

Olga Svestkova

Charles University in Prague

Katerina Svecena

Charles University in Prague

University of South Bohemia in České Budejovice

Petra Formankova

University of South Bohemia in České Budejovice

Is it Occupational therapy important in the process of Rehabilitation?

Summary

Occupational therapy is associated with all means and stages of rehabilitation, despite being considered a healthcare field in the Czech Republic. In the European countries and worldwide, the trend in recent years suggests the important role of occupational therapy not only in healthcare but also in the social sphere. Occupational therapy is an integral part of rehabilitation. Its aim is to preserve or restore a person's abilities through the use of meaningful activities and employment. Meaningful activities are selected individually for each individual of any age category according to the importance so that they can manage their routine daily living and the occupational, educational, social, leisure and recreational activities that are essential to them. Occupational therapists diagnose the functional condition of an individual, including the diagnosis of their functional abilities to manage activities of daily living, cognitive functions in terms of activities of daily living, motor skills and the function of the upper extremities, prevocational rehabilitation for the purpose of occupational and educational rehabilitation, diagnosis of leisure activities that an individual is able to perform, and diagnosis of environmental factors in relation to facilitators and barriers. Based on the results of the examinations and the diagnosis, the occupational therapist designs a short- and long-term occupational therapy plan and recommends customized occupational therapy in order to achieve the maximum possible quality of life. Occupational therapy in healthcare is conducted as prescribed by a doctor.

Keywords: occupational therapy, rehabilitation, activities of daily living, functional abilities, prevocational rehabilitation

Introduction

Occupational therapy is an essential part of rehabilitation. Occupational therapy is associated with all means and stages of rehabilitation. Rehabilitation is a process that helps persons suffering the consequences of a disease or injury

restore their original quality of life¹, and if this is not possible, it reduces the functional consequences in the area of activities or participation, identifies facilitating environmental factors, and in the case of citizens who remain seriously disabled, it helps support a dignified life. Occupational therapy is a part of rehabilitation means:

1. Rehabilitation in the healthcare
2. Social rehabilitation
3. Prevocational (called “ergodiagnostika” in Czech) and vocational rehabilitation
4. Educational rehabilitation

According to Czech law, this field is classified as a healthcare field. In European countries and worldwide, the trend in recent years suggests the important role occupational therapy plays also in other spheres of social life.

The aim of occupational therapy is to maintain or restore the ability of a person or to mitigate the functional consequences and help achieve a dignified life for severely disabled citizens. Activation by meaningful activities is used to restore the abilities of an affected individual with the possibility of subsequent retraining, education and employment². As part of therapy, the occupational therapist individually selects a meaningful activity for the patient/client based on functional diagnostics to enable them to carry out normal daily, occupational, educational, social, leisure and recreational activities. In the Czech Republic, occupational therapy is known as „ergoterapie“ which is derived from the Greek „**ergon**“ (work) and „**therapeia**“ (**treatment**). The translation of these words often implies an imprecise idea of the content of this field, as even many healthcare professionals and experts in rehabilitation medicine believe that occupational therapy is a vocational therapy in ceramic or wood workshops, in administration or gardening. At the time occupational therapy emerged at the beginning of the 20th century, it was really a „treatment by work“ in workshops of various types established mainly in psychiatric institutions. In the Czech Republic, this understanding of “ergotherapy” still persists today, although the content of this field is fundamentally different. The goal of occupational therapy is to achieve the maximum level of functional ability of patients/clients with an optimal quality of life. The English term „occupational therapy“ is closer to today’s content of this healthcare field, as it refers to the objective of occupational therapy in the productive age, which is **work and employment, i.e. occupation**. In children, adolescents, people in productive age and the elderly, this means employment, i.e.

¹ O. Svestkova, et al., *Metodiky psychosenzomotorického potenciálu cloveka (Methodologies of human psycho-sensorimotor potential)*, Prague, Rozvojove partnerstvi Pentocom, 2008, p. 54

² Czech Association of occupational therapists, [online], Prague, Definice ergoterapie (Definition of Occupational Therapy), 2008, [cit. 2013/10/03], available from: http://www.ergoterapie.cz/Events_List.aspx

all activities of daily living and participation in society. In Czech, we should distinguish between employment – work and giving employment and activities, because during the communication, these terms are often used only in connection with the work, and this again contributes to a false understanding of ergotherapy.

The term patient is used when a person is treated in the healthcare system, while the term client is used when a person needs social services.

In the Czech Republic, occupational therapists (ergotherapists) currently obtain their education at universities, earning a bachelor's degree. This type of study was established in 1992. In some countries (e.g. England), students can also earn a master's degree in the field. In the Czech Republic, we have prepared a two-year master's degree program in occupational therapy in 2013, and we hope that it will be made available to students in the 1st Faculty of Medicine at Charles University in the autumn of 2014. Before 1992, occupational therapists acquired their education in secondary schools, particularly at higher vocational schools, or they supplemented their education at the National Centre of Nursing and Non-Medical Professions in Brno as extension training after completing the study of physiotherapy at specialized secondary schools.

Occupational therapists in the Czech Republic may find jobs in the healthcare system and in social services. Unfortunately, occupational therapists only rarely work in life-saving departments of healthcare facilities (e.g. stroke units). They commonly work in acute inpatient wards of various clinical specialties. Occupational therapists are part of the inter-professional rehabilitation team at early and regional inpatient rehabilitation hospitals and in daily rehabilitation centres; new opportunities are available at local outpatient clinics near the patient's/client's home, and occupational therapists also commonly work in residential homes. Occupational therapists are also making home visits, where they evaluate the living space and recommend facilitators to create a barrier-free apartment in accordance with the individual needs of patients. Unfortunately, this service is paid only as an occupational therapy procedure, and the travel costs to get to the client's residence are not reimbursed. In social services, occupational therapists are employed in various types of social day care centres, retirement homes and other social housing facilities.

Occupational Therapy

Basic activities of the occupational therapist:

- Self-sufficiency, training of daily activities, including prescription of assistive devices
- Motor functions and optimum function of the upper extremities
- Cognitive function, communication
- Prevocational rehabilitation

- Encouraging motivation and positive emotions in the field of functional abilities
- Daily program and leisure activities
- Evaluation of apartment living space and the recommendation of facilitators to achieve a barrier-free environment
- Member of an inter-professional rehabilitation team, case manager

The occupational therapy process begins with a functional diagnosis. Based on the diagnosis, the occupational therapist prepares a short- and long-term occupational therapy plan³. During the occupational therapy process, the occupational therapist re-evaluates the functional status of the patient/client. Re-evaluation is conducted by an inter-professional team, which evaluates the effectiveness of performed interventions and the possibility to continue the therapeutic process, its modification or termination. Occupational therapy and other therapies are based on the prescription of the doctor responsible for the patient's rehabilitation program. The rehabilitation conference held on a weekly basis is attended by all members of the inter-professional rehabilitation team responsible for a particular patient. Every member of the rehabilitation staff presents a functional diagnosis, intervention and results, and consults further objectives with the plans in accordance with other team members. When a patient is admitted, a physician prescribes the required functional diagnosis and interventions of the members of the inter-professional rehabilitation team and prepares a final report. The occupational therapist terminates the occupational therapy process based on development and the improvement in the functional abilities of the patient/client. Termination of the occupational therapy process is justified only when the patient's/client's functional status has not improved for three months. The occupational therapist uses objective and standard methods to assess the functional status of the patient/client in combination with a quality of life questionnaire, e.g. their subjective opinion. Objective methods can include a structured interview (history), structured observation (aspection), various standardized scales, tests and methodologies. Subjective methods can include informal interviews and observations, subjective self-assessment questionnaires and scales. The occupational therapist therefore has standardized and non-standardized assessments and tests available⁴.

³ J. Jelinkova, M. Krivosikova, L. Sajtarova, *Ergoterapie (Occupational Therapy)*, Prague, Portal, 2009, p. 270

⁴ M. Krivosikova, *Uvod do ergoterapie (Introduction to occupational therapy)*, Prague, Grada Publishing, a. s., 2011, p. 364; O. Svestkova, K. Svecena, *Ergoterapie, „Skripta pro studenty bakalarskeho oboru ergoterapie na I. lekarske fakulte Univerzity Karlovy”, (Occupational therapy, Textbook for undergraduate (bachelor) students of occupational therapy at the First Faculty of Medicine, Charles University)*, Prague, Charles University in Prague, 1st Faculty of Medicine, 2013, p. 199

Interprofessional rehabilitation teams are composed of:

- Doctors
- Occupational therapists
- Physiotherapists
- Psychologists, Neuropsychologists
- Speech therapists
- Special education teachers
- Nurses
- Nutritional therapists
- Prosthetic engineer
- Social worker
- Biomedical technician

Of course, the patient and their family or friends are also part of the team.

Basic occupational therapy examinations:

- **Baseline** – The occupational therapist obtains basic information on the functional status of the patient/client (including from medical records and indications/prescriptions of the doctor) to set effective occupational therapy goals and plan, and to obtain information about the individual's family, social situation, current status in employment and leisure activities. If the patient is unable to provide valid information, the occupational therapist may work with the family or friends of the patient/client.
- **Ongoing** – The occupational therapist identifies the current status of the patient/client and compares it with the previous evaluation of objective functions to find out whether the defined occupational therapy target is effective and whether there has been a positive change in the functional status of the patient.
- **Final** – the occupational therapist summarizes the results of functional tests, interventions, objectively evaluates the functional status at the completion of the therapeutic process, and provides their opinion on the achieved goals of therapy and adherence to the occupational therapy plans. They evaluate the efficacy of occupational therapy. If necessary, the occupational therapist defines a long-term occupational therapy plan or indicates other necessary means of rehabilitation and determines the prognosis in cooperation with the doctor.
- **Follow-up** – according to the prognosis, the occupational therapist determines additional follow-up examinations and tests and, based on these, may reintroduce these examinations and tests into the rehabilitation process or recommend continued home therapy according to the recommended procedures. The patient/client is informed that if needed, e.g. when an

improvement or deterioration in the functional status occurs, he/she may contact the treating occupational therapist⁵.

Before starting the therapy, it is necessary to determine **occupational therapy goals and plans** for every patient/client. When determining goals and plans, it is necessary to consider the patient's view and their priorities; the attitudes of their family are also important. Motivation of the patient has a great influence on the achievement of the objectives of occupational therapy. If the therapist fails to take into account the opinions and views of the patient, there is a high risk of losing the patient's trust and thereby impacting future cooperation with the patient. If the patient has no opinion or has priorities for the therapeutic goals and plans that differ from the therapist, the therapist must take sufficient time to explain the next steps to the patient and outline the importance and relationship of these steps to ensure that the patient will reach their goal. Cooperation with family and friends is essential. The comprehensive occupational therapy plan is divided into short- and long-term occupational therapy goals and short- and long-term occupational therapy plans.

The long-term occupational therapy goal should be determined as soon as possible after the functional diagnosis. These are the main results of therapy which the therapist and the patient want to achieve after the long-term occupational therapy interventions.

The short-term occupational therapy goal is subsequently determined. These are separate individual targets leading to the achievement of the long-term goals. The time required for the short-term occupational therapy goals is up to four weeks. It depends on the type and operation of the facility; in some cases (especially with severely disable patients for whom long-term occupational therapy is anticipated) and at some facilities, the short-term goal may extend to six weeks. The occupational therapist should always specify the time they expect for the given goal.

Occupational therapy goals should therefore be realistic, meaningful and achievable, and time and measurement criteria should be defined in a very specific and detailed way. The rate criterion need not contain numbers, but it may contain the achievement of a certain function; moreover, a standardized and objective methodology used should be described.

Occupational therapy focused on self-sufficiency

The level of self-sufficiency is determined by the ability to perform activities of daily living. In the area of self-sufficiency, the occupational therapist functionally evaluates the patient's/client's ability to perform various activities of daily living

⁵ M. Krivosikova, *Uvod do ergoterapie (Introduction to occupational therapy)*, Prague, Grada Publishing, a. s., 2011, p. 364

(activities of daily living – ADL) crucial for their life. Activities of daily life can be divided into “primary activities of daily living”, also known as personal ADL, which may include basic human activities such as dressing, undressing, washing, eating and drinking, use of the toilet, and so on. „Secondary activities“ of daily living, also known as instrumental ADL, may include activities that sometimes can be carried out by another person in real life even among functionally capable individuals: laundry, shopping, housework, and so on.

Assessment

Examination, evaluation and the subsequent diagnosis of activities of daily living can be performed using objective and subjective methods.

Standardized tests commonly used in occupational therapy are as follows:

1. **Barthel index** (BI) – test for personal activities of daily living (ADL) – a standardized test on activities of everyday life. The test includes an evaluation of the ten basic activities of daily living. This is probably the most widely used test of the areas of activities of daily living in Europe, especially in German-speaking countries. The original target group was only patients with a neuromusculoskeletal disorder. This test has been extended today to all patients with a disability. The Barthel Index evaluates the functional view on the performance of activities of daily living on three levels: whether the patient performs the activity independently, with assistance or whether they are entirely unable to carry out the activity. The disadvantage of this test is that it is not sufficiently sensitive to minor changes in the functional state of the patient/client and does not cover items in the area of cognitive, communication and social interaction. On the other hand, its advantage is the fast and simple administration and interpretation of the test⁶. The test, which is not demanding in terms of supplies and equipment is used not only by occupational therapists, but is also widely available for other healthcare professions such as nurses, nursing staff, physiotherapists, doctors and others.
2. **The Functional Independence Measure** (FIM) – is a standardized test on activities of everyday life covering some of the items from the cognitive and psychosocial areas. A total of seven levels are determined according to the level of dependence and required assistance of another person⁷. The

⁶ M. Lippertova-Gruenerova, *Neurorehabilitace, (Neurorehabilitation)*, Prague, Galen, 2005, p. 350

⁷ M. Faktorova, *Vysetreni ergoterapeutem a terapie kognitivnich a percepčních poruch u pacientu po postizení mozku, „neurologie“ (Examination by an occupational therapist and therapy of cognitive and perceptual disorders in patients with brain damage, “Neurology”)*, Prague, Triton, 2003, p. 386; M. Lippertova-Gruenerova, *Neurorehabilitace, (Neurorehabilitation)*, Prague, Galen, 2005, p. 350; O. Svestkova, K. Svecena, *Ergoterapie, „Krehký pacient a primární péče“ (Occupational Therapy, „Fragile patient and primary care“)*, Prague, Grada Publishing, a. s., 2011, p. 400

test evaluates eighteen items, thirteen of which are items of physical functions and functions of activities of daily living (e.g. self-feeding, grooming, bathing, dressing of the upper and lower part of the body, care of toiletries, transfers, sphincter control, locomotion/mobility; the following items are used to evaluate the understanding and expression of the patient/client, problem solving and memory⁸. The test was created in 1984 in the USA. The target group of the test is patients/clients over seven years of age with different types of disability (functional disability). The functional independence measure is intended mainly for hospitalized patients, where it must be conducted within 72 hours of the admission of the patient, and 72 hours before his/her discharge. Another version of the test was developed for outpatient and acute patients: Lifeware system and AlphaFIM. A special version is also available for paediatric patients⁹. The advantage of the test is a higher sensitivity than the Barthel Index, since the activity is evaluated at seven levels. Another advantage is that it also includes cognitive and psychosocial items, and is not demanding in terms of supplies and equipment. All test results can be visualized in a chart making it possible to quickly assess any improvement or deterioration in the functional status of the patient. Poor availability of the test is among the major disadvantages. This test is conditional on purchasing a one-year license from the copyright owner. In practice, the current version of the test should always be used, while the older version should be used under the terms of the copyright owner, Uniform Data System For Medical Rehabilitation (www.udsmr.org)¹⁰. This is a huge problem for conditions in the Czech Republic, since the license lasts only one year.

In Europe and in the USA, the FIM or BI tests are used to determine whether the rehabilitation services for the patient will continue to be covered from the health insurance plan. It depends whether the patient continues to improve in a certain timeframe, according to the evaluation of these tests.

3. Functional Assessment Measure (FAM) – this test is not very well known in the Czech Republic and is not used in the country. It is a standardized test on activities of daily living, covering, like FIM, certain items from the cognitive and psychosocial areas, while also including an additional eighteen items. These extended items contain further cognitive functions as well as some of the instrumental activities of daily living. This

⁸ M. Lippertova-Gruenerova, *Neurorehabilitace, (Neurorehabilitation)*, Prague, Galen, 2005, p. 350

⁹ UDSMR – *Uniform Data System For Medical Rehabilitation, The Fim System Clinical Guide*, Version 5.2., New York, Uniform Date System for Medical Rehabilitation, 2009, p. 183

¹⁰ K. J. Floriano, *Uniform Date System For Medical Rehabilitation*, Personal communication, 2009

test originated in Middlesex, Great Britain. FAM should be conducted within ten days of admission of the patient/client and seven days prior to discharging the patient/client¹¹. Advantages and disadvantages of the test are comparable to those of the FIM test. The difference is that this test is more comprehensive than the FIM test and it is not necessary to buy an extra license for it. However, the user should have a current license for FIM and complete a course on its practical application.

- 4. Test of instrumental activities of daily living (ADL)** – a standardized test of instrumental activities of daily living. The following areas are evaluated by the test: use of public transportation, grocery shopping, cooking, telephoning, etc. Like the BI test, it is classified at three different levels: whether the patient performs the activity independently, with assistance or whether they are entirely unable to perform the activities – using scores of 0, 5 and 10. The advantages and disadvantages of the test are similar to those of the BI test. Disadvantages are that the test is not sufficiently sensitive to minor changes in the functional status of the patient/client and vice versa, while the advantages are quick and simple administration and interpretation.

Therapy

Various therapeutic approaches are used in occupational therapy focused on self-sufficiency. The ideal situation is a combination of any of the approaches within the therapy along with a selection of specific meaningful activity, in this specific case, some of the activities of daily living, which are selected individually according to the abilities, education, hobbies, and experience of the patient/client. To ensure that a person is as self-sufficient as possible within their functional abilities, the occupational therapist may use:

- Training of the activity
- Training of the given activity using a substitute mechanism or substitute movements
- Compensation for the activity using assistive devices or using modern technologies
- Compensation of the activity with the assistance of another person
- Recommendation of individual facilitators

Any of the neurodevelopmental approaches used in occupational therapy may be used to train the given activity or activities using substitute movements. For example, this may include the Bobath concept or the Affolter technique, or the therapist may use guiding, wherein the therapist guides the movement of the

¹¹ L. Turner-Stikes, *The UK FIM+FAM (Functional Assessment Measure) Developed by the UK FIM+FAM Version 2.1. Brief overview*, 1994

patient client. Due to the fact that self-sufficiency disorders very often involve a functional impairment of the upper extremity, it is necessary to combine several approaches, e.g. a neurodevelopmental approach combined with a biomechanical and kinesiological approach, in which the therapist prepares the upper extremity for the performance of activities such as facilitation or approximations. To train self-sufficiency, some of the following approaches may be used in the context of training activities:

- **Bobath Concept** (BC) is used in patients/clients as an approach aimed at solving problems in the area of functional capability disorders. The therapy leads to the best possible restoration of functions; the therapist tries to eliminate the pathology and pathophysiology in the movements. This concept aims at natural movements, and training of the affected limb should not be avoided during the given activity. The therapist should encourage the patient to become involved in all activities during their performance¹². BC is a 24-hour approach in which the therapist can select some of the elements that are effective for the patient and they are used throughout the day, not only during the therapy¹³.
- **Affolter technique** is based on the fact that patients with brain damage have reduced perception and processing of stimuli from the environment, have impaired interaction with the surrounding and therefore also have impaired movement abilities. The aim is to improve the impaired ability of perception and the processing of sensory information. This method is based on non-verbal communication and can therefore be used even in patients in coma¹⁴. We make every effort to ensure that patients are not exposed to “magic“. “Magic” means any acts that are performed by a second person for a person with disability, and under normal circumstances would be independently performed by that person. The occupational therapist tries to perform all operations together with the patient – client. The method tries to increase the intake of information from the surrounding environment by practising everyday situations¹⁵.
- **Compensation of activities using assistive devices** helps the patient in the activities of daily living with the objective of achieving maximum

¹² L. Meadows, S. Raine, M. Lynch-Ellerington, *Bobath concept: theory and clinical practice, „(neurological rehabilitation)“*, Oxford, Wiley-blackwell, 2009, p. 216

¹³ INTERNATIONAL BOBATH INSTRUCTORS TRAINING ASSOCIATION, An international association for adult neurological rehabilitation, [online], Amstelveen, Bobath concept, 2013, [cit. 2013-11-03], available from: <http://www.ibita.org/>

¹⁴ D. Pavlu, *Specialni fyzioterapeutické koncepty a metody I. (Special physiotherapy concepts and methods I.)*, Brno, CERM, 2002, p. 239

¹⁵ M. Lippertova-Gruenerova, *Neurorehabilitace, (Neurorehabilitation)*, Prague, Galen, 2005, p. 350

self-sufficiency. The patient/client in the Czech Republic can get the assistive device:

- assistive devices in the area of personal ADL reimbursed from the health insurance
- assistive devices in the area of instrumental ADL, reimbursed from social benefits, utilities for work reimbursed from resources of the Employment Act in the “Vocational rehabilitation” chapter, teaching aids for children and adults reimbursed based on the law regulating primary, secondary and high schools/universities from the chapter for education of people with special learning needs
- assistive devices reimbursed by civil associations, foundations, charitable organisations of people with the disability and their families and friends
- assistive devices paid by the patient/client¹⁶ assistive devices reimbursed from the health insurance plan in the Czech Republic, may be obtained by the patient based on a medical prescription. The occupational therapist will recommend the specific aid/device, try out the aid/device with the patient and train the patient to use it. It is necessary to try out certain equipment in the home environment and possibly in its surroundings where it will be used by the patient on a daily basis. The aids/devices reimbursed by the health insurance companies are listed in the code list of Všeobecná zdravotní pojišťovna (VZP) (Czech General Health Insurance Company). These aids/devices can be reimbursed in full or in part or they are not reimbursed at all and are purchased by the patient on their own¹⁷.

The occupational therapist, along with a physiotherapist, recommends appropriate aids and devices for movement, e.g. canes, crutches, walkers, such as different types of rollers, four-point, three-point walkers, tools for self-care, which sometimes are not reimbursed by health insurance – e.g. specially adapted cutlery with reduced weight, curved, with thickened grip, etc., incontinence supplies, aids and devices for people with sensory disabilities, for people with cancer such as wigs, breast forms. These may include assistive devices for bathrooms, kitchens, living rooms, stairs, etc., such as toilet seat extensions, bathtub seats, hoists, special shelves in the kitchen, handrails, stair platforms.

¹⁶ V. Hejzlarova, K. Pokorna, *Poradím si sam! Kompenzacni pomucky a upravy prostredi v praxi (I can handle it myself! Compensatory aids and environmental adjustments in practice)*, Prague, Asistence, o. s., 2012, p. 60

¹⁷ VZP – Všeobecná zdravotní pojišťovna (Czech General Insurance Company), [online], VZP, 2012, [cit. 2012-8-20], available from: <http://www.vzp.cz/uploads/document/ciselnik-860-metodika-860.pdf>; V. Hejzlarova, K. Pokorna, *Poradím si sam! Kompenzacni pomucky a upravy prostredi v praxi (I can handle it myself! Compensatory aids and environmental adjustments in practice)*, Prague, Asistence, o. s., 2012, p. 60

When selecting assistive devices, the occupational therapist evaluates not only the functional status of persons with disabilities, but also the cognitive function of the patient/client, which must be at a level to understand the use and instructions for use of the device, and be able to use it safely. The patient's own initiative is essential so that he/she can clearly understand when and in which daily life situations the device is to be used.

The safety of persons with disabilities is a priority, and the occupational therapist must accept this fact in all activities with the patient. The occupational therapist will try to eliminate the risk of falls by preventive instructions, the appropriate placement of furniture, non-slip floor surface design and adequate supplies of assistive devices.

Evaluation of the apartment and barrier-free environment

Along with occupational therapy focused on self-sufficiency, it is often necessary to make a home visit to the patient/client so that the occupational therapist can evaluate the functional status of the patient/client in their home.

Home visits are very closely related to the provision of occupational therapy in the community. Unfortunately, this area of occupational therapy is not very common in the Czech Republic. The reason is that occupational therapy is classified as a healthcare profession in the Czech Republic, where the healthcare and social spheres are separated according to the competences of the Ministry of Health and the Ministry of Labour and Social Affairs. In practice, occupational therapists work in social services and health services. Under healthcare legislation, an occupational therapist can be employed in the healthcare sector and the work is reimbursed from the health insurance. In social services, occupational therapists often work in positions of social workers, etc. Therefore, it is not common in practice that an occupational therapist provides intervention in the patient's home environment. On the contrary, this is normal in Sweden. Occupational therapists provide an assessment of the home environment in terms of barrier-free access as well as common therapy at home.

In the Czech Republic, the most frequent service is the assessment of the home environment. Occupational therapists come for home visits to the patients' homes and provide them with advice regarding the environment to enable patients to be self-sufficient as long as possible without the need for assistance. Thus, they determine the specific facilitators and recommend the removal of barriers. This information and adjustment or even replacement of the living space is essential to allow a disabled patient to return home as soon as possible. These home interventions are most frequently provided from social service resources, less frequently from health service resources.

A home visit should be performed well in advance before the patient's return from the hospital. The occupational therapist helps recommend appropriate adjustments to the apartment or house so that a person with a disability is as self-sufficient as possible.

People react differently at home than in a foreign environment (hospital, institutional). They can move better in their familiar environment, where they are able to overcome certain barriers. In many cases it is necessary not only to evaluate the home environment, but also to provide training with respect to occupational therapy in the home environment of the patient/client. During the home visit, it is useful to evaluate the interior of the apartment and recommend adjustments to the apartment; and assistive devices; it is also important to evaluate the exterior and the nearby surrounding of the apartment or house and to recommend the removal of barriers. It is important to take into account the surroundings of the apartment in relation to the use of a manual or electric wheelchair, whether the patient/client in a wheelchair is able to get home, into the elevator, and from the house. It is necessary to consider the width of the door, the size of rooms and other architectural parameters. If the apartment cannot be adjusted, an individual with a disability can apply for a barrier-free apartment.

Home visits can also be used for basic tests of cognitive function, assessment of client satisfaction (quality of life questionnaire), or to fill out a questionnaire about hobbies.

During the home visit, the occupational therapist suggests:

- correct placement of furniture so that a person with a disability has plenty of support points around them throughout the apartment
- sufficient number and accessibility of lighting controls
- removal of carpets and thresholds (eliminating the risk of falling)
- appropriate assistive devices (e.g. bathtub seats, non-slip pad, handles, WC extensions)
- further remodelling of the apartment (rebuilding the bathtub as a shower stall, barrier-free WC accessible by wheelchair)

During the home visit, the occupational therapist should preferably cooperate with the social worker, wherein the occupational therapist proposes modifications of the apartment and the social worker informs the person with the disability and their family about the possibilities of long-term social benefits and services and offers them the possibility of long-term counselling. Sometimes cooperation between the occupational therapist and physiotherapist is also important if an appropriate movement is to be recommended to perform specific activities in a barrier environment.

Occupational therapy with the aim of improving functional abilities of the upper extremity

The main subject of occupational therapy is therapeutic approaches focused on upper limbs and aimed to maintain their functional level. Occupational therapy focused on motor skills is very closely linked to occupational therapy focused on self-sufficiency, because an individual with damage to the upper limbs very often has a reduced level of self-sufficiency. The quality of life depends on the given case, on the motivation and skills of the individual and on the possibility of using assistive devices. The motivation of persons with a disability is a very important factor, as it is impossible to achieve the goal without motivation. If the patient/client does not want to improve in their functional status, the therapist, after a careful and detailed review of the medical history, should find an activity which the patient was able to do in the past and is able and likes to do in the present. Hence, the occupational therapist must positively motivate the patient so that they are able to manage certain activities. It turns out that motivation changes positively when the patient is performing activities for which they have positive emotions. In these cases, the functional examination of the brain strongly shows increased activity. Therapy should be planned together with the concerned individual, and we should try to motivate them as positively as possible during the therapy. The activity to be trained must be relevant and meaningful for the given person, and everyone should be given their own choice of activities.

Assessment

Examination, evaluation and subsequent diagnosis of motor skills and function of the upper limbs are also possible using objective and subjective methods.

The most widely used standardized objective tests include:

Jebsen Taylor test, used to evaluate fine motor skills and function of the hand. The test includes tasks focused on the graphomotor function of the dominant and non-dominant upper limb, rotation of cards and work with light and heavier objects. The test is intended to simulate activities of daily living. The duration of the test is about 30 minutes, and its interpretation takes about 15 minutes¹⁸. Acquisition requires only a single purchase of the test; the manual is included in the test and its practical application requires no training course.

Purdue pegboard test (model 320 20) is a test that simulates a job in a factory. It focuses on the dexterity of hand, its coordination and assessment of gross and fine motor skills. The test originated in the USA, where it was intended

¹⁸ JEBSEN TEST OF HAND FUNCTION, [online], Sydney, Jebsen summary, 2012, [cit. 2013-11-12], available from: <http://www.rehabmeasures.org/Lists/RehabMeasures/DispForm.aspx?ID=1025>

mainly for the selection of employees for factories¹⁹. In the Czech Republic, it is used mainly as part of prevocational rehabilitation, but can also be used for assessment of the grip in normal patients to evaluate the effects of therapy. The test contains tasks for the dominant and non-dominant limbs for both the upper and lower limbs at the same time. The test primarily involves moving pins into holes and assembling various components.

Jamar dynamometer evaluates the muscle strength of hand grip, i.e. grip on a variety of levels. The device has five spans: 9 cm, 12 cm, 14.5 cm, 17 cm, 20 cm, wherein various muscles of the hand are involved for each setting²⁰.

Therapy

As part of therapy, identical approaches listed for occupational therapy focused on self-sufficiency can be used. Depending on the selected approach, the most frequent objective of occupational therapy is suppression of the pathological and pathophysiological patterns of movement and pathological co-movements during the performance of the activity. It is optimal to achieve the highest possible involvement of both upper limbs in the normal activities.

In some cases, this involvement is not possible because one of the upper limbs is plegic or severely spastic. In this case, the occupational therapist supports at least passive involvement of damaged upper limbs in any activity; for example, it is possible to use the limb as a weight during fixation of objects. The occupational therapist emphasizes the appropriate posture of the joints and trains the patient/client to improve their fine and gross motor skills. The occupational therapist uses escalation during the therapy, and its aim is to improve the performance of the patient by changing the environment or process of the task being performed²¹. Therapy can be focused on a specific activity which is troublesome for the patient/client, i.e. which is associated with the limitation of activities. The therapist selects specific interventions that improve the function of the hand in order to achieve the optimum possible level of the activities and functions.

¹⁹ PURDUE PEGBOARD TEST USER INSTRUCTION, [online], Parkway North, Purdue Pegboard model 320 20, User manual, 2004, [cit. 2013-11-12], available from: <http://www.google.cz/url?sa=t&rct=j&q=&esrc=s&source=web&cd=15&ved=0CJ4BEBYwDg&url=http%3A%2F%2Fwww.siinstruments.com.au%2Flafayette%2Ffiles%2Fdownload%2Flafayette-current-version-purdue-pegboard-test-32020-lafayette-32020-purdue-pegboard-test-manual-pdf.html&ei=-47CUv7eNoTBtAaOroHADg&usg=AFQjCNG-JMZ3d0y6kUyDNsdD5Td9csdqta&sig2=Q15H6CMMESibqaO6coNcVA&bvm=bv.58187178,d.Yms>

²⁰ JAMAR HYDROLIC HAND USER INSTRUCTION, [online], Parkway North, Jamar Users manual, 2004, [cit. 2013-11-12], available from: <https://www.chponline.com/store/pdfs/j-20.pdf>

²¹ M. Krivosikova, *Uvod do ergoterapie (Introduction to occupational therapy)*, Prague, Grada Publishing, a. s., 2011, p. 364

Occupational therapy focused on cognitive functions

Cognitive functions affect the level of performance of the activities of daily living. In the Czech Republic, functional diagnostics of cognitive functions are made by a psychologist or neuropsychologist, while behavioural therapy is carried out by an occupational therapist. The occupational therapists must pass two semesters of special training by a neuropsychologist in order to perform these therapies. In some cases, the patient has no problems with their motor functions but is unable to perform certain activities due to a poor level of cognitive functions, e.g. they are unable to remember certain exercises due to a memory disorder. This concerns the use of cognitive functions in terms of practical everyday life (behavioural); the occupational therapist should not forget about human safety. Cognitive functions include learning functions – the essential functions of the brain – such as memory, attention, visual-spatial abilities, language and speech skills²².

Besides diagnosis performed by a psychologist, an occupational therapist often performs a preliminary diagnosis of various components of cognitive functions such as memory, attention, thinking, reading and writing with respect to the activities of daily living. The occupational therapist evaluates the consequences of the inability to perform various activities, e.g. when the patient/client is unable to sign their name, it is not possible for them to work with finances and collect funds from a bank using their specimen signature.

Occupational therapists commonly use various standardized cognitive tests:

- **Rivermead behavioural memory test** is used to detect impairment of cognitive functions, such as various types of memory (visual, auditory, prospective) and other cognitive functions using eleven subtests measuring behaviour and cognitive functions in different situations, e.g. by identifying faces or reproducing an article. A special version is available for children and seniors²³. The tasks involve remembering faces and different images. The patient must recall which face or image they have already seen. Another task is to remember the text after reading, remember and later recall the route around the room, remember where the patient's personal item has been hidden, and what the client is supposed to say when the alarm clock rings after 20 minutes of testing²⁴.

²² J. Klucka, P. Volfova, *Kognitivni trenink v praxi (Cognitive training in practice)*, Prague, Grada Publishing, a. s., 2009, p. 150

²³ O. Svestkova, et al., *Metodiky psychosenzomotorickeho potencialu cloveka (Methodologies of human psycho-sensorimotor potential)*, Prague, Rozvojové partnerství PENTACOM, 2008, p. 54

²⁴ M. Krivosikova, *Uvod do ergoterapie (Introduction to occupational therapy)*, Prague, Grada Publishing, a. s., 2011, p. 364

- **Minimental state examination** is a standardized test that is commonly used in the Czech Republic by a wide range of medical experts. It is used to examine orientation in time, spatial orientation, naming, attention, ability to repeat and other tasks. It serves primarily to distinguish people with dementia²⁵. Administration of the test takes about 20 minutes²⁶.
- **Adenbrook cognitive test** is slightly more detailed than the Minimental state examination, and can differentiate Alzheimer's disease from atherosclerotic dementia²⁷. It contains both the test items from the Minimental state examination and the clock test. It contains eighteen items, which are used to test recall, naming, perception, and other items²⁸.

Treatment of cognitive functions

The occupational therapist uses training, exercise and compensation with various aids and devices. Cognitive functions can be practised specifically through various exercises, such as memory. Short-term memory can be used e.g. to practise remembering images, words and numbers. Cognitive functions are practised comprehensively as part of common activities of daily living. An example is cooking – the patient should be able to remember the recipe and procedure for the use of ingredients. The client can be guided using a variety of tools, such as correctly arranged pictograms. Verbal and non-verbal aids are used that help remembering when recalling various associations or ideas or a story related to the things and objects that the patient is to remember.

To compensate for cognitive functions, the occupational therapist uses a variety of normal and common aids like keeping a diary, using a pencil and paper, various information and remembering boards, charts, an alarm clock, PC software and more.

Prevocational rehabilitation

As part of prevocational rehabilitation, the occupational therapist evaluates the functional potential of people for occupation. Prevocational rehabilitation is one of the means of rehabilitation. However, the prevocational rehabilitation is not only performed by occupational therapist but also by other professionals

²⁵ M. G. Folstein, S. E. Folstein, P. R. MC Hugh, *Mini-mental state: a practical method for grading the cognitive state of patients for clinicians*, „Journal of psychiatric research” 1975, Nr 12, p. 189–198

²⁶ M. Krivosikova, *Uvod do ergoterapie (Introduction to occupational therapy)*, Prague, Grada Publishing, a. s., 2011, p. 364

²⁷ M. Orel, V. Facova, *Clovek, jeho mozek a svet (Man, his brain and the world)*, Prague, Grada publishing, a. s., 2009, p. 256

²⁸ M. Krivosikova, *Uvod do ergoterapie (Introduction to occupational therapy)*, Prague, Grada Publishing, a. s., 2011, p. 364

from the inter-professional rehabilitation team. The prevocational rehabilitation is initiated in the rehabilitation process once the patient has been stabilized and is no longer functionally improving. We evaluate their general psychosensomotor potential to work and initiate vocational rehabilitation in cooperation with employment authorities. Vocational rehabilitation under the Employment Act falls under the competence of employment authorities. Prevocational rehabilitation in the Czech Republic can now be requested by occupation advisers from employment authorities, who turn to the inter-professional rehabilitation department; in this case, this examination is also reimbursed by the employment authority from active employment policy funds. In the Czech Republic, we now have an established network of inter-professional rehabilitation centres (we have thirteen regions, one centre per region), where we create a unified methodology for determining the potential to work as part of the EU EQUDEL project and now from the project of the Ministry of Labour and Social Affairs. We create personal, factual and material standards which the Ministry of Labour and Social Affairs will use to grant accreditation by the end of next year to the facilities which will be able in the future, in cooperation with the relevant authorities, to carry out the prevocational rehabilitation that will be reimbursed from the resources of the employment agency. Currently, the prevocational rehabilitation may also be requested by the treating doctor. However, if the applicant is a doctor, this will be only partially reimbursed from the health insurance. This case concerns not only prevocational rehabilitation as such, but also the examination of functional potential. The client will be examined by each member of the inter-professional rehabilitation team: doctor, physiotherapist, occupational therapist, psychologist and, if necessary, speech therapist, special education teacher, and social worker. Conclusions from the examination are then consulted by the team members at the rehabilitation conference. The aim of the conference is to identify the positive recommendations, recommend suitable job positions, or if appropriate, specific job positions, the need for breaks, job aids, workplace ergonomics, to recommend options for transportation to the work or to recommend work at home. Negative recommendations are also determined, i.e. which work activities must be avoided by the client to prevent damage. These include carrying limitations and limitations of physical activity.

As part of the prevocational rehabilitation, the occupational therapist obtains a detailed medical history focused on education achieved, work activities and experience and hobbies, sports and so on, and identifies further details in cooperation with the social worker based on social history; the occupational therapist then provides a general determination of the level of cognitive functions. The occupational therapist detects and examines the ability to perform activities of daily living, motor function of the upper limbs, areas of interest, daily and weekly schedules, habits, subjective ideas about work potential, and so on.

Standardized tests used by the occupational therapist, physiotherapist and doctor as part of the prevocational rehabilitation in the Czech Republic include the **Isernhagen work system**, which is a set of tests aimed at the performance of heavy manual labour such as carrying and lifting heavy objects, work with hands above the head, and so on. This testing also includes Jamar dynamometer tests on fine motor skills of the upper limbs and subjective tests on employment opportunities. The Isernhagen Work System comes from the USA, but has been standardized for Europe. The use of the test is subject to the completion of a special training course. It is intended for people with a disability and without education or for those with only primary education who perform mostly manual labour²⁹.

Occupational therapy focused on the daily program and leisure activities

Each person should have a feeling of self-fulfilment. If not, the quality of life is reduced, resulting in a sense of dissatisfaction and depression. Sufficient leisure activities and interests contribute to the feeling of positive fulfilment. Therefore, this area is important and the occupational therapist must address it in their practice. Leisure activities can gradually become the basis for a long-term occupational therapy plan to complete education or find place on the labour market. Recreation and leisure time are also necessary to complement normal working activities, stress reduction and relaxation. Leisure activities are associated with positive emotions and motivation of the patient. Motivation is of great importance in the entire occupational therapy and throughout the rehabilitation process. Identification of the interests of the patient/client may be the basis for further adjustment of the occupational therapy plan. The occupational therapist must identify the favourite leisure activity of the patients not only in the present but also before the illness or injury, and try to find a way to allow the person with a disability to perform these popular activities again. Sometimes adaptation to the environment is sufficient and the patient can return to their leisure activities. The occupational therapist must identify information about the interests and leisure activities of the patients using interviews, standardized questionnaires or observation during specific activities. The therapist can create their own custom forms. Leisure activities are also important in achieving the optimal quality of life for seniors.

Conclusion

The objective of occupational therapy is to achieve the inclusion of the patient in their original environment to achieve the highest possible quality of life. The

²⁹ O. Svestkova, et al., *Metodiky psychosenzomotorického potencialu cloveka (Methodologies of human psycho-sensorimotor potential)*, Prague, Rozvojove partnerstvi PENTACOM, 2008, p. 54

means to achieve this goal is a meaningful activity selected individually according to the personality of the patient/client. The modern philosophy of occupational therapy uses the biopsychosocial model of the International Classification of Functioning, Disability and Health, WHO³⁰. The classification takes into account the holistic model of rehabilitation as well as occupational therapy, which focuses on functional ability, participation in society, facilitating environmental factors, personal factors of a person with a disability and therefore takes a person as a whole in combination with the environment in which they live³¹.

The International Classification of Functioning, Disability and Health, published by the World Health Organization in May 2001, is divided into components, domains and qualifiers. It is necessary to consider body functions and structures at the organ level, activities and their limitations, participation restrictions, with barrier or facilitating environmental elements and personality factors. Disability situations in which a person with a disability occurs should be evaluated; after resolving these situations by using various facilitators, a person with a disability can fully enjoy his/her “**functional health**”.

The objective of occupational therapy is to achieve an optimal quality of life for a person with a disability. This includes a timely return to the home environment, the educational process (school, retraining), the labour market and the return to the common labour market, with the help of supported employment or protected job position, and using all the available long-term services and support mechanisms available in the Czech Republic. An occupational therapist is an important, substantial and irreplaceable expert who is essential for achieving optimal inclusion and quality of life of a person with a disability at any stage of life.

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³⁰ O. Svestkova, J. Pfeiffer, *Mezinarodni klasifikace funkcnich schopnosti, disability a zdravi, „Neurorehabilitace”*, (International Classification of Functional Abilities, Disability and Health), „Neurorehabilitation“, Prague, Galen, 2003, p. 350

³¹ O. Svestkova, P. Sladkova, K. Svecena, *Mezinarodni klasifikace funkcnich schopnosti, disability a zdravi, WHO (MKF), International Classification of Functioning, Disability and Health, WHO (ICF)*, Prague, Charles University in Prague, 1st Faculty of Medicine, 2010, p. 44

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