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THE ROLE OF MUNICH DIAGNOSTICS FOR THE ASSESSMENT OF DEVELOPMENTAL CHANGES OF YOUNGER CHILDREN

Abstract. The article is devoted to the choice of proper diagnostic tool for the investigation of development of younger children of at-risk groups. The article generalizes the existing material on the topic under study and presents experience of approbation of one of the psychometric scales. The dynamic observation of children with perinatal lesion of central nervous system allows the author to estimate the peculiarities of their development by means of the Munich functional diagnostics.

The article describes the procedure of diagnostics implementation in 2 groups of children (one group of children from non-problematic families, another group of children living with mothers in crisis centers). On the basis of analysis of the received data, the author draws children development profiles which present variants of combinations of violated and intact functions. The objective of the study is to demonstrate the possibilities of the Munich scale for investigation of children development dynamic changes from their birth till the age of two years.

The results show that this diagnostic method could be interesting to specialists working in psychology, medicine, in pedagogical spheres, in clinics, dispensaries, in psychological and pedagogical rehabilitation centers, and centers of early development. The Munich functional diagnostics is a guide which helps to choose a proper therapy and allows coordinating all rehabilitation measures taking into account children development; therefore it is an effective tool for monitoring early childhood development.

Keywords: diagnostics, diagnostic tool, younger children at risk, dynamic observation of children, monitoring development.

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Humanization of the attitude of society to persons with disabilities dates back to the social changes which became possible due to the development of medicine, philosophy and psychology in European and American countries. In the late 19th century Russia, humanitarian ideas also stimulated the appearance of parental and professional social unions, popular periodicals on the problems of maternity and childhood and publication of the first books on early childhood [2; 10; 11]. The subsequent history of systematic records of observations of one's own children paved the way for the scientific stage in pedagogy and psychology of early childhood.

Russian science gave birth to many fundamental development theories in the 20th century: the syncretism of psycho-motor development in early childhood (L. S. Vygotskiy, A. V. Zaporozhets, O. E. Smirnova, D. B. El'kon-

in), the role of activity in the child's development and the leading kinds of early childhood activity (L. S. Vygotskiy, A. N. Leont'ev, M. I. Lisina, D. B. El'konin), the role and development of communication in early childhood (M. I. Lisina and her students, D. B. El'konin), etc.

Taking into account the experience of Western scholars in creation of psychometric scales of development of infants (A. Gesell Developmental Schedules, 1925; R. Griffiths Mental Development Scales, 1954; N. Bayley Scales of Infant Development, 1969; the *Denver Developmental Screening Test, 1973;* the *Munich Functional Development* Diagnostics, 1975-1979), Russian psycho-diagnostics also worked out practical problems of diagnostics of psycho-motor development in early childhood (G. V. Pantyukhina, K. L. Pechora, E. L. Frukht, L. T. Zhurba i E. M. Mastyukova, O. V. Bazhenova, G. V. Kozlovskaya, E. A. Strebeleva, E. O. Smirnova, M. L. Dunaykin) [1; 3; 4; 5; 6; 7; 9; 13]. A number of scientific researches generalizing practical materials were conducted in Russia in this field (I. Yu. Levchenko, E. F. Arkhipova, O. G. Prikhod'ko, Yu. A. Razenkova, etc.).

At present, early support is considered to be one of the innovative research fields in the sphere of education. As a result of comprehensive study of experience of some budgetary education institutions providing young children's support in central cities and regions of Russia and the scientific activity of some centers and institutes the Ministry of Labor and Social Protection of the Russian Federation worked out a draft conception of early support of children at risk and children with general and genetic impairments and support of families caring for such children. The first proclaimed goal of this conception is to reveal risks and developmental disorders in children from the time of their birth to 3 years of age.

In recent years we have witnessed growing interest to the problems of early diagnostics of developmental disorders in children, because this stage is the stepping stone of rehabilitation events. Today, diagnostics of younger children as a method of their study is being used for scientific and practical purposes by doctors, psycho-pedagogues in clinics, outpatients, medical and psycho-pedagogical rehabilitation centers and centers of early development.

The study of provision of early support demonstrates the fact that specialist are often faced with the problem of choice of adequate diagnostic tools for a specific children contingent. Nowadays, a large number of children are perinatal pathology children whose development is characterized by non-desirable effects from their birth. And not always do they suffer from serious neuropsychic diseases or have dramatic deviations in their development; very often they occupy medium position between norm and pathology and demonstrate a variant of development close to the norm or delayed in the rate of formation of one or several functions. A proportion of these children with light aftereffects of perinatal pathology can be referred to the group at risk. This group usually

comprises children whose development is especially vulnerable because of their plight due to internal (biological) or external (social or circumstantial) factors; the group is characterized by a broad variety of impairments – from severe physical disability to fuzzy manifestations of developmental disorders. In a number of cases, unclear anamnesis produces the risk for the family to stay without due support by specialists of both medical and psycho-pedagogical profile.

Our study included 52 families caring for children at risk during the first or second year of life. We conducted an outpatients observation of 24 children living generally in complete families (95%) in satisfactory conditions. The age of the mothers in these families varies between 20 and 45; all of them have completed higher education; two mothers have secondary special education as well. At crisis centers, our investigation included 28 children brought up by mothers in difficult life situations the majority of whom are under age and have not completed secondary education; some of them study at a college. All children under observation suffer from early organic disorders of the central nervous system, which was found out in the course of analysis of their medical history.

Assessment of developmental peculiarities of children was conducted with the help of the observation method and the psychometric method – the *Munich Functional Development* Diagnostics presupposing differential assessment of psycho-motor development (MFDD).

The given diagnostics was worked out at the Institute of Social Pediatrics of Munich University by a group of specialists headed by Doctor of Medicine, Professor Theodor Hellbrügge as a result of many years of observation of infants including those in conditions of deprivation [8].

The diagnostics was formed in the framework of socio-pediatric conception as a result of cooperation of pediatricians and children's psychologists in the interests of children and presupposes the existence of uniform terminological apparatus and practical cooperation of specialists. There is long-term experience of application of the MFDD not only at the Munich Children's Center specializing in early diagnostics and therapy of developmental disorders and delays but also in the practice of other countries: there are affiliated centers in Germany and all over the world, including Russia (Kazan).

The diagnostics comprises eight functional areas: crawling, sitting, walking, catching, perception, speaking, speech understanding and social behavior. The aim of the given diagnostics is not to define the age of general development of a baby but to find out its development in concrete functional areas which could provide making therapeutical conclusions. It employs categorial evaluation, i.e. attention is paid to the fact whether the task was fulfilled or not. The result of evaluation is expressed in months.

As long as the diagnostics takes into account the lower limits of the norm, it is necessary to pay attention to every downward deviation from the chronological age. More than a

month's delay during the first year of life is relevant. The functional areas are diagnosed by methods of observation and provocation of the corresponding response. If necessary, mother or a close relative is involved in the diagnostics procedure.

The Munich diagnostics provides standardized conditions of investigation conduct (suitable lighting, temperature and exclusion of interference), clearly defines the test material and uses standardized documentation. The outcomes are registered in a results sheet. The study begins with the tasks of the level a moth lower of the corrected age. The study should be continued until the researcher gets convinced that the tasks of higher age stages cannot be solved.

The choice of the diagnostics scale for the given research was chosen due to the following advantages of this method:

– MFDD allows conducting dynamic observation of child development from its very birth periodically registering deviations in the direction of growth or regress;

– MFDD allows focusing on the formation of every singled out psychic function in their natural sequence: from simple skills to more complex ones;

– MFDD makes it possible to use the material for studying both children with normal development and the ones with disabilities;

– standardization of the conduct procedure allows using the MFDD in various cultural contexts.

Alongside with the advantages described above, the method has some disadvantages:

– MFDD differs from our traditional distinction of stages of formation of certain psychic responses. The reason is reported to lie in the specificity of national systems of education, in different approaches to the definition of age stages and content areas of infants' development [12];

– an essential drawback is, for example, the late (from 10 months) observation of the function of "speech understanding"; the result of it is skipping the initial stage of development of the function, which is closely connected with another one – "speaking" – as a precise indicator of general development. Our home diagnostics start speech observation on average at 10 months age.

Let us now see some protocols of observation and profiles of development dynamics of children obtained through the use of MFDD.

An example of the profiles of development dynamics of Child A during the first and second years of life obtained through MFDD is shown in Figures 1 and 2.

Date of observation	Corrected age	crawling	sitting	walking	catching	perception	speaking	Speech understanding	Social development

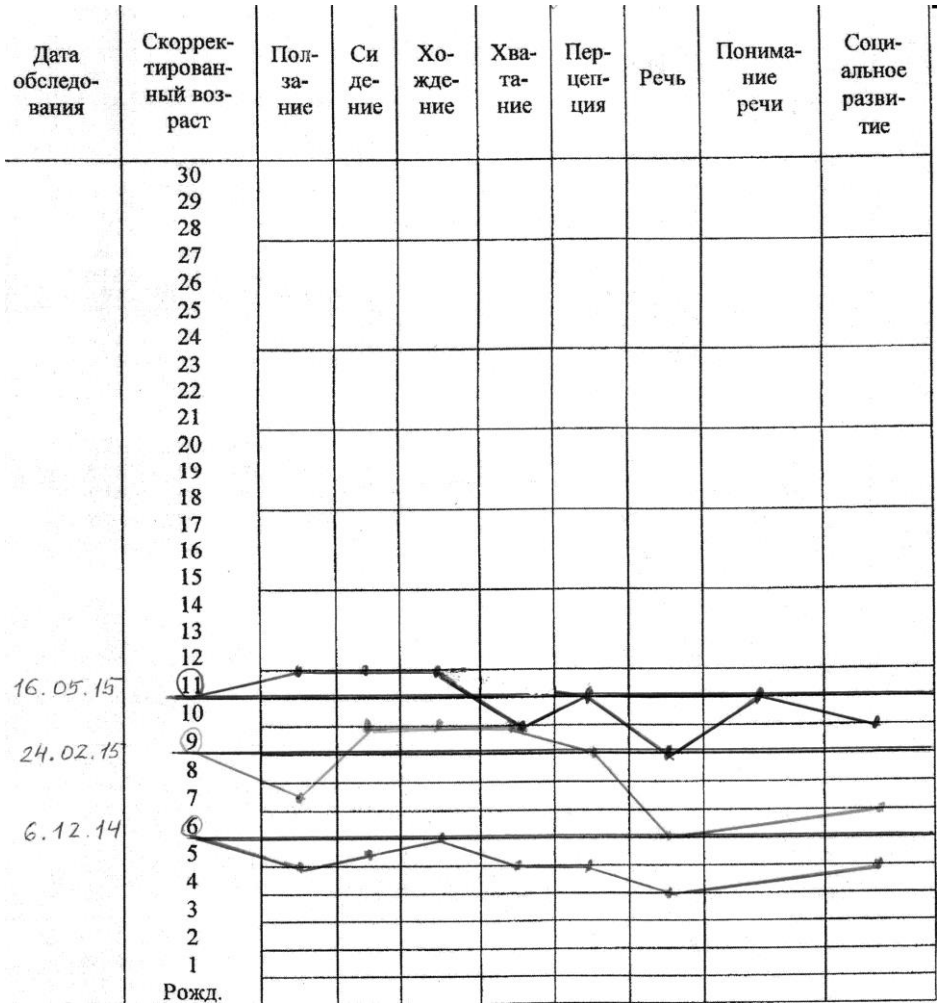

Figure 1. Profiles of development of Child A during the first year of life

Date	Age	Age of walking	Age of wrist dexterity	Age of perception	Age of active speech	Age of understanding spech	Social age	Age of independence

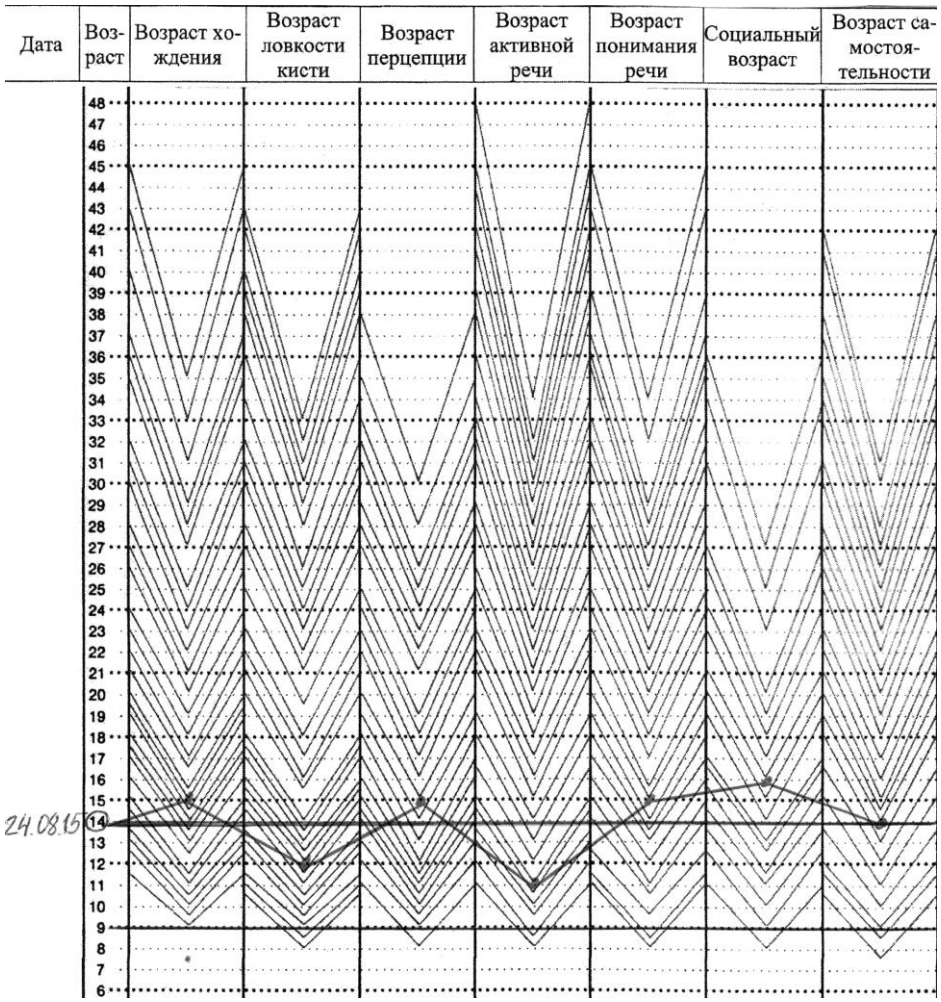

Figure 2. Profiles of development of Child A during the second year of life

An example of a protocol of dynamic observation. Child A.

The boy was born after the third attempt of in vitro fertilization (IVF) treatment (the first and second attempts failed). The child lives in an incomplete family and is under observation of a pediatrician at the outpatients.

Figure 1 shows his profiles during the first year of life: at six, nine and eleven months of age. Figure 2 presents his profile at 14 months of age. Figure 1 demonstrates eight areas of his development. The MFDD of the first year of life differs from the second year of life in the fact that the areas of motor functions of the former are more detailed: crawling, sitting and walking. In addition, the first year does not include "age of independence" which is important for the child's development only during the second year of life.

Dynamic observation with the help of the given method allowed distinguishing the peculiarities of the child's development during the first two years of his life: which indicators accounted for the slowdown of development of a function, and which ones were close to the norm or even showed faster development.

A slowdown in the development of crawling and partly sitting registered in the first two profiles was overcome and beginning with month 11 positive dynamics was registered; the development of walking corresponded to the norm in all diagrams.

It was interesting to follow the development of the function of catching: we observed fluctuations from the normal rate (at 9 months of age) to an insignificant slowdown (at 6 and 11 months of age); at the age of 14 months it was found out that the child lacked behind in the development of wrist dexterity.

In general we observe a tendency of slowdown of the rate of development of the motor sphere.

Analysis of the speaking function dynamics shows that it invariably falls behind the age group normal indicators in all profiles, whereas speech understanding is always within the frames of the age norm.

We should also note a slowdown in the development of social sphere which is overcome during the second year of life as it is shown in the last profile (at 14 months of age).

This tendency is corroborated by what became known to us from the communication with the child's mother: all this time the child lived with her, but starting from 12 months of age (early summer) he moved to a summer cottage where he lived in a large family of relatives, which gave an impetus to his social development. The given example illustrates children's susceptibility to external factors in early childhood.

An example of the profiles of development dynamics of Child B during the first year of life obtained through MFDD is shown in Figure 3.

An example of a protocol of dynamic observation. Child B.

The girl was born by a 17 year old mother living together with her child in the Moscow Crisis Center for

Women and Children where they are getting complex psycho-pedagogical assistance. Pregnancy of the underage mother passed on the background of smoking. The child's anamnesis includes perinatal damage of the central nervous system and the muscular dystonia syndrome. The obtained profiles provide a detailed picture of development dynamics: at 2, 4, 6, and 7.5 months of age.

At the age of 2 months the profile corresponds to the low age norm one month behind schedule in the development of two functions: sitting and speaking. Starting with the age of 4 months the development takes an "asynchronous character" in comparison with the normative indicators of all motor functions, development of perception, speaking and social development.

In the last profile (7.5 months) the registered tendency grows even more evident: the motor processes – crawling, sitting and walking – become being formed with upgoing dynamics whereas speaking and social development lag 2.5 months behind the age norm. It is necessary to note that even a minor slowdown in the development of a child is significant and needs further observation and consultation.

An example of the profiles of development dynamics of Child B during the second year of life obtained through MFDD is shown in Figure 3.

An example of a protocol of dynamic observation. Child B.

The boy was brought to the crisis center with his young pregnant mother at the age of 13 months in a much neglected state. No history of his birth or development is available. The center neurologist gave the following diagnosis: *perinatal damage* of the *central nervous system of ischemic origin, rachitis, muscular dystonia, retardation of psychological development.*

The first profile was calculated on the basis of diagnostics results conducted two months after the child's acceptance in the center. By the time of the first diagnostics the child had partially adapted to the new conditions, could let her mother's hand go in her presence, walk away from her in the same room, communicate with an adult person in her presence when he got interested in the offered material.

Date of observation	Corrected age	crawling	sitting	walking	catching	perception	speaking	Speech understanding	Social development

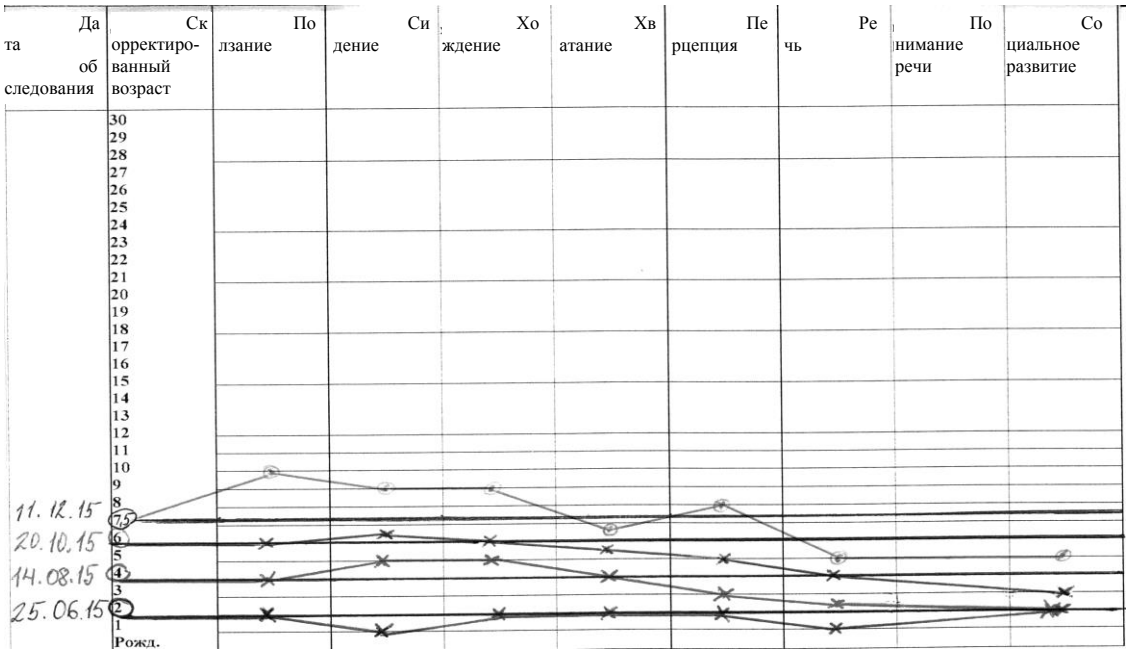

Figure 3. Profiles of development of Child B during the first year of life

Date	Age	Age of walking	Age of wrist dexterity	Age of perception	Age of active speech	Age of understanding spech	Social age	Age of independence

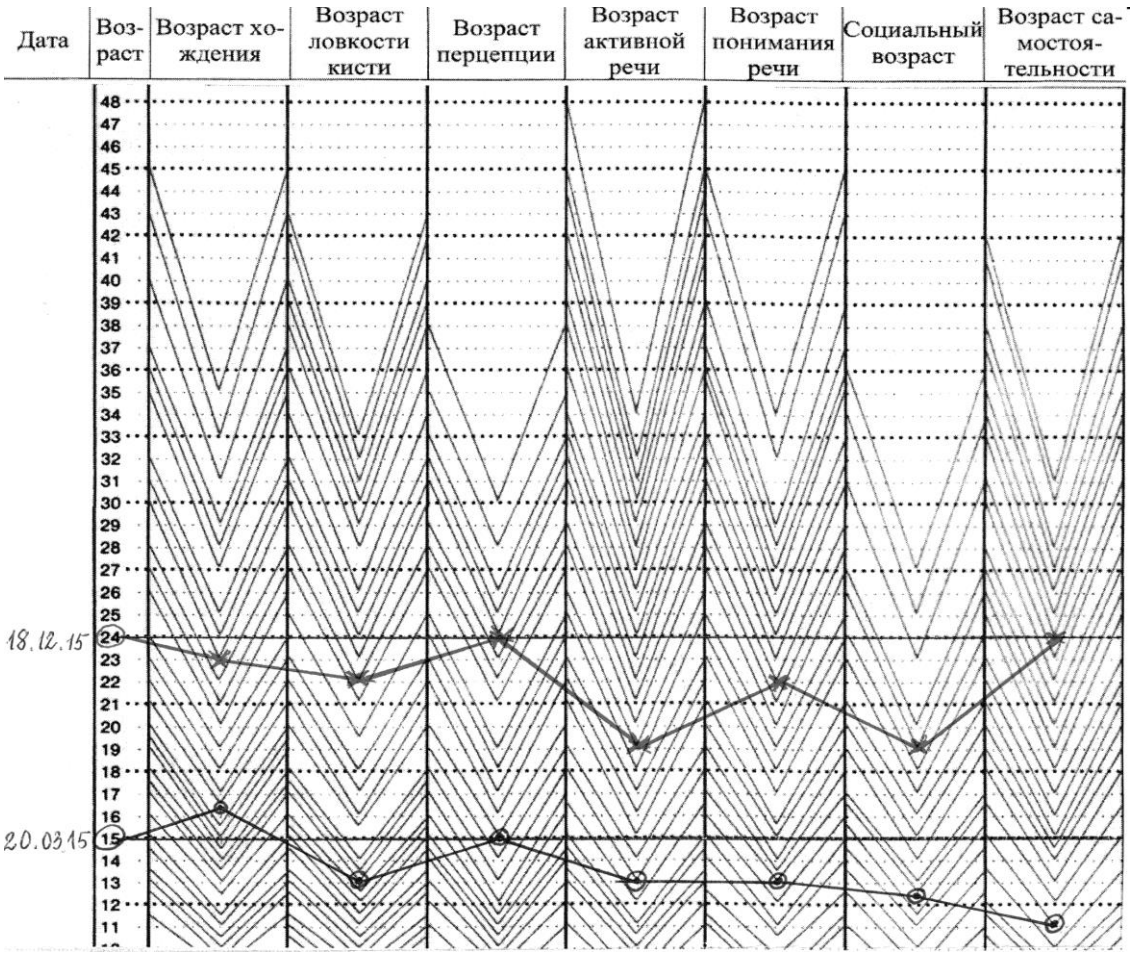

Figure 4. Profiles of development of Child B during the second year of life

The diagnostics results revealed retardation in all areas of development except walking and perception (tactile, visual and auditory). The most serious slowdown was registered in the sphere of independence and self-service. In this case such performance is the result of the social conditions of the period of early childhood of the baby. It is well known that timely formation of behavioral skills in routine moments characterizes not only physiological maturity of the baby but also their level of socialization.

At the age of a year and a half the child was abandoned by the mother and consequently transferred to the children's department of the center. The second profile was compiled at the age of 2 on the basis of results of the diagnostics carried out a year and a half after he had parted with his mothers. All this time the boy spent at the children's department where he received both medical and psycho-pedagogical assistance (counseling).

The second profile demonstrates

that the general motor functions lag slightly behind the age norm, and the development of minor motor functions is two months slow, the same as at the time of the preceding observation.

The development of perception, as before, corresponds to the age norm. Changes took place in the development of speaking; the level of its development shows a double time decline; there is certain retardation in speech understanding. The social age of the child is slow to the same degree as the level of development of active speech. Considerable positive dynamics is shown in the area of age of independence: at the age of 15 months it was 4 months lower than the norm, but at the age of 24 months it corresponds to the age norm. This fact can be explained by the change of the social conditions: the mother, attachment to whom may be characterized as anxious-ambivalent, prevented the boy from mastering the simple skills of self-service.

After separation from the mother, it became vitally important for the child to master the skills of self-service; an important role in this process was played by the crisis center counselors.

The following conclusion can be made on the basis of the undertaken research: if the child's development diagnostics is carried out using a certain scale regularly and in due time, it is possible to get exact data about the dynamics of the child's development, evaluate the level of development at each age stage and compare the information with the previously obtained data.

Non-systematic control ruins the dynamic nature of observation of the child's development and may cause failure to register development slowdown which would prevent rendering timely psycho-pedagogical assistance.

The data about the child's development obtained through MFDD may serve as a milestone for providing suitable therapy and defining the content of psycho-pedagogical assistance. They are especially important for organizations using a complex approach to child's development.

We believe that MFDD is one of the most effective tools of monitoring early child's development and fully justifies itself as a reliable psychometric method ensuring proper choice of data about the development of an infant and analysis of the dynamics of their development in the process of maturity.

References

1. Bazhenova, O. V. Diagnostika psikhicheskogo razvitiya detey pervogo goda zhizni / O. V. Bazhenova. — M. : Izd-vo Mosk. un-ta, 1986.
2. Vodovozova, E. N. Umstvennoe razvitie detey ot pervogo proyavleniya soznaniya do vos'miletnego vozrasta : kn. dlya vospitateley / E. N. Vodovozova. — SPb., 1871.
3. Deti-siroty. Konsul'tirovanie i diagnostika razvitiya / pod red. E. A. Strebelevoy. — M. : Poligraf-servis, 1998.
4. Dunaykin, M. L. Metodika neyropsikhologicheskoy diagnostiki u detey pervogo goda zhizni / M. L. Dunaykin, I. L. Brin // Defektologiya. — 2014. — № 2.
5. Dunaykin, M. L. Metodicheskie podkhody k otsenke nervno-psikhicheskogo razvitiya detey pervogo

goda zhizni / M. L. Dunaykin, I. L. Brin // Defektologiya. — 2002.— № 3.

6. Zhurba, L. T. Narushenie psikhomotornogo razvitiya detey pervogo goda zhizni / L. T. Zhurba, E. M. Mastyukova. — M. : Meditsina, 1981.

7. Kozlovskaya, G. V. Metodika opredeleniya psikhicheskogo razvitiya detey do 3 let — GNOM / G. V. Kozlovskaya, A. V. Goryunova, N. V. Shikunova, T. G. Katkovskaya // Zhurnal nevropatologii i psikhiatrii im. S. S. Korsakova. — 1997. — № 8.

8. Khel'bryugge, T. Myunkhenskaya funktsional'naya diagnostika razvitiya. Pervye tri goda zhizni / T. Khel'bryugge, F. Layoshi ; pod red. F. L. Ratner, M. A. Utkuzovoy. — Kazan' : Tsentr innovatsionnykh tekhnologiy, 2004.

9. Pantyukhina, G. V. Diagnostika nervno-psikhicheskogo razvitiya detey pervykh trekh let zhizni / G. V. Pantyukhina, K. L. Pechora, E. L. Frukht. — M., 1983.

10. Pokrovskiy, E. A. Ob ukhode za malymi det'mi / sost. glavnym doktorom Moskovskoy detskoy bol'nitsy ; E. A. Pokrovskiy. — M. : Tipografiya I. D. Sytina i Ko, 1889.

11. Pokrovskiy, E. A. Predislovie izdatelya / E. A. Pokrovskiy // Vestn. vospitaniya : nauch.-pop. zhurn. dlya roditeley i vospitateley / izd. pod red. E. A. Pokrovskogo. — 1890. — № 1.

12. Razenkova, Yu. A. Sravnitel'nyy analiz nekotorykh otechestvennykh i zarubezhnykh shkal razvitiya mladentsev. Diskussionnye aspekty problemy diagnosticheskogo instrumentariya / Yu. A. Razenkova, E. L. Frukht // Problemy mladenchestva: neyro-psikhologo-pedagogicheskaya otsenka razvitiya i rannyaya korrektsiya otkloneniy : materialy nauch.-prakt. konf. / In-t korrektsionnoy pedagogiki RAO. — M. : Poligraf servis, 1999.

13. Smirnova, E. O. Diagnostika psikhicheskogo razvitiya detey ot rozhdeniya do trekh let / E. O. Smirnova, L. N. Galiguzova, T. V. Ermolova, S. Yu. Meshcheryakova. — M. : MGPPU, 2002.

14. Bayley, N. Bayley Scales of Infant Development / N. Bayley. — 2nd ed. — San Antonio : Psychological Corporation, 1993.

15.Griffitth, R. The Abilities of Babies / R. Griffitth. — London : Univ. of London Pr., 1954. — (per. na rus. E. S. Keshishyan, 2012).