



Care and Assessment of Early Development According to Cultural Paradigm

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Authors' contributions

This work was carried out in collaboration between all authors. Author YS designed the study and wrote the first draft of the manuscript. Authors HP and LQ managed the analyses of the study and managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Organization of assessment and care during first years of life requires of theoretical psychological argumentation. Conception of historical and cultural psychology, introduced by L.S. Vygotsky is one of possible backgrounds for such argumentation. Early childhood should be understood as a specific period of development or specific psychological age. Ways of care and assessment depends on the level of professional knowledge and preparation of specialists. The article offers an opportunity of inclusion of early development into general neuropsychological conception of child' development. Developmental procedures and organization of life should be taken into account by parents, teachers and other specialists. Original conception and proposals of the authors in relation to attendance of newborns by Master Program in Neuropsychology in Mexico are presented. Organization of emotional and personal communication between adult and child in specific kinds of joint actions is the basic method for care and assessment. The authors discuss the possibility of establishment of methodological relation between understanding of systems of care of newborns and fundamental concepts of neuropsychological theory within historical and cultural paradigm of development.

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1. INTRODUCTION

1.1 Early Childhood from the Perspective of Historical and Cultural Psychology and Neuropsychology

According to the conception of historical and cultural psychology, introduced by L.S. Vygotsky, early childhood should be understood as a specific period of development or specific psychological age. The goal of the present article is to discuss methodological possibilities of historical and cultural approach in psychology and neuropsychology for assessment and care of early age. Such understanding of the organization of care and assessment within complex and socially introduced joined activity is an opposition to the common approach of neurosciences as the spontaneous functioning of brain structures [1,2].

Historical and cultural approach understands psychological development as the product of the interaction between adult and child. Such interaction is not postulated as something static and obligatory, but as a possibility of specific kinds of activities at each moment of development. The central nervous system is given by birth, while the cultural interaction is always a potential possibility. The historical and cultural approach considers development as a process of potential possibility for the acquisition of cultural experiences, accumulated in all previous generations in the history of mankind.

Acquisition of cultural experience within cultural actions (activities) directed to goals shared with an adult emerge stabilization of voluntary actions and, at the same time, conformation of functional unions of nervous mechanisms. In this conception, a nervous system is not the source of psychological functions, but functional mechanisms of psychological actions, which conform functional systems or functional organs [3]. Functional systems do not result in natural maturation, but of cultural activities shares with an adult.

The cultural activity might never be based on only one isolated function or "area" of development. The process of activity obligatory includes the participation of central and peripheral nervous system in general. At the

same time, the participation of each element of the nervous system in each concrete activity (action) is specific [3,4].

From a neuropsychological point of view, it is possible to study how, during the first year of life and within a communicative activity, functional systems start with their functional consolidation. One of the major goals of neuropsychology is to establish precise participation of elements of the central nervous system in concrete action. According to Luria, such particular participation is described in terms of "factors" [4]. Developmental neuropsychology intends to discover and follow the formation of such "factors" through diverse periods of ontogenetic development [5].

For this reason, historical and cultural approach suggests that the process of psychological development might definitely be guided and provided by parents of the children.

Vygotsky [6] suggests that emotional expression is the first manifestation of the communicative possibility of a newborn. It is possible to argue that during the first year of life, there is no use of consideration of isolated motor, emotional and speech functions, but that all of them confirm the unity: the unity of emotional expression as a joint activity between adult and child. Bozhovich [7] has pointed out that from the first year of development, the child doesn't only have a simple motor and emotional "reactions", but expresses individual life with the help of movements and emotions. Both emotional and motor sphere accomplish the same role: participation in common joint communication between adult and child.

Such communication will not be limited to biological necessities for alimentation and physical mobility. Communication permits to guarantee social necessity for new experience and impressions, for example, to share contact with the others. According to Tomasello [8], this necessity should be recognized as a basic human necessity and possibly, this necessity is the main difference between the development of the human child and superior apes. Communicative activity guarantees individual affective experience, which was mentioned by Vygotsky and proposed as one of the unities for analysis of the development of personality [6].

The absence of satisfaction of this necessity might be converted in the origin of tranquillity and anxiety from the very early age. As the consequence, the content of psychic life of the child might be converted into the negative emotional experience and into the negative basis for consolidation of his/her personality during following ontogenetic periods. The emotional content of the child's activity directly depends on the content of communication attitude of the adults, who surround him/her in life.

According to historical and cultural perspective in psychology, the whole behaviour of the child is mediatized and represented by an act of collaboration with an adult. For this reason, an adult converts into the principal "bridge" between the cultural experience of humanity in general and the process of psychological development of the child. The adult should be understood as the origin of the psychological cultural development of the child. In this point is important to assume the predominant role of relations and communication with the child from the very beginning. Vigotsky [9] expressed an opinion that the whole psychological function of the child is an external function divided between adult and child at this period and that this function is social and not biological. Later, such an opinion was called as a "paradox of cultural psychology" by Elkonin [10]. The proper psychological function was firstly social function divided between two participants. Such an opinion is not yet understood or shared by cognitive psychology, which considers all cognitive process as functions of brain structures and/or neuronal networks as a product of biological evolution [2,1,11]. This difference is essential for interpretation of the origins and paths of early development during the first year of life.

The key concept for the understanding of historical and cultural conception of development is "rector activity". Such rector activity might be understood as the unit for analyses of development on different levels, including psychological and neuropsychological levels of analysis [12,13]. According to Elkonin [14], while assessing and understanding of a child, it is necessary to start with the development of his/her activity. We may say now that there are no "functions" or "spontaneous brain development" without the unit of cultural activity.

Each stage of psychological development might be characterized as the specific relation between the child and his/her life in the world. Lisina [15]

suggested that the young children may assimilate much better different experiences if those would be included as part of child's communicative activity. This kind of communicative activity possesses following characteristics or indicators:

1. Attention and interest of all actions of an adult.
2. The emotional response to each contact and action of an adult.
3. An initiative of the child to follow and to involve an adult in communication.
4. The sensibility of a child towards the attitude of an adult, which he/she manifests to other persons, objects and the child.

It is interesting to note that these indicators might be understood as a manifestation of the directed activity of the child. Firstly, these indicators depend on actions and attitudes of an adult; later on, the child would show more and more initiative and will direct his own attitudes and actions towards other people and objects. This activity, if positively introduced, might produce future important changes in cognitive and affective "image of the world" [16]. According to our opinion, the concept of the image of the world includes both social meanings of significant day-to-day situations and the gradual acquisition of a personal sense of such situations for the child. As a result of the activity of close and continuous personal communication, the zone of proximate development will turn gradually into the zone of actual development for goals and expressions of communication. From this point of view, it is important to analyse the very initial introduction of communication between adult and child and its effects for future psychological development.

1.1.1 How does this communication activity start?

An adult attracts the child by starting the interaction of communication; later on, the proper necessity of communication will become a child's initiative. The whole activity of communication might be understood as a cultural system created between adult and child. This system of activity includes diverse levels of representation: social interaction as high level of activity within the social situation of development [6], level of shared and jointed actions of adult and child-directed by conscious meaning and sense of direction of communication by an adult and level of brain functional systems, which begin their

long and complex consolidation. The unit of such consolidation is the joint act of communication created between adult and child.

According to Lisina [17], one of the early forms of communication is called "communication in personal situations". Such type of early communication, accessible, for a child, acquires the form of developed activity at the end of the first year of life. The first indicators of a complex of animation, the concentration of the face of an adult, "the social smile", the exclamations, vocalizations and general motor excitation towards the appearance of an adult. This kind of activity is the first rector activity of cultural development and starts from the second month in optimal social and organic conditions of development.

The complex of animation facilitates the acquisition of perceptive actions in general in all sensory modalities. These acquisitions will conform the necessary basis for the significant progress of actions with cultural objects during the next period of cultural development [18,19,20].

On the basis of communication in personal situations, the following stage of communication appears starting from the sixth month, which was called by Lisina [21] as "actions of manipulation". On this stage, the child is attracted to the manipulation of interesting and new objects and it even seems that the child is "obsessed" by objects. The limitation of the possibilities of the child during the usage of the objects implies the necessity of participation and constant help from the adult. It is possible to notice that communication continues to represent the rector activity, but communication is directed now to the objects and not only to personal situations of affection as it was earlier.

The decisive role of transformation of communication activity and changing of its direction towards objects should be understood by adults, parents and specialists. For example, constant promotion of objective of the actions and initiative of an adult for the realization of actions with objects and toys is very useful and essential at this moment. The way of the attitude of an adult towards cultural objects is the path, which the child would follow together with an adult. Indifference and lack of expression have negative consequences on speech and motor development at the end of the first year of life. On the contrary, initiative and help from an adult

conform the basis for the adequate acquisition of cultural actions with the objects at an early age.

Examples are the usage of towel, cup and spoon as the first meaningful cultural objects with concrete cultural actions and not just as "physic" objects with some features as colour and size. During the process of collaboration between adult and child, the child knows what does approval means. Social approval conforms the basis for social motives of activity and the basis for the motive of cooperative activity and mutual helping and cooperation [22]. According to this author, superior apes are not eager to help each other or another participant of an action, while the babies of 9 months old, with positive development, show such motivation for helping and cooperation [8].

According to the importance of cultural and historical approach, meaningful relation between parents and child as essential for early psychological development. Such importance helps to consider in an original way the possibilities of the influence and correction of development in cases of difficulties or risks. The concept of rector activity and of orientation for communication and manipulation activity according to the proper stage of each child is essential for our proposal of the methodological relation between assessment and correction. We propose now to call this methodology as assessment, correction and development according to our previous publication dedicated to the methodology of neuropsychological correction at pre-school and school ages [23,24].

1.2 Considerations about the Differences between Classic Approaches for Early Stimulation of Neurodevelopment and Alternatives of Cultural and Historical Approach

According to our opinion, it is possible to identify two essential features of the classic approach for early stimulation of development. Such an approach might be also called as "cognitive-evolutive approach" as it is base on the positions of cognitive neurosciences. A first essential feature of the classical or cognitive-evolutive approach is understanding of neurodevelopment as the study of independent "functions" or "processes" or "areas" as isolated modules. According to this understanding, each function or area might be "stimulated" as isolate areas with no "contact" with the other "areas of

development” or functions. The motor area would be considered as one of these isolated areas [25].

A second essential feature of the cognitive approach is an absence of conceptual clarity of the process of psychological development. Stages of development are frequently understood as the stages of natural development [26] or as a combination of “natural” factors” and “social conditions of life”. The problem of such understanding is that it is never clear what kind of conditions are favourable and predominately negative conditions are mentioned and taken into account such as total social isolation or hospitalization or situations of violence and so on. Favourable conditions are never studied neither taken into consideration as the powerful methodological instrument for children’s development.

It is clear that cognitive approach considers the role of adult’s care for child’s development. The problem is that such understanding of this role is totally general and non-specific. It is possible to compare it, to one of the other multiple characteristics of the social world in general. Or we might say that the “social situation” might be in general positive or negative without any kind of specification of the essence of such “social situation”. From this position, the researcher normally observes and registries behaviour of adults and children, but proposes nothing to change or to offer something new or different to communication between adult and child. Such situation is frequently called as “natural development”, where no kind of suggestions, orientation or correction might take place. The only possibility is stimulation of isolated area during external consultation in specific institutions.

The notable fact of such an approach is that motor development is considered as predominant and even as only important “area”, which should be developed and stimulated during the first year of life. It is considered that motor development passes through a series of stages or achievements independently from the aspects of communication or organization of activity of the child. It is considered that motor development is a part of “natural” development and that this process is an automatic result of biological evolution and “inherited”.

For example, it is supposed that each achievement automatically prepares the next

motor achievement. The baby requires of cephalic control in order to achieve precise eye movements and stabilize the glance in order to follow the objects, which move. In this case, it is supposed that such achievements are “the result of evolution”, are automatic and do not depend on participation of the other or of the cultural objects. An adult is taken into account as one who provides love and affection, which is totally correct, but not enough for an appropriate understanding of the process of psychological development during the first year of life. The role of the adult is not only abstract “love”, but also concrete correct (or incorrect or total absence) of guidelines, an organization of life, time, communication and organization of cultural activity of the baby.

An adult is an essential part of “diada”, of the psychological situation “us, together” proposed by Vigotsky [6]. An adult is essential for orientation of the whole sphere of the movements, expressions and relation to cultural objects. Such role of the adult in psychological development is not completely understood by cognitive science at the moment. On the contrary, according to Vigotsky’s position and to the whole paradigm of historical and cultural development, the only participation of an adults converts perception of the objects into a voluntary act and later converts to intended cultural action with cultural objects [3].

The behavior of communication is always a relevant component of all traditional tests for neurodevelopment [27,28]. It is supposed that the baby, from the moment of birth, accomplishes reflective acts in relation with situations of positive and negative emotions or physical states. Such reflective acts become patterns of elementary movements. This situation of transition of the reflective act into a motor act is understood also as “natural” or “automatic” achievement of the evolution of specie of Homo Sapiens. Such point of view is opposite to the proposals of historical and cultural approach on psychological development.

2. METHODOLOGICAL PROPOSALS ACCORDING TO A CULTURAL PARADIGM IN PSYCHOLOGY AND NEUROPSYCHOLOGY

It is important to note that an adult not only tries to find some interpretation to baby’s expressions and gestures but also to satisfy all “necessities”

of the baby according to his/ her this interpretation. It is possible to say that the adult, actually, anticipates voluntary actions of the baby. Involuntary movements are understood and responded as voluntary motivations of the baby. An adult decides about the sense and the meaning of the expressions and the movements of the baby. An adult anticipates and moves to the future involuntary expressions of the baby and converts them into voluntary actions of affective communication. An adult attributes cultural meaning to involuntary reflective movements and facial expressions of the baby. Proximately, the baby will accept such meaning and will start to fulfil his/her own first voluntary actions: actions of communication.

In our opinion, this is precisely real understanding of the concept of the zone of proximate development at the beginning of child's cultural development [6]. Vygotsky has written that psychological development is significant not when the child solves the simple problem by him/herself, but when is guided by an adult and solves the most complicated problem in cooperation. How might we apply such comprehension of significant development for the first year of life and for the first kind of activity of the child? It is possible to suggest that the problem of the child is the cultural necessity of being understood within the act of joint communication. Communication, provided and guided by an adult, permits to include the child in the act of communication. At the same time, such interpretation provides meaning and significance for the whole act of communication. In future, the child acquired the ability for recognition of interpretation and of the meaning of the situation of communication.

On the basis of such affirmation, we may confirm that the child takes part in the act of cultural communication. According to Eco [29], the act of cultural communication begins when the participant can recognize an object of his /her communication. We believe that such position might be useful for understanding not only of anthropological and semiotic situations but also of the beginning of communication at the early stages of development.

From this point of view, each motor movement might acquire a kind of cultural meaning and an adult would "answer" and act according to this meaning. This situation permits to introduce and facilitate all kinds of joint actions between adult and baby. Within the context of joint interaction,

specific postures and gestures would appear and the child would be able to recognize cultural meaning provided by an adult to all his or her expressions and movements. Later one, the child will be able to recognize an adult as his/ her object of activity of communication and will try to suggest an interpretation of actions of an adult.

At first, such recognition is involuntary for the child and is completely regulated by an adult. During the first year of life, this process of cultural recognition becomes gradually voluntary actions of communication with the identification of the precise object of communication (concrete adult or adults). The child starts to regulate his or her acts of communication and starts to show communicative initiative.

In the context of joint interaction between adult and child, specific postures and gestures appear, are repeated, imitated and created within the concrete communicative situation. Motor sphere of the child becomes subordinated to the sense of the communicative situation.

Social interaction is another important issue during the assessment of neurodevelopment. Assessment includes an appreciation of vocalizations, eye glances and sounds expressed by the baby. All these indicators are considered as "natural" stages of development independently of situations of communications. In our opinion, such indicators are essential aspects of communicational activity between adult and child during considered period. Initially, the activity of communication includes non-verbal components, which are the components of movements, gestures, facial and corporal expression. Later on, the activity of communication includes verbal components as vocalization and first pronunciation of sounds and syllables and so on.

According to the previously exposed, traditional approaches for assessment and correction during the first year of life takes into account "areas" of development: motor sphere, social interaction, communication, and verbal area. Such areas are treated and understood as "natural" processes of evolution and considered isolated one from another. The interaction between adult and child is taken into account separately from mentioned above areas and it not understood as the basis for integrations of all these "areas". Communication is understood as one of the "areas" and not as predominant kind of joint activity. The social situation is not

understood as the result of guided activity, but only as a kind of characteristic of the social life of the child, which is common in apes and even in other mammals.

The predominant role of neurological maturation is also considered as isolated from the kind of communicative activity. In such an approach, there is no place for the consistent dialectic relation between cognitive functions, which are presented by the descriptive manner and in isolation one from another. Development is described as the accumulation of different experiences or as a passage from one stage to another and not as unique qualitative processes of changes in the social situation and types of joint activity between adult and child. The necessity of changes or modification of activities is never taken into account and development is studied "as a natural process of maturation of nervous system" [26,30].

Dialectic and dynamic relation between the process of maturation and cultural activity have not yet become the problem of psychological and neuropsychological research. Neuropsychological mechanisms and their functional changes and constellations into complex functional systems as the result of changes in joint activity are not even mentioned. From our point of view, the historical and cultural paradigm of development might help on the path of therapeutic, methodological and practical research in psychology and neuropsychology of early development [31].

2.1 The Original System of Assessment and Care within the Context of Cultural Paradigm of Development

The system of assessment, correction and development during early infancy was also called as a proposal of interactive prevention. The main objective of such prevention is to impact on motor patterns, interaction with objects, and communication on the basis of directed orientation [32]. In our previous publications, we have mentioned that it is not only important to provide motor treatment and exercises, but also include them into patterns of meaningful communication [33,31]. The efforts of the parents are essential and situations of personal communication should be provided several times daily and not only exercised on therapeutic sessions one time per week. The organization of motor patterns and stereotypes should be subordinated to the goals of joint communicative

actions shared between adult and child. An adult is always the one who starts, provides and guarantees all acts of communications instead of being waiting when the child starts communication. The role of an adult is to create the zone of proximate development according to Vigotsky [6].

It is possible to consider that communication activity with essential content of affective emotional component and later with the inclusion of practical and situational component (starting from the second half of the first year) help to strengthen patterns of movements as well. These are kind of patterns, which are specific to human cultural communication and practical interaction such as crawling, sitting, and biped walking. In this case, effective communication is not a result of development, but the platform for much more complex patterns of movements. Affective and emotional communication is a central base, which may confirm the origin for the establishment of effective verbal contacts of the child to other people and, additionally, may provide necessary experience for a sensory basis of perception and interaction. Sensory, motor and verbal experiences take an important part in psychological development.

From the positions of cultural and historical developmental psychology, these experiences are not an automatic manifestation of the central nervous system, but the elements (mechanisms of operations) of activity of communication, shared between adult and child.

According to the previously exposed in the article, it is possible to say that infant's development is mediated by communication activity. From the point of view of brain mechanisms of such activity, it is important to stress essential activation of anterior frontal (orbital) region. This area guarantees connections with limbic structures and thalamic system, which provides relations of anterior cortex with all posterior sensory multimodalities [34]. Some neurobiological studies indicate that these relations are responsible for the process of emotional social relations [35,36].

According to Morgenson & cols. [37], the neuronal interaction between motor and limbic systems might be achieved by the participation of nuclear accumbens. This structure takes part not only in locomotion in general but also in movements associated to alimentation and vocalization. Bezrukikh and Farber [38] mention that an important part of affective signals can

generate sensorial perceptual information. In this case, actions of communication with an adult can provide required visual sustained contact directed to a cultural goal (shared with the other participant of action). Important indicator of this sustained contact with affection is the child's smile. It was precisely this child's smile that was noticed by Vigotsky and studies with details by his followers [21] in shared activities during the first year of life. Appearance of a smile, together with the shared process of alimentation with duration of longer general activation (arousal), conduct gradually to the possibility of a baby to achieve movements and postures considerably for more time.

We stress that starting from the age of five to six months, important qualitative changes occur. Emotional components of activity provide origins for shared cultural goals or, in other words, voluntary actions of communication. We are sure that this would be the best way for an understanding of the content of psychological function of attention during the first year of life. Attention doesn't appear "automatically" or "biologically" as a "response to stimuli of a context". What is truly biologically determined is the capacity of a child to direct the eyes to some new objects, moving objects and disappearing objects [39]. In some publications, this capacity is called "awareness" and also exists in other biological species and is understood as a synonym of consciousness [11].

The situation, which doesn't exist in other species, is that an adult to the child proposes all objects and all goals. An adult provides cultural goals for affection and communication. An adult makes a decision if the object is "worth or not" to be presented to the child. The child answers to this proposal and gradually starts to organize voluntary goals of effective communication with the adult. We might say that the child becomes conscious of his/ her communication with an adult. Of course, we can't say that the baby becomes conscious of all other goals of activities, but for sure of his/ her communication. We might even say that this is the essential achievement of the first psychological age. The consciousness doesn't appear automatically with the birth of the child, as some authors claim [40]. In our opinion, the consciousness might be understood only in relation to the goals of the activity.

It is clear that traditional ways of assessment of neurodevelopment do not consider the voluntary

act of communication [41]. The authors usually mention just changes of attention function by itself and with the relation of changes of electric brain activity in cortical frontal and central zones [41]. These changes show the participation of systems of limbic and frontal essential regulation from the point of view of the central nervous system [42]. From the point of view of psychological development, this is the achievement of voluntary shared communicative activity.

By the help of monitoring and regulation coming from an adult, the child might, at the age of 6 to 8 months the child becomes able to sustain the eyes (glance) at objects and subjects and look and search for objects actively. Such expressions might serve as important indicators of consolidation of voluntary actions starting from an early age. Iverson [43] stresses that an acquisition of motor abilities and voluntary behaviour in elementary forms has an important influence on verbal development.

The principles of historical and cultural psychology permit accomplish analysis of motor, sensorial, emotional and verbal processes not as isolated functions or processes but as content and elements of unique cultural activity: the activity of communication shared between adult and child. This content might be understood as a neurophysiological basis and functional system of this shared activity in early age.

The program for correction and development, created and applied to young children during the first year by our research is based not only on activation of differences "centers" of vestibular, visual and proprioceptive systems, all connected to motor development, but also systems of regulation of emotional tone and effective relations with the others [32].

According to the purpose of gradual development of activity, our program pretends to include simple movements into complex acts of interactions and communication between adult and child. Initially adult always proposes communication. An adult should understand this fact and learn how to involve the bay into the shared process of positive social affective communication.

Later on, the effects of social constant interaction become more complex. The adult continues with an introduction of more complex goals within communicative activity such as precision of

names, actions and features, recognition of known objects and appearance of new objects as objects of interaction and significant from the adult's point of view. Communicative activity reorganizes and converts to following rector type of cultural activity: actions with cultural objects [14,23].

An idea of the program of prevention and development supposes the inclusion of a combination of graduated promotion for motor postures together with the inclusion of the child into shared communication with the adult. This combination of both postures and affection seems to be the optimized positive condition for the development of children with neurological risk [32].

We may observe how, in all cases, an adult introduces the zone of proximate development for motor sphere and verbal communication, before these aspects appear "spontaneously". The zone of proximate development is a powerful methodological concept. We believe that the proper concrete usage of this concept, introduced by L.S. Vigotsky, still needs to be discovered and specified for each psychological age in a systemic way. A similar opinion is expressed in recent publications related to the necessity of following the systemic approach in educational and child psychology [44,45].

3. FINAL CONSIDERATIONS AND CONCLUSIONS

The present work pretends to argue the structure and the content of the program for prevention for any kind of expression of neurological risk or even damage. It is known that at the early ages it is rather complicated to determine priestly possible risk or the evidence of neurological damage. Normally, all kinds of stimulation or proposals for correction come later. And we know that sometimes the meaning of "later" might become to the meaning of "too late", in fact.

It is possible to mention that the system of used therapeutic exercises seems to be useful also for the processes of exploration with the indicator of general curiosity expressed by babies after participation in our program. The general affective tone and expressions become positive and acquire clear directed goals of communication. Additionally, we might mention that at the level of valuation of electric brain activation with EEG method, increasing of the

potential of the rhythm alpha was noticed in central, parietal and occipital regions in babies after participation in our program for 8 months [46].

The concept of the functional system [47,16,48] becomes even more significant from the perspective of our research and findings. In other words, it might be the path for an understanding of the interaction of different levels of human activity at the early age: psychological level and the level of brain mechanisms. Interaction within non-verbal close communication should be considered as the first joint psychological activity directed to specific external motive. This motive is an adult. All this psychological situation of development guarantees gradual conformation of functional systems of the brain, which include different complex mechanisms of different levels of integration.

It is necessary to express that the present work tries to provide a new perspective into clinical practice with the babies during the first year of life. The methods used in the program might be reflected in the better organization of brain electric activity and can be determined with objective neurophysiological methods. Prevention of difficulties might be noticed both at the level of psychological activity of communication and on the level of brain neurophysiological mechanisms of this activity. The authors have tried to express the possible union of different levels of analysis according to historical and cultural approach according to the unit of action of communication at an early age.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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