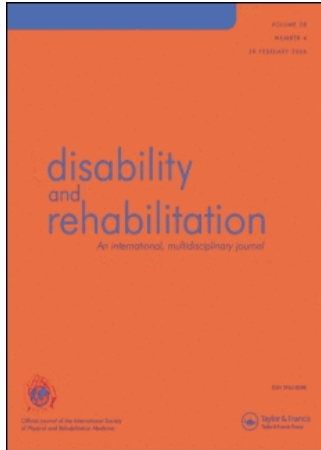


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## Vocational rehabilitation: A multidisciplinary intervention

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### Abstract

Vocational rehabilitation is by definition a multidisciplinary intervention in a process linked to the facilitation of return to work or to the prevention of loss of the work. Clinical staff in contact with a person who has lost his job (general practitioner, specialized physician) must promote vocational rehabilitation. Medical rehabilitation for those with disabilities, whether new or old, has to be followed without delay by vocational rehabilitation. It is even better if these two intertwined processes are overlapping. They involve many professionals including physiotherapists, occupational therapists, psychologists, vocational trainers, job counsellors, teachers, case-managers, job placement agencies. Vocational rehabilitation has a financial cost, borne by many state organizations (security, social system, social affairs) as well as by employers and private insurances, which are in case of accident, concerned by this process. However, the evidence suggests that this is recouped 2- to 10-fold as suggested by the British Society of Rehabilitation Medicine.

**Keywords:** *Vocational rehabilitation, definition, multidisciplinary*

### Introduction

Many definitions have been proposed for vocational rehabilitation. The International Labor Organization in 1998 [1], the British Society of Rehabilitation Medicine in 2000 [2], and Selander [3] have all proposed definitions which include a multidisciplinary intervention. The definition proposed by Selander [3] seems, however, the most complete including medical, psychological, social and occupational aspects: 'which are all included in a vocational programme with an aim of returning to work'. Such a vocational programme deals with vocational assessment, work retraining, work guidance, work orientation and counselling as detailed by Gobelet and Franchignoni in 2006 [4]. The success of a vocational rehabilitation programme (VR) is conditioned by different positive and negative factors [5].

### *Why vocational rehabilitation?*

The uptake and costs of sickness benefits, disability benefits and employment injury benefits have dra-

matically increased during the last decades in all industrialized countries. In all the countries of the European Community the rise of the expenditures attributed to the socio-professional aids between 1960 and 2000 was impressive. It is also worth noting that from 1985 the causes of certification for sick leave have changed from being entirely medical towards including many more psycho-social ones.

All the European countries are affected by this evolution whatever is their social and the political organizations. Even though the public statistics of the new members of the European Union are limited, we have reliable information for the initial 15 countries members of EU [4].

For these, from 1985–1994, a 20–30% increase of sickness and 15–20% increase in disability benefits has been observed. In Switzerland, for example (7,500,000 inhabitants), the disability compensation insurance, which controls disability pension payment, has accepted, in 2005, 289,834 claims and has paid out 6.4 billion Swiss Fr. for disability pensions [6]. During the same year the Suva (compulsory national accident insurance for heavy

workers) has paid out 1.2 billion Swiss fr. for disability pension [7]. Thus, in Switzerland, the burden for disability compensation insurance has increased by 123% in claims and by 165% in expenditure between 1988 and 2001 [6].

In all EU countries, the main causes of disability pension are now musculoskeletal, mental and cardio-respiratory disorders. Some musculoskeletal disorders have particularly produced long-term sick leave during the last decades. Thus, in the USA back problems counted for approximately 40% of all compensation claims whereas in UK, musculoskeletal disorders were diagnosed in only 28% persons receiving incapacity benefit [8].

Recently in Sweden and Switzerland, two similar countries which have the same size of population, there has been a shift in the diagnoses of those claiming benefits [6,9]. Psychiatric and stress-related diseases have dramatically increased: In Switzerland, an increase of 72% invalidity pensions for psychoses and of 239% for psychic reactive troubles [6] has occurred.

It has to be borne in mind that in the EU, the number of disabled people who had an employment is 22.1% less than those of non-disabled adults [10]. There are, however, large differences between countries which may be partly explained by the different levels of support disabled people experience as well as by variations in the definition of disability.

In recent years, politicians have come to recognize that there is a need to contain public expenditure and that there are issues of social exclusions to be addressed: there is the need to ensure the integration of disabled people in society.

'Vocational rehabilitation: The way forward' [2]; this title introduced by the British Society of Rehabilitation Medicine is very explicit. It makes explicit the path that policy-makers and others will need to take to ensure that people who are, or have recently become, disabled or chronically sick are helped to stay in work, or to return to work. These and other proposals which seek to replace the negative features of sick certification with the assessment being an access point for effective rehabilitation and vocational rehabilitation, has a chance to lessen the burden on society or may hopefully reduce the direct and indirect costs associated with not working, and early pensions. They may thus provide the help that so many newly certified as sick have been trying to find. Chamberlain and Frank [11] and more recently Frank and Thurgood [12] have focused on the importance of recognizing the many aspects of vocational rehabilitation and the many factors associated with it [12].

Thus, as discussed by Nachemson [13], the development of comprehensive rehabilitation pro-

grammes must include all the aspects of vocational intervention (vocational training, vocational guidance, education, job counselling, job placement, etc.).

Vocational rehabilitation has a pluridisciplinary approach starting with a medical assessment early in the course of a full medical rehabilitation programme. The team delivering vocational rehabilitation will include those in the disciplines of physiotherapy, occupational therapy, psychology, psychiatry, work counselling, work training, job teaching and others depending on the organization of vocational rehabilitation in the particular country.

#### *At what time should a vocational rehabilitation start?*

We firmly believe that the vocational aspect of the rehabilitation should be introduced as soon as possible in the course of the medical rehabilitation programme. In our clinic, which is concerned with musculoskeletal and neurological rehabilitation, 32% of the hospitalized patients require at least one aspect of the vocational training programme (assessment, guidance or training) [14]. This belief is clearly shared by the British Society of Rehabilitation Medicine [2].

If help is to be provided early for the person who is going off work and in danger of losing their job, the effective and knowledgeable intervention of the line manager at the workplace is crucial, as is that of the counsellor at the workplace or the occupational health professional. Their actions may prevent the job being lost, may help the employee find a more appropriate job in the short- or the long-term or may lead to changes in the job or environment or equipment which help the person remain in work. There may also be times when there is conflict and misunderstanding between the disabled employee and colleagues or management: In this situation human resources or occupational health may be able to help especially where there is poor understanding of the person's disease or disability or the Disability Discrimination law.

#### *The role of insurance companies*

The role of the insurance company varies greatly between countries. Depending on the health organization and politicians of the different countries, insurances, employers or state institutions can be directly concerned and responsible for the majority or the minority of vocational rehabilitation. The role of the insurance company in the vocational rehabilitation may be crucial especially in innovating better practice. The accident insurances are, in many countries of the EU, directly concerned with the payment of loss of wages and disability pensions. The

insurance has thus to recognize the direct benefit of participating actively and speedily in the return to work process which is facilitated by a vocational rehabilitation programme. Thus W. Morger, one of the directors of Suva insurance which is a compulsory accident insurance for manual workers in Switzerland [15], states: 'Despite integration measures, the financial burden for insurance company payments will be for pensions. However, reintegration measures will gain priority for ethical, socio-political and economical reasons and finally also in the financial interests of the insurance company itself'.

The quote makes clear that it is in the interest not only of the disabled person and the state to engage in VR but it is also in the financial interest of the insurance companies. Vast amounts of money spent by state or insurance company can be saved by timely VR [16]. In most of the European Union countries, the insured person has a legal right to integration measures but also has an obligation to participate in measures to promote reintegration before having the possibility to benefit from disability pension. In Switzerland, for example, this principle applies to the entire social system. A comprehensive revision of the unemployment insurance law was initiated in 1997 to achieve this. In 2006, different governmental federal insurances (disability insurance, unemployment insurance, social aid: MAMAC project) decided to join forces in order to promote return to work, working together in patient-centred case management. In some European countries like Sweden or The Netherlands it is employers who are responsible for vocational rehabilitation thus becoming important partners in this multidisciplinary process. Sometimes the participation of governmental organizations is not as effective as needed [17].

#### *Assessment of working ability*

An early important step in vocational rehabilitation is to determine the individual's work ability. The assessment has to be based on medical, functional and psychological factors.

The medical assessment is generally made by a general practitioner or by physicians specialized in rehabilitation medicine. In some countries only doctors, according to the social governmental organization, are authorized to undertake the medical assessment.

The role of the physician is to determine as precisely as possible the importance of the impairments (diagnoses and clinical findings). General practitioners are frequently confronted to certifying the inability to work. More than 10% of the people aged between 15 and 65 who consult leave the

practice with a certification of inability to work [18]. This certification of work inability is often a heavy burden for a doctor who may see himself as the patient's advocate rather than a gatekeeper of state resources. As written by Pilet [19] 'on one hand, he must accompany the patient through a difficult physical, psychological and social process and on the other hand he is under pressure from employers, private insurance companies and public social institutions'. For this reason, it seems that the best way may be to leave assessment of the work ability to specialized physicians who are not directly concerned with the patient. However, the general practitioner is probably the one who knows best the complex factors which can influence his patient's ability to work. The general practitioner and the specialist physician both need to be convinced of the value of multidisciplinary vocational rehabilitation to the patient and able to access it.

Evaluation of functional capacity is complementary and equally necessary. Oliveri [20,21] has described all the aspects of functional evaluation. When assessing functional capacity, maximal performance often depends on physical and psychological factors. This duality was well defined by psychophysical evaluation method described by Snook [22]. Kinesio-physical performance tests, in which an examiner evaluates the performance of a subject on the basis of standardized ergonomic observation criteria [23], are also useful. Oliveri [20] has analysed other important factors of the functional evaluation: He has indicated that it is important to extrapolate the tests to the working day and situation rather than conclude that the lab tests will necessarily reveal all the problems found in that particular workplace. It needs to be established that there is a correlation between the working reality and the standardized ergonomic observation criteria.

Factors to be considered include the person's motivation and endurance in the real workplace; the final decision may have to be the best possible approximation. Nowadays the most frequently used assessment tests in the EU countries are the progressive isoinertial lifting evaluation (PILE test) [24], the functional capacity evaluation according to Isernhagen [23] and the ERGOS work simulator [25]. Many other methods of evaluation may be used depending on the experience of the assessing team concerned by the functional evaluation. In our rehabilitation clinic, beside the evaluation according to Isernhagen, we use work observation in our workshops or in enterprises directed by job trainers. We think that this mode of observation is useful because it allows us to observe the disabled person in situations which approximate closely to daily job activities.

*Factors affecting negatively work ability and return to work*

Many factors related to the person influence time off work. Age, gender, health status are generally cited as influencing negatively work ability and work resumption. One of the most complete studies was undertaken by Selander et al. [26]. These authors have listed subjective factors as older age, foreign origin, low income, low education level, psychosocial factors like low self-confidence, low health locus control, low quality of life, depression, medical factors such as medical complex history, severe disability and pain, ADL deficits, environmental factors like poor physical work environment, poor psychological and organizational work environment and socio-economic factors such as type and amount of social benefit, labour market and others. A recent report of Schroër et al. focused on the important influence of organizational structures and organizational culture on return to work or work disability [27].

Another well known negative factor affecting return to work is an extended sick leave in itself. Thus a few months on sick leave are sufficient to strongly deter work resumption [28–30]. For Hansen et al. [31] the strongest predictive factors of return to work are the individual's expectations, days of sick leave, somatic disorders, high level of life satisfaction and sense of coherence. These authors have considered in their conclusions that 'the most strongly predictive factors for a return to work after a period of sick leave for both genders concerned the individuals' expectations concerning the likelihood that they would return to work'. Lydell et al. [32] have reported on the same subject the positive value of some independent factors such as ability to undertake activities, quality of life and fitness on exercise.

Financial compensation is widely considered to increase the risk of negative influence on the motivation to return to work like it was mentioned by Lysgaard et al. [33] in a population of 1397 rehabilitees.

*Are vocational rehabilitation programmes cost-effective?*

The answer to this question is difficult because scientifically based studies are still rare [34] and because comparison between studies is often difficult, vocational rehabilitation programmes being different in term of initial financial investment and in form of vocational interventions (counselling, training, education).

However some studies can be mentioned because they give a positive impact in favour of vocational rehabilitation and are in the same time of a good

scientific expertise. The BSRM document asserted that the evidence points to a benefit-to-cost ratio of from times 2 to times 10 [2].

Schmidt et al. [35] have compared the rate of success of employment after special rehabilitation programmes focused on work. They analysed the probability of obtaining a job after rehabilitation and observed that vocational rehabilitation and work training had a significant impact on employment.

Dean et al. [36] have analysed the effect of vocational rehabilitation on an important cohort of 28,986 records during eight years. They conclude that the vocational rehabilitation programme was cost effective.

Loisel et al. [37] in a 6 years follow-up study observed that a combined programme of occupational and clinical rehabilitation was beneficial compared to usual practice (without VR) or partial intervention. Kärholm et al. [38] have recently published their observation that a coordinated multi-disciplinary vocational rehabilitation was effective in terms of lessening the sick leave days per month; the economic benefit was between 1278 Euro and 2405 Euro per month depending on the sick leave days.

Finally Elders et al. [39] reviewed the literature focused on the effectiveness of rehabilitation programmes for return to work after sick leave for back disorders. They selected 12 studies on the effect of ergonomic interventions on return to work. Among these 7 out of 8 back school programmes showed a significant positive difference in return to work compared to a reference group. However long-term effect and compliance were often lacking in the studies.

**Conclusion**

Vocational rehabilitation is a positive and successful response to the prevention and shortening of prolonged work disability. It can accelerate return to work, induce an increase in work productivity and the participation of disabled people. It can help in reducing premature retirement and in diminishing the direct and indirect costs of a disease [40].

However, to implement successful vocational rehabilitation programmes necessitates the use of an effective multidisciplinary approach. This includes many players: Doctors, physiotherapists, occupational therapists, psychologists, work counsellors, work trainers, insurance case managers, employers, federal offices and all other stakeholders. It needs wholehearted support and participation of employers and of the concerned disabled employee. In addition, for a successful result, all the concerned governmental organizations and the social security system have to collaborate actively. In this context it is necessary that economic incentives work with

vocational rehabilitation not against it: The benefits from compensation should be less than normal wages and not higher than unemployment insurance benefit otherwise there is a risk of sickness being prolonged, with all that implies [41].

## References

1. International Labor Organization. Vocational rehabilitation and employment of disabled persons. International Labor Conference, 86th session; Geneva: ILO; 1998.
2. British Society of Rehabilitation Medicine. Vocational rehabilitation: the way forward; London: BSRM; 2000.
3. Selander J. Unemployed sick leavers and vocational rehabilitation. A person level study based on a national social insurance material. Dissertation from the Department of Rehabilitation Medicine; Karolinska Institute. Stockholm, Sweden; 1999.
4. Gobelet C, Franchignoni F. Vocational rehabilitation. In: Gobelet C, Franchignoni F, editors. Vocational rehabilitation. Paris: Springer; 2006. pp 3–16.
5. Marnetoft SU, Selander J, Bergroth A, Ekholm J. Factors associated with successful vocational rehabilitation in a Swedish rural area. *J Rehabil Med* 2001;33:71–78.
6. Statistiques de l'Assurance Sociale. Statistiques de l'AI 2005, OFAS. Available from: [www.bsv.admin.ch](http://www.bsv.admin.ch)
7. Statistique des accidents LAA, 2006. Available from: [www.unfallstatistik.ch](http://www.unfallstatistik.ch)
8. Bonfiglio RP, LaBan MM, Taylor RS, et al. Industrial rehabilitation medicine management. In: DeLis editor. Rehabilitation medicine. Principles and practice. Philadelphia: Lippincott JB; 1993. pp 169–177.
9. Engstrom LG, Eriksen T. Can differences in benefit levels explain duration and outcome of sickness absence? *Disabil Rehabil* 2002;24:713–718.
10. Malo MA, Garcia-Serrano. The employment situation of people with disabilities in the European Union. 2001. Social Security and social integration. Employment and Social Affairs. European Community. Available from: [www.employment-disability.net](http://www.employment-disability.net)
11. Chamberlain MA, Frank AO. Congratulations but no congratulations: Should physicians do more to support their patients at work? *Clin Med* 2004;4(2):102–104.
12. Frank AO, Thurgood J. Vocational rehabilitation in the UK: Opportunities for health-care professionals. *Int J Ther Rehabil* 2006;13(3):126–134.
13. Nachemson A. Back pain and causes, diagnosis and treatment updated in 1999. Sweden. Swedish Council on Technology Assessment in Health Care 1999;108:1–5.
14. Gobelet C. Personal results. Clinique romande de réadaptation SuvaCare, 2006.
15. Morger W. The point of view of the insurance company. In: Gobelet C, Franchignoni F, editors. Vocational rehabilitation. Paris: Springer; 2006. pp 17–30.
16. Pattani S, Constantinovici N, Williams S. Who retires early from the NHS because of ill health and what does it cost? A national cross sectional study. *BMJ* 2001;322:208–209.
17. Sirvastava S, Chamberlain MA. Factors determining job retention and return to work for disabled employees: A questionnaire study of opinions of disabled people's organizations in the UK. *J Rehabil Med* 2004;36:1–6.
18. Dunner S, Decrey H, Burnand B, Pecoud A. Sickness certification in primary care. *Soz Präventivmed* 2001;46:389–395.
19. Pilet F. Inability to work, disability and vocational rehabilitation: Does the general practitioner have a role to play in these processes? In: Gobelet C, Franchignoni F, editors. Vocational rehabilitation. Paris: Springer; 2006. pp 41–51.
20. Oliveri M. Functional capacity evaluation. In: Gobelet C, Franchignoni F, editors. Vocational rehabilitation. Paris: Springer; 2006. pp 69–93.
21. Oliveri M. Arbeitsbezogene funktionelle Leistungsfähigkeit. In: Hildebrandt J, Müller G, Pflingsten M, editors. Lendenwirbelsäule. Ursachen, Diagnostik und Therapie von Rückenschmerzen. Elsevier GMBH, Urban & Fischer Verlag ed. München; 2005.
22. Snook SH, Irvine CH. Psychophysical studies of physiological fatigue criteria. *Hum Factors* 1969;11:291–300.
23. Isernhagen SJ, Hart DL, Matheson LM. Reliability of independent observer judgments of level of lift effort in a kinesio-physical functional capacity evaluation. *Work* 1999;12:145–150.
24. Mayer TG, Barnes D, Kishino ND, Nichols G, Gatchel RJ, Mayer H, Mooney V. Progressive isoinertial lifting evaluation. A standardized protocol and normative database. *Spine* 1988;13:993–997.
25. Kaiser H, Kersting M, Schian HM. Der Stellenwert der Arbeitsstimulationgerätes ERGOS als Bestandteil der Leistungsdiagnostischen Begutachtung. *Rehabilitation* 2000;39:175–184.
26. Selander J, Marnetoft SU, Bergroth A, Ekholm J. Return to work following vocational rehabilitation for neck, back and shoulder problems: Risk factors reviewed. *Disabil Rehabil* 2002;24:704–712.
27. Schröer CAP, Janssen M, van Amelsvoort LGPM, Bosma H, Swaen GMH, Nijhuis FJN, van Eijk J. *J Occup Rehabil* 2005;15:435–445.
28. Gallagher RM, Rauh V, Haugh LD, Milhous R, Callas PW, Langelier F, McClallen JM, Frymoyer J. Determinants of return-to-work among low back pain patients. *Pain* 1989;39:55–67.
29. Hansen A, Edlund C, Bränholm IB. Significant resources needed for return to work after sick leave. *Work* 2005;25:231–240.
30. Floderus B, Göransson S, Alexanderson K, Aronsson G. Self-estimated life situation in patients on long-term sick leave. *J Rehabil Med* 2005;37:291–299.
31. Hansen A, Edlund C, Henningsson M. Factors relevant to a return to work: A multivariate approach. *Work* 2006;26:179–190.
32. Lydell M, Baigi A, Marklund B, Mansson J. Predictive factors for work capacity in patients with musculoskeletal disorders. *J Rehabil Med* 2005;37:281–285.
33. Lysgaard AP, Fonager K, Nielsen CV. Effect of financial compensation on vocational rehabilitation. *J Rehabil Med* 2005;37:388–391.
34. James P, Cunningham I, Dibben P. Job retention and vocational rehabilitation: The development and evaluation of a conceptual framework. Research report 106–Middlesex University Business School and the University of Strathclyde for the Health and Safety Executive. Sudbury, UK: HSE Books; 2003.
35. Schmidt SH, Oort-Marburger D, Meijman TF. Employment after rehabilitation for musculoskeletal impairments: The impact of vocational rehabilitation and working on a trial basis. *Arch Phys Med Rehabil* 1995;76:950–954.
36. Dean DH, Dolan RC, Schmidt RM. Evaluating the vocational rehabilitation program using longitudinal data. Evidence for a quasi experimental research design. *Eval Rev* 1999;23:162–189.
37. Loisel P, Lemaire J, Poitras S, Durand MJ, Champagne F, Stock S, Diallo B, Tremblay C. Cost-benefit and cost-effectiveness analysis of a disability prevention model for back pain management: A six-year follow-up study. *Occup Environ Med* 2002;59:807–815.

38. K arrholm J, Ekholm K, Jakobsson B, Ekholm J, Bergroth A, Schuldt K. Effects on work resumption of a cooperation project in vocational rehabilitation. Systematic, multi-professional, client-centred and solution-oriented co-operation. *Disabil Rehabil* 2006;28(7):457–467.
39. Elders LA, van der Beek AJ, Burdorf A. Return to work after sickness absence due to back disorders—a systematic review on intervention strategies. *Int Arch Occup Environ Health* 2000;73:339–348.
40. Disler PB, Pallant JF. Vocational rehabilitation. *BMJ* 2001;323:121–122.
41. Engstrom LG, Eriksen T. Can differences in benefit levels explain duration and outcome of sickness absence? *Disabil Rehabil* 2002;24(14):713–718.