

# RETURN TO WORK INFLUENCED BY VOCATIONAL REHABILITATION IN A MULTIDISCIPLINARY TEAM

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*SUMMARY: In the Institute for Rehabilitation of Ljubljana (IRRS), Slovenia's national centre for rehabilitation, complex rehabilitation is organized as cooperation of medical rehabilitation teams and vocational rehabilitation teams. This article describes the cooperation between the medical and vocational rehabilitation teams in our institution. The process of vocational rehabilitation begins with vocational evaluation – the assessment of the functional and working abilities and capacities of the client, and it is followed by the elaboration of a rehabilitation plan to optimize the disabled person's return to work. All activities must be patient-centered. The medical records of the candidates referred for vocational rehabilitation were analyzed to explore the demographical, psychological, social and medical characteristics that influence the return to work. The results show the prevalent characteristics of the persons who have problems returning to work after medical rehabilitation. The most common suggestions for improvement advised by the vocational rehabilitation team after assessment are also presented to give an idea of rehabilitation outcomes.*

**Key words:** vocational (occupational) rehabilitation, return to work, multidisciplinary team, complex rehabilitation

## INTRODUCTION

*Rehabilitation* is a process whose goal is to enable disabled persons to achieve and retain their optimal physical, emotional, intellectual, spiritual and social functional level and thereby improve their lives towards greater independence. When this process involves a wide spectrum of activities, starting with general medical rehabilitation and progressing towards more goal-oriented activities such as vocational (occupational) rehabilitation, it is called holistic or complex rehabilitation (*The Standard Rules On The Equal-*

*sation of Opportunities for Persons with Disabilities, United Nations General Assembly, 1993).*

Vocational rehabilitation is a process involving all activities that help the disabled person to obtain or retain a suitable employment (*Konvencija št. 159, 1987*). In the process, medical information about permanent consequences of a disease/injury must be communicated to the institutions from the field of work, health and disability insurance, and the client's actual capacities, his legal rights, as well as the best way to return to work (or retire) must be planned. During this transition the person experiences different roles and relationships towards different institutions (patient, client, rehabilitant, disabled person, insurance policyholder and worker) and has different legal rights and obligations towards them.

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The basis for obtaining legal rights as a disabled person is the assessment of the consequences of the disease and the residual working capacity, approved by deciding bodies (committees or boards). This makes vocational rehabilitation a complex interaction of different factors, often poorly coordinated in terminology as well as in communication and action (Figure 1); (*Berling et al., in 1997, in Selander et al., 2002*). The vocational rehabilitation team can help optimize the process by providing a thorough assessment of the client's functional and working abilities and by setting up the rehabilitation plan.

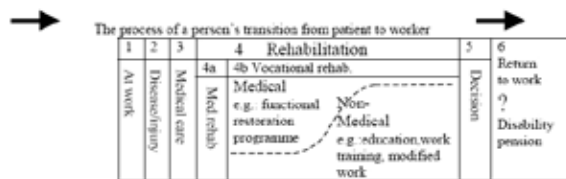


Figure 1. The process of transition from patient to worker upon return to work after a disease/injury with permanent consequences

Slika 1. Proces prijelaza od bolesnika do radnika po povratku na posao nakon bolesti/ozljede s trajnim posljedicama

The role of vocational rehabilitation in the process of returning to work is more than a mere assessment of residual abilities and capacities. In rehabilitation the aim is to restore, develop and change the person's abilities, to compare them to the demands of work, and to influence the balance of the two, either by changing the demands or the person's abilities (*Brejc, 1996*). The ability to work, by definition, means a balanced relationship between the worker's functional and executive abilities and the demands of the working environment. It is defined by a number of physical and psychological capacities that are necessary for the successful performance of certain working tasks while using certain tools. The worker's capacity to tolerate adverse influences of environment factors is especially important and often represents an even greater health hazard than the work itself (*Fatur-Videtič, 2000*).

Vocational rehabilitation is performed as a process, based on the *rehabilitation plan*. The client (the rehabilitant) is an active participant throughout the process.

## Team of experts for vocational rehabilitation

The Rehabilitation Institute in Ljubljana, Slovenia, is the central national rehabilitation organization in Slovenia, with programs of medical rehabilitation for persons with disabilities of locomotor functions, and research and education in the field of rehabilitation. Vocational rehabilitation has been a part of the programs since the founding of the institution in 1954 and it is based on conceptual framework as well as practical experience. We have come to the conclusion that only by programs of complex (holistic) rehabilitation we can fulfill the goals of equality and full participation of people with disabilities in all areas of life. Through the years, the organization of vocational rehabilitation programs has evolved into an up-to-date concept of work in a multidisciplinary and transdisciplinary team in the Centre for Vocational Rehabilitation (CPR). The following experts make up the Vocational Rehabilitation Team:

- *Social worker*, who explores the client's position in the world of work/employment, with regard to the level of his or her rights and social support systems
- *Medical doctor* specialist in vocational (occupational) medicine, whose task is to assess the consequences of the patient's disease matched to the demands of the workplace
- *Clinical psychologist*, who explores intellectual, emotional, and psychosocial abilities of the client, and tries to measure the potentials and obstacles in returning to work
- *Vocational therapist* with tools to measure the client's psycho-motor and motor abilities and skills
- *Vocational assessment specialist*, an expert from the industry, who has expertise to assess the client's working ability by using several work samples, some in general use in industry (Workfactor, Ertomis) and others of our own development.

*The technology of work in the vocational rehabilitation team* is a product of our own development of 25 years. Each team member must

choose among the assessment methods of their professions to independently assess the client's abilities and handicaps. After gathering the necessary information, the team members discuss the case in a team conference to gain valuable and multi-dimensional insight into the client's unique status and consider various possible solutions. The decisions are reached in consensus. The decisions and options are always discussed with the client during every stage of the process, a fact that is of utmost importance for the empowerment of the client. Whenever possible, the employer is invited to participate (site visit) and is involved in choosing between different options. It usually takes two weeks (10 working days) for basic tests and preliminary decisions to be elaborated. During this time the presence of the client is required each day from 8 a.m. to 2 p.m. If the person lacks endurance, the daily duration can be shortened or expanded according to the individual's needs. In the cases of employed clients, the employer is contacted and the real-life situation and working requirements are examined in a site visit (social worker and medical doctor). The task of the vocational rehabilitation team evaluation is to translate the disabilities into work capacities and compare them to the demands of work. If permanent consequences can be proved at the pension board meeting, the client may be eligible for a form of disability protection rights: a pension, a right to work shorter hours, a different (less strenuous) job, or vocational training for a new, better suited career.

The final report (rehabilitation plan) should be written within 14 days from the conclusion of the procedures. Each team member contributes a partial assessment, and then the team leader writes final conclusions and recommendations. The Team works in cooperation with the Ministry of Labor, Family and Social Affairs, Health Insurance, Disability Insurance and Employment Services, and other vocational rehabilitation service providers.

The Institute for rehabilitation in Slovenia has three units, consisting of several teams, in Ljubljana, Maribor and Murska Sobota. The CPR Vocational Rehabilitation Teams evaluate

approximately 700 clients per year, 600 clients in vocational evaluation programs and 100 clients in vocational training programs. The target groups are not only persons with locomotor disabilities, completing programs of medical rehabilitation in the Institute for Rehabilitation (referred by doctors from medical rehabilitation programs), but also persons who are referred to vocational rehabilitation by GPs or by pension boards. Programs for unemployed persons with disabilities are also provided, and the persons are referred to the Institute by employment agencies. In our article we purport to describe exclusively the work with the patients of the Rehabilitation Institute Ljubljana who almost continuously progress from medical rehabilitation to vocational rehabilitation and back to work, making the process worthy of the title of continuous or complex (holistic) rehabilitation.

## THE AIM OF OUR ANALYSIS

The factors that influence successful return to work were explored, and the proportion of these factors in the population of the clients of the Vocational Rehabilitation Team was analysed. Literature research indicated that there were several factors influencing the return to work. These can be divided into demographical, psychological, social and medical factors, those connected to the rehabilitation process, those influenced by the characteristics of the work, and also those mostly influenced by the legislation that was supposed to protect the disabled. These different factors were interrelated in several ways. According to literature research, return to work after neck, back and shoulder problems was influenced by several risk factors that made return to work less likely (*Selander et al, 2002*). The factors that positively influenced the return to work were:

- intervention of a multidisciplinary team,
- early vocational rehabilitation,
- understanding of the situation at work by the team experts,
- extent to which the rehabilitation procedures had been completed,

- patient's satisfaction with the rehabilitation procedures, and
- patient's opportunity to influence the procedures (patient centeredness).

As has been explained in the description of the procedures, all of these features have been incorporated into the routine work of the vocational rehabilitation teams in the Ljubljana Rehabilitation Institute.

## MATERIALS AND METHODS

Personal data routinely collected and coded in the medical documentation of the vocational rehabilitation clients was analysed. The candidates and the clients that were evaluated by the teams in the years 2004 and 2005 were included.

### 1. The candidates for vocational rehabilitation (transition from medical rehabilitation services):

The candidates were referred to the programs of *vocational rehabilitation* directly from the teams for *medical rehabilitation* in the Institute for Rehabilitation. The reasons for referral were that the medical rehabilitation team of the institution had evaluated their rehabilitation potentials at the end of the medical treatment/rehabilitation and decided that there were *permanent consequences in their functional abilities related to their work*.

### 2. The vocational rehabilitation clients:

Out of the 185 candidates who had been proposed for vocational evaluation, 102 (55%) were accepted for assessment procedures and are further referred to as "the clients". *The decision whether to accept a referred patient into the vocational rehabilitation program or not is made by a medical doctor – the team member who first contacts the candidate. Based on the available medical documentation, medical examination and discussion about the candidate's position in regards to his/her work, employment rights and pension rights, the doctor must gain preliminary insight into the candidate's status*

and a perspective on the duration of further medical treatments. For the vocational evaluation to begin, all medical procedures have to be completed. The doctor must also make some initial assumptions about the candidate's motivation to return to work. The decision to invite a client to join vocational rehabilitation programs is then communicated to his GP.

The source of used data was the medical documentation from our medical archives (OB CPR 030), (OB CPR 039) and the client's medical files, routinely filled in by the team medical doctor or by the team leader. This documentation contained valuable information on the demographical, psychological, social and medical factors influencing the return to work. Basic statistics-proportions were then calculated to illustrate the characteristics of our population with regard to the factors influencing the return to work.

## RESULTS

### Results of candidates for vocational rehabilitation (transition from medical rehabilitation services)

During the last couple of years a constant number of about 100 patients per year have been referred from the medical rehabilitation teams to the vocational rehabilitation teams. Within the time of our research, 185 candidates were examined by the medical doctor in the vocational rehabilitation team in order to assess whether they have potential for vocational rehabilitation. The majority were males (67%).

**Table 1. Vocational rehabilitation referred candidates by gender**

**Tablica 1. Spolna struktura kandidata upučenih na radnu rehabilitacijo**

GENDER	MALES	FEMALES	ALL
N	123	52	185
%	67%	29%	100%

Most candidates were in their thirties and forties (65%) or younger, a sign of a very active

ve population. It was expected that vocational rehabilitation would be of particular interest to younger people. However, recent changes in the legislation have forced senior workers over fifty to stay active. The changes also affect the younger population that needs to fulfill certain conditions to be granted protection by the disabled protection laws or to be granted the right to vocational training.

**Table 2. Vocational rehabilitation referred candidates by age**

**Tablica 2. Dobna struktura kandidata upućenih na radnu rehabilitaciju**

Age	minus 20	from 21 to 30	from 31 to 40	from 41 to 50	50 plus
N	3	47	59	61	15
%	2%	26%	32%	33%	9%

Most referred candidates were employed at the time of evaluation (77%). Literature research (3) reveals that the chances for return to work are better for employed persons.

**Table 3. Referred candidates by employment status**

**Tablica 3. Struktura kandidata prema radnom statusu**

Employment status	Employed	Unemployed	All
N	107	32	139
%	77%	23%	100%

Most candidates had never been assessed by pension boards prior to this contact (123 candidates or 88%). Some had problems with their status because their medical treatments had lasted for years and they repeatedly had to bring proof that they were unable to work.

### Results of vocational rehabilitation clients

After the initial selection of candidates, the chosen clients were invited to join vocational rehabilitation procedures and, by the end of 2006, 102 evaluations were completed. This is our second population, selected from the referred candidates with the potential to profit from our programs.

As the result of vocational evaluation procedures, we have assessed the clients' functional disabilities of intellectual/emotional and bodily functions. The selection of the parameters was made on the basis of the International Classification of Impairments, Disabilities and Handicaps (ICIDH); (ICIDH, 1980), a classification that preceded the currently available International Classification of Functioning (ICF, 2001). They are shown in Tables 4 and 5.

**Table 4. Functional disabilities (problems): intellectual/emotional performance**

**Tablica 4. Funkcionalne teškoće: intelektualna/emocionalna sposobnost**

1. intellectual impairments (psychological underdevelopment or deterioration)	5	6%
2. mnestic impairments	20	22%
3. cognitive impairments	31	34%
4. impairments of consciousness	10	11%
5. perceptual disorders	5	6%
6. disorders of emotion and will	27	30%
7. behavioral disorders	6	7%
8. dependencies	1	1%

**Table 5. Functional disabilities (problems): bodily functioning**

**Tablica 5. Funkcionalne teškoće: tjelesna sposobnost**

1. communication problems (speech, listening, writing)	7	8%
2. impaired vision	11	12%
3. impairment of daily personal care (personal hygiene, dressing, feeding...)	14	16%
4. impairment of motility (walking, transfer, transportation)	53	58%
5. special bodily postures intolerance (lifting, reaching, pulling-pushing, kneeling)	55	60%
6. problems with dexterity	45	49%
7. problems with endurance	70	76%
8. tolerance of environmental adverse factors (temperature, climate, noise, illumination, dust, working loads)	47	51%

It is interesting to note that 76% clients suffered problems with endurance, and more than half had trouble with motility and intolerance of specific body postures that are often necessary for work. Half of the clients had problems with dexterity and could not tolerate environmental adversities. This means that most vocational rehabilitation clients were severely disabled and probably would never return to work without the help of vocational rehabilitation.

The recommendations of the Vocational Rehabilitation Team are only of advisory nature, as the final decision on the clients' retirement or return to work is made afterwards by a Pension Board of the National Insurance Institution. To avoid communication problems, however, the recommendations are phrased in the pension board's terminology. The results are shown in Table 6. The most frequent recommendation was to shorten the working hours, which is comparable to a 76% of clients having endurance problems. One out of four clients was found incapable of work and retirement was recommended. 22% of recommendations for vocational training was a rather high proportion indicating that the general idea behind vocational rehabilitation is empowerment of the client.

**Table 6. The Team recommendations for vocational rehabilitation measures**

**Tablica 6. Preporučene mjere za radnu rehabilitaciju**

RETIEMENT	23	25%
VOCATIONAL TRAINING	20	22%
SHORTER WORKING HOURS, SAME OR DIFFERENT JOB	37	41%
CHANGES IN WORK DEMANDS, DIFFERENT JOB, FULL TIME	10	11%
OTHER (medical treatment not yet completed)	2	3%
ALL	92	100%

The medical factors that influence the capacity for work of our clients (Table 7) were classified according to the medical diagnoses and coded according to the **International Statistical Classification of Diseases and Related Health Pro-**

**blems** 10th Revision (*ICD-10, 1992.*), the official classification tool used by medical institutions throughout WHO countries. All diagnoses were registered, but not all have the same effect on working abilities. The translation from diagnoses to functional disabilities is not direct, so ICD is not the best tool for classification in rehabilitation, but is still used because of the international comparability of data. In the Ljubljana Rehabilitation Institute we devote great efforts to introduce the **International Classification of Functioning, Disability and Health (ICF); (ICF, 2001)** into routine work, recommended by WHO as a more advanced classification in rehabilitation. On average, 9.13 diagnoses per patient were registered. Most of them concerned states after severe trauma or head injury.

**Table 7. The medical factors that influenced the capacity for work of our clients coded according to the ICD-10**

**Tablica 7. Medicinski čimbenici koji su utjecali na radnu sposobnost naših kandidata prikazan prema dokumentu ICD-10**

ICD Category	Diseases	No. of clients
I	Certain infectious and parasitic diseases	3
II	Neoplasms	5
III	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	5
IV	Endocrine, nutritional and metabolic diseases	8
V	Mental and behavioral disorders	20
VI	Diseases of the nervous system	56
VII	Diseases of the eye and adnexa	18
VIII	Diseases of the ear and mastoid process	3
IX	Diseases of the circulatory system	40
X	Diseases of the respiratory system	2
XI	Diseases of the digestive system	3
XII	Diseases of the skin and subcutaneous tissue	-
XIII	Diseases of the musculoskeletal system and connective tissue	96

ICD Category	Diseases	No. of clients
XIV	Diseases of the genitourinary system	4
XV	Pregnancy, childbirth and the puerperium	-
XVI	Certain conditions originating in the perinatal period	-
XVII	Congenital malformations, deformations and chromosomal abnormalities	1
XVIII	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	17
XIX	Injury, poisoning and certain other consequences of external causes	139
All		420

## CONCLUSIONS

Vocational rehabilitation is a process involving all activities that help the disabled person to obtain or keep a suitable employment. During this process there is an intensive interaction of various institutions, but the laws in the different areas (work, insurance, medicine) are not perfectly coordinated and there is too much room for complications and misunderstandings, leading to less than optimal results of return to work. The process of vocational rehabilitation should be patient (client)-centered. A working out of a rehabilitation plan and a coordination of the vocational rehabilitation process by a multidisciplinary team can be a positive factor leading to better communication, assessment of functional (dis)abilities and return to work. Literature research has shown that treatment in a multidisciplinary team, early vocational rehabilitation (direct referral from medical rehabilitation ward), the team understanding the situation at work (considering job analysis and relationships) and the satisfaction of the patients – the ability to influence the result (patient-centeredness), are all factors that positively influence the return to work (*Selander et al, 2002*).

In this article we have described the procedure of vocational rehabilitation that (by referral)

can continue after the programs of medical rehabilitation in the central rehabilitation institution in Slovenia have been completed. We have tried to explore the characteristics of our clients and define the factors, medical as well as other, which contribute to a successful return to work. The results show the prevalent characteristics of the persons who have problems returning to work after medical rehabilitation, as well as the most common suggestions for vocational rehabilitation measures.

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### **POVRATAK NA POSAO NAKON PROFESIONALNE MULTIDISCIPLINARNE REHABILITACIJE**

*SAŽETAK: U slovenskom nacionalnom Institutu za rehabilitaciju u Ljubljani provodi se organizirana suradnja timova za medicinsku rehabilitaciju i radnu rehabilitaciju. Članak je posvećen suradnji između liječničkih timova i timova za radnu rehabilitaciju. Postupak radne rehabilitacije počinje procjenom funkcionalnih i radnih sposobnosti, a slijedi ga razrada plana rehabilitacije kako bi se invalidna osoba mogla vratiti na posao. Sve poduzete radnje moraju imati bolesnika u središtu pažnje. Analizirana je medicinska dokumentacija kandidata upućenih na radnu rehabilitaciju kako bi se utvrdili demografski, psihološki, socijalni i medicinski čimbenici koji utječu na povratak na posao. Rezultati pokazuju koji prevalentni čimbenici utječu da osoba ima teškoća pri povratku na posao nakon medicinske rehabilitacije. Navedene su i najčešće preporuke radnog rehabilitacijskog tima nakon procjene kako bi se prikazali rezultati rehabilitacije*

**Ključne riječi:** radna (profesionalna) rehabilitacija, povratak na posao, multidisciplinarni tim, kompleksna rehabilitacija

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