

APPLICABILITY OF THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH AS A TOOL FOR DETERMINING BENEFITS FOR SPECIAL AIDS AND EQUIPMENT IN THE SOCIAL SECTOR

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Abstract

The International Classification of Functioning, Disability and Health (ICF) has wide application in the field of rehabilitation. To date, it has been the only tool to combine health and the social view of the patient in the area of services provided. It defines not only the aetiological diagnosis, but also the functional condition of the patient and their participation in society in relation to environmental factors. With the correct enactment in health and social legislation, this classification can be used to provide an effective tool for determining the necessary long-term social services and benefits. In the rehabilitation process of patients/clients in the Czech Republic, the interconnection and coordination of medical and social components is still lacking. Throughout its domains, the ICF covers the area of activities and participation in conjunction with environmental factors. Evaluation of environmental factors is the domain of an occupational therapist. This study focuses primarily on the practical use of the ICF in the area covered by the Act regulating the provision of benefits for special aids and equipment. This act defines the requirements for special aids and equipment for persons with severe disorders of the supporting or musculoskeletal system (modification of motor vehicles, apartment remodelling, special modifications of computers, portable ramps, stair climbers, loadings skids and stair lifts (including installation), requirements for special aids and equipment for the severely visually and hearing impaired. In this study, we focus mainly on the use of the ICF for assessing the entitlement to special aids and equipment for persons with serious disorders of the supporting and musculoskeletal systems, wherein 30 clients were coded using the ICF, activities and participations were determined, including the resulting facilitators or barriers of the environment (environmental factors) that have a major impact on the client's self-sufficiency, their opportunity to live in their home environment and to achieve the maximum possible quality of life.

Key words: activity; participation; environmental factors; functioning; facilitators and barriers; quality of life

Abbreviations and units (standard and SI units)

ADL, Activity of Daily Living

EU, European Union

FAM + FAM, Functional Independent Measure + Functional Assessment Measure

ICF, International Classification of Functioning, Disability and Health

MHADIE, Measuring Health and Disability in Europe: supporting policy development

QL, Quality of Life

UN, United Nations

WHO, World Health Organisation

WHO-DAS II, World Health Organisation's Disability Assessment Schedule 2.0

INTRODUCTION

The International Classification of Functioning, Disability and Health (ICF) is the first classification that was created by the World Health Organisation as a biopsychosocial model. The ICF uses a holistic (holographic) view of human beings (WHO 2001).

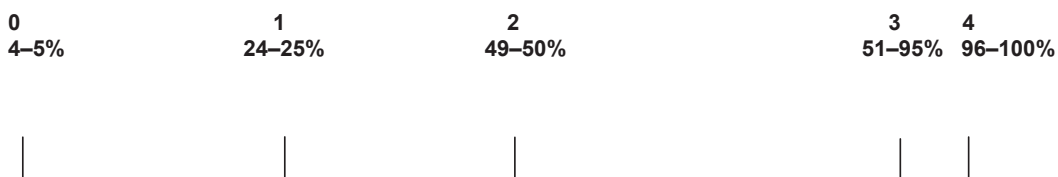
The ICF has a wide range of practical use. It is intended for various disciplines and sectors, but one of the main reasons this classification was created was to provide a versatile tool for the assessment of the health and functional condition of humans (Peterson 2005, WHO 2008). Once a disease is cured or an injury heals, the quality of life may change in some patients/clients, as the consequences of the disease can interfere with or affect their subsequent everyday life (Švestková 2007).

Until that time, these effects and consequences could not be classified in the respective individuals. The classification helps objectively evaluate not only their health, but also their social condition with the objective of achieving the greatest possible participation in society. The main principle of the ICF is a shift from the perspective of the separate medical and social models to the biopsychosocial model. The classification

evaluates the “Disabling situations” in which a person may find himself/herself. When these situations are managed using facilitators, a person with a disability is able to fully use their functional health (Švestková 2007).

Use of the ICF has great potential for possible changes in the social system precisely because it is a holistic view of a human and therefore uses the interconnection of health and social aspects as opposed to the traditional medical model. An important factor is the identification and removal of barriers just by indicating specific facilitators. Failure to remove barriers can be a great limitation to the participation of disabled persons at the community level (Howard et al. 2008).

Some social legislation in the Czech Republic uses the philosophy of the ICF and accordingly determines the amount of certain allowances and benefits (the five-step system according to the Likert scale (Graph 1). This applies, for example, to disability pensions. The system of the functional assessment of the client is designed according to the ICF principle. Clients who have their functional ability limited by 50% or more, i.e. the second and third degree of disability pension, are classified as severely and very severely disabled according to the ICF.



Graph 1. Likert scale

According to Decree 359/2009 Coll. (based on Act 155/1995 Coll., as amended, and Decree 284/1995 Coll., as amended) in its current wording, the following functional assessment shall apply:

Grade I disability – if the working ability has decreased by 35% to 49% as a result of the long-term unfavourable health condition.

Grade II disability – if the working ability has decreased by 50% to 69% as a result of the long-term unfavourable health condition.

Grade III disability – if the working ability has decreased by at least 70% as a result of the long-term unfavourable health condition.

When determining the degree of disability, physician reviewers rely on the results of functional tests (Zvoníková et al. 2010).

Another example of the practical use of the ICF is allowance for care in accordance with Decree No. 391/2011 Coll. The amount of the care allowance is assessed in ten key areas according to the person's ability to manage the following activities and is processed according to the ICF domains: mobility, orientation, communication, food, clothing and footwear, personal hygiene, physiological needs, health care, personal activities, household care.

The majority of both professionals and lay people and citizens with disabilities and their families believe that this involves only the evaluation of the ten basic human functional capabilities.

But in reality it does not:

- **Mobility**, in which a person is evaluated according to their ability to get up and sit down, stand, change different positions, walk at least 200 m (including over an uneven surface), walk up stairs (at least one floor) and use means of public transportation.
- **Orientation**, in which a person is evaluated according to their ability to recognize and distinguish things using vision and hearing, be oriented in time and place, orientated by person and be oriented in unusual environments and situations.
- **Communication**, in which a person with a disability is evaluated according to their ability to communicate and understand, communicate clearly in spoken and written language, to understand pictorial symbols or audio signals and use ordinary means of communication.

- **Consumption**, in which a person with a disability is evaluated according to their ability to choose for consumption prepared beverages and food, including self-service as to the food within their reach (pour a drink, cut and portion food, serve food, eat and drink).
- **Clothing and footwear**, in which a person with a disability is evaluated according to their ability to choose and wear clothes and put on shoes.
- **Physical hygiene**, in which a person with a disability is evaluated according to their ability to use sanitary facilities, wash and dry, to carry out the overall hygiene, comb, perform oral hygiene, shave.
- **Physiological needs**, in which a person with a disability is evaluated according to their ability to use the toilet, have bowel movements, clean themselves and use sanitary equipment.
- **Health care**, in which a person with a disability is evaluated according to their ability to comply with the prescribed treatment regime and use the necessary drugs and devices.
- **Personal activity**, in which a person with a disability is evaluated according to their ability to enter into relations with other persons to perform daily programs and activities typical for their age and environment.
- **Household care**, in which a person with a disability is evaluated according to their ability to manage money, handle objects of everyday use, perform household chores, etc.

(Regulation No. 108/2006 Coll., Decree No. 391/2011 Coll.)

Although the program assesses 10 basic areas, they encompass a total of 36 functional activities. This assessment has been prepared under the ICF philosophy and allows for an objective assessment of the functional condition of a person with a disability, thereby assessing the degree of dependence on help from another person and the provision of the care allowance (i.e., social services, personal assistance), which has four levels.

Like the ICF model, which has a 5-point evaluation scale, it also includes 0, which means that the client has no disability. In practice, this means that the range that

indicates disability begins from number 1 Evaluation of the care allowance, which has a 4-tier evaluation system, starts with class 1 and ends with class 4, i.e. the same range as the ICF.

The care allowance is intended for “purchasing” social services of personal assistance.

Act 329/2011 Coll. and Decree 388/2011 govern the provision of allowances for mobility and special aids and equipment. Special aids and equipment include: an allowance for the purchase of a vehicle, stair climber, ceiling lift system, stair platform and stair lifts, motor vehicle modifications, remodelling of apartments, special computer modifications, portable ramps, loading skids, special holding systems, aids for severely visually and hearing impaired. The granting of special aids and equipment is not linked to the ICF classification. Our study evaluates the allowance for special aids and equipment for physically disabled clients who are entitled to the special aid and equipment in relation to the use of the ICF (Regulation No. 329/2011 Coll., Decree No. 388/2011 Coll.). We believe that the use of the ICF would be an effective tool for objectively determining the allowance for special aids and equipment, according to the ICF terminology for determining the specific facilitator. The ICF does not evaluate the client’s health and disability but rather the “disabling situation”, i.e. the situation of the environment that causes the client’s disability. When addressing this disability situation, the client may fully utilize their functional abilities or functional health.

In 2014, the European Union created the Horizon 2020 grant call. One of the basic topics, “Health, demographic change and well being”, was used to create the European sites network project. Specifically, the Horizon 2020 grant call: H2020-PHC-2014-single-stage Topic: PHC-26-2014 Type of action: RIA Proposal number: SEP-210135669 Proposal acronym: ESTER. This project has received preliminary approval. In this call, the Czech Republic will be represented by the First Faculty of Medicine, Charles University, specifically the Department of Rehabilitation Medicine and the Faculty of Biomedical Engineering, the Czech Technical University in Prague and their joint site at the First Medical Faculty of Charles University

in Prague “Centre of Application Outputs a Spin-off Companies”. The project is conceived as a network of European centres that will develop databases of technical means and aids/equipment that eventually can be used in all European Union countries (translated into national languages). The database will be prepared in connection with facilitating environmental factors by the International Classification of Functioning, Disability and Health. A list of devices will categorize the necessary aids according to the specific functional abilities of the clients, for example, it will determine the specific appropriate and necessary aids to improve self-sufficiency and independence for people with different functional disabilities such as hemiparesis.

We believe that the ICF can help establish the system, organization and coordination of health and social services in the Czech Republic. This view is also supported by Martinuzzi et al. (2008), who claim that the ICF provides a revolutionary new view of health and social services showing the possible interconnection of these services based on the biopsychosocial model.

The use of the ICF in the Czech Republic is also applied in the area of compensation for impaired social functioning. Czech Ministry of Health Decree 440/2001 Coll. regulating compensation for pain and diminished social function, which defined the score assessment for diminished social function due to injuries and occupational diseases, ceased to be valid as of 1 January 2014. The compensation system for diminished social function was thereby terminated. The new Civil Code, Act No. 89/2012 Coll., which became valid as of 1 January 2014 and dictates full remedy of injuries assessed according to the judge’s best knowledge and faith. In cooperation with academic circles, the Association of Judges of the Czech Republic and the Czech Bar Association have been preparing a new bill on compensation for diminished social function according to the ICF. They established a working group that cooperated with the representatives of the Department of Rehabilitation Medicine, First Faculty of Medicine, Charles University and General University Hospital in Prague, which are licensed to teach the ICF, in the area of the joint training of lawyers, insurers, and doctors – sworn experts. The first course, which was

attended by more than 80 participants, took place at the Department of Rehabilitation Medicine on 7 and 8 April 2014, and on 2 and 3 June 2014; between these sessions, trainees were educated through an e-learning system (Decree No. 440/2001 Coll. Regulation No. 89/2012 Coll.).

Lawyers agreed that sworn experts who will speak about this issue must eventually take ICF courses (Mach 2014, Zdravotnické noviny 2014).

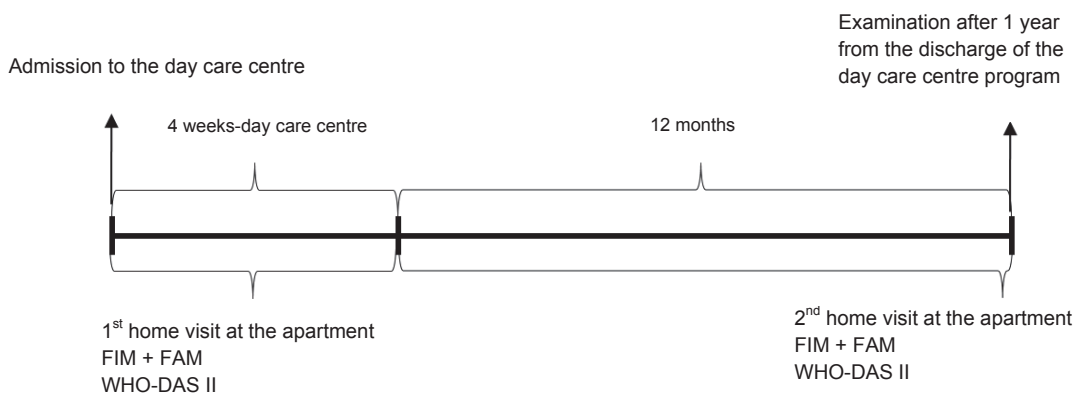
MATERIAL AND METHODS

Clinical research was conducted on 30 patients/clients with brain injuries who were or still are patients of the day care centre, Clinic of Rehabilitation Medicine, 1st Faculty of Medicine, Charles University in Prague and General University Hospital in Prague and, at the same time, were or newly became clients of certain social services. The day care rehabilitation centre of the clinic is the only healthcare facility of its kind in the Czech Republic that provides an intensive interprofessional rehabilitation program individually focused on patients following brain injury. It is community-based rehabilitation provided at the patient's home. After the end of the incapacity to work, it is necessary for the patient to use personalized long-term social support and services. All patients of the day care centre are at home and attend the clinic for four weeks on weekdays. They complete the individual program within the short-term interprofessional rehabilitation plan. A rehabilitation physician prescribes an examination by experts of the interprofessional rehabilitation team and the decision to admit the client to the day care centre of the clinic is jointly assessed by members of the interprofessional team (occupational therapist, physiotherapist, psychologist, speech therapist, special educator, social worker). In the event of a proposal to admit a patient to the day care centre, the goals and plan of the intervention are prepared. Each client must pass a social investigation. The social worker is a member of the interprofessional rehabilitation team and serves as a necessary and important member of coordinated rehabilitation. At the end of the day care centre stay, a case report

conference is held and individual members of the interprofessional team assess the functional condition of the client and decide regarding further procedures and determine additional goals and plans for the client, or the end of their rehabilitation process. They propose necessary social services and support and express their opinion on possible further education and perform prevocational rehabilitation, providing their general opinion on further possible employment.

All clients participating in the study were visited by the occupational therapist at their homes. Based on this home visit, an evaluation of the apartment was performed in terms of a barrier-free environment, and facilitation means were recommended. When possible, the occupational therapist proposed a barrier-free solution, consultancy and indicated necessary assistive devices. In the event a barrier-free solution was not available, a change of an apartment to a barrier-free one was recommended. When evaluating the home visit, the occupational therapist focused on the specific implementation of the Act regulating the provision of benefits for special aids/equipment for people with a physical disability. Specifically, the following recommendations were made (stair climber, ceiling lift system, stair platform and stair lift, apartment remodelling, special computer modifications, portable ramp, loading skids, special holding systems). In our study, the occupational therapist performed two home visits for each client, the first time during the day care centre program and thereafter one year after the end of the day centre program (Graph 2).

The evaluation of the apartment by the occupational therapists was performed during the four-week program in the day care rehabilitation centre, when the first home visit was performed. Some clients already had a part of the prescribed aids and equipment at home; some of them did not have any. The second home visit and assessment of the client by the occupational therapist took place one year after the end of the day care centre program. At that time, the client already had all the necessary information regarding the facilitating factors for the barrier-free environment. After one year, some of the clients already had their apartments adapted to a barrier-free environment or had moved



Graph 2. Time schedule of the course of testing of clients

to a barrier-free apartment; in some cases they even obtained the necessary technical equipment and assistive devices.

The occupational therapist, in cooperation with other team members during the patient's stay at the day care centre, performed the ICF classification of the client in terms of activities and participation and environmental factors. This classification identified the need for facilitating factors, and the occupational therapist was thereby able to indicate/prescribe specific environment facilitators, including special aids and equipment. The patient was evaluated according to standard methodologies: Functional Independent Measure + Functional Assessment Measure (FIM + FAM), and using the quality of life questionnaire – The World Health Organisation's Disability Assessment Schedule 2.0 (WHO-DAS II). We wanted to determine whether the client's participation after the provision of the necessary equipment and assistive devices improved in both objective and subjective terms. Objective methods of evaluation included measurable standardized methodologies. They have a precise description of the activities, a manual that must be strictly observed, while training courses are essential for some other methodologies. In contrast, the subjective methodology, which includes subjective quality of life questionnaires, takes into account the subjective view, perceptions and feelings of the client. The important thing is

a comparison of the objective and subjective views. A professional should always observe and consider the client's subjective view.

Functional Independent Measure + Functional Assessment Measure (FIM + FAM) is a standardized methodology to objectively assess the functional condition of the client in 36 items. It evaluates both self-sufficiency and items of cognitive and psychosocial functions.

The World Health Organisation's Disability Assessment Schedule (WHO-DAS II) questionnaire is a tool that evaluates an individual's subjective attitude and their view of the quality of life. WHO-DAS II was designed according to the ICF biopsychosocial model (Luciano et al. 2010). Within the 6th Framework Programme of the EU: Measuring Health and Disability in Europe: Supporting Policy Development (MHADIE), the interprofessional team of the Clinic of Rehabilitation Medicine made practical use of the ICF and WHO-DAS II for 100 patients after traumatic brain injury and 100 patients with multiple sclerosis (Švestková and Pfeiffer 2009). WHO-DAS II was thereafter designed as a subjective tool for evaluating the quality of life of the clients who require social services and support. The simultaneous use of the ICF and WHO-DAS II highlights the differences between the objective assessment by a professional in accordance with the ICF and the client's subjective opinion on their quality of life (McArdle et al. 2005, Cieza and Stucki 2005).

Objectives of the study:

1. To confirm the applicability of the ICF in the functional evaluation of activities and participation.
2. To confirm the applicability of the ICF in the area of facilitating environmental factors in order to achieve the highest possible quality of life.
3. To confirm the applicability of the ICF in the area of the bill on the provision of benefits to persons with disabilities, and amending related acts, for clients with physical disabilities entitled to special aids/equipment (stair climber, ceiling lift system, stair platform and stair lift, apartment remodelling, special computer modifications, portable ramps, loading skids, special holding systems).

Research question:

“Can the International Classification of Functioning Disorders, Disability and Health be used in connection with the Act on the provision of benefits for special aids/equipment (entitled to stair climber, ceiling lift system, stair platform and stair lift, apartment remodelling, special computer modifications, portable ramps, loading skids, special holding systems)?”

Data in our research was obtained from several sources:

- from talking to clients focused on the possible use of special aids and equipment;
- from observations of clients;
- from classifying clients according to ICF;
- from selected domains of activities and participation, wherein the performance (participation) in a particular domain was directly linked to a facilitating environmental factor (i.e., special aid/equipment);
- from using a standardized objective functional test FIM + FAM, which was used strictly for research purposes;
- from the use of the WHO-DAS II quality of life questionnaire.

Statistics

A targeted selection of 30 clients was used to select the basic study population. This work is focused on the practical use of the ICF in the area of participation and facilitating

environmental factors, which represent “special aids/equipment” in this research according to Act 329/2011 and Decree 388/2011 regulating the provision of benefits to persons with disabilities that defines the provision of benefits for special aids/equipment.

Specifically, according to said act, this includes entitlement to a stair climber, ceiling lift system, stair platform and stair lift, apartment remodelling, special computer modifications, portable ramps, loading skids, special holding systems.

The group of clients with acquired brain injury was made up of subjects with motor function disabilities. Each client signed an informed consent form to be enrolled in this study. The informed consent form was approved by the ethics committee of the General Teaching Hospital in Prague. The selected file contains a total of 30 clients: seventeen men (56.7%) and thirteen women (43.3%); the youngest client was 24 and the oldest 60 years of age, with the average age being 43 years. Twenty-one (70%) clients were from Prague, the remaining nine clients (30%) from the Central Bohemia Region.

Selection criteria for the study:

- acquired brain injury;
- motor function disorders – walking;
- men and women aged 24 to 60 years;
- signed informed consent form approved by the ethics committee of the General Teaching Hospital in Prague
- ability to understand instructions and the informed consent form (a psychological examination was performed on all clients for that purpose).

Criteria that excluded individuals from the study:

- severe sensory disturbances;
- severe speech and cognitive disorders;
- severe psychiatric disease;
- a lack of cooperation from the client;
- comorbidities that significantly affect the functional condition of the client.

Data obtained from our study were statistically analyzed using the non-parametric Wilcoxon paired test for two dependent samples.

RESULTS

In our study, we compared two cases of statistically significant differences between capacity (activity) and performance (participation) in subjects participating in our group. In the third case, we compared participation during the course of the day care centre program and after one year of living in the home environment.

1. The first research results we evaluated and processed statistically involved the population of clients who resided in the day care centre. These clients newly entered a 4-week program in the day care centre of the Department of Rehabilitation Medicine, as new clients. The results obtained during the stay of clients in the day care centre were compared to the activities and participation of individual subjects at the time the “special aids/equipment” had not already been indicated (Graph 2). A statistically significant difference was found for the Recreation and leisure domain at a significance level of 0.1, for the Transferring oneself domain at a significance level of 0.05. The significance level was 0.01 for the items of Changing basic body position, Movement around using equipment, Toileting, Eating and Preparing meals. The significance level was 0.001 for the items of Walking, Moving around within the home and Moving around in different locations, other specified – moving up and down the stairs, the domain Washing oneself, Using transportation, Caring for body parts, Dressing and Acquisition of goods and services.

2. The second results of our study show a comparison of the capacity and performance at one year after the completion of the day care centre program, when the subjects already were using special aids/equipment. These results indicate statistically significant differences between the capacity and performance at the significance level of 0.1 in the domain of Speaking, a statistically significant difference at the significance level of 0.05 for the domain of Solving problem, Transferring oneself and Recreation and leisure. A statistically significant difference at the significance level of 0.01 was detected for the domains of Changing basic body position, Movement around using equipment, Drinking,

Eating and Preparing meals, Doing housework and basic Economic self-sufficiency. After one year, clients were usually 60% facilitated with special aids/equipment.

3. The third research results compare performance (participation) classified according to the ICF in clients during their stay at the day care centre and subsequently at one year after the stay at the day care centre, when the subjects were already using their prescribed special aids/equipment that were linked to performance through the facilitating environmental factors. Results with statistically significant difference at the significance level of 0.1 are observed in the domains of Moving around in different locations (Graph 3), Moving around in different locations, other specified – moving up and down the stairs (Graph 4), Washing oneself and Recreation and leisure time. The results show statistically significant differences at the 0.05 significance level in the domains of Walking, Moving around within the home, Toileting and Caring for body parts.

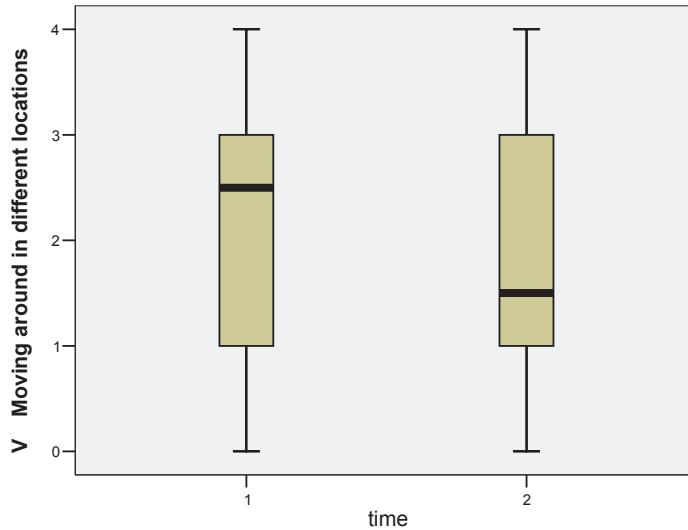
4. The fourth results in our study compared data from the objective FIM + FAM assessment, which was performed in a group of clients during their stay in the day care centre and one year after the end of the day care centre program, when clients were already living in a home setting and some of them (60%) had facilitating products available. A statistically significant result was the difference between the first and second assessment at the significance level of 0.1 for the items of Orientation, Attention, at the significance level of 0.05 for the items of Grooming, Dressing of the upper body, Car transfer, Walking/Wheelchair, Emotional status, Preparing food, Work – education, and at the significance level of 0.01 for the items of Dressing the lower body, Transfer from bed to wheelchair and back, Transfer to the toilet, Moving up and down the stairs, Community access, Shopping. At the significance level of 0.001, statistically significant differences were found for the items of Bathing, Toileting, Transfers from/to tub and shower and leisure time activities.

The first four results of our research work addressed the issue of the objective view of the professionals on the functional capabilities of the client.

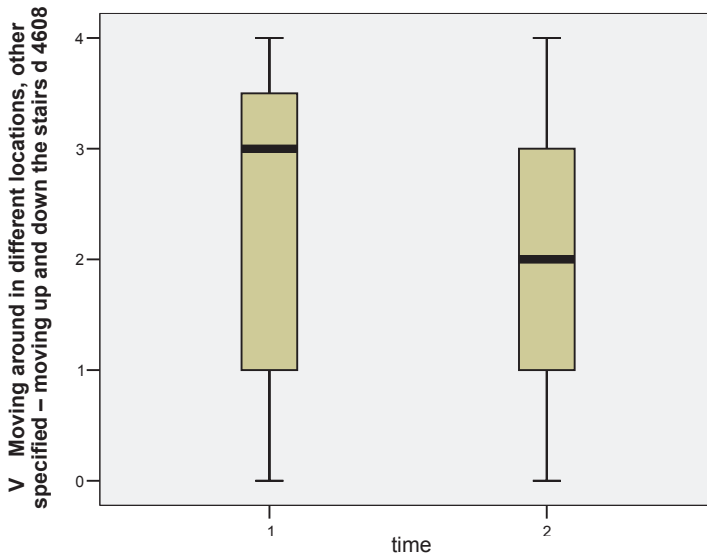
The fifth and last point of our research deals with the subjective view of the client's quality of life.

5. Other research results are related to the subjective perspective of the client. They compare the results of the WHO-DAS II quality of life questionnaire, which was given to

clients during their stay in the day care centre and after one year in the home environment, when the clients already had their facilitating means. These results indicate statistically significant differences at the significance level of 0.1 for the items of communication, going out with friends and family and high-



Graph 3. Comparison of Performance 1 and 2 in the domain Moving around in different locations, code d 4602 at the level of significance $p = 0.1$ (Results, section 3)



Graph 4. Comparison of performance 1 and 2 in the domain Moving around in different locations, other specified - moving up and down the stairs, code d 4608 at the significance level of $p = 0.01$ (Results, section 3)

quality processing of tasks. Statistically significant differences at the significance level of 0.05 were found for the items of long walks, whole body hygiene, quality of home tasks, completion of the necessary tasks, time loss due to illness and job position. Statistically significant differences at the significance level of 0.01 were reported for the items long-term standing, moving around the apartment, moving outdoors, independence, making new friends, home responsibilities, speed of performance, loss of income, respect for the environment and leisure. Statistically significant differences at the significance level of 0.001 were found for the items of getting up from a sitting position, social activities, surrounding barriers, mental condition due to the illness, financial situation.

DISCUSSION

We believe that the results of our study point to the possibility of using the ICF in the social sphere, as we present in our work, regarding one particular law. This result could be generalized to the overall applicability of the ICF during participation in society and the use of facilitating factors, in this particular case for indication of long-term social services and support (in our study, the prescription of special aids and equipment). This applies to the use of the ICF in social laws (social rehabilitation) as well as in the laws regulating the area of educational and vocational rehabilitation. This confirms the conclusion by Eldar, who claims that the ICF can contribute to the establishment of a uniform system for the evaluation of functional health and disability, i.e. health-related fitness, comparable to the national and international level (Eldar et al. 2008).

The results of our study confirmed the practical applicability of the ICF in relation to the Act regulating the provision of special benefits for clients with physical disabilities, specifically special aids and equipment.

Based on the results of our work after static examination, we can conclude that for the clients in day care centres, the following results were obtained regarding their capacity and performance (Results, point 1): a statistically significant difference was found for the domain of Recreation and leisure time

at a statistically significant difference was found for the Recreation and leisure domain at a significance level of 0.1, for the Transferring oneself domain at a significance level of 0.05. The significance level was 0.01 for the items of Changing basic body position, Movement around using equipment, Toileting, Eating and Preparing meals. The significance level was 0.001 for the items of Walking, Moving around within the home and Moving around in different locations, other specified – moving up and down the stairs, the domain Washing oneself, Using transportation, Caring for body parts, Dressing and Acquisition of goods and services. Based on these results, it is evident that the clients have already had some facilitating means, given the differences between the activity (capacity) and participation (performance).

In this case, facilitating means are:

- a) The intensive rehabilitation program of the day care centre resulted in education, instruction training, practical examples, training in the area of clients' activities of daily living, use of their full functional potential, strengthening of the overall physical condition. All of these rehabilitation goals of the interprofessional team help develop a positive feeling in the clients, who are thus better able to handle the tasks. We thereby increase their motivation and improve their functional condition, i.e. performance (participation) in society. Rehabilitation should be initiated as soon as possible, optimally, as proposed by Barnes, immediately after the stabilization of the condition. This applies to timely rehabilitation when the interprofessional rehabilitation team is part of the team at intensive units. After achieving stabilization, the patient is first referred to the early rehabilitation inpatient ward, where they continue in individual intensive rehabilitation. This will probably help prevent complications such as muscle contractures, decubitus ulcers and so on, which may later negatively affect the functional condition of the client (Barnes 1999).
- b) In our work, clients already in the day care centres have had and started using assistive devices, mainly canes, crutches,

walkers, wheelchairs, aids for hygiene (toilet, washing), and other.

- c) All clients have received home visit by an occupational therapist, which included evaluation of the home visit as well as consultancy regarding the activities carried out so that the client is able to perform them independently in their home or with as little help from the family as possible. The client's family also received training. This is a facilitator, i.e. assistance from another person. The importance of family participation in therapy, as another member of the team, is also confirmed by Cameron (Cameron et al. 2012).

The results of our study compared the capacity and performance at one year after the completion of the day care centre (Results, section 2) indicate statistically significant differences between capacity and performance at the significance level of 0.1 in the domain of Speaking, a statistically significant difference at the significance level of 0.05 for the domain of Solving problem, Transferring oneself and Recreation and leisure. A statistically significant difference at the significance level of 0.01 was detected for the domains of Changing basic body position, Movement around using equipment, Drinking, Eating and Preparing meals, Doing housework and basic Economic self-sufficiency. Clients have improved even in domains that do not seem to be linked to special aids/equipment, such as the domain of Speaking, Solving problem, and Recreation and leisure. Clients who improved in speaking items attended speech therapy on a regular basis. After the delivery of special aids/devices and the necessary assistive devices, mental well-being improved, as the clients managed their activities separately and usually were not dependent on another person. The state of well-being contributed to the development of speech and problem resolution. By acquiring special aids such as a ramps and stair climbers, clients were able to begin to operate independently outdoor leisure activities, and therefore improved even in these items. Some of them could begin to perform gainful activities, and therefore improved in the items of economic self-sufficiency. We consider this point to be very crucial – the ultimate success of rehabilitation

of the clients in the productive age is their employment. Because during one year clients were provided not only with special aids/equipment, but also with the necessary assistive devices such as a mechanical wheelchair, handles and tools for self-care, they improved in the domains of moving using various equipment, drinking, eating and preparing meals, and doing housework.

Comparison of statistically significant results regarding the clients' performance during the time when they resided in the day care centre and at one year after the end of the day care centre program (Results, section 3). Results with statistically significant difference at the significance level of 0.1 are observed in the domains of Moving around in different locations, Moving around in different locations other specified – moving up and down the stairs, Washing oneself and Recreation and leisure time. The results show statistically significant differences at the 0.05 significance level in the domains of Walking, Moving around within the home, Toileting and Caring for body parts.

For the domains of Moving around in different locations, Moving around within the home, Moving around in different locations other specified – moving up and down the stairs, Toileting, Caring for body parts and Washing oneself, it could be expected that the results for evaluation of performance after one year would show improved performance, i.e. the participation of the client. At this time, i.e. after one year, clients have already obtained the necessary special aids/equipment. This fact was confirmed statistically for the domain of moving in the interior. Improvement was also achieved in the performance domains of moving in the exterior and climbing the stairs. As we mentioned, the performance condition changed statistically at the 0.05 significance level in the domains of Walking, Moving around within the home, Toileting and Caring for body parts – so washing themselves independently. The use of these items would have been more appropriate for assessing the entitlement to allowances for care in the area of assessment of self-sufficiency. However, use of these domains is necessary to obtain a comprehensive picture of the client's functional condition. Improvement in the performance of clients was not only driven by special aids/equipment, but also by all types

of assistive devices that the client received based on the advice of an occupational therapist, physiotherapist or other members of the interprofessional team. Improvement was also achieved in items seemingly unrelated to specific aids/equipment, such as recreation and leisure time. Being able to get out independently thanks to the use of special aids/equipment, some clients could also begin to enjoy leisure activities that affect the inner feelings of the client and their self-fulfilment. Therefore, it is necessary to evaluate the client as a whole with all their functional abilities.

Of the statistically significant results from the comparison of trials according to FIM + FAM (Results, section 4) which took place during the clients' stay at the day care centre and then one year after the end of the day care centre program, the following items emerged as statistically significant results: at the significance level of 0.1 for the items of Orientation, Attention, at the significance level of 0.05 for the items of Grooming, Dressing of the upper body, Car transfer, Walking/Wheelchair, Emotional status, Preparing food, Work – education, and at the significance level of 0.01 for the items of Dressing the lower body, Transfer from bed to wheelchair and back, Transfer to the toilet, Moving up and down the stairs, Community access, Shopping. At the significance level of 0.001, statistically significant differences were found for the items of Bathing, Toileting, Transfers from/to tub and shower and leisure time activities.

The items of orientation and attention improved through rehabilitation inter-professional intervention provided to clients during the day care centre program and outpatient attendance of the clinic. Another reason was the activation of the client at their home based on specific recommendations from the interprofessional team. After living one year in the home setting, the clients improved their orientation and attention because they felt safe, confident in the familiar home environment and fewer situations became stressful and the client was therefore better able to manage their emotional condition and even cognitive functions. The performance in the items of personal hygiene, dressing the upper half of the body, getting into a car, walking, meal preparation and work – education improved thanks to the acquisition

of the necessary assistive devices and special aids/equipment, but also due to the improved functional condition of the clients, as some clients after one year still attended the day care centre for interprofessional therapy, including occupational therapy, physiotherapy, speech therapy, psychology and special education at home.

Among the most important items related to the provision of benefits for special aids/equipment are bathing, personal hygiene, toilet use, moving into the bathtub and to the toilet, moving up and down the stairs. Due to the receipt of funds for bathroom remodelling, clients moved from an area where they required assistance or supervision to the area where they require no assistance but only an assistive device for the activity, or sometimes just a longer time. This is crucial, because in these cases the client is able to independently perform the above activities of daily living. Clients have improved in leisure activities and shopping. These instrumental activities of daily living improved among the clients due to special aids/equipment and therefore the client is able to get out and is able to perform the above activities. People with brain injury who cannot have a job have therefore more opportunities to engage in leisure activities. However, their ability to engage in these activities can be inhibited as a result of:

- a) cognitive impairment, such as poor control skills, problem solving, and decision making;
- b) social and behavioural problems leading to difficulties in maintaining social relationships;
- c) environmental barriers.

The interprofessional rehabilitation team should help them overcome these difficulties (New Zealand Guidelines Group 2006). But in order to overcome these problems, it is first necessary to identify them, which can be achieved by using FIM + FAM and the ICF.

The client's condition improved even in the items of the FIM + FAM objective evaluation associated with special aids/equipment. The scale of the FIM + FAM test proved more detailed and sensitive than the ICF scale and using a wider scale can detect changes in the functional condition of the client not revealed by the ICF. We therefore recommend that items related to participation

and environmental factors be, if possible, evaluated by an occupational therapist. In the event of ambiguity, the latter can use a standardized functional methodology for detailed evaluation of the functional condition, such as FIM + FAM, FIM and others.

Of the statistically significant results of the subjective evaluation using the WHO-DAS II questionnaire, which was carried out on clients during the day care centre program and then one year after the end of the day care centre program (Results, section 5), relevant statistical results in our work are at the significance level of 0.1 for the items of communication, getting along well with friends and family and the high-quality processing of tasks. Statistically significant differences at the significance level of 0.05 were found for the items of long walks, whole body hygiene, quality of housework, completion of necessary tasks and appointments. Statistically significant differences at the 0.01 level of significance are reported for the items of long term standing, independence, making new friends, home responsibilities, speed of execution, loss of income, respect the surroundings. Statistically significant differences at the significance level of 0.001 were found for the items of getting up from a sitting position, social activities, surrounding barriers, mental condition due to the illness, financial situation. Clients subjectively experienced improvement in the above-mentioned components. By providing the necessary special assistive devices, clients improved in the items of getting along well with friends and family, the high-quality processing of tasks, the quality of housework and completing of necessary tasks. For clients who are dependent on family members, there is an increased risk of problems in the family. No longer getting on well with loved ones is also due to the increased stress of family members exposed to the client's severe functional limitations in everyday situations. Kreutzer describes that 47% of family members of clients after traumatic brain injury have symptoms corresponding to a psychiatric diagnosis (Kreutzer et al. 1994). The provision of special aids/equipment and assistive devices to the subjects resulted in their greater autonomy (independence) and increased self-confidence, as they feel they are able to cope with daily activities much better.

For example, due to improved mobility they were able to begin to safely move around the house and perform some household chores. For the same reasons, they subjectively evaluated being able to handle the workload and thus actually start a job. This point is very important, as it is apparent from the conclusions that mobility is essential in both personal and instrumental activities of daily living, and leads to improved participation of clients. They also achieved a higher degree of independence from their family members, and therefore they were able to get along better with them. The motor function items of walking, body hygiene, and long-term standing improved after the provision of assistive devices and regular interprofessional rehabilitation intervention.

An interesting indicator is the improvement in the items of mental condition due to the illness, participation in social activities, financial situation and leisure activities, the quality of housework, completion of necessary tasks, and job position, making new friends, home responsibilities, speed of execution, loss of income and respect for the surroundings. Clients themselves subjectively perceived improvement in these items, likely the result of improvement in their mental well-being. The mental well-being condition was improved by the provision of aids and equipment and by the possibility to independently perform activities such as getting out of the house (via a ramp or stair climber); they were able to enjoy leisure activities, social activities and meet their friends without limitations, but also make new friends. By allowing movement away from their home, clients gained the opportunity to start thinking about the possibility of their carrier, and thereby improve their financial situation. Very important is the subjective improvement in the items related to social activities such as making new friends, respect for the environment and social activities, because then we can assume that patients are not socially isolated, which is a high risk in persons with disabilities (Murray et al. 2008, Švestková et al. 2009). We would like to point out the differences between the objective views of a professional and subjective views of clients, who surprisingly show in their results that the subjective perception of improvement in certain items of personal and instrumental activities of daily living, i.e. capacity and

performance, is perceived much better by the subjects than it is objectively classified by experts. We believe that the explanation is facilitating means in the area of motor function skills, which have much higher effects on subjective positive perception of the quality of life.

We believe that for an objective assessment of the functional condition of the client, and given the context of the law regulating social services and benefits, it is beneficial to use the ICF to modify the environment and obtain the necessary special aids/equipment and assistive devices that serve as facilitators for the environment and thereby improve the participation of people in the society. As we point out in our study, it is important and necessary to evaluate the client and their functional condition at home, which is necessary for the prescription of facilitating factors. We believe that without the inclusion of home visits in the social service system, it is not possible to achieve the defined target – optimal client inclusion in society.

We propose using the ICF as a special tool for the evaluation of the entitlement to special aids/equipment. Evaluation of self-sufficiency, evaluation of the need for “special aids/equipment” and assistive devices is the domain of an occupational therapist qualified to make this evaluation and in the event of difficulties, they can use additional test tools that provide more details in these particular areas. We recommend assessment of the respective functional domains in the interprofessional rehabilitation team. The term “interprofessional” team replaces the previously used terms “multidisciplinary and interdisciplinary”. This new term better describes the need for cooperation between different professions (Steinert 2005).

In order for the patient/client to have as few functional limitations as possible after brain injury, rehabilitation and social services should be initiated as soon as possible. However, this does not happen very often in patients/clients with severe acquired brain disorder. Carney considers it important for a person to function in the home environment and in society as soon as their condition allows it. This should become the main goal of rehabilitation. This, however, requires early rehabilitation of the patient/client, but also a balance between social and healthcare

services, in which the aim for the client is to achieve a satisfying quality of life (Carney et al. 1999, Doig et al. 2001, Geurtsen 2010).

CONCLUSION

In conclusion, it should be noted that the ICF is applicable in the social sphere, including in relation to the law regulating long-term social benefits and services. However, we believe that the individual items for the evaluation of the functional condition of the client should be coded by the interprofessional team, e.g. an occupational therapist should evaluate some items focused mainly on self-sufficiency in the area of activities and participation, along with environmental factors, while a physiotherapist should evaluate items focused mainly on human motor skills, and a social worker some of the environmental factors relating to social benefits and services. The applicability of the ICF is also confirmed by Pereborn, who claims that a decrease in disability among persons with disabilities is an important goal of rehabilitation and health policy. Monitoring the degree of dependence of people with a disability is a major focus of health and social policy (Pereborn et al. 2003). The ICF could be the appropriate tool for this monitoring.

At present, a system for evaluating diminished social function is under preparation according to the ICF. It is recommended that judges determining the amount of compensation for diminished social function should rely on expert opinions formed according to the ICF (Mach 2014).

For practical coding according to the ICF, it is necessary to understand the philosophy and application of the entire classification; hence, a course is recommended (Schuntermann 2007). The ICF focuses on functional health and evaluates the ability of individuals with a disability. The principle is the functional diagnosis of disability situations in which the patient/client is disabled in connection with environmental barriers. These problems can be identified and subsequently eliminated using identified facilitators that an individual must obtain in the form of services and benefits in the social sphere. In this way, we will ensure the effective use of functional health (Stucki et al. 2002).

The ICF is a tool recommended for use in the European Union (EU) by the European Commission and the Council of Europe, and is recommended for use by the United Nations (UN) and the World Health Organization (WHO). The ICF is used to classify functional abilities and evaluate the

degree of functional disability and functional health. It is a “common language” for medical, paramedical, social, educational, legal, and other professions that have an impact on the inclusion of people with a disability in society and the achievement of their maximum possible quality of life.

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