

Pidlubnyi V. L., Chabaniuk S. O. Modern approaches of diagnosis and criteria for assessing the limitations of life activities in adolescents with mild mental retardation. *Journal of Education, Health and Sport*. 2021;11(03): 57-66. eISSN 2391-8306. DOI <http://dx.doi.org/10.12775/JEHS.2021.11.03.007>
<https://apcz.umk.pl/czasopisma/index.php/JEHS/article/view/JEHS.2021.11.03.007>
<https://zenodo.org/record/4628205>

The journal has had 5 points in Ministry of Science and Higher Education parametric evaluation. § 8.2) and § 12.1.2) 22.02.2019.
© The Authors 2021;

This article is published with open access at Licensee Open Journal Systems of Nicolaus Copernicus University in Torun, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.
The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 15.02.2021. Revised: 26.02.2021. Accepted: 22.03.2021.

MODERN APPROACHES OF DIAGNOSIS AND CRITERIA FOR ASSESSING THE LIMITATIONS OF LIFE ACTIVITIES IN ADOLESCENTS WITH MILD MENTAL RETARDATION

V. L. Pidlubnyi, S. O. Chabaniuk

Zaporizhzhia State Medical University, Ukraine

Abstract

Among the forms of mental pathology that are found in childhood, mental retardation (MR), which makes a significant contribution to the rates of morbidity and disability, occupies a special place. In order to investigate modern approaches and the criteria for diagnosis and assessment of limitations of life with mild MR in adolescents, on the basis of the Kryvyi Rih (Ukraine) neuropsychiatric dispensary, a two-stage clinical-epidemiological, clinical-psychopathological and psychodiagnostic study of 154 people born in 2003-2008 with mild MR was carried out. According to the results of the study, a number of factors that directly affect the quality of life of adolescents with mild MR have been established, among them: underdevelopment of cognitive forms of mental activity (in the forms of violations of logical thinking, slowing down of processes of generalization and comparison), slow pace of thinking and inertia of thought processes (which makes impossible to transfer the skill acquired in the learning process to new conditions), underdevelopment of thinking with a decrease in the function of attention (which leads to underdevelopment of complex emotions and arbitrary forms of behavior), mental underdevelopment in combination with impaired motor skills, speech, memory, attention and emotional sphere.

Key words: mental retardation; social adaptation; psychoeducation; quality of life.

Urgency. Mental retardation (MR) is a fairly common disease in modern population. The dynamics of its prevalence in many countries is characterized by a tendency to increase, especially its mild forms, with up to 22.9% of all cases are observed in adolescence [1-3]. The analysis of modern data shows that today significant progress has been made in understanding the nature, manifestations and causes of MR. According to modern ideas, MR is characterized by clinical picture various signs, due to organic lesions of the central nervous system and a significant decrease in physical, mental, intellectual, emotional and personal characteristics [2-4]. However, the definition of MR is still quite unclear, mainly because it is based more on the empirical concept (IQ measurement) than on the clinical characteristics of patients. The traditional classification of MR in degrees is conditional and approximate, as it depends on the test options used to assess intelligence (usually, according to the recommendations of ICD-10, the degree of expression of the defect is measured by Wexler's intelligence test in conventional units) [3, 5, 9]. This psychometric approach to the division of people with mental retardation has its drawbacks. According to L. S. Vyigotskiy [1], the level of actual development of the child (IQ) says little about the prospects for his further learning and social development. Sustainable understanding of the stability of intellectual deficit and the peculiarities of the course of MR in the last decade are revised and supplemented with information on the impact of age, therapeutic, social factors on its manifestations, and because the categories of the psychometric approach emphasize the degree of mental retardation, they potentially brand and limit a person in matters of socialization. Current statistics confirm that approximately three percent of the world's population exists with an IQ of less than 70 points [10]. As for severe mental retardation, it occurs in about one percent of people. All this necessitates the search for more humane and prognostic psychodiagnostic criteria both for the diagnostic process and for the choice of criteria for assessing the limitations of life.

The objective: to investigate modern approaches and the criteria for diagnosis and assessment of limitations of life with mild MR retardation in adolescents.

Research design and general characteristics of the contingents under study. On the basis of the Kryvyi Rih (Ukraine) neuropsychiatric dispensary, with informed consent, 154 patients born in 2003-2008 who were under the dispensary observation of a teenage psychiatrist because of mild MR. The study consisted of two stages: the first – at the initial psychiatric treatment in childhood, when the diagnosis of mild MR was established, and the

second one – follow-up from 18 to 23 years. The primary contingent consisted of 108 (70.13%) boys and 46 (29.87%) girls, whose average age was 16.08 years.

Methods. Clinical and epidemiological, clinical and psychopathological, psychodiagnostic and statistical methods were used in the study. The main tool of the study was the «Map for clinical and epidemiological studies», which included socio-demographic and anamnestic information, the clinical part with a description of the existing symptoms and syndromes.

The diagnosis of mild MR was verified on the basis of the ICD-10 criteria (reduced cognitive abilities, delayed language development, lack of motor and social skills) taking into account the indicators of standardized tests to determine IQ using the adolescent version of the method D. Wechsler (1949), adapted Yu. Panasyuk (1973). Due to the selection of subtests aimed at determining verbal and nonverbal intelligence, this technique allowed to get an idea not only of the general level of intelligence, but also of its structure: verbal subtests with criteria of general culture and academic success, and nonverbal reflected individual skills, features of his psychophysiological and sensorimotor characteristics. In order to form a holistic diagnostic picture, in addition to psychopathological manifestations and level of intelligence, the presence of psychophysical disorders, comorbid pathology and adaptive skills were also studied, including self-care, social fitness, communication, personality self-direction, psychomotor development, level of learning and emotional skills. The ILK method was used to determine the quality of life (QOL) of children and adolescents with mental disorders. Statistical data processing was performed using Statistica-10 for Windows software.

Results. According to the results of clinical and anamnestic research, it was found that 69% of patients were initially diagnosed with mild MR in childhood. It was less common at the age of 3-6 years (9.4%), most often at 7 years (16.2%) and later at 10 years (13.6%), i.e. before school (7 years) and the transition from junior to high school (10 years). Nosological qualification of 76 (49.35%) patients was confirmed by inpatient examination during adolescence. In 29% of patients with mild MR, the underlying disorder was associated with concomitant mental, neurological, or somatic symptoms. The most common disorders were: behavior – in 89 (57.79%) patients; neurotic – in 13 (8.44%); convulsive states of different genesis – in 29 (18.83%); local neurological disorders (residual manifestations of cerebral palsy, the consequences of neuroinfections and injuries) – in 17 (11.03%); signs of psychoorganic syndrome – in 6 (3.89%).

In general, among patients with mild MR, males were twice as prevalent during the entire observation period. Family burden of mental pathology was found in 63% of respondents: in 21% of cases relatives suffered from addictions; in 18% – intellectual disability of varying severity, in 11% of cases relatives had personality disorders. The high frequency of various exogenous hazards in the period of fetal formation and the early postpartum period attracted attention: in 81% of patient's mothers the pregnancy was complicated. The most common were factors that have long affected the fetus: nephropathy, threats of abortion, anemia. 42 (27.2%) mothers suffered from infectious diseases during pregnancy; toxic effects of alcohol – 18 (11.69%); 9 (5.84%) mothers tried to get rid of the fetus on their own, taking various medications. Almost half of the observations showed a combination of adverse factors that complicate the course of pregnancy. 34% of respondents were born from the first birth, others – from repeated. Complications in childbirth were found in 108 (70.13%) of 154 examined: asphyxia – in 53 (34.41%), premature birth – in 18 (11.68%). Among those examined with mild MR, a significant proportion were those born with low birth weight (up to 3 kg) – 40%. Early postnatal adverse events occurred in 33%. Among mothers there was a relatively high proportion of those who gave birth between 35 and 40 years, at the same time there were no early (up to 18 years) births, isolated cases of births by mothers over 40 years. 48 (31.16%) patients were brought up in large families, 82 (53.24%) – in single-parent families; 34 patients (22.07%) had experience living with parents who led an antisocial lifestyle.

Psychomotor development in children with mild MR was timely in 38% of subjects, but most patients developed with a delay in either speech (34%) or motor-speech (53%) development.

During the psychological diagnosis with the Wechsler Adult Intelligence Scale (WAIS), it was found that each subject with mild MR performed all of 12 subtests, including 6 tests of the verbal scale and 6 tests of the nonverbal scale.

In most cases (93.7%) of the surveyed there was a low stock of knowledge, reduced general educational level (subscale «Information»), reduced quality of memory and attention, inaccuracy of reproduction (subscale «Digit Span»), slow thinking, the impossibility of logical generalization (subscales «Similarities» and «Vocabulary»). In addition, the analysis of causation (subscale "Picture Arrangement") was difficult. There were difficulties in performing arithmetic operations in the mind, instability of attention (subscale «Arithmetic»). There was a decrease in observation and concentration, slow perception (subscale «Picture Completion»). Deficiencies of motility were manifested in the fragmentary nature of the

depicted lines. When performing the tasks, there was also a lack of understanding of the internal connections between the individual parts, which made it difficult to imagine the subject as a whole («Block Design», «Visual Puzzles», «Coding» and «Symbol Search» subscales).

It is well known that the presence of concomitant pathology can change not only the picture of the disorder, but also its course, which in turn has prognostic value for yourself with mild MR. According to medical records and anamnestic data, we analyzed the structure of comorbid pathology among adolescents with mild MR. Analysis of the data showed that 87% (101 cases) of students with mental retardation had one or more chronic somatic diseases. In the examined contingent, the frequency of comorbid somatic pathology was 78.57% (n = 121).

The most common 67.53% (n = 104) were diseases of the musculoskeletal system. Most diseases were represented by pathology of the musculoskeletal system: kyphosis, scoliosis, flat feet, microcephaly, deformation of the skeletal system due to the underlying disease.

In second place are diseases of the nervous system. Thus, 59.1% (n = 91) of patients with mild MR had one or more neurological diseases. The following comorbid neurological disorders were detected in the subjects: paralysis and paresis in 12.33% (n = 19), epilepsy and epileptiform syndromes in 17.53% (n = 27), speech disorders in 27.27% (n = 42), craniocerebral injuries in the anamnesis were found in 25.32% (n = 39). Combination with mental disorders was observed in 11.69% (n = 18), and a combination of one or more neurological diseases occurred in 82.3% of subjects.

Pathology of the respiratory system was observed in 29.87% (n = 46), diseases of the gastrointestinal tract were observed in 24.02% (n = 37), pathology of the urinary system (chronic cystitis, pyelonephritis) occurred in 7.79% of cases (n = 12), cardiovascular pathology and blood diseases were observed in 11.03% of cases (n = 17), overweight occurred in 13.63 % (n = 21), thyroid disease was diagnosed in 2 cases of hypothyroidism and 1 – autoimmune thyroiditis. Among eye diseases there were myopia, strabismus, astigmatism in 33.11% (n = 51). The combination of 2 or more somatic diseases with a mild degree of mental retardation occurred – 47.4% (n = 73).

We also assessed the QOL of adolescents with mild MR using the ILK method, which included the analysis of questionnaires to assess various areas of their lives by both patients and their parents. According to the obtained data of the survey of patients, the least problematic areas of life of adolescents indicated the areas: «Physical health»– 1.6 ± 0.9 ;

«General assessment of QOL»– 1.64±0.9; «Family»– 1.96±1.2. The most problematic areas: «Leisure»– 3.02±1.5; «Mental health»– 2.5±1.3; «Adolescent busyness due to mental illness»– 2.4±1.3 points, respectively. Other areas: «School» (1.98±1.2), «Busyness in diagnostic and therapeutic procedures» (2.19±1.3), «Social contacts with peers» (1.8±0.9) received satisfactory grades.

The correlation analysis of QOL assessments in adolescents with mild MR showed the existence ($p < 0.05$) of a direct correlation between the indicators of deferent scales: «Mental health» with the «Family» ($r = 0.48$), «Social contacts with peers» ($r = 0.43$) and «General assessment of QOL» ($r = 0.39$) scales, and between the «General assessment of QOL» and the «School» ($r = 0.39$), «Family» ($r = 0.41$) and «Mental health» ($r = 0.45$) scales.

The data obtained from the results of the parental block of the ILK test showed that the parents' assessment of QOL in adolescents with mild MR is as follows: the most unfavorable QOL indicators were found on the scale «Mental health» – 3.43±0.8 points, «Physical health» – 2.98±0.8; «School» – 2.88±0.8. The most favorable parents of patients were rated the scale «Busyness in diagnostic and therapeutic procedures» – 1.43±0.8 points; «Adolescent busyness due to mental illness» 2.15±0.9; «Parental busyness in diagnostic and therapeutic procedures of adolescents» – 2.35±0.9. Satisfactory results were obtained by the «General assessment of QOL»– 2.7±0.8; «Parental busyness in adolescent disease» - 2.68±0.8; «Social contacts with peers» – 2.58±0.8; «Family» – 2.39±0.9; «Leisure» – 2.34±0.9.

A comparative analysis of the results of QOL assessment by adolescents with mild MR and their parents showed that the latter assessed the QOL of their children reliably ($p < 0.01$) differently on the scales: «Physical health», «Mental health», «School», «General assessment of QOL», «Family», «Social contacts with peers», «Leisure». In almost all of these areas, patients rated their QOL more favorably than their parents thought. In addition, the assessment provided by the parents highlighted the more objective problem areas of the patients' lives, namely mental and physical health and problems with the education process. The existence of direct correlations on the scales, in this situation, means that favorable QOL estimates correspond to inadequate self-assessment of patients with mild MR.

In order to analyze the criteria for assessing the limitations of life expectancy in mild MR in adolescence, we conducted a phased study and analysis of their social adaptation. At the beginning of the survey 7.14% patients with mild MR (7 boys and 5 girls) had a disability as a child. Disability was most often assigned from 1 year to 5 years. 4 children received primary childhood disability due to mental illness, 5 – due to neurological pathology, 2 – due to somatic. At the second (follow-up) stage, at the age of 23, the number of people with

disabilities was 17 patients (14.65%). Among them, 14 (12.06%) patients had 3rd group of disability, 3 (1.72%) –2nd group.

The analysis of the medical documentation of the group of patients with mild MR allowed us to conclude that the main criteria for establishing disability were: the rate of mental development (was between 50-69 points); the presence of initial signs of delayed language comprehension; delay (inability) to obtain special knowledge and skills and their application in practice; frequent decompensation and disorganization in behavior; long-term (more than 6 months) social maladaptation; the presence or accession of comorbid pathology.

It should be noted that the majority of respondents (85.35%) at the time of completion of the study had a fairly stable social adaptation, and did not need to determine the group of disability. They were able to work independently in the normal conditions of general production, without the need for any additional conditions or outside help. Available for them were mainly types of work that do not require complex qualifications: locksmith, painter, carpenter, courier, lifter, cloakroom attendant, cleaner, loader etc. Such social and labor adaptation was achieved by patients gradually over several years.

Our analysis of the contingent and modern approaches to diagnosis and criteria for assessing the limitations of life in mild MR of adolescence allowed us to formulate general criteria for a multilevel diagnostic process (Table 1).

Table 1 - General criteria for diagnostic multilevel assessment of life limitations in mild MR in adolescence

Diagnostic component	General standard of living			
	very low	low	satisfactory	adaptive
1	2	3	4	5
Clinical picture	Little or no knowledge of body parts. Does not orientate on the street and at home, does not navigate in new circumstances. Knows places where to eat. Performs all practical actions with constant outside help. The stock of knowledge is very scarce. The amount of knowledge is	Knows body parts. Able to navigate with the help of others under normal circumstances. Knows the purpose of individual household items, can independently perform simple household tasks. Follows the rules of conduct in public places.	Able to navigate in a familiar situation independently. Can use household appliances. Able to navigate the street. Knows the norms of behavior and tries to comply with them. Can run errands, shop, etc. Able to study in a specialized institution. A positive emotional attitude,	Fully oriented in the surrounding situation. Only needs help in unusual, stressful situations. Capable of mastering school skills within the scope of primary school. Requires correctional training according to a special program. Most of the emotional reactions are

1	2	3	4	5
	insufficient for adequate interaction with other people. Little differentiation of emotions and actions that do not correspond to the nature and purpose of the task. Additional mental disorders are present.	Low ability to acquire knowledge and skills. Fine motor skills are impaired. Able to express emotions. The ability to perform targeted actions. Additional mental disorders are present	purposefulness in work that does not require constant attention. Additional mental disorders are usually absent.	adequate to the situation. There are no additional mental disorders.
The results of psychological research.	IQ 50-55. Cannot perform almost all test techniques, even with outside help.	IQ = 55-60. Can partially perform test techniques with assistance.	IQ = 60-65. Difficulties in performing individual tests	IQ = 65-70. Performs all relevant tests independently.
The presence of comorbid pathology	The presence of severe neurological or somatic pathology or combinations thereof.	The presence of one comorbid disease of moderate severity.	Minor disorders or pathology are absent	There is no pathology.
QOL and social functioning	Extremely low level of QOL and social functioning which can be determined only with the help of people around the patient	Low level of QOL and social functioning. Most indicators are inflated	Average indicators of QOL and social functioning, which can be determined using methods for the mentally ill. Most indicators have an objective assessment.	The level of QOL and social functioning is close to standard indicators that can be determined using methods for the mentally ill. Usually overestimated indicators of the general assessment of QOL.
Degree (loss) of social adaptation	Needs constant care. Complete dependence on others. Disabled (2nd or 3rd disability group).	Need constant help or support from others. Disabled (3rd groups of incapacity)	Capable of self-service in most cases. Rarely needs partial help from others. Requires special or simplified conditions for work and additional conditions for social adaptation	Capable of self-care and independent living. Does not require special or simplified working conditions.

Thus, we have identified the main clinical-psychopathological, psychological and medical-social approaches to diagnosis and criteria for assessing the limitations of life in mild

MR of adolescence based on a comprehensive assessment of clinical-functional, medical-psychological and social status.

Conclusions

1. The main clinical signs of MR in adolescents are: the presence of intellectual decline where there is a large persistent failure of abstract forms of thinking; underdevelopment of cognitive forms of mental activity, which is represented by violations of logical thinking, slowing down of the mobility of mental processes of generalization and comparison of objects and phenomena of the surrounding reality; slow pace of thinking and inertia of mental processes, which makes it impossible to transfer the skill learned in the learning process to new conditions; underdevelopment of thinking affects the functions of attention, disrupts the components of mental activity associated with analytic-synthetic activity of the brain, leads to underdevelopment of complex emotions and arbitrary forms of behavior; intellectual underdevelopment, as a rule, has a combination with disorders of motor skills, speech, memory, attention and emotional sphere.

2. To determine the depth of mental underdevelopment and the qualitative characteristics of its structure, in addition to the main clinical-psychopathological method, which makes it possible to identify additional psychopathological syndromes and diagnose complicated and atypical forms of mental retardation, pathopsychological examination should be used, including the study of thinking and the prerequisites of intellectual activity, this is necessary for the purpose assessing the possibility of assimilating the school curriculum and opportunities for further employment.

Recommendations for the preparation of differentiated programs for individual rehabilitation of persons with mild MR of adolescence should be based on the analysis of clinical and functional data, categories of disabilities and their severity, recommended and contraindicated types of employment, taking into account the age, level of adaptation, rehabilitation potential of the individual and his / her possibilities implementation.

Prospects for further research consist in the development of recommendations for the formation of complex diagnostic approaches and programs of medical and social rehabilitation of adolescents with mild MR, which will improve QOL and social functioning and the effectiveness of rehabilitation assistance to this contingent of people.

References:

1. Vyigotskiy L. S. (1996). Dinamika umstvennogo razvitiya shkolnika v svyazi s obucheniem [Dynamics of the student's mental development in connection with learning]. Moscow, 480.
2. Zhulkovska T. (2001) Sotsializatsiya lyudey s ogranichennymi intellektualnyimi vozmozhnostyami [Socialization of people with intellectual disabilities]. Moscow : Sotsyum, 208.
3. Myakushko O. I. (2013) Sistemi klasifikatsiyi rozumovoyi vidstalosti ta pidhodi do diagnostiki ditey z pomirnoyu rozumovoyu vidstalistyuu [System of classification of the level of the quality and approach to diagnostics of children with the help of the same rate of performance] *Osvita osib z osoblyvymy potrebamy: shliakhy rozbudovy*, 4(1), 146–157.
4. Isaev D. N. (2007) Umstvennaya otstalost u detey i podrostkov. Rukovodstvo [Mental retardation in children and adolescents. Manual]. Saint Petersburg: Rech., 391
5. Isaev D. N., Kolosova T. A. (2012). Praktikum po psihologii umstvenno otstalyih detey i podrostkov: uchebnoe posobie dlya studentov meditsinskih i pedagogicheskikh vuzov [Workshop on the psychology of mentally retarded children and adolescents: a textbook for students of medical and pedagogical universities]. Saint Petersburg: KARO, 171.
6. Petrova V. G. (2004) Psihologiya umstvenno otstalyih shkolnikov: uchebnoe posobie [Psychology of mentally retarded schoolchildren: textbook]. Moscow: Akademiya, 160.
7. Akimovoy M. K., Gurevicha K. M. Psihologicheskaya diagnostika: Uchebnik dlya vuzov [Psychological diagnostics: Textbook for universities]. Saint Petersburg: Peter, 2007, 652.
8. Bouras N., Jacobson J. (2002) Mental health care for people with mental retardation: a global perspective. *World Psychiatry*, 1(3): 162–165.
9. Castrén E., Elgersma Y., Maffei L., Hagerman R. (2012) Treatment of neurodevelopmental disorders in adulthood. *The Journal of Neuroscience*, 32(41): 14074–14079. DOI: 10.1523/JNEUROSCI.3287-12.2012.
10. Maulik, P.K., Harbour, C.K. (2011) Epidemiology of Intellectual Disability // In: J.H.Stone, M. Blouin, editors. *International Encyclopedia of Rehabilitation*. URL: <http://cirrie.buffalo.edu/encyclopedia/en/article/144/>