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ON THE ISSUE OF MEDICAL REHABILITATION: CURRENT LEVEL AND DEVELOPMENT PROSPECTS

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Abstract. The concern for the health of the population as the highest value in the Russian Federation dictates the necessity to seek the most advanced measures for patients of various ages to prevent disability and reduce the number of severe functional impairments that form during and as a result of illness, leading to limitations in physical and psychological aspects, as well as in the social aspect, including the educational process for children and the employment of adult patients, significantly reducing the level and quality of life. The global medical-social problem lies in providing comprehensive assistance to such categories of patients, which falls within the competence of medical rehabilitation. Its main tasks include maximizing the improvement of the functional state of patients to achieve the most complete recovery or compensation for the functions affected by the pathological process and enabling the fullest return to the usual social environment, including domestic, educational, and professional settings. Medical rehabilitation today is a relevant, modern, and successfully developing direction of domestic medicine, based on the scientific and practical knowledge and skills of such confidently established medical disciplines included in the rehabilitation process as therapeutic physical culture and sports medicine, physiotherapy, reflexology, and manual therapy. Physicians specializing in these disciplines, under the guidance and coordination of a physician specializing in medical rehabilitation or physical and rehabilitation medicine, together with a narrow-profile specialist and, if necessary, involving specialists in clinical psychology, corrective pedagogy, social workers, and others, form interdisciplinary teams aimed at providing maximally early, individual, comprehensive, systematic, and prolonged in time necessary assistance to the children and adult population of our country at all stages of medical rehabilitation. Thanks to effective and individual rehabilitation programs, it is possible to more successfully solve such serious tasks as reducing the level of disability, the percentage of people with disabilities, reducing the duration of incapacity for work, and improving the quality and level of life, which ultimately meets the most important objectives of domestic healthcare: preserving and strengthening the health of the citizens of the Russian Federation and preventing adverse outcomes of diseases.

Key words: *medical rehabilitation; rehabilitation potential; rehabilitation diagnosis; rehabilitation prognosis; stages of medical rehabilitation.*

К ВОПРОСУ О МЕДИЦИНСКОЙ РЕАБИЛИТАЦИИ: СОВРЕМЕННЫЙ УРОВЕНЬ И ПЕРСПЕКТИВЫ РАЗВИТИЯ

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Резюме. Забота о здоровье населения как наивысшей ценности в Российской Федерации диктует необходимость поиска наиболее совершенных мероприятий для пациентов различного возраста по профилактике инвалидизации и снижению числа тяжелых функциональных нарушений, формирующихся в течение и результате болезни, приводящих к появлению ограничений возможностей, как в физическом и психологическом плане, так и в социальном аспекте, включая образовательный процесс у детей и трудовую деятельность у взрослых пациентов, что значительно снижает уровень и качество жизни. Глобальная медико-социальная проблема заключается во всесторонней помощи таким категориям пациентов, что входит в компетенции медицинской реабилитации, основными задачами которой является максимальное улучшение функционального состояния больных с целью наиболее полного восстановления или компенсации пострадавших в результате патологического процесса функций, а также наиболее полноценное возвращение в привычную социальную, в том числе бытовую, образовательную и профессиональную среду. Медицинская реабилитация сегодня — актуальное современное и успешно развивающееся направление отечественной медицины, которое базируется на научно-практических знаниях и умениях таких уверенно зарекомендовавших себя медицинских дисциплин, входящих в состав реабилитации, как лечебная физическая культура и спортивная медицина, физиотерапия, рефлексотерапия, мануальная терапия. Врачи данных специальностей под руководством и координацией врача по медицинской реабилитации или врача по физической и реабилитационной медицине, совместно с узким профильным специалистом, а при необходимости — с подключением специалистов по клинической психологии, коррекционной педагогике, социальных работников и других, входят в состав междисциплинарных бригад, призванных оказывать максимально раннюю, индивидуальную, комплексную, систематичную и пролонгированную во времени необходимую помощь детскому и взрослому населению нашей страны на всех этапах медицинской реабилитации. Благодаря эффективным и индивидуальным программам медицинской реабилитации возможно более успешное решение таких серьезных задач, как снижение уровня инвалидизации, процента людей с ограниченными возможностями здоровья, сокращение сроков нетрудоспособности, повышение качества и уровня жизни, что в конечном итоге будет отвечать важнейшим задачам отечественного здравоохранения: сохранение, укрепление здоровья граждан Российской Федерации и профилактика неблагоприятных исходов заболеваний.

Ключевые слова: медицинская реабилитация; реабилитационный потенциал; реабилитационный диагноз; реабилитационный прогноз; этапы медицинской реабилитации.

Under the definition of “rehabilitation”, *rehabilis* (from the Latin *re* — renewal, *habilitas* — ability, suitability), according to the translation from Latin, means the restoration of abilities, suitability for anything or properties, which reflects the presence of both biological and social components of this concept [1–4].

The World Health Organization interprets the concept of rehabilitation as follows: “Rehabilitation is a set of activities — medical rehabilitation, psychological rehabilitation, pedagogical rehabilitation, social rehabilitation and legal rehabilitation, designed to provide persons with disabilities with maximum adaptability to living conditions in society” [1, 2].

Medical rehabilitation is a relatively young area in medicine, which appeared during the First World War and has actively developed since the second half of the 20th century. Initially, medical rehabilitation was considered an integral part of the treatment process, but now medical rehabilitation should be considered as a central component of a comprehensive rehabilitation process [1, 5].

“Rehabilitation 2030: a call to action” is the global strategic plan adopted by the World Health Organization in 2017 [3, 6].

The functional responsibilities of a medical rehabilitation specialist (also a *physical medicine and rehabilitation physician*) are presented in the Order of the Ministry of Labor of the Russian Federation dated 03.09.2018 № 572n “On approval of the professional standard “Medical rehabilitation specialist” [7, 8].

Orders of the Ministry of Health of the Russian Federation dated 31.07.2020 № 788n “On approval of the procedure for organizing medical rehabilitation for adults” and dated 23.10.2019 № 878n “On approval of the procedure for organizing medical rehabilitation for children” are regulatory documents governing the organization of medical rehabilitation for the child population in the Russian Federation, according to which medical rehabilitation is carried out in the following conditions: outpatient, day hospital or inpatient, depending on the child’s condition and the ability to achieve the set rehabilitation goals [9, 10].

According to the Order of the Ministry of Health of the Russian Federation dated 02.05.2023 № 206n "On approval of qualification requirements for medical and pharmaceutical workers with higher education," the following specialties were introduced: instructor-methogist in physical therapy (non-medical education); medical psychologist, clinical psychologist (non-medical education); physical rehabilitation specialist (kinesio-
logist, non-medical education) [11].

In practice, a variety of therapeutic methods of medical rehabilitation are widely used, including therapeutic and surgical strategies, as well as alternative non-drug technologies and innovations [1, 3, 12–14].

The most advanced technologies have been developed with the participation of microprocessor information devices for managing digital "cloud" data; they represent, in particular, biocontrolled and robotic medical equipment [3].

The patterns of influence on the human body of numerous means of rehabilitation, primary physical factors and exercises, the action of which is justified from a scientific and practical point of view, are at the origins of medical rehabilitation and are called upon to normalize sanogenesis [3, 15–19].

The staged nature and differentiated approach of rehabilitation programs in case of reversible functional impairments should ensure the restoration of the health of the population and its maintenance at a decent level. In the formation of irreversible morphological changes in the body, the focus should shift to achieving and maintaining compensation for impaired functions. In addition, it is important to carry out secondary prevention of the occurrence of diseases and relapses, the development of possible complications [1].

Rehabilitation should be considered as a process of recovery, a return to the original state of physical, personal and social status in pathological conditions diagnosed in patients at different ages, after early childhood. On the contrary, habilitation involves a set of measures carried out in the case of congenital or early acquired disorders with the aim of forming and further developing physical, personal and social indicators. The methods used in habilitation differ from rehabilitation methods — these are pedagogical and psychological developmental methods [2, 20].

In the absence of significant restrictions, a treatment strategy that affects the etiopathogenesis of the disease is indicated; combining the

efforts of therapeutic and rehabilitation tactics is determined by the presence of disability or the risk of its formation. A fundamentally new section — physical and rehabilitation medicine — is designed to study the influence of physical methods on the body of physical methods and means available in the arsenal of medical rehabilitation to solve the problems of patients with persistent limitations [3].

Rehabilitation is understood as the restoration of health, functions and performance of people affected by diseases, injuries, exposed to factors of various nature: physical, chemical and social [2].

The result of rehabilitation is the achievement of the maximum possible physical, mental, professional, social fullness and economic self-sufficiency in the case of a specific disease, which is possible with the provision of necessary and timely medical and social assistance [1].

Rehabilitation today is a serious pressing problem of national healthcare, which has a diverse vector focus and includes, along with the compulsory medical component, the participation to a greater or lesser extent of the psychological, labor, social and economic spheres [1, 21, 22].

The most important goals of rehabilitation include a recovery of psychological status, normalization of personal characteristics, as well as the earliest and fullest possible return of patients to work and everyday skills, their successful integration into society [2, 23–25].

According to the goals set, the most important tasks of rehabilitation are put forward, which include the full recovery of the functional state of various organs and systems of the body, and, if necessary, the formation of compensatory adaptations to the conditions of daily life; normalization of household skills; carrying out secondary prevention measures in the direction of preventing the occurrence of deviations from the norm in people's health [2].

The leading principles of medical rehabilitation include the following positions: according to indications, the earliest possible start, an integrated approach, the validity of rehabilitation measures, the development of an individual rehabilitation program, compliance with stages, continuity and succession during the rehabilitation process, the work of a multidisciplinary team, prolongation in time until confident positive dynamics, availability of rehabilitation measures [2].

The social orientation of rehabilitation programs is important, the compulsory use in the

practice of monitoring the adequacy of the loads administered to patients and assessing the effectiveness of the rehabilitation methods used [1].

The need for medical rehabilitation is justified in cases of real possibility of eliminating or reducing the consequences of the disease. Depending on the severity of functional disorders, the body responds with one of the options: restitution, regeneration or compensation [3].

Thus, medical rehabilitation should not be considered as a direction for further treatment of patients in whom high effects cannot be expected. Only the earliest possible inclusion in the treatment process, starting from resuscitation, of necessary and possible rehabilitation techniques will contribute to the best outcome of the disease, as well as secondary prevention of disability [1, 2].

It is important to note that there are no general contraindications for rehabilitation measures; there are only contraindications for specific methods. Carrying out postural correction in a very serious patient's condition is indicated and is the beginning of the rehabilitation process [1].

The basic principles of medical rehabilitation are: the provisions of the International Classification of Functioning, the selection of the most effective minimum of rehabilitation measures, compliance with the necessary performance criteria at each stage of medical rehabilitation, the formation of an information infrastructure among rehabilitation institutions, the availability of a unified routing management system for specialized patients [2, 26].

Of particular note is the International Classification of Functioning, Disability and Health, proclaimed by the World Health Organization in 2002, which, thanks to validated categories of health and associated characteristics, helps to establish a rehabilitation profile, monitor and objectively assess the effectiveness of rehabilitation measures [3, 27–29].

According to modern scientific ideas, the following areas of rehabilitation are distinguished, systematized by E.I. Aukhadayev [2]:

- noorehabilitation — recovery of the patient's intellectual capabilities;
- psychorehabilitation — normalization of the components of the patient's mental health, in particular emotional, volitional and other areas;
- sensory rehabilitation — recovery of both the senses and the ability to perceive a variety of sensations;

- logo rehabilitation — recovery of pronunciation speech and related internal functions of the language;
- kinesitherapy — recovery of motor function at different levels of complexity in various pathologies;
- vegetative rehabilitation — normalization of the functional state of internal organs, recovery of vegetative processes;
- ergo rehabilitation — recovery of vital processes, labor activity;
- eco-rehabilitation — recovery of adaptive abilities to both the natural and social environment;
- ludorehabilitation — involves stimulating the creative capabilities of the individual;
- self-rehabilitation — normalization of the personal characteristics of a particular individual.

When providing medical rehabilitation assistance, the stability of the patient's clinical condition is essential, regardless of the duration of the disease; at the same time, the risk of possible complications should not exceed the rehabilitation potential; there should also be no contraindications to the prescription of certain methods, taking into account the rehabilitation diagnosis [1].

The definition of rehabilitation potential is the key point to the successful implementation of rehabilitation measures.

For this purpose, both clinical manifestations and functional disorders, characteristic features of somatic and psychological status are subject to careful study, which are the necessary foundation for the recovery of affected functions and serve as a decisive moment for the prospects for recovery or the ability to compensate for the limitations that have arisen.

Rehabilitation potential is usually understood as an objective perspective of the patient's functional recovery over the expected period of rehabilitation care, taking into account the clinical picture of the disease in a particular patient, the availability of individual resources and compensatory capabilities, provided that the psychosomatic state is stable against the background of high motivation for the rehabilitation program [1].

Thus, rehabilitation potential is a set of biological and psychological characteristics of the patient, as well as social and environmental aspects that determine the possible extent of realization of his potential.

There are high, medium and low levels of rehabilitation potential. In particular, high rehabilitation potential is characterized by a disease duration of no more than three months in the absence of information about a progressive pathological process, occurs in children, young or middle-aged people with good motivation of the patient or child's parents for rehabilitation, in older people with preserved cognitive status and, as a rule, an adequate psycho-emotional background or its minor changes [1].

Only high rehabilitation potential implies full recovery or a high level of functional recovery of the body as a result of the selected rehabilitation protocol.

A moderately expressed level of rehabilitation potential is characterized by a disease duration of no more than a year in the absence of information about a progressive pathological process; in this case, patients under the supervision with moderate changes in weight and height parameters, with adequate cognitive status and, as a rule, moderate deviations in the psycho-emotional background, amenable to slight pharmacological correction [1].

In patients with a disease duration of more than 1–2 years, a progressive course, significant deviations in weight and height parameters (in middle-aged and older people), pronounced disorders of a healthy lifestyle — alcoholism or drug addiction (in middle-aged and older people), severe cognitive and emotional disorders that require serious correction, as a rule, reveal a low level of rehabilitation potential.

In the case of moderate rehabilitation potential, only partial, and with low rehabilitation potential, insignificant, even non-existent, recovery of impaired body functions as a result of the rehabilitation process is possible [1].

To solve rehabilitation problems, indicators of physical development and physical endurance are determined, the degree of development and stability of the psycho-emotional sphere, the level of social adaptation, including the ability to acquire familiar household and work skills and abilities are identified [23–25].

A rehabilitation diagnosis is understood as a diagnosis that reflects an assessment of the emerging functional consequences of the disease. It consists of a description of the injury and subsequent impairments, both household and professional, indicating restrictions on activity and participation in private life and society, with an emphasis on envi-

ronmental factors that can relieve or aggravate the patient's basic life functions [1].

It is necessary to carefully examine the patient in order to establish his rehabilitation diagnosis for the subsequent formation of an individual rehabilitation program. This examination consists of collecting anamnestic data, complaints, as well as the necessary set of laboratory and instrumental studies with the obligatory determination of the influence of physical disorders on the functional state of the body, the degree of preservation of everyday and professional skills [1].

A multidisciplinary approach is central to medical rehabilitation, with the participation and close cooperation of medical, psychological, pedagogical, social and professional specialists to provide all necessary types of assistance and correct the resulting consequences of the disease, for a gradual return to a normal lifestyle, with the maximum functional recovery or compensation of the impaired functions in the absence of the proper level of rehabilitation potential [1, 2, 18].

An individually formed multidisciplinary team consists of: a physical medicine and rehabilitation physician, a profile specialist (attending physician), a doctor in physical therapy and sports medicine, a physiotherapist, a medical psychologist; if necessary, a reflexology therapist, a chiropractor; nurses, both specialized in medical rehabilitation and care; according to indications — specialists in laboratory and instrumental diagnostics, adaptive physical culture, as well as in correctional pedagogy (speech therapy, deaf pedagogy, typhlopädagog, oligophrenopedagog), clinical psychology, including neuropsychologists, specialists in social work, vocational guidance and occupational therapy, who have undergone advanced training in methods rehabilitation of patients of the corresponding profile [1, 2, 18].

The tasks of the multidisciplinary team include the development of an individual rehabilitation program for a particular patient, followed by the implementation of a set of rehabilitation measures and mandatory monitoring of the adequacy of the loads and their effectiveness [1].

Specialists of a multidisciplinary team provide assistance to patients as a single whole, and it is very important for each of them to clearly know their functional responsibilities and close cooperation of all specialists with each other [1, 2, 18].

Options for the work of a multidisciplinary team may include joint patient visits, medical commissions and consultations, explanatory con-

versations with relatives and care staff. Multidisciplinary team specialists assess the level of rehabilitation potential, outline rehabilitation goals and a rehabilitation plan, in which the patient and relatives can participate, and establish contact with outpatient polyclinic service for further assistance [2].

A multidisciplinary team determines the most likely prospect for the development of compensatory and adaptive capabilities in each clinical case.

During the rehabilitation process, an analysis of the functional response of various organs and systems to the presented diverse load is carried out. Strict dosing of physical activity and an adequate choice of means of therapeutic and rehabilitation training are important: preference should be given fractional loads of a gradual plan, the necessary ratio of activity and rest, and mandatory consideration of the individual characteristics of the patient [30].

The effectiveness of the individual rehabilitation measures, as well as the medical rehabilitation program in general, is assessed objectively over time for timely correction strategies, if necessary.

Thus, the result of rehabilitation largely depends on the coordinated professional participation of each member of the multidisciplinary team at all stages of medical rehabilitation. However, the nature and intensity of the work of specialists differs as the pathological process develops in the patient [1, 2, 18].

The rehabilitation goal is the real planned result of the rehabilitation program, which is determined at a meeting of the multidisciplinary team with the possible participation of the patient himself.

The goal of rehabilitation will be in direct correlation with the degree of initial anatomical, functional disorders and social deviations: in some cases it is possible to achieve complete recovery of the affected functions with a full return to the social environment, in others we will only be talking about possible compensation of impaired functions for maximum adaptation in household and professional spheres, improving the level and quality of life [1, 2, 18].

Carrying out medical rehabilitation is justified within three stages, which depends on the severity of the existing violations.

In the resuscitation department and intensive care unit of medical institutions, assistance is provided at the first stage of medical rehabilitation

to patients in the acute period of illness, if there is sufficient rehabilitation potential and there are no contraindications to the planned methods of rehabilitation measures. Medical rehabilitation assistance at this stage is carried out according to the profile of the identified pathology in accordance with existing clinical protocols.

Inpatient departments of rehabilitation and rehabilitation centers provide assistance within the second stage of medical rehabilitation for patients in the early recovery period of the disease, late rehabilitation period, in the period of residual symptoms and in the chronic course of the disease outside the exacerbation during current hospitalization. These patients must also be objectively confirmed to have the rehabilitation potential necessary to solve the planned rehabilitation tasks [1].

Outpatient care, as well home care by mobile teams, is considered the third stage of medical rehabilitation for patients in early or late residual periods, as well as during the period of residual symptoms of the disease and in the chronic course of the pathological process outside the exacerbation. In this case, to obtain an effective result of rehabilitation measures, a sufficient level of rehabilitation potential is also necessary. In the departments and offices of rehabilitation, physiotherapy, physical therapy, reflexology, manual therapy, psychotherapy, medical psychology, speech therapist (teacher of the deaf, typhlopedagogue and other specialists in the field) the necessary amount of qualified, including high-tech assistance is provided with the inclusion of modern strategies and innovations in the field medical rehabilitation.

In especially severe cases, when patients, due to their functional capabilities, cannot do without outside help, without the necessary level of rehabilitation potential to significantly improve their condition, medical care is provided in care organizations and consists of maintaining the achieved or existing functional state with the maximum possible adaptation environment to the level of individual functionality [1].

The successful result of rehabilitation measures is characterized by stabilization of the physical, psychological and social aspects of the health and life of patients, and their fullest integration into the usual society [2].

However, for certain medical indications, patients can continue the rehabilitation process in the sanatorium-resort conditions, depending

on the profile of the existing pathology [31, 32]. In this case, resort therapeutic factors in combination with the recommended regimen, including diet therapy, the indicated intensity of physical activity, contribute to the improvement of the psychophysical state, and in the most curable cases, the normalization of previously existing activities, including recovery in the professional sphere, which has a positive effect on the overall emotional mood for recovery or the maximum possible compensation of affected functions, improving the quality of life [1, 2, 18].

Sanatorium-resort treatment has a preventive focus, which will be true both for preventing the further development of a newly occurring disease, occurs for the first time, and strengthening the body, and for anti-relapse purposes, as well as for reducing the degree of progression of a previously diagnosed pathological process [2, 15–17, 33].

Thus, medical rehabilitation is currently facing serious and pressing challenges due to the increasing number of people with chronic diseases and disabilities among patients of different ages.

All modern technologies, strategies and innovations included in the complex of rehabilitation measures are currently aimed at recovering and maximizing compensation for the impaired functions of the rehabilitator.

Based on the principles of medical rehabilitation, multidisciplinary team specialists, professionally trained within the scope of their competencies, under the guidance of a rehabilitation medicine doctor or a physical medicine and rehabilitation physician, form individual rehabilitation programs with mandatory monitoring of their effectiveness and safety.

Vector orientations of rehabilitation to normalize the physical, psychological, social, educational and professional aspects, together with motivating trainings for patients and their relatives about the necessity and importance of the rehabilitation process, will contribute to the achievement of the most satisfactory recovery results and an optimistic post-rehabilitation prognosis for the life and health of the people of our country.

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Author contribution. Thereby, all authors made a substantial contribution to the conception of the study, acquisition, analysis, interpretation of data for the work, drafting and revising the article, final approval of the version to be published and agree to be accountable for all aspects of the study.

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