actions. When organizing speech therapy work with children in the first years of a child's life, it is necessary to take into account a number of factors, such as: age factors and specific features of the development of speech function.

From infancy and early age, the foundations of speech activity are just being formed, at this time it is inappropriate to talk about any speech defect. The first year of a child's life is considered a pre-speech period, and at the same time, a slowdown in pre-speech development in dysontogenesis can be observed; at an early age (in the second-third years of a child's life), the child begins to actively acquire speech means of communication, and speech problems are noted as a slowdown in the development of speech at this age. L. I. Belyakova; M. A. Breslavets; JI. S. Volkova; I I Dudeva; N. I. Jinkin; M.M. Koltsova; I. Luria, R. V. Tonkova-Yampolskaya; L.A. Chistovich; Ya. Shaginyan [6]; The results of the study of speech activity by [4] and other scientists show that the motor organization of speech depends on the state of the speech-action analyzer, which determines the character of speech articulation. Based on research conducted by a number of scientists to study the connection between speech-movement and speech development, the following laws have been determined:

- there are integral functional connections between the movement components of speech and the general movement system of the organism
- voluntary movements (high level of development of motor activity) are formed directly under the influence of the control function of speech, generalizing and abstracting functions of the second signal system

the development of speech-movement and general motor areas is emphasized (L. Ya. Balanov; A. G. Ivanov-Smolensky; A. E. Lichko, N. N. Traugott; et al.) [11]; [4]. N.A.Berstein's [1] movement organization theory is based on the principle of interdependence of general motor skills and speech, which enables the development of the movements of members of the articulatory apparatus that make up speech by improving general motor characteristics (G.R. Shashkina). Based on the results of his researches, M.A. Piskunov emphasizes that there is an integral connection between speech motor skills and accompanying movements (mimic muscles, hand gestures). M.A. Piskunov believes that the quality of articulatory motor skills directly depends on the state of the body's neuromuscular apparatus and general movement skills [5].

The development of articulatory motor skills plays an important role in the formation of speech function. The development of speech zones in the brain largely depends on speech kinesthesias (impulses that occur in the movements of the organs of articulation during the speech process), and they are also disrupted in articulation disorders. A decrease in afferent

impulses to the speech area of the brain delays their transmission, which can lead to a delay in the full development of speech.

A. Piskunov emphasizes that in the ontogeny of children's speech, the dependence of speech articulation on the state of the child's general motility is clearly visible. In the initial period of speech formation (1-2 years old), speech motor skills are quite stable and undifferentiated. In the next stage (physiological language freshness), there is a general inconsistency, uncertainty and insecurity in the general neuromuscular system of the child. At the same time, the improvement of pronunciation mechanisms is noticeable. The development of the pronunciation side of speech is inextricably linked with the improvement of the peripheral speech apparatus.[5]

In phylogeny, the development of articulation organs is associated with the formation of walking, hand movements and their differentiated movements. In normal speech development, the child acquires the sound system of the language simultaneously with the development of general motor skills and differential hand movements. (N. I. Jinkin). [6]

I. P. Pavlov views speech primarily as kinesthetic impulses coming from the speech organs to the cerebral cortex. He called these kinesthetic sensations the main component of the second signal system. "All external and internal stimuli, all newly formed reflexes, both positive and negative effects are immediately expressed by means of words, they are also connected with a speech-action analyzer and expressed as a phrase of children's speech"[2].

Most researchers note the interrelationship between the areas of movement and speech. It is through actions and words that the child learns the environment, interacts with it, expresses his attitude towards it, develops and improves his worldview. Movement and speech (together with the senses) are the most important among a number of other factors that ensure the child's mastery of the objective world. Movements, motor activities and speech as a means of communication provide the opportunity to perform various types of activities and at the same time can be manifested as independent psychomotor or speech activities. The formation and development of the interdependence of the functional systems of movements and speech in preschool ontogeny has an indirect effect on the subsequent age periods. On the one hand, the external construction of speech, i.e. the pronunciation side of speech (sound pronunciation and prosody) is provided by clearly coordinated movements of the members of the peripheral part of the speech apparatus. It provides for the normative construction of the central and peripheral parts of the speech apparatus in order for the child to acquire the skills of pronunciation of sounds in the native language, for adults to ensure the implementation of finely differentiated movements of their speech organs in the expression of speech. If there are organic or functional disorders in the central or peripheral parts of the speech apparatus, it is known that motor difficulties in various mechanisms occur, which in turn prevents the normal acquisition of the pronunciation side of speech in preschool age and leads to various speech disorders in later age periods. On the other hand, the formation of the human locomotor functional system takes place with the active participation of speech. (E.P. Ilin). [8] The role of speech in the implementation of voluntary actions has been demonstrated by many scientists.

The analysis of the literature presented above shows that the problem we are studying has not been studied in our republic. Therefore, we set ourselves the goal of studying the specific characteristics of general and small motor functions of children with dysarthria, and set a number of tasks to achieve our goal.

The methodology of learning with mild dysarthria of preschool age was formed based on the analysis of psychological-pedagogical literature on examination problems, taking into account the young characteristics of children.

The implementation of the tasks set before the research, the results of the logopedic examination allow us to have complete information about the specific characteristics of the motor activity of children with dysarthria of preschool age.

We conducted the logopedic examination in the following directions:

1. Study of the state of general and voluntary motor development.
2. To study the state of development of small hand motor skills.

The study of any motor disorder begins with the study of general motor skills. Because any degree of motor impairment is reflected in general motor skills. Therefore, we also started the examination with the examination of general voluntary motor skills. In the examination of general voluntary motor skills, 5 different levels of tasks were given.

- * Standing on one leg: left, right
- * Jumping moving on two legs
- * Throwing and catching the ball
- * Walking while standing
- * Climbing and descending stairs

We carried out our experimental investigation at KTIMTT number 480, Yunusabad district, Tashkent city. 10 5-6-year-old children with dysarthria were selected for the study. 4 of them are boys and 6 are girls. We conducted our investigation in the III stage.

In the first stage, we talked with group speech therapists and parents. Diagnostic materials were sorted, leaflets were made to record the results of the obtained stress experiments. Medical documents were analyzed, anamnestic data were collected, and a research group was formed.

In stage II - based on the methodology given above, we checked children's movement activity and recorded it on the speech card.

In stage III - we observed children during various activities (play activities, visual activities, training activities).

Before examining the children, we collected complete information about their physiological hearing ability, intellectual condition, and vision ability.

We have presented the results of the state of general and voluntary motor development in Table 1.

Table 1. Results of the study of the state of development of general voluntary motor skills

Assignments given		Assignment evaluation criteria (in points)			
	3 points		2 points	1 points	0 points
Standing on one leg: left, right.	-		46%	35%	19%
Jumping on two legs	-		42%	31%	27%
Throwing and catching the ball	-		43%	25%	32%
Walking while standing	12%		54%	34%	-
Climbing and descending stairs	-		37%	29%	34%

The results of the study of the state of development of general voluntary motor skills are presented, none of the participants could complete the task of standing on one leg (left, right) correctly, 46% of the children performed the task at a slow pace, although it was not clear enough, they struggled to keep their balance and stretched their arms to the sides. fulfilled the requirements; 35% of the children had bad balance while standing on one leg, quickly lowered their leg and looked for support, the body deviated to one side, they dragged their hands to the ground; 19% of children could not complete the task, because, although these children stood on one leg for a very short time, there were cases of tremors in their legs,

quick lowering of the leg, looking for a support for balance, and cases of floating without being able to keep the body upright. This does not meet the verification requirements.

Children got tired quickly while performing the tasks, made excessive disproportionate movements, could not maintain balance.

There were no children who were able to fully and correctly perform the two-legged jump task, but 42% of children who performed the task slowly and correctly were observed. These children hesitated to jump several times and jumped slowly, they struggled to maintain balance while they hesitated to jump, and cases of their bodies turning to one side were observed; By 31% of children, the tasks were not performed accurately enough, the child stretched his arms to the side for balance, struggled to aim for a jump, there were cases of pulling his hands on the ground for balance, and they reached the set goal with difficulty. And 27% of the children kept their balance poorly while performing the task, after jumping forward, they extended their arms long during the jump, prepared themselves several times, and then tried to jump, but they could not do it.

They sat down after one difficult jump forward, or hopped alternately on one leg in a manner inconsistent with the task, as if jumping from a ditch, but there were also cases of not being able to maintain balance, spreading their arms wide, making circling movements, and trying to keep their balance. Children were also observed who were afraid of falling and could not jump at all.

The task of throwing and catching the ball was not only fun but also challenging for the children. Children who were able to perform this task correctly and precisely were not observed, although throwing the ball did not cause such a problem for most of the children, it was shown that catching it was a more difficult task.

Children's movements are rough, disproportionate. 43% of children who performed this task slowly and correctly; 25% of the children could not perform the task accurately, threw the ball too low, had difficulty catching the ball, could not hold the ball for a long time, the ball fell out of their hands quickly, and 32% of the children could not perform the task, they had poor balance, the ball they throw to a very low height, they could not catch the ball, the ball fell as soon as it touched their fingers, swaying from one side to the other to catch the ball, excessively scattered, aimless movements were observed; were unable to balance when stopped on command. During the performance of the tasks, children's muscle activity was observed to be weak, their hands were trembling. It can be seen that in most of these children fine motor skills are not well developed, voluntary movements of fingers and proportional control of the body are disturbed. This indicates that this category of children has not fully developed voluntary general motor skills and kinetic-kinesthetic praxis of hands.

The children were able to complete the task much better because the task of walking while standing was much easier. 12% of the children performed the task correctly, and 54% of the children had difficulty balancing during the task. 34% of the children made mistakes while performing the task, struggled to maintain balance, and when cases of the body deviated to one side were observed, they walked forward with their arms outstretched to the side and held balance, and continued walking in another place. Children who failed to complete the task and made gross mistakes were not observed.

The task of going up and down the stairs - although the children began to perform the task with great interest, there were no children who performed it correctly and accurately. 37% of the children performed the task correctly but slowly, 29% of the children did not perform the task correctly enough, they made many aimless, scattered movements when going up and down the stairs.

Children are afraid of falling, have trouble keeping their balance when climbing and descending the ladder, putting their feet and hands on one previous or next step instead of the

next one, cases of letting go of their hands, shaking hands when going up or down the stairs, holding the ladder tightly, not believing in their own strength. observed. And 34% of children climbed up the stairs with great difficulty, but could not go down on their own. It was observed that they were tired, made excessive aimless efforts to get down, dropped their hands at the same time, hung on the ladder with one hand.

These cases were recorded as failure to complete the task. Also, with the coarseness of children's movements, rapid fatigue, increased physical pressure, muscle activity decreased, and muscle tremors were observed.

After recording the performance of the tasks for checking the state of development of general motor skills, we calculated the average value of the tasks for checking the general motor skills of children. Accordingly, on average, 3% of the tested children performed the tasks correctly, 43% of the tested performed the tasks slowly, uncertainly. Their movements were clumsy and incoherent, and they had difficulty in aiming in space and imitating given movements. They have a hard time throwing and catching balls.

Limitation of muscle activity, tremors, perseverations were observed. In 32% of children, poor balance, jumping, walking in one line, roughness of movements, children looking for support during movement, muscle weakness, additional purposeless movements, tremors were observed. Also, these children spent a lot of time on assignments. There was a lot of lack of confidence in them to be able to complete the tasks. 22% of children could not complete the tasks. Although these children began to complete the tasks, they quickly gave up on the tasks after the first few failures.

From our side, the results of our research on the state of development of general motor skills, scientists who studied the development of general motor characteristics of children with speech defects L.V. Lopatina, E.M. Mastjukova, N. N. Traugott, E. F. The opinions of Arkhipova, M.M. Koltsova about the development of general motor skills in children with mild dysarthria were confirmed [4].

The data obtained on the examination of the state of fine motor skills are highlighted in 2 tables.

Assignments given		Assignment evaluation criteria (in points)			
	3 points	2 points	1 points	0 points	
All fingers are bent except the thumb and the thumb is extended to the left	34%	53%	13%	-	
The fingers of both hands are bent into fists, while the thumbs are raised	39%	52%	9%	-	
Putting it on the left (right) palm with the fingers of the right (left) hand turned into a fist.	26%	53%	21%	-	
The fingers of the right (left) hand are bent into a fist, the palm of the left (right) hand is placed vertically on it.	25%	56%	19%	-	

When examining the development of the kinesthetic basis of hand movements, 34% of children could correctly perform the task of extending the thumb to the left with all fingers bent except the thumb, 53% of the children performed it correctly, but at a slow pace, they had difficulty finding the necessary movements, they used the other hand to bend their fingers.

Their actions are vague, scattered, they point fingers at others. 13% of children completed the task with the help of adults. They had difficulty controlling their hands in space, working with two hands at the same time. When correcting the position of one hand,

there were cases of losing the position of the other hand, pointing to the finger other than the one that was required to move to restore it, and they had difficulty distinguishing between right and left. Children who failed the task at all were not observed.

39% of children performed the task of thumbs up with both hands bent into fists correctly, 52% of children performed it correctly, but at a slow pace, in which children had difficulty finding the necessary position when raising the thumb up, fisting their hands very hard, raising the thumb cases of helping with the other hand while losing the position of the other hand were observed.

They spent a lot of time to restore the condition of both hands. 9% of children performed the task with the help of adults with difficulty, these children could not work with both hands at the same time. When one hand held the position, the other lost the position. They could not keep their hands in space. Rapid fatigue of hands, loss of posture, etc. were observed. There were no children who could not complete the task at all.

26% of children correctly performed the task of putting the fingers of the right (left) hand into a fist, but at a slow pace, 21% of children performed the task with the help of adults. Children who failed the task at all were not observed.

The right (left) fingers are bent into a fist, the left (right) palm is placed vertically on it - 25% of the children were able to do it correctly, 56% of the children were able to do it correctly, but at a slow pace.

Difficulty in finding the necessary movements, difficulties in transferring the position from one hand to the other, they were able to restore the position by making vague, scattered movements in space to find the necessary position. They had difficulty distinguishing between right and left. 19% of children completed the task with the help of adults. They misdirected their hands in space, expressed the said situation playfully, that is, on the contrary.

They could not work with both hands at the same time. He could not transfer the movement of one hand to the other. They could not hold their hands correctly in space, they change the right and left hand (does not know right, left). unnecessary, scattered, unclear actions were observed a lot. Children who failed the task at all were not observed.

The average indicators of the performance of tasks for testing the kinesthetic basis of hand movements were as follows: on average, 31% of the participants performed the given tasks correctly and accurately, 53% of the children had difficulty performing the given movements. They could not maintain the required position. Having lost the state, they performed additional actions or observed perservations. 16% of children's actions were vague, aimless.

Fatigue, tremors in perseveration muscles were also observed. They had difficulty controlling their hands in space. Difficulties were observed in children with sense of position, performing movements with both hands at the same time, controlling the related hands in space.

2. Conclusion

In conclusion, it should be noted that motor skills are not well developed in children of preschool age, it is distinguished by a decrease in flexibility and delicacy. Accuracy of movements is broken. There are difficulties in transitioning from one movement to another. These disorders are especially evident in hand movements. The systematic use of the correlation between the development of fine and general motor movements in speech therapy work and the implementation of correction work will generally increase the effectiveness of speech therapy work.

3. References

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