



Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

EARLY NEUROPSYCHOLOGICAL DIAGNOSIS AND INTERVENTION IN CHILDREN AT GENETIC RISK BORN FROM CONSANGUINEOUS MARRIAGES

Muminov Rahimjon Kayumjonovich

Senior Lecturer Andijan State Medical Institute Department of Psychiatry, Narcology, Medical Psychology and Psychotherapy
Andijan Region, Andijon City, Shimoliy Distric 40a/58

Usmanova Matluba Bautumanovna

Senior Lecturer, Andijan State Medical Institute Department of Psychiatry, Narcology, Medical Psychology and Psychotherapy
Andijan Region, Andijon City, Qushariq Distric 64/59,

Isakov Mashalbek Urmanbekovich,

Assistant Andijan State Medical Institute Department of Psychiatry, Narcology, Medical Psychology and Psychotherapy Andijan region, Istiqbol Distric 100,

Madaminov Oyatullo Abduvosil ugli,

Assistant, Andijan State Medical Institute, Department of Psychiatry, Narcology, Medical Psychology and Psychotherapy
Andijan region, Shaxrikhan Distric 64

Abstract

The issue of early diagnosis and intervention in the neuropsychological development of children born from consanguineous marriages is an urgent topic in clinical neuropsychology and child psychiatry. High genetic burden associated with consanguinity increases the risk of primary and secondary developmental delays. Typical deviations include delayed speech, reduced cognitive development, executive dysfunction, and behavioral and emotional instability.

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

This study aimed to identify early neuropsychological markers in preschool children from genetically at-risk families and evaluate the effectiveness of a corrective intervention program. The sample included 72 children (42 boys, 30 girls) aged 2 to 5 years, born to first-degree relatives (siblings or cousins). All participants lived in rural or peri-urban areas with limited access to early education and healthcare services.

The diagnostic toolkit included neuropsychological tasks (based on Luria and Akhutina), behavioral rating scales (CBCL), and structured parental interviews. Areas of focus included sensorimotor coordination, auditory and visual perception, memory, speech development, and behavioral regulation.

Findings revealed that over 65% of children showed signs of neuropsychological underdevelopment: 41% had moderate speech delay, 36% had sensorimotor difficulties, and 28% exhibited emotional lability and impulsivity. After a 6-month intervention program that included speech therapy, sensorimotor exercises, cognitive training elements, and parent consultations, most children showed improvements in communication, attention span, and behavior.

The study concludes that early neuropsychological screening and targeted intervention in genetically vulnerable groups are essential for preventing persistent developmental disorders. These results may inform regional early-intervention programs, especially in areas with a high incidence of consanguineous marriage.

Keywords: Neuropsychological diagnosis, genetic risk, consanguinity, preschool children, cognitive intervention, early intervention.

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

РАННЯЯ НЕЙРОПСИХОЛОГИЧЕСКАЯ ДИАГНОСТИКА И ИНТЕРВЕНЦИЯ У ДЕТЕЙ ИЗ ГРУПП ГЕНЕТИЧЕСКОГО РИСКА, РОЖДЁННЫХ В УСЛОВИЯХ БЛИЗКОРОДСТВЕННОГО БРАКА

Муминов Рахимжон Каюмджонович, старший преподаватель
Андижанский государственный медицинский институт
Кафедра психиатрии, наркологии, медицинской психологии и
психотерапии

Андижанская область, г. Андижан, микрорайон Шимолий, 40а/58 Усманова

Матлуба Баутумановна, старший преподаватель, Андижанский
государственный медицинский институт
Кафедра психиатрии, наркологии, медицинской психологии и
психотерапии

Андижанская область, город Андижан, район Кушарик, 64/59,

Исаков Машалбек Урманбекович, ассистент
Андижанский государственный медицинский институт
Кафедра психиатрии, наркологии, медицинской психологии и
психотерапии

Андижанская область, Истикболский район, 100,

Мадаминов Оятулло Абдувосил Угли, ассистент
Андижанский государственный медицинский институт
Кафедра психиатрии, наркологии, медицинской психологии и
психотерапии Андижанская область, Шахриханский район, 64.

Аннотация

Проблема ранней диагностики и коррекции психического развития у детей, рождённых в результате близкородственных браков, представляет собой актуальное направление клинической нейропсихологии и детской психиатрии. Высокий уровень генетической отягощённости, связанный с консангвинностью, значительно повышает риск формирования первичных

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

и вторичных нарушений нейропсихологического развития. К числу типичных отклонений относятся задержки речевого развития, снижение темпов формирования когнитивных функций, дефицит исполнительного контроля и трудности в эмоционально-поведенческой сфере.

Настоящее исследование было направлено на выявление ранних нейропсихологических маркеров у детей дошкольного возраста из групп генетического риска и оценку эффективности комплексной коррекционной программы. В выборку вошли 72 ребёнка (42 мальчика и 30 девочек) в возрасте от 2 до 5 лет, рождённых в семьях, где родители находятся в родственных отношениях первой степени (двоюродные или родные брат/сестра). Все дети проживали в сельских или пригородных районах, где социальные и образовательные ресурсы были ограничены.

Для диагностики использовались адаптированные методики оценки психического развития, включая нейропсихологические пробы (по А.Р. Лурия и Т.В. Ахутина), поведенческие шкалы (CBCL) и родительские анкеты. Особое внимание уделялось развитию сенсомоторных функций, слухового и зрительного восприятия, памяти, речи, а также навыков регуляции поведения.

Результаты исследования показали, что более 65% детей имели выраженные признаки нейропсихологического дефицита: у 41% — умеренная задержка речевого развития, у 36% — трудности в сенсомоторной координации, у 28% — эмоциональная неустойчивость и импульсивность. После прохождения 6-месячной коррекционной программы, включающей логопедические занятия, сенсомоторную стимуляцию, элементы когнитивной тренировки и родительское консультирование, у большинства детей наблюдалось улучшение в сфере коммуникации, повышения уровня внимания и поведения.

Выводы исследования подтверждают, что ранняя нейропсихологическая диагностика и интервенция у детей из групп с повышенным генетическим

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

риском являются необходимыми условиями для снижения вероятности развития стойких нарушений. Полученные результаты могут использоваться при разработке программ раннего вмешательства в регионах с высокой долей близкородственных браков.

Ключевые слова: нейропсихологическая диагностика, генетический риск, близкородственный брак, дети дошкольного возраста, когнитивная коррекция, раннее вмешательство.

Introduction

Inbreeding increases the risk of having children with congenital genetic and neuropsychiatric disorders. In first-degree consanguineous relationships (e.g., first cousin marriages), the likelihood of autosomal recessive transmission of diseases increases significantly [6]. In addition to somatic and neurological pathologies, these children are more likely to experience delays in speech, cognitive, and emotional development, as well as a higher risk of autism spectrum disorders and intellectual disabilities [8].

Given the increasing sociogenetic risks, especially in regions with a high frequency of inbreeding, early diagnosis and intervention for children with a compromised heredity are crucial.

Modern research in child neuropsychology and medical genetics indicates a growing number of children with psychodevelopmental disorders, especially in regions with a high prevalence of consanguineous marriages [8,12]. Consanguinity significantly increases the risk of autosomal recessive disorders and a variety of cognitive and behavioral disorders due to increased homozygosity for a number of pathological alleles [4,7].

Of particular concern is the fact that mental developmental disorders in conditions of genetic burden often manifest themselves at the earliest stages of ontogenesis, but remain undiagnosed until the child enters educational institutions [5]. This is

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

due both to limited access to specialized diagnostics in regions with a high rate of consanguineous marriages, and to the low awareness of parents and pediatricians about the importance of early detection of such deviations [2,6].

Among the most common disorders in children from consanguine marriages are delays in speech and motor development, emotional dysregulation, problems with the development of volitional behavior, as well as persistent difficulties in learning and socialization [7,8]. In these conditions, neuropsychological diagnostics based on the concepts of A.R. Luria, A.N. Leontiev and their followers are becoming one of the most informative and accessible tools for assessing the functional state of a child's brain [11].

It is also important to emphasize the need for early intervention aimed at activating immature or deficient cognitive functions, stimulating sensorimotor and speech development, correcting behavioral manifestations, and training parents in support methods [9]. The effectiveness of such intervention programs is confirmed by international and domestic studies, especially when a multidisciplinary team (psychologist, speech therapist, special education teacher, pediatrician) is included in the intervention [1].

Thus, a comprehensive approach, including early screening, neuropsychological diagnostics, and timely intervention, is key to preventing severe developmental delays and secondary mental disorders in children at genetic risk [13].

Purpose of the study

To determine the neuropsychological developmental characteristics of preschool-aged children born to consanguineous parents and to evaluate the effectiveness of early interventions aimed at minimizing cognitive and behavioral impairments associated with genetic predisposition.

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

Research Materials and Methods

The study included 50 children aged 6 months to 5 years, born to parents who were close relatives (cousins, uncles and nieces, etc.). The primary objective was to determine the prevalence of mental retardation in these children and the effectiveness of early interventions.

All children were observed at a children's psychoneurological center and preschools with special needs groups. The study was conducted over the course of one year.

Study Results

The study involved 72 children aged 6 months to 5 years, born to closely related parents. The study included 72 children aged 2 to 5 years, born to consanguineous marriages (first-degree kinship: cousins and siblings). Of these, 42 were boys (58.3%) and 30 were girls (41.7%). All children lived in rural areas where there were no accessible specialized early psychological and pedagogical support centers. Selection was based on parental informed consent and a preliminary neurological screening.

The first stage of the study included an in-depth neuropsychological assessment using a set of methods adapted for preschool age. It included:

- tasks testing visual-spatial gnosis and constructive praxis,
- tests of auditory perception and verbal memory,
- tasks testing visual-motor coordination,
- observation of regulatory behavior, initiative, and emotional reactivity.

In addition, a parent questionnaire and the CBCL (Child Behavior Checklist) were used.

Data analysis revealed that:

49 children (68%) showed deviations from the norm in several functional areas. 30 children (41.6%) were diagnosed with speech delay (reduced vocabulary, limited phrasal speech, and articulation difficulties).

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

26 children (36.1%) showed underdeveloped visual-spatial perception and difficulties analyzing objects by features.

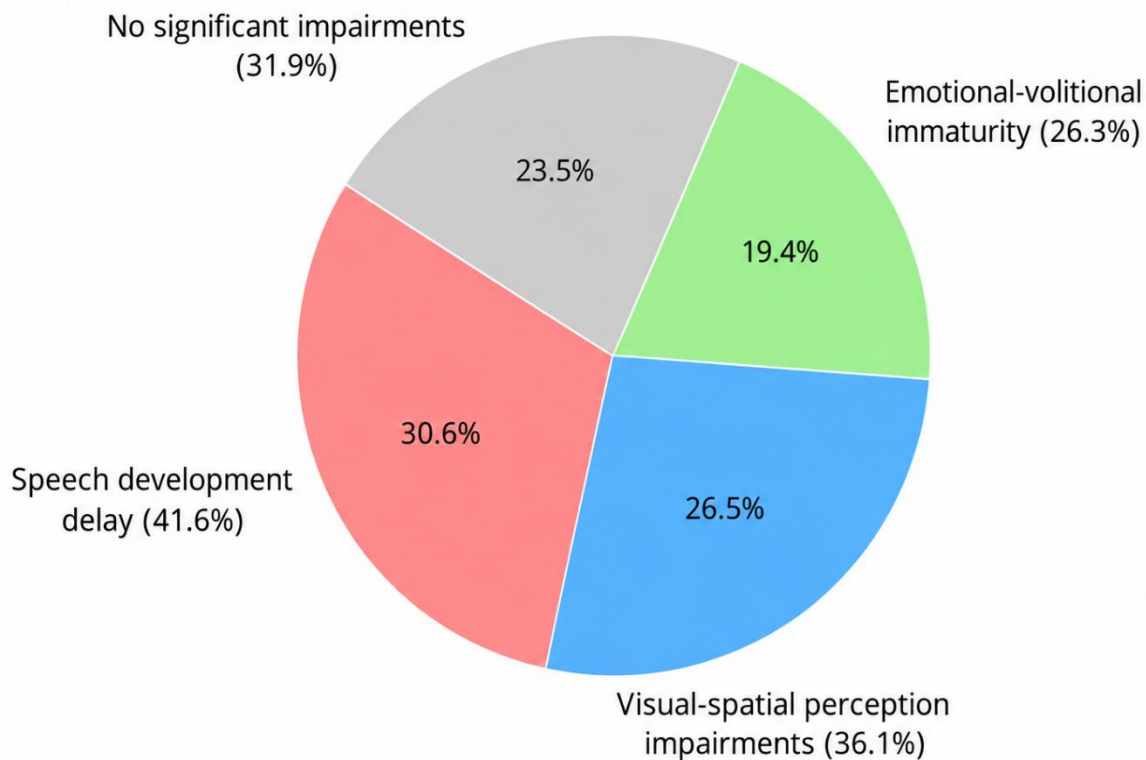


Diagram 1. Structure of neuropsychological disorders in children from genetic risk groups.

The diagram shows the distribution of the main types of disorders identified during the initial neuropsychological assessment in preschool-age children born to consanguineous parents. The most common deviations were delayed speech development, impaired visual-spatial perception, and emotional-volitional immaturity.

Emotional-volitional immaturity and impulsive behavior were recorded in 19 children (26.3%).

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

Only 23 children (31.9%) showed no significant deviations based on the neuropsychological testing results; however, they also showed some signs of sensorimotor immaturity.

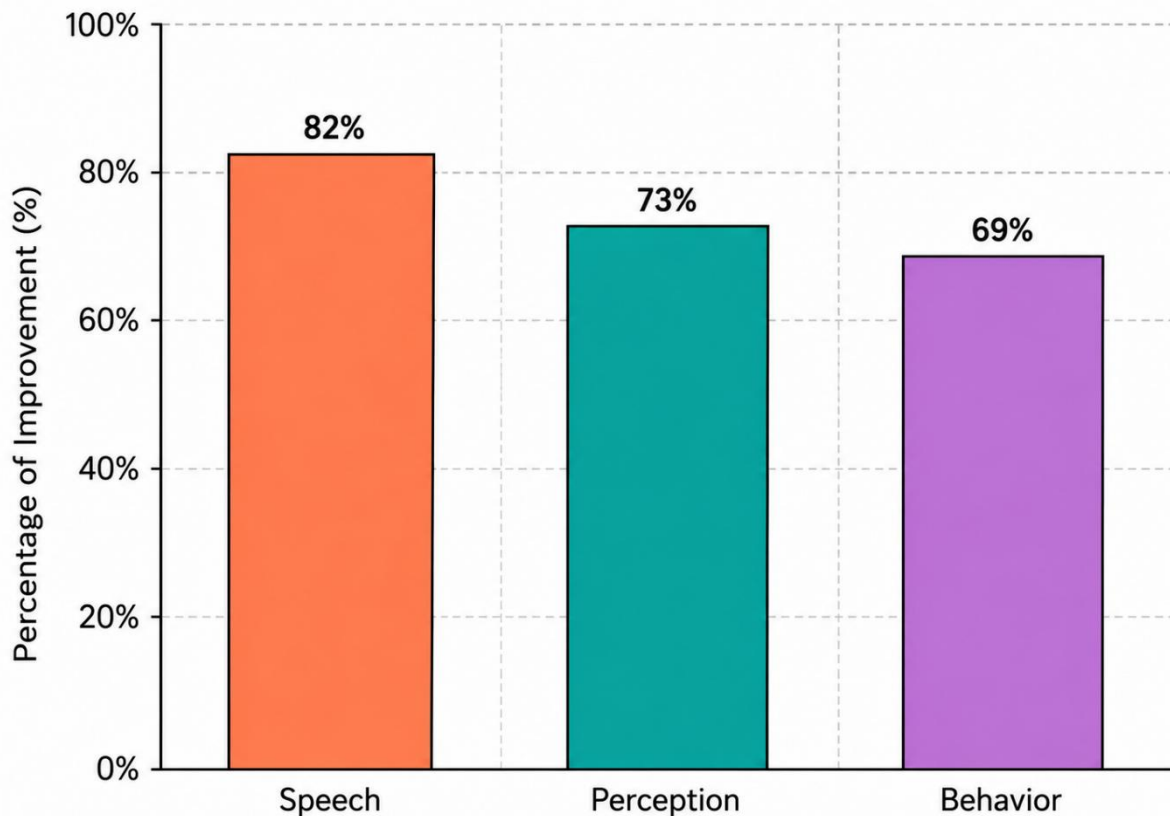


Diagram 2. Positive dynamics after the intervention program

The diagram demonstrates the degree of improvement in preschool-aged children with neuropsychological disabilities after completing a 6-month comprehensive intervention. The most significant positive dynamics were recorded in the areas of speech development (82%), perception (74%), and behavior regulation (69%). In the second phase, 39 children with the most severe disabilities were enrolled in a 6-month intervention program. This included:

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

- Individual speech therapy sessions (twice a week),
- Elements of sensorimotor correction (development of fine motor skills, balance, spatial orientation),
- Cognitive games to develop attention and memory,
- Parental counseling and home exercises.

The control group (n = 33) received only baseline observations from a pediatrician and care recommendations.

At the end of the program, a follow-up neuropsychological assessment was conducted. The results showed significant improvements in the experimental group:

82% of children showed increased speech activity, the development of basic dialogues, and an increase in vocabulary.

74% showed improved attention and auditory perception, and a reduction in the number of errors when recalling tasks.

69% showed positive dynamics in behavioral regulation (decreased impulsivity, the development of skills to follow instructions).

Parents noted increased sociability, decreased anxiety, and a more stable mood in their children.

The control group did not show significant positive dynamics for most indicators, indicating the critical need for early intervention, especially in the presence of genetic risk.

Thus, the study results confirm that children born from consanguineous marriages have a significantly increased risk of neuropsychological disorders. These children require systematic diagnosis from an early age and multi-level corrective care adapted to their age and cognitive characteristics. The data obtained highlight not only the clinical and psychological but also the social and preventive significance of the early intervention program. The proposed algorithm can be implemented in the practice of district psychological, medical, and pedagogical

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/5>

commissions, children's clinics, and early development centers in regions with high rates of consanguineous marriages.

Conclusion: Children born in consanguineous marriages do have a higher risk of mental retardation. However, with timely identification of problems and early intervention (remedial classes, family support), significant progress can be achieved. The earlier assistance is initiated, the greater the chances of normalizing the child's development and adapting to life and society.

References

1. Абрамова Г.С. Возрастная психология: Учебник для вузов. — М.: Академический проект, 2020. — 416 с.
2. Ахмедова С.А., Юсупова Г.Р. Генетически обусловленные формы задержки психоразвития у детей. // Педиатрия и детская неврология, 2021. — № 4. — С. 23–28.
3. Вассерман Л.И., Бурлачук Л.Ф. Психодиагностика в клинике и практике развития. — СПб.: Речь, 2019. — 304 с.
4. Ганиев Ф.К. Неврологические аспекты раннего детского развития. // Неврология и нейропсихиатрия, 2022. — № 2(36). — С. 41–45.
5. Ермолаева М.В. Нарушения речевого развития в условиях наследственной патологии. — М.: Логос, 2018. — 280 с.
6. Журавлёва И.В. Влияние генетических факторов на формирование когнитивной сферы у детей. // Медико-социальные аспекты здоровья детей, 2020. — № 1. — С. 14–19.
7. Коновалова И.А., Саидова Д.М. Этапы и подходы к нейропсихологической коррекции дошкольников. // Детская клиническая психология, 2021. — № 3. — С. 59–65.
8. Савина Е.А. Междисциплинарный подход к ранней помощи детям с нарушениями развития. // Дошкольная педагогика, 2021. — № 5. — С. 8–12.

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 5, May 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaopenaccess.com/index.php/5>

9. Bittles A.H. Consanguinity and its relevance to clinical genetics. // *Clinical Genetics*, 2001. – Vol. 60(2). – P. 89–98.
10. Bunday S., Alam H. Risk of genetic disorders in the offspring of consanguineous marriages. // *Journal of Medical Genetics*, 1993. – Vol. 30. – P. 113–116.
11. Luria A.R. *The Working Brain: An Introduction to Neuropsychology*. – New York: Basic Books, 1973. – 400 p.
12. Mervis C.B., Klein-Tasman B.P. Early intervention for children with genetic syndromes. // *Developmental Disabilities Research Reviews*, 2015. – Vol. 21(1). – P. 48–54.
13. World Health Organization (WHO). *Early Childhood Development and Disability: A Discussion Paper*. – Geneva: WHO, 2012. – 36 p.