

Department of Public Health Sciences, Division of Rehabilitation Medicine,
Karolinska Institutet, Stockholm, Sweden

VOCATIONAL REHABILITATION, WORK RESUMPTION AND DISABILITY PENSION

A register-study of cases granted vocational rehabilitation by
social insurance offices in a Swedish county

Åsa Ahlgren



**Karolinska
Institutet**

Stockholm 2006

© Åsa Ahlgren, 2006
ISBN 91-7140-659-X

To Magnus,
Björn, Erik and Johanna

ABSTRACT

Increasing figures for long-term sickness absence and disability pension are problems for many European countries where they have increased to burdensome levels, socially and financially. In a European study in 2003, Sweden showed the highest proportion of sick-listed with 4.5% of the employed work force absent due to sickness.

The primary aim of this thesis was to study the outcomes of decisions taken at the Social Insurance Offices in a Swedish county with regard to work resumption after vocational rehabilitation (VR). Another specific aim was to evaluate whether social insurance officers show conformity of attitude regarding professional practice in their application of the insurance system. The reasoning behind this is that outside the legal framework and official policy, consciously or subconsciously, there is a selection of sick-listed persons to VR, and that the selection influences the outcome with respect to work resumption or disability pension.

The study is based on all 832 clients granted VR (4.7 % of about 17,000 cases of sick listing) from six local social insurance offices in Sweden during 1998-99. Data were collected from mainframe registers and other records at each office. The register study was combined with a questionnaire study addressed to 30 social insurance officers at the offices. The questions concerned attitudes to the insurance system and the officers' practice and application of the system.

The proportion of clients with sickness allowance that received any VR measures varied among the offices from 1.2 % to 8.7 %. Among those granted VR 36% were men and 64% women. The predominant diagnosis group was musculoskeletal disorders/pain conditions. Of all cases receiving VR, 52.4% resumed work and 46.2% ended with a disability pension allowance. Two years after finalised VR a large proportion of the temporary disability pensions had become permanent. Among cases granted VR, those undergoing detailed investigation showed the lowest figures of work resumption, while those who did job training showed higher figures. The distinguishing factor between remaining at work and relapsing into sick-leave by the two-year follow-up was the duration of sick-leave. Those most likely (odds ratios) to remain at work two years after completed rehabilitation were industrial employees who had short sickness absence, had been selected for job training as a VR measure and were aged 16-29 years. Intra-county differences occurred in processing cases of sick-leavers who take part in VR measures. The local social insurance offices with the highest and lowest outcome rates of work resumption and disability pension, respectively, selected clients for VR from different categories of cases. The differences in characteristics appeared as duration of sick-listing. The offices whose clients had long sickness absence, including processing time for VR, and frequently used detailed investigation as a VR measure, showed more disability pension grants as outcomes of VR. Social insurance officers from different local insurance offices differed in their attitudes towards the social insurance system and its clients.

Key words: rehabilitation measures, disability pension, sick-listed, intra-county differences, work resumption, diagnoses, sick-leave, vocational rehabilitation, return-to-work, unemployment, sickness benefit, health insurance.

ISBN 91-7140-659-X

CONTENTS

ABSTRACT	5
CONTENTS	6
ORIGINAL PAPERS	9
AIMS OF THE STUDY	10
DEFINITIONS	11
INTRODUCTION	12
SICKNESS ABSENCE IN AN INTERNATIONAL COMPARISON	12
NATIONAL SOCIAL INSURANCE	12
<i>The concept of disease</i>	13
<i>Statutory provisions</i>	13
<i>New provisions on sickness compensation and activity compensation</i>	13
VOCATIONAL REHABILITATION	14
THE SOCIAL INSURANCE OFFICERS' ROLE IN REHABILITATION	15
THE PROCESS OF VOCATIONAL REHABILITATION	16
<i>Step-by-step assessment; steps 1-6</i>	16
<i>Step-by-step assessment, step 7</i>	16
VR MEASURES	17
THE COUNTY	18
FRAMEWORK OF THEORY	20
LITERATURE	21
FACTORS ASSOCIATED WITH SICKNESS ABSENCE	21
<i>Health and medical care</i>	21
FACTORS ASSOCIATED WITH SUCCESSFUL VR AS WORK RESUMPTION	22
<i>Early start of VR and shortening duration of sickness absence</i>	23
<i>Gender</i>	23
<i>Clients' workplaces</i>	23
<i>Several authorities</i>	24
FACTORS ASSOCIATED WITH UNSUCCESSFUL REHABILITATION	24
<i>General factors</i>	24
<i>Economic factors</i>	24
FACTORS ASSOCIATED WITH DISABILITY PENSION	25
<i>Groups of diseases</i>	25
DIFFERENT TYPES OF REHABILITATION	25
<i>Multidisciplinary rehabilitation</i>	25
<i>Multimodal cognitive-behavioural rehabilitation programmes</i>	25
<i>Functional restoration programmes</i>	26
<i>Medical programmes aiming at return to working life</i>	26
THE LITERATURE SUMMARISED	27

MATERIALS, METHODS AND STATISTICS	27
SELECTION OF INSURANCE OFFICES	27
SUBJECTS	27
<i>Exclusion of cases</i>	28
<i>Clients granted vocational rehabilitation</i>	28
<i>Diagnosis</i>	28
STUDY DESIGN	29
<i>Follow-up</i>	29
<i>Questionnaire</i>	29
STATISTICS	30
<i>Register investigation</i>	30
QUALITY OF DATA	30
RELIABILITY AND VALIDITY	31
LIMITS AND BIAS.....	31
<i>Control groups</i>	31
<i>Generalization</i>	31
ETHICAL INSPECTION.....	31
RESULTS	32
VOCATIONAL REHABILITATION MEASURES AND OUTCOMES (STUDY I).....	32
<i>VR Measures</i>	32
<i>Outcome after VR</i>	32
<i>Unemployed clients</i>	32
<i>Predominant economic sectors</i>	33
<i>Duration of sick-leave</i>	33
<i>Diagnosis</i>	33
DISABILITY PENSION (STUDY II)	34
<i>Statutory provisions regulating rehabilitation and pensions</i>	34
<i>Differences between the groups</i>	34
<i>Factors for and against work resumption</i>	34
<i>Gender</i>	35
<i>Employed vs. unemployed</i>	35
<i>Changes in type of disability pension</i>	35
OUTCOMES TWO YEARS AFTER REHABILITATION (STUDY III).....	37
<i>Outcome after two years</i>	37
<i>Employed vs. unemployed</i>	37
<i>Type of VR measure</i>	37
<i>Gender</i>	37
<i>Age</i>	38
<i>Odds ratios for work resumption after VR and at the two-year follow-up</i>	38
<i>Age</i>	40
<i>Detailed investigation</i>	40
<i>Sick-leave period</i>	40
<i>Employment</i>	40
INTRA-COUNTY LOCAL DIFFERENCES (STUDY IV)	41
<i>Employment</i>	41
<i>Differences between the six offices concerning case characteristics</i>	41
<i>Results of questionnaire section regarding SIOs' attitudes</i>	43

DISCUSSION	47
GENERAL ASPECTS	47
WORK-RESUMPTION AS AN OUTCOME MEASURE	47
<i>VR measures</i>	48
DIAGNOSIS	48
EARLY START OF VOCATIONAL REHABILITATION	49
THE VOCATIONAL REHABILITATION ACTORS	49
<i>Social insurance officers</i>	49
<i>The client</i>	49
<i>The employer</i>	50
<i>Physicians</i>	50
SUMMARY OF RESULTS AND CONCLUSIONS.....	51
STUDY I.....	51
STUDY II.....	51
STUDY III.....	52
STUDY IV.....	53
ACKNOWLEDGEMENTS.....	54
REFERENCES	55

ORIGINAL PAPERS

This thesis is based on the following studies, which will be referred to in the text by their Roman numerals.

- I.** Ahlgren, Å., Bergroth, A., Ekholm, J.:
Work resumption or not after rehabilitation? A descriptive study from six social insurance offices.
International Journal of Rehabilitation Research, 27 (3):171-180, 2004.
- II.** Ahlgren, Å., Broman, L., Bergroth, A., Ekholm, J.:
Disability pension despite vocational rehabilitation? A study from six social insurance offices of a county.
International Journal of Rehabilitation Research, 28 (1):33-42, 2005.
- III.** Ahlgren, Å., Bergroth, A., Ekholm, J., Schöldt, K.:
Work resumption after vocational rehabilitation. A follow-up two years after completed rehabilitation.
Submitted.
- IV.** Ahlgren, Å., Bergroth, A., Ekholm, J., Schöldt, K.:
Selection of clients for vocational rehabilitation at six local social insurance offices. A combined register and questionnaire study on rehabilitation measures and attitudes among social insurance officers.
Submitted.

All previously published papers are reproduced with permission from the publisher.

AIMS OF THE STUDY

The primary aim of the work was to study clients granted vocational rehabilitation measures after decisions by insurance offices of a county with regard to post-rehabilitation outcomes such as work resumption, sickness allowance or disability pension. An underlying question concerned how the resources of social insurance offices are used for vocational rehabilitation.

The main aims of the studies constituting the present work were

Study I

– to describe measures and outcomes of VR at six local social insurance offices in the same county;

Study II

– to evaluate the proportion of cases granted VR measures and still resulting in permanent or temporary disability pension;

Study III

– to evaluate work resumption, disability pension and sickness absence among previous sick-leavers granted VR measures, directly after completed VR and two years subsequently;

Study IV

– to evaluate local intra-county differences in the handling of sick-leavers taking part in vocational rehabilitation.

DEFINITIONS

Vocational rehabilitation (VR):

Vocational rehabilitation (VR) is here defined as medical, psychological, social and occupational activities aiming to re-establish among sick or injured people with previous work history their working capacity and prerequisites for returning to the labour market, i.e. to a job or availability for a job and abilities for a normal life (Höök & Grimby, 2001).

Social insurance officer (SIO):

In a social insurance office a case worker can process different kinds of case. In the present study the SIO is the case worker dealing with VR and interacting directly with the client.

Work resumption:

Work resumption indicates that a client has been signed out from the social insurance office and receives no allowance from the social insurance system. The term refers to persons who have returned to work but also to unemployed people taking part in any labour-market-oriented programme or available to take a job. Work resumption may be partial: 25%, 50%, 75% of full-time.

INTRODUCTION

SICKNESS ABSENCE IN AN INTERNATIONAL COMPARISON

Sickness absence and disability pension in Western societies have increased to burdensome levels, socially and financially. A European study in 2003 showed that Sweden had the highest proportion of sick-listed people: 4.5% of the employed work force. For 2004, social insurance costs related to sick-listing corresponded to €1400 million, twice the growth of national GNP (Palmer 2005).

Along with Norway and the Netherlands, Sweden showed high figures of sickness absence for 2001: about 4.5% or at least one's week absence per year. The corresponding figures for Denmark, Finland, France, Germany and the UK were below 2.5%. Factors that affect the level of sickness absence are according to a government report age structure, frequency of female employment, and general level of occupation (Ds 2002:49).

When comparing countries it is necessary to consider the economic, social and political uniqueness of each. Levels and periods of benefit may vary in ways that may create difficulties for a relevant evaluation. One important difference between Sweden and many other countries is that there is no theoretical limit to the period of sickness benefit. This may partly explain why the periods of sickness allowance treated here are exceptionally long compared to studies from other countries.

A government report (Ds 2003:63) revealed important differences between countries in the form of built-in strategies for preventing and shortening sick-leave. Finland and Germany, with low levels of sickness absence, impose legal obligations on their national social insurance offices to provide measures for health promotion and the prevention of sickness. In both those countries the offices cooperate in preventive activities at workplaces. Occupational health care is compulsory by statute or otherwise in the other countries. In Sweden such activities are neither compulsory nor statutory. Further, both Finland and Germany require doctor's certificates at an early stage of sick-listing and there are guidelines for insurance-related medical assessment of working capacity. Moreover, certificates that deviate from the said guidelines are systematically examined. Sweden and the Netherlands have no corresponding practice for granting sickness allowance (RFV 2003:16). One consequence of the lack of insurance-related guidelines for medical assessment may be arbitrary regional differences in office practice for granting sickness allowance (Haglund and Rosén, 2003).

NATIONAL SOCIAL INSURANCE

The Swedish sickness insurance system compensates for loss of income for insured clients aged 16-64, i.e. benefit is payable when a person unable to support himself due to disease or injury. Two prerequisites need to be satisfied for the entitlement to apply: disease or injury and that this has led to impaired working capacity of 25% or more (Järholm and Olofsson, 2002).

For the purposes of social insurance, following a patient's visit the physician is required to state how the patient's medical status affects his or her functional ability and subsequently how any such functional impairment affects working capacity. Based on this statement, the SIO is to assess the degree of impairment and the patient's – now the client's – right to compensation (SOU, 1996).

Before 1 October 1995, Section 8 of Chapter 3 of the Swedish Act on Public Insurance (AFL) stated that the assessment of a client's right to sickness allowance should "... take into account what could reasonably be expected by the client with respect to his/her sickness, education and previous activity and age, conditions of domicile and other such circumstances".

The wording introduced in 1995 is considerably stricter:

"In the assessment of sickness, no regard should be taken to aspects related to labour-market, economic, social and other such circumstances" (Section 7 of Chapter 3, AFL).

The concept of disease

Entitlement to sickness allowance and disability pension requires a defined disease or diagnosis. The term disease is not defined in the Act on Public Social Insurance (SFS, 1962). Statements by the Social Insurance Committee in the 1940s are still used as a guideline (SOU, 1944). In the assessment of whether a patient's perceived condition of illness counts as a disease, the guideline referred to what contemporary language and medical practice held as sickness. Hence legal practice is not tied to a fixed definition but open to considerations of fairness in the individual case. Accordingly the concept of disease may, under the same set of rules, be adapted to cultural changes and scientific progress (SOU, 1995).

Compensation system have been obliged to provide sickness pay during the first two weeks of sick-leave (SFS 1991:1047). For the employed, a sick-leave case is recorded with the social insurance office from day 15, when the responsibility for sick pay is transferred from the employer to the insurance office. For employed people, sickness absence shorter than 14 days is not recorded. Sick-leave cases for unemployed people are recorded with the insurance office from day one, since there is no sick-pay period from any employer.

The client's income is the basis for calculating the level of sickness allowance (SGI). The allowance is assessed by the social insurance office based on an estimated annual income. The lowest level of SGI is 24% of a "price base amount", which for 2004 was €4226 (exchange rate 9.30, i.e. SEK 39300). The maximum SGI is 7.5 times the price base amount. Unemployed people with no wage income may keep their SGI while unemployed provided they are registered with the employment office as actively seeking a full-time job. Sickness benefit is payable at four levels 25%, 50%, 75% and 100% related to the client's assessed working ability.

Statutory provisions

Different rules apply as the legal framework for vocational or back-to-working-life rehabilitation. The relevant provisions are in the Labour Environment Act, AML (1997:1160), the Public Social Insurance Act, AFL (1962:381), the Security of Employment Act, LAS (1982:80) and the Health and Medical Care Act, HSL (1982:763).

New provisions on sickness compensation and activity compensation

Since this study is based on the allowance system in use before 1 January 2003, and since the new terminology is not fully compatible with the old, the old terminology is used throughout the text.

As from 1 January 2003, the provisions regarding temporary and permanent disability pension for persons with medically-grounded permanent or long-term impairment of working ability were abolished. Instead, new provisions covering sickness compensation and activity compensation were incorporated in the National Insurance Act (Swedish initials AFL), Lagen (1962:381) om allmän försäkring). The previous institutions were part of the national pension

insurance system, whereas the new forms come under national health insurance. The criteria for impaired working capacity and assessment of the right to sickness compensation and activity compensation are the same as those previously applied for permanent disability pension. Sickness compensation covers insurance clients aged 30-64 with a permanent work-capacity impairment. If the impairment is deemed to be temporary (minimum one year), temporary sickness compensation is granted.

Activity compensation is temporary. Allowance periods are 1-3 years and the compensation form covers ages 19-29. One objective of this form of compensation was to support young clients with a long-term impairment and stimulate them to be active during the allowance period.

VOCATIONAL REHABILITATION

Vocational rehabilitation (VR) is nothing new in the Swedish social insurance system. Over the years rehabilitation has been officially investigated with a view to finding methods for preventing long-term sick leave and returning sick-listed people to working life. The chief policy has been the “work line”, stressing active measures before passive allowances (Kerz et al. 1995, Marklund, 1995, SOU 2000:78).

Increased emphasis on VR was introduced into the Swedish social insurance legislation through the rehabilitation reform of 1991/92. Of its three cornerstones the first was *an improved work environment*, where the employer was expected to assume more active responsibility for rehabilitation of employees. The means for exercising this responsibility were planning, managing the work, and promoting a good work environment including the organisation of rehabilitation and measures for adapting job tasks. Secondly, *more efficient rehabilitation* implied shifting rehabilitation towards working life with measures for facilitating work resumption for e.g. the long-term sick-listed. Also encompassed were requirements for setting up rehabilitation investigations and rehabilitation plans for the sick-listed. Further, statutory provisions explicitly enjoined social insurance offices to initiate and co-ordinate measures from different instances involved in the rehabilitation process – the actors. The third cornerstone was implementation of a ‘*general employer’s period*’. Subject to one day of qualification, the employer pays the first two weeks of sick pay (SFS 1991:1047). The intention was to create an economic incentive for employers to take greater responsibility for the work environment and health.

An official state report (SOU 2000:78) does not hold the aims have been reached. One factor raised is the vast and unmet need for rehabilitation measures and that, when taken at all, the measures come at an ever-later stage (Henrekson et al. 1992, Marnetoft et al. 1997, Bendix et al 1998, Selander 1999, SOU 2000:78, Marnetoft et al. 2001, Selander et al. 2002, Baril et al.2003a, Ahlgren et al. 2004 and 2005, Eklund et al. 2005, Hansen et al. 2006). Also, the system of rehabilitation support in the public sector is strongly under-utilized (Heijbel et al. 2005).

In Sweden, patterns of sick-listing and VR show great regional differences. Yet there seems to be no simple answer or single reason for these differences (SOU 2002:5). Particularly for rural areas, it is difficult to find the explanations in varying demographic, socioeconomic and labour market conditions. Instead, disparities may be derived from diverging practice in the application of the social insurance rules (RFV 2003:17). The legislation stipulates equal access to rehabilitation measures regardless of domicile within the country (Chapter 22, section 5, Social Insurance Act, 1962:381 (AFL). Yet VR is not a general “citizen’s right” but an opportunity offered after selection.

The high number of sick-listed people has consequences not only for the individuals and their families but also for the labour market and for society as a whole (Hogstedt et al. 2004). Long-term illness also implies a problem of re-entry into the labour market. Here, effective VR, active labour-market policies and employment protection may help those with impaired working capacity to remain in the labour market and able to support themselves (Burström et al. 2000).

THE SOCIAL INSURANCE OFFICERS' ROLE IN REHABILITATION

SIOs play a central part in the rehabilitation process (Östlund et al. 2001, Åhrberg et al. 2002, Hansen 2005). Even so, few studies focus on the decision-making process between SIOs and their clients: how their interaction affects the process (Söderberg and Alexandersson, 2005a).

The SIOs have twofold tasks. One is to co-ordinate measures and to support the sick-listed client in his or her attempt to resume work. At the same time the SIO is to investigate and assess the client's right to sickness allowance according to Ch 7, sec 1, first para of the Social Insurance Act (AFL). Thus SIOs have to balance the client's requirements and wishes, relevant legal provisions and the intentions/targets of any organisations involved. The contrary positions presuppose a bureaucratic role as well as a professional one, both necessary for achieving the best results (Hall 2001). If the professional part is insufficient, for instance due to lack of research, SIOs are compelled to seek support wherever they can, and this is the administrative domain, with its production targets and legal requirements. Lacking a scientific basis for their work, there is a risk that the SIOs will seek bureaucratic legitimacy rather than professional. Conversely it is essential that legislative norms and administrative routines keep pace with research so that SIOs are not hindered by bureaucracy from applying new methods and ideas.

Social insurance officer is not considered a profession in its own right. SIOs may have totally differing professional backgrounds and may have completely diverse professional views. This may be a valuable asset or a burden in the encounter with clients in terms of communication, empathy, treatment etc. In terms of professional competence, treatment of clients and internal co-operation, informal learning seems to be of great weight for case-handling at the social insurance offices (Edlund, 2001, Edlund and Dahlgren, 2002, Hagmyr 2005). While there are great differences in the ways that SIOs perceive their *factual* role, they share a consistent community of values with regard to the *expectations* of their role (Edlund (2001).

Over time, the Act (1962:381) on Public Social Insurance has been given a varying scope of application. Without any legislative changes or amendments in this respect, the circle of clients granted protection has varied in relation to the shifting status of the labour market (Westerhäll 1997).

According to Cha 22 , sec 5 SFS 1962:381, AFL, regulating the mandate of rehabilitation, the SIO must "in conjunction with the insured client ensure that his/her needs for rehabilitation are assessed and that the appropriate measures for effective rehabilitation are taken".

Government Bill 1989/90:62 (Prop 1989/90) allows insurance offices to purchase rehabilitation services in order to fulfil this obligation. Further prerequisites for such services are that they should be of vocational as opposed to medical character and, in addition, be of immediate importance for bringing the client back to work.

The costs of such activities are specially funded by the government on an annual basis. The internal distribution of the allocated means varies between local and regional insurance offices. So far there is little research to indicate what type of rehabilitation gives the best

results and even less on what measures are the most successful. Within the framework of the Swedish social insurance system, very few comprehensive evaluations have been made of these measures in relation to work resumption (SBU 2003).

THE PROCESS OF VOCATIONAL REHABILITATION

Rehabilitation measures are taken at the initiative of the treating doctor, the sick-listed person himself/herself, the employer or the social insurance officer (SIO). Reasons may be that the sick-listed person needs a VR measure in order to return to previous work or to train for a new job with the aim of increasing his/her availability. Detailed investigation of working ability may be needed in order to assess the sick-listed client's residual capacity; on occasion also in relation to particular areas of work or degrees of workload.

Assessment of a client's right to sickness allowance, temporary disability pension and need for VR follows the "step-by step" model (Insurance Office Guidelines; RFV Vägledning 2004:2).

Step-by-step assessment; steps 1-6

The assessment of working ability should be carried out gradually in steps. When an insured client is unable to return to his or her ordinary work (step 1), the primary measure is to seek alternative tasks with the client's employer (step 2-4). In the absence of suitable alternative work, or if such a measure would require overly lengthy rehabilitation, the client's work capacity should then be assessed against the general labour market (steps 5 and 6). A client who, despite disease, can manage a different normal job (step 5) is not entitled to any social insurance allowance. Other types of work than those normally existing on the job market should be considered only if they are actually available to the client (Government Bill 1996/97:28 pp 18 and 27). If an insured client is no longer capable of managing his or her work full-time, alternative work with the employer or another job normally existing on the labour market, but is still assessed as having residual work capacity, he or she may be entitled to a partial allowance (Sec 7, paras 3-5, Ch 3, Social Insurance Act (AFL): see also Government Bill 1996/97:28 p.13).

Step-by-step assessment, step 7

If examination of a case of sick-leave shows that impairment of the client's work capacity is permanent or will last for more than a year, Sec 1, Para 2, Ch 16, Social Insurance Act (AFL) states that sickness allowance should be replaced by permanent or temporary disability pension. A corresponding assessment should be made if the client applies for a pension allowance (Government Bill 1996/97:28 p.20).

In principle, working capacity is not considered permanently or protractedly impaired by at least 25% until such reasonable and relevant rehabilitation measures have been taken. Thus until all possibilities of rehabilitation have been exhausted yet the work inability remains, the insured client will remain entitled to sickness allowance or rehabilitation allowance (Prop. 2002/03:89).

In Sweden, a person granted a disability pension may apply for a temporary suspension of this for up to 24 months in order to "try" resuming work. During this period, the client retains the allowance from the social insurance office, irrespective of any wages earned meanwhile. This allows the client to feel his or her way without economic risk should work resumption prove a failure. However, extremely few clients use this opportunity.

VR MEASURES

Before VR is commenced, a rehabilitation plan is made in conjunction with the sick-listed, and sometimes also with the employer. The insurance doctor or the treating physician may be consulted so that no steps are taken that would conflict with the medical treatment.

The choice of VR measures may vary over the country. Purchasing is organised at county level and the availability of external suppliers of VR may differ from county to county. In addition, local insurance offices may sign contracts with external rehabilitation providers for measures not covered by the central agreements. Depending on the value of the contract, formal calls for tender have to be made in accordance with public procurement legislation.

The most common VR measures investigated were:

1. Job training. If evaluation of the client leads to the conclusion that full and immediate return to work is impossible, tasks and working hours can be adapted to the client's condition. This may lead to the client initially working alongside colleagues but with limited responsibilities, activities etc. to reduce the risk of increased distress or disorder. Working hours may also be adapted to 25, 50, 75 or 100% of ordinary hours. Job training may be ordered for up to three months per period of sick-listing. During this period working hours may be increased gradually to find a level that does not lead to the client's further distress. With a view to finding tasks adapted to, or even reducing e.g. pain intensity, job training can also take place outside the client's ordinary field of work.
2. Detailed investigation is used to achieve a detailed medical, physical and/or psychological assessment of disease, with the aim of appropriate planning of the client's future. For instance it is necessary to establish whether the reduced working ability is seen as short-term or long-term estimated working ability; whether the reduced working ability is general or the distress or disorder is related to certain tasks or working areas. Investigation may be further used to assess the client's right to various allowances at any of the four levels noted earlier and related to the client's assessed work ability. Thus if the client has work ability of 75%, the allowance level is 25%. Besides work ability, an investigation may also include e.g. the client's social circumstances and occupational qualifications.
3. Studies and education are examples of other VR measures used for facilitating the client's move to another field of work, where the disease or distress would not restrict work capacity. Re-education may enable the sick-listed person to return to employability. Under the social insurance system and in the context of a rehabilitation plan, the insurance offices have authority to supply vocational training for up to one year.
4. Combined measures. Various local VR measures are also purchased by SIOs with the aim of enabling clients to return to work or regain employability. For example, programmes are available for the sick-listed person to undergo physical training, regime and lifting technique training. Further local rehabilitation measures are described below.

BRYGGAN, "the Bridge", was a rehabilitation activity set up by the municipal adult education organisation for clients with recurrent sick listing. The aim was to create a long-term work or study situation. A 20-week curriculum was set up consisting of e.g. job training or practice, vocational guidance and opportunities to

try studies. Subsequently, BRYGGAN was extended by another 20 weeks and re-named TRAMPOLINEN, “the springboard”, to create better opportunities for those needing more time and training to get back to work or studies. When finance for these activities was withdrawn, an EU project called BRÄNNINGEN “the breakers” was initiated as a replacement at the Centre for Flexible Learning, CFL, in the local adult education organisation. It is directed to three major groups, youth, the unemployed and the long-term sick-listed. The aim is to create a stable work or study situation. Individual project activities are carried out for at least four weeks. The main curriculum consists of Swedish language, mathematics, English language, social studies, information technology and health care – keep-fit measures. For all these activities, the social insurance offices have been able to purchase services for long-term sick-listed clients as a VR component.

VENTURA is a programme for alcoholics and drug addicts. The aim is to help participants to a life without drugs and alcohol. Ventura also arranges a training programme for treatment assistants.

Activities During Sick Listing, (AUS), is a project in conjunction with local primary health care and the county health administration (Finsam), where the original target group was recently-sick-listed people with emotional problems. Subsequently, as levels of sick-listing increased and began showing a new pattern, the project was modified to embrace also stress-related disorders. In addition the staffing was extended from a half-time physiotherapist to a full-time physiotherapist and the co-operation of a health instructor, a psychotherapist, a qualified welfare officer and a social insurance officer in a specially-designed team. Project activities included six weeks of practical and theoretical seminars and a ten-week programme of group therapy meetings on stress handling.

The BORIS project was a VR project run in conjunction by the municipality, social insurance office and job centre. It was financially supported by the European Social Fund. The objective was to develop a method for local co-operation between authorities involved in VR, particularly for long-term sick-listed people with complex work disabilities. The concrete aim of co-ordinating VR measures was to create a long-lasting solution as to work/occupation/livelihood resulting in a higher quality of life for the target group.

THE COUNTY

The county studied is situated 200-400 km north of Stockholm, the Swedish capital. Of the ten municipalities, six were represented in the study with one social insurance office each. All the six municipalities lie in an area regarded as sparsely populated and with declining populations (Table.1).

Table 1. Population of each municipality 1998 / 1999: difference and density, inhabitants/km².

Population	Municipality					
	A	B	C	D	E	F
Total 1999	27075	12623	10987	6222	37511	27842
Age 16-64 1999	15537	7386	6182	3693	21880	15888
Difference 1999-1998						
Total	-220	-178	-204	-34	-394	-367
Age 16-64	-84	-124	-158	-7	-256	-239
Inhabitants/km²	15.0	6.6	27.0	5.7	31.5	26.0

Source: Statistics Sweden, SCB. A to F represent the different offices.

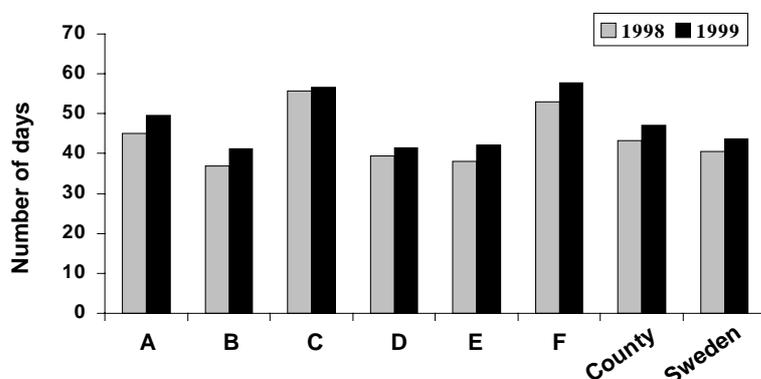


Figure 1. Incapacity rate for each municipality. Source: Statistics Sweden (SCB).

Incapacity rate is defined as number of days with benefit, per person aged 16-64 and year, based on sickness benefit, rehabilitation allowance, work injury allowance, training allowance, temporary disability pension and disability pension. Compensation with sick pay from an employer is not included in the incapacity rate. Values are presented as full days e.g. two days of half allowance payment count as one day.

The county shows top scores nationally with regard to both unemployment and sick-listing. Of the 21 counties in Sweden, this county came second in 1998 and 1999 with 11% unemployment (openly unemployed plus participants in labour-market programmes) (AMS register 1998-1999). Sick rate, defined as allowances distributed by social insurance offices in this county, is among the country's highest, with 14.8 per 1000 registered insurance clients aged 16-64 years, per 31 December 1999. The corresponding figure for all insurance offices in Sweden was 13.8 (RFV Register, Statistical Information, 1999). The incapacity rate also differed substantially between the six municipalities (figure.1).

Major economic activities within the municipalities were: manufacturing, pulp and paper industry, geriatric and medical care, and trade and transport. However the types of industry differed. The prevailing industry at the location of office B is small-scale factories and offices. The location of office C is dominated by one major large-scale concern.

FRAMEWORK OF THEORY

The development of theory in vocational rehabilitation science is as yet weak, being replaced largely by government directives. The reasoning used in the present studies is founded on a principle of selection of clients to receive vocational rehabilitation (VR) measures.

Since the economic means for purchasing VR services vary and are sometimes not in proportion to the number of clients, a selection is made. Thus clients that receive VR have been prioritised in relation to other clients. This prioritisation or selection of clients given access to VR is a factor that, in concert with other important factors such as gender and demographics, explains the outcome of the measures.

One explanation of this selection could be that the same group of SIOs is responsible both for VR measures aiming at work resumption and for investigating remaining working ability as a basis for deciding about pension grants. Client selection would then be into the “healthiest” and the “sickest”, where the former return to work and the latter are given detailed investigation in order to confirm their reduced working ability. This in turn implies that the “healthiest” will respond well to VR and return to work; they will also have better chances of remaining there.

The “sicker” group would also include more complex cases with long-term sick-leave, perhaps combined with unemployment. Demographic factors and the job-market situation may further affect the selection to the various groups. This could also favour the “healthier” group in that these cases receive job training while the more complex cases receive detailed investigation.

Two possible models of this reasoning have been used by Marklund (1995) for explaining disability pensions and sick-listing at society level. They are the *repulsion* model and the *attraction* model.

The repulsion model is connected to workplace and job-market factors. Following rationalisation and requirements for higher efficiency, employees unable to cope with new demands or with reduced work ability face a higher threshold for being offered rehabilitation in connection with sick-listing. Instead they may be offered disability pension as a legitimate/convenient way out of the job market. This model fits in with various structural changes in the job market, resulting in changes in competence requirements. This then eliminates employees with lower education and training.

In the *attraction* model the individual is viewed as a rational actor able to choose a form of entitlement instead of work if his or her economic situation permits. Here, the expansion and the levels of social insurance have a critical role in making such choices possible. In the attraction model a shift towards more and more types of sickness that will entitle clients to benefit thereby creates a system of economic protection covering an increasing number of situations.

The actual increase in permanent disability pensions could be explained by both models. (Lindqvist 1995).

Based on these two models the considerations of SIOs with regard to the current labour market situation, the clients’ motivation and chances of staying in the job market form a basis for the selection made in relation to the client’s local circumstances.

An underlying theory for the model mentioned above could be that of ‘street-level bureaucracy’, as introduced by Lipsky (1980) and used in research where public-service professionals interact directly with citizens in their work and have substantial discretion in the

execution of their tasks. The SIO's role is one of 'street-level bureaucracy': they have to respond to clients within a humanistic ideology but from within a bureaucratic structure orientated towards needs defined on a mass basis (Johansson 1992). Lipsky argued that 'street-level bureaucrats' have cope with a work situation characterised by inadequate resources, large caseloads and unpredictability of clients. They do this by developing practices such as rationing services or modifying objectives to match performance.

With the SIO's role seen in the light of Lipsky's theory, the *repulsion* and *attraction* models could function as a rational tool for explaining how SIOs, in their professional discretion, balance their selection of sick-listed clients to VR with a view both to meeting the wishes of their clients and alternatively complying with office performance targets. Lipsky's term may thus function as a guide to understanding SIOs' work situations, and for explaining underlying reasons for the selection of cases to VR.

LITERATURE

Few scientific articles deal with specific VR measures and the outcome in terms of work resumption; and few follow up the measures, investigating how far clients remain fit for work one to two years after completed VR. The present literature search was therefore directed towards studies of what are generally held as positive concepts from a VR point of view. Many of the present clients were unemployed when undergoing VR, and the literature search therefore included unemployment and the situation of employed.

FACTORS ASSOCIATED WITH SICKNESS ABSENCE

Underlying causes of sick-listing are manifold. Among the most frequent are an increasing proportion of elderly people at work, rationalisations that have created tougher working conditions and higher levels of sickness allowance (RFV 1999, Marklund et al. 2005, Bjurvald et al. 2005). Age, female gender, immigration, lower socioeconomic status and location of residence may also play a part (Grossi et al. 1999, SBU 2003). The quality of the work environment and social relations independently affect sickness absence (Melchior et al. 2003). Changes in psychosocial work environment such as improvement in social support at work and increased control over one's job are associated with a reduced risk of subsequent long spells of sickness absence (Head et al. 2006). In a study by the RFV (2003:10), half the respondents stated that their sick-leave was work-related. But health is also patterned on family and employment status, especially among women (Holmgren and Dahlin Ivanoff 2004, Voss et al. 2004, Roos et al. 2005).

In Sweden, sickness absence has varied historically with the state of the trade cycle (Ds 2002:49).

Health and medical care

Patients seem to have a major influence on the outcome of visit to a practitioner regarding sick-listing, the physician apparently being influenced by how patients present their problems and responding as the latter wish. Physicians also differ with respect to frequency, patterns and duration when they grant sick-leave certificates (Englund and Svärdsudd 2000, Englund et al. 2000b, Arrelöv et al. 2001). It may be that physicians' sick-listing practices are influenced by local structural factors (Arrelöv et al. 2005).

Previous studies show that patients' self-assessed work ability or predictions of the length of sick leave seem to be a useful prognostic indicator of actual duration (Reiso et al. 2001, Fleten et al. 2004). Physicians apparently predict return to work more accurately in cases of brief episodes than in long-term ones (Reiso et al. 2004). Patient's self-rated health may also provide a helpful complement to a physical evaluation of health (Undén and Elofsson 2001) and of subsequent mortality when it comes to reported poor self-rated health (Burström and Fredlund 2001).

Very few studies have addressed the topic of physicians' sickness certification practices, and even fewer the interaction between professionals involved in the same case (Söderberg and Alexandersson 2003). One way to improve this situation could be inter-professional training, starting at student level, to stress the importance of good communication for teamwork (Ponzer et al. 2004).

The legislative changes implemented on 1 October 1995 had no effect on length of sick-listing. This indicates that other factors than legislation may be more important for physicians' practice (Englund et al. 2000a, Arrelöv et al. 2003), for instance increased information or classes in insurance medicine.

FACTORS ASSOCIATED WITH SUCCESSFUL VR AS WORK RESUMPTION

In the present study, successful VR is defined as resuming work, fully or partially. Factors in whether people resume work or even retain their work capacity seem complex and not only a question of health status. With regard to factors correlated, individually or in concert, with positive outcome, various studies indicate that the demographic variables age, gender, education, and marital status affect the tendency to return to work (Tate 1992, Hennessey and Muller 1995). Motivation, coping ability, sense of coherence, stimulating working situation, short periods of sick-listing after injury or sickness, low age, and patients' expectations of recovery are also considered important factors for work resumption and retention (Schechter 1997, Bendix et al. 1998, Grahn et al. 2000, Watson et al. 2000, Marnetoft et al. 2001, Berglind and Gerner 2002, Haldorsen et al. 2002, Selander et al. 2002, Baril et al. 2003a, Melin and Fugl-Meyer 2003, Borg et al. 2004, Schultz et al. 2004). Of further importance for work resumption are the client's own motivation, expectation and belief that he or she will return to work, and his/her perception of changes of health status (Eklund et al. 1991, Schechter 1997, Berglind and Gerner 2002, Melin and Fugel-Meyer 2003, Gerner 2004, Grahn et al. 2004, Hansen et al. 2005). Motivating factors could be health, self-confidence, relationships and contentment (Gard and Sandberg 1998). The self-esteem and faith of the client in returning to work are important in patients with persistent low-back pain (Pfungsten et al. 1997).

The chances of getting VR tend to increase when clients give their own proposals for measures (RFV 1997:6). Measures that SIOs held important for improving VR were early identification of problems, clear targets and more activation of employers in VR (Gard and Söderberg 2004).

Case management or professional mentorship seeking to support the client has a good effect on work resumption (Salazar et al. 1999, Marnetoft and Selander 2000, Green-McKenzie et al. 2002, Janssen et al. 2003, Shaw and Feuerstein 2004, Selander and Marnetoft 2005). Respectful reception by social-insurance staff and access to a professional mentor have been mentioned as important for successful VR (Östlund et al. 2001, Åhrberg et al. 2002, Hansen 2005, p75).

Early start of VR and shortening duration of sickness absence

Several authors mention the duration of sickness absence or days on sick-leave as important for work resumption (e.g. Henrekson et al. 1992, Marnetoft et al. 1997, Bendix et al 1998, Selander 1999, SOU 2000:78, Marnetoft et al. 2001, Selander et al. 2002, Baril et al.2003a, Ahlgren et al. 2004 and 2005, Eklund et al. 2005, Hansen et al. 2006).

Gender

Studies show seemingly conflicting results with regard to work resumption related to gender, Men more often return to work than women do (Hennessey and Scott Muller 1995, Ahlgren and Hammarström 1999, Marnetoft et al. 2001).However, other studies show women having a higher level of early return to work than men (Bendix et al. 1998, Baril et al. 2003).

In patients with psychiatric diseases/disorders, women reportedly have a higher cumulative incidence of sickness absence, but men have more sickness absence days per sick-listed person and absence episode (Hensing et al. 2000).

Clients' workplaces

Franche et al. (2005) concluded that workplace-based return-to-work interventions (RTW), associated with musculoskeletal disorders or other pain-related conditions can reduce work disability duration and associated costs. They found evidence that the duration of work disability was reduced by work accommodation offers and contact between health care provider and workplace. Other studies of VR have supported the importance of clients' keeping in touch with the workplace (Bendix et al. 1998, Selander et al. 2002, Nordqvist et al. 2003). One factor for retained work ability, in a one-year follow-up study, was having a physically non-strenuous job (Lindberg et al. 2005).

Job training as a method enables the client to establish or maintain contact with a workplace, or alternatively to gain experience in a new job area. Modified work programmes facilitate return to work: injured workers who are offered modified work do return about twice as often as those who are not (Krause et al. 1998). This contradicts another study, though, which showed no difference in duration of sick leave for employees with modified work (van Duijn et al. 2005). For unemployed clients with persistent low-back pain, VR can to advantage focus on work skills and job training (Watson et al. 2004).

Programmes including education facilitate return to work (Lundh 2000, Marnetoft et al. 2001). Subsidized temporary jobs seem more successful than non-profit employment programmes in getting the unemployed back to work (Gerfin et al. 2005). Programmes where participants obtain work experience and work training provided by firms have better outcomes than VR based on classes (Carling and Richardson 2004). In a support perspective, the culture of the workplace and its surrounding actors affect return to work (Friesen et al. 2001, Baril et al. 2003b).By taking part in "real" activities, clients are enabled to cope with their reduced working capacity in ways that do not hinder them in doing the job tasks. Thus, job training can contribute to achieving this goal by modifying the working environment or improving the client's ergonomic behaviour.

Work is an important part of a person's quality of life and self-esteem. A study of life satisfaction after brain injury showed that more persons in the group 'back to work and studying' were satisfied with their ability to perform activities of daily living (Johansson and Bernspång 2003). Of those with brain injury the most common returned-to-work situation is that they can only manage part-time, because of fatigue (Johansson and Bernspång 2001).

Several authorities

Work-related rehabilitation involves several interests as well as the client, e.g. the social insurance office, medical care, the employer and, for the unemployed, the employment service. When two or more authorities are involved, targets and definitions may not be fully coherent or may even be contradictory. Different welfare agencies sometimes lack common goals and outlooks, and this can impede the rehabilitation process (Lindqvist and Grape 1999, RFV 2001:1). Here co-ordination of VR measures taken by different agencies may make the VR more efficient and improve the client's chances of resuming work (van Lierop et al. 2000, Jakobsson et al. 2002). Target groups for various projects of co-ordination/combined VR measures are people in contact with two or more authorities at the same time. Such projects seek to co-ordinate VR measures more efficiently and to reduce the risk of individuals falling between the responsibilities of different authorities.

FACTORS ASSOCIATED WITH UNSUCCESSFUL REHABILITATION

General factors

Factors associated with unsuccessful rehabilitation include old age, female gender, unemployment, a delayed start on rehabilitation, poor education and full-time sick-listing before start of VR (Marnetoft et al. 2001), high pain intensity, low self-assessed work ability, and a self-predicted estimation of not returning to work (Reiso et al. 2003). For unemployed clients, long unemployment, much self-estimated bodily uneasiness and depression are factors connected with negative work-resumption (Watson et al. 2004).

Economic factors

Some studies show that economic compensation after VR, sickness benefit or disability pension counteracts return to work (Lysgaard et al. 2005, Rasmussen et al. 2001). The economic realities of life may conflict with the will to work if the benefit level is high.

Accordingly, "successful" VR may imply reliance on an uncertain salary rather than on a regular "income", i.e. disability pension (Drew et al. 2001, Ludvigsen Enhage et al. 2002) For unemployed people, sickness allowance may be more than unemployment compensation, which may also counteract work resumption (Engström et al. 2002). The Swedish Social Insurance Act offers the option of maintaining the disability pension during a transitional period of job training. This "resting" pension is a way of mitigating the transition to salaried work without the risk of losing one's disability pension.

When the client has submitted a formal application for a disability pension allowance, it is unlikely that treatment will alter/improve the client's chances/odds of returning to work (Pfingsten et al. 1997). Those who return to work do so for reasons of economic need (Schechter 1997). The proportions of clients resuming and remaining at work after disease or injury are equal among high wage-earners and low wage-earners (Anagostes et al. 2002).

FACTORS ASSOCIATED WITH DISABILITY PENSION

In Sweden the number of permanent disability pensions has increased annually since 1985 (DS 2002:49). Factors related to pension allowances seem to be sick-leave duration and old age (Biering-Sørensen et al. 1999, Gjesdal and Bratberg 2003, Sorvaniemi et al. 2003, Gjesdal et al. 2004, Ahlgren et al. 2005). For job-related accidents, blue-collar workers stand a three-to-fourfold higher risk than white-collar workers of ending up with a disability pension (Lund and Bjerkedal 2001). Major downsizing of plants increases the prevalence of disability retirement compared to no downsizing (Vahtera 2005). Fear of permanent unemployment arose in connection with patients' plans for a disability pension (Claussen and Nygård 1994). A study by Ydreborg and Ekberg (2004) show that the risk of being denied a permanent disability pension grant is higher for unemployed clients living in a central municipality and younger than 50 years than it is for employed clients in smaller municipalities, regardless of diagnosis.

Groups of diseases

Long-term sickness absence caused by musculoskeletal disease/disorder constitutes a higher risk of disability than other categories of disease do (Borg et al. 2001, Gjesdal et al. 2004). Employees with musculoskeletal symptoms risk ending up with long-term sickness absence (Heijbel et al. 2005). Low-back, shoulder or neck diagnoses also form a high-risk group for disability pension, especially for women (Alexanderson et al. 2005).

DIFFERENT TYPES OF REHABILITATION

Multidisciplinary rehabilitation

The choice of treatment is critical for clients with poor prognoses for return to work, as shown by psychological and physiotherapeutic findings. These clients need extensive multidisciplinary treatment to succeed. As opposed to this, clients with good prognoses appear less sensitive about the choice of treatment for reaching their goal of work resumption (Haldorsen et al. 2002).

Predicting outcomes of multidisciplinary rehabilitation for patients with chronic low-back pain has proved difficult. The complexity of the disorder makes it hard to define a generic set of predictors (van der Hulst et al. 2005). However, programmes based on behavioural principles of pain management seem more effective in an occupational setting than e.g. physical exercise alone (Waddell and Burton 2001).

Multimodal cognitive-behavioural rehabilitation programmes

Concerning multimodal cognitive-behavioural rehabilitation programmes, current studies show a partially fragmented picture. According to Jensen and Bodin (1998), such treatment decreases pain intensity, enhances self-reported behavioural changes in personal life and improves pain-coping ability at work; but no significant effect was found on patients' return to work or sick-leave rate. Marhold et al. (2001) showed that cognitive-behavioural programmes were effective for patients with short (2-6 months) sick-leave but not for those absent for more than 12 months. Proudfoot et al. (1997) reported that long-term unemployed clients who had undergone cognitive-behavioural training were more likely to get a job than clients of a randomly assigned control group.

Functional restoration programmes

Functional restoration programmes integrate intensive physical exercises, increasing stamina, psychological counselling, and patient education. Factors reportedly correlating with success one year after rehabilitation are low age, few days on sick-leave, connection with the work force and moderate pain intensity. (Benix et al. 1998).

Medical programmes aiming at return to working life

Table 2. Results of studies regarding return to work after persistent pain conditions.

Author	Type of Study	Material	Result
Flor et al. 1992	Review (65 studies)	Chronic back-pain	Positive. Multidisciplinary treatment superior to no treatment, monotherapy and pain medication.
Haugi et al. 2001	Randomised with control group.	Musculoskeletal disorders/ pain (n=120+44)	Positive. Group learning programmes reduce rate of disability benefits.
Casso et al. 2004	Questionnaire prospective	Low back pain (n=125)	Positive. Intensive reconditioning programme had positive effects on return-to-work after 1 year.
Mayer et al. 1985	Non-randomised prospective	Chronic back pain patients (n=116+72)	Positive in terms of return to work. Multidisciplinary functional restoration programmes. One-year follow-up.
Mayer et al. 1987	Non-randomised prospective	Chronic back pain patients (n=66+38)	Positive in terms of return to work. Multidisciplinary functional restoration programmes. Two-year follow-up.
Strand et al. 2001	Randomised controlled study prospective	Long-term sick-listed, back pain (n=81+36)	Positive. Improvement in physical performance related to return to work after one year.

THE LITERATURE SUMMARISED

The literature review showed that the main approaches in the present area of research are the following:

1. Several studies focus on the importance of active contact with the workplace/labour market for successful return to work after sick-leave.
2. Research dealing with causes of sick-listing has been carried out within several disciplines including medicine, sociology and economics.
3. The breadth of vocational science/research may be an important reason why, despite studies showing connections between sick-leave and e.g. longer sick-leave, old age, female gender, lower socio-economic status and place of residence, we still lack coherent conclusions on how the various parts are related.
4. Several studies raise the importance of motivation and coping ability as a success factor in work resumption after sick-leave.
5. Other factors mentioned as negative for work resumption are an aging working population/ an increasing proportion of elderly people at work; and that rationalisation has created tougher working conditions and higher levels of sickness allowance.
6. Despite findings regarding the importance of the professional's role in VR, few studies focus on the decision-making process between SIOs, physicians, employment officer, employers' personnel office staff and clients, and how their interaction affects the process.

MATERIALS, METHODS AND STATISTICS

SELECTION OF INSURANCE OFFICES

All the offices were situated in different municipalities in the social insurance district of southern Norrland. The county studied was chosen for convenience with regard to access and good knowledge of the locality.

The offices, all serving different municipalities, were selected through stratification to cover smaller and bigger municipalities and offices with little as well as much sickness absence.

At these offices, all the clients that had received rehabilitation during the years in question were surveyed.

SUBJECTS

The four studies are based on all the clients granted VR from the six insurance offices in 1998 and 1999. All cases of sick-listing from these years were scanned manually by the first author. All cases including any VR measure were then selected for further study.

Of the over 17000 cases of sick-leave, VR had been carried out in 843. All the clients in the study had doctors' certificates from their treating physician. The certificate verified the underlying diagnosis occasioning the sickness absence owing to impaired working ability. The study thus surveys all 843 cases where VR was given at the offices in question. Employed people (full or part time), unemployed and self-employed are represented in the

study population. Since the study focused on VR measures taken at each office and their outcome, no selection was made on the basis of sick-leave duration.

Exclusion of cases

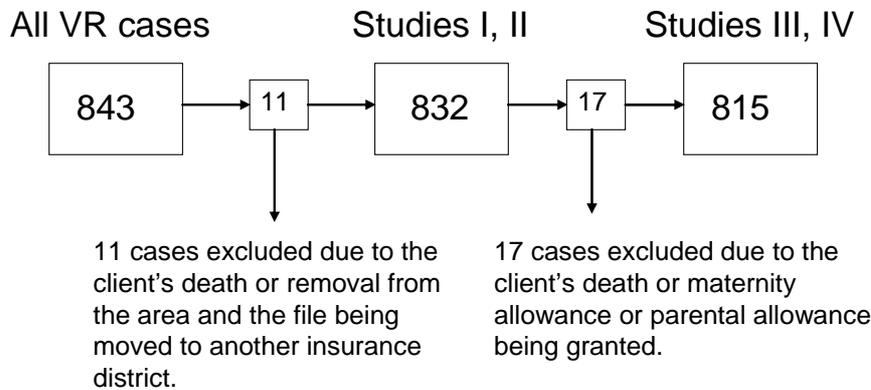


Figure 2. Cases excluded from the different studies, and remaining cases.

Clients granted vocational rehabilitation

When a sick-leave case becomes a VR case, a separate VR file is opened or a special note is made in the medical record. Further, the ordinary sickness benefit is replaced by a special rehabilitation allowance, of the same amount as the sickness allowance. There is a requirement for a rehabilitation plan, to be agreed by the insurance client and the SIO. The plan should comprise the objective of the VR and the aim of an individual measure. Situations giving a right to rehabilitation allowance include job training, education, study and combined measures (SFS 1991:1321). This is also recorded in the mainframe system for benefit disbursements at the offices. Since the filing routines differ between offices, the search was carried out manually as well as through the computer system.

Diagnosis

The diagnosis recorded in the study for each case was the one first stated as the cause of sick leave or, if a pension file had been opened, the one stated there as ground for disability pension. The result after VR was the person's status (work resumption, sickness allowance or disability pension) on closure of his or her VR files and at a two-year follow-up. The study data were retrieved from mainframe registers, medical records, rehabilitation files and individual records at the local social insurance offices. The 24 diagnoses underlying sick leave were categorised into five groups: musculoskeletal disorders/pain conditions, rheumatoid arthritis and arthrosis, psychiatric diseases and disorders, cardiovascular diseases, and miscellaneous including e.g. traumatic injuries, asthma, allergy, eczemas and drug abuse.

STUDY DESIGN

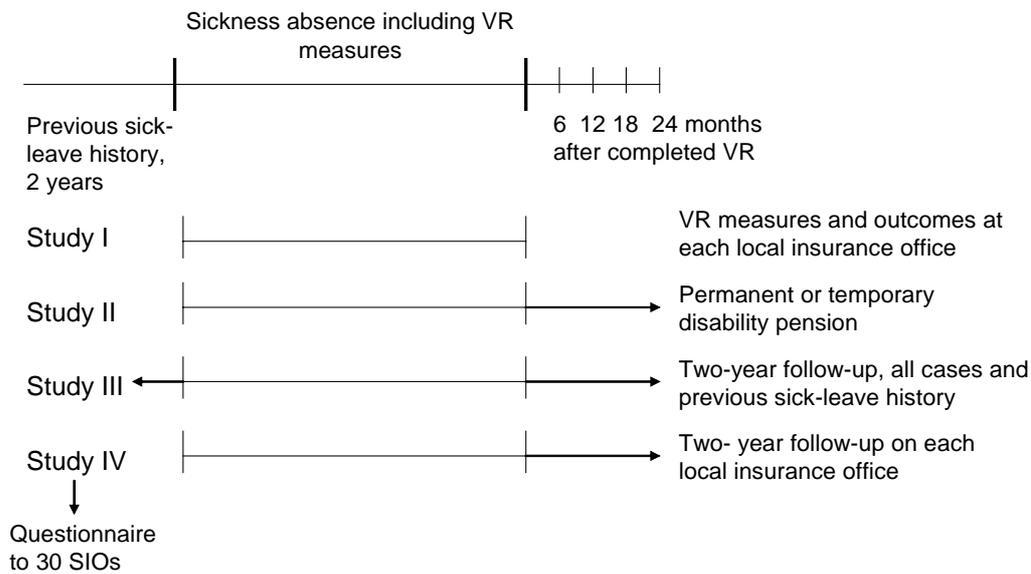


Figure 3. Study design

Study I was a descriptive examination of the VR measures given in the various offices and of the demographic setting in which the offices operate.

The evaluation presented in Study II included a longitudinal follow-up, two years after completed VR, of all cases granted temporary disability pension.

Study III included a two-year follow-up of all cases and an evaluation of previous sick-leave history two years prior to the time when the client was granted VR.

Study IV was an evaluation which included a two-year follow-up of all cases by local social insurance office, together with a two-part quantitative inquiry among 30 SIOs at the various offices.

Follow-up

Individual follow-up was used to identify changes in sickness status regarding work resumption, sickness allowance or disability pension two years after completed VR. Any new periods of sick-leave occurred during these 24-month periods were recorded in the database. At the final, 24-month, follow-up the then current status of the client was recorded. If at any measurement point a client was on parental allowance or old-age pension or had deceased, that client was removed from the follow-up study. Parental allowance can be received in connection with the birth or adoption of a child, and can be full, three-quarter, half- or quarter-day (SFS 1995:584).

Questionnaire

Study IV included a quantitative inquiry in two parts. The respondents were SIOs working with VR at the six offices studied. The first part contained eleven statements relating to attitudes towards sick-listing and its actors, where agreement, disagreement or no opinion was sought.

Part two contained ten open questions about the SIOs' work situations.

The inquiry gave 30 replies from all six offices, where 36 SIOs were then working. The rate of response was thus 83%.

Prior to handing out the inquiries, an introductory note had been sent to the office managers. Subsequently the SIOs met, were briefed and completed the questionnaire on three occasions. The first author informed the respondents about the objective of the inquiry and then sat down, taking no active part in the SIOs' responses. Immediately thereafter she collected the completed forms.

STATISTICS

Register investigation

The study data in studies I-IV were retrieved from the social insurance office mainframe registers, medical records, rehabilitation files and individual records at the six local social insurance offices.

Non-parametric tests were used when no normal distribution of the population could be predicted for age distribution and duration of sickness absence.

All statistical analyses were done in SPSS, with a statistical significance level of 5%. Study I used SPSS version 9.0; Studies II and III version 11.0, Study IV version 12.0.

Table 3. Statistical methods used in the four studies. RTW: return-to-work.

	Study I	Study II	Study III	Study IV
Mann-Whitney U test	X	X	X	X
Kruskal-Wallis test	X		X	X
Ordinary Chi-square test		X	X	X
Phi coefficient and Cramer's V			X	X
Stepwise logistic regression			X	

For comparing the questionnaire, part one, the Kruskal-Wallis test was used.

For comparing the questionnaire, part two, frequencies were used.

QUALITY OF DATA

Much of the present work is based on facts taken from the National Social Insurance Board data register. Since some of the data recorded is information given by the client, there may be reasons for querying the reliability of the sickness allowance and income figures. However, there are economic incentives for the clients to report sick-leave to the insurance office as well as changes of income, and the figures may therefore be assumed to be reasonably correct and up-to date. In addition, reported income figures are checked regularly by the SIOs, which implies a high degree of reliability. All register information was collected by the first author.

Finally, the open nature of the inquiry in Study IV does not allow for the responses to be treated statistically. However, this was deliberate and unavoidable since a widened picture of the underlying causes of sick-listing and rehabilitation was desired.

RELIABILITY AND VALIDITY

The reliability of the study is high in the sense that the data was collected in a standardised manner from a database of reasonably high consistency and quality.

With regard to the validity of a quantitative study, the investigation presented a particular problem of causality. Since there are no strict borders between work-related and personal situations, it is difficult to assess how far the actual outcome of VR was influenced by factors outside the rehabilitation process.

LIMITS AND BIAS

Since the same group of SIOs are responsible for measures aiming at work resumption and for investigating remaining work ability in preparation for decisions regarding pension grants, the selection of clients could comprise the “healthiest” as well as the “sickest”, where the former return to work and the latter receive detailed investigation with a view to confirming their reduced working ability.

The definition of the “sicker” group also allows for clients with more complex cases with long lasting sick-leave and/or combined with unemployment. A problem is that the study material does not consider how the expectations of the actors involved may have affected the selection to rehabilitation. This could imply that clients registered for VR are not necessarily seeking to resume work but rather aim at being investigated for any residuary work capacity or a decision as to partial or full time pension allowance.

Control groups

Since the study lacked a comparison group, it cannot be excluded that other factors than VR may have affected the outcome. It is difficult to determine a randomised control group. This follows from ethical considerations; but also from the fact that it is difficult to find a control group that fully corresponds to the present study group. If other cases of sick-listing were used as a control group with respect to the number of cases ending with a pension allowance, a problem would emerge in that the group contained “extremes” that do not occur to the same extent among other cases. One way to reduce this problem would be to use control groups from other counties to see whether VR outcomes followed similar patterns.

Generalization

Considering the common underlying legislation and administrative set of rules for granting pension allowances and the objective of VR measures to help the client resuming work, similar patterns could be expected to occur in most local offices in Sweden.

ETHICAL INSPECTION

The research study was scrutinised by the Regional Research Ethics Committee at the Karolinska Institutet (KI dnr: 02-258 and KI dnr: 03-373).

RESULTS

VOCATIONAL REHABILITATION MEASURES AND OUTCOMES (STUDY I)

The proportions of sick-listed clients offered rehabilitation measures differed between the offices (Table 4).

Table. 4. Percentage of all clients with sickness allowance who were granted VR by social insurance offices A to F.

Office	A	B	C	D	E	F
	%	%	%	%	%	%
	n=302	n=76	n=26	n=52	n=218	n=158
1998	7.4	4.9	2.6	8.7	4.5	2.8
1999	7.6	4.6	1.2	4.6	4.0	4.2

VR Measures

The most frequent VR measure for the entire group and all the offices was job training, 52% (n=432). With local variations, detailed investigation of remaining working ability was the overall second most frequent measure, with an average of 21.7% (n=180). In addition to detailed investigation, the second most frequent measure at some offices was local VR activities such as co-operation between authorities or attendance at studies. Distribution of VR measures also varied according to gender, women receiving more job training, men receiving more detailed investigation and studies or education.

Outcome after VR

The most frequent outcome for the entire study population, 37.9% (n=315), was being declared fully fit for work after completed, planned VR. This varied among the local offices from 57.9% to 23.9%. The second most common outcome was full disability pension, 15.7% (n=131), which ranged among the offices from 26.9% to 10.5%.

The clients granted job training showed the highest frequency of being declared fully fit for work, 50.7%. The corresponding outcome after attending studies as VR measure was 39.3%. In 28.9% of all cases, detailed investigation was followed by full disability pension. This varied among the offices from 57.1% to 18.8%.

Unemployed clients

Of the entire study group of clients on sick-leave, 25.5% were unemployed and their most frequent outcome after completion of planned VR was transition to activity support, 23.1%. An unemployed person who receive activity support undergoes a labour-market-policy measure. The County Labour Market Board is the authority responsible for such local programmes, whilst individual measures are initiated by the local employment service office, and payment to participants on a governmental temporary support programme is administered by the local insurance office. For the unemployed, the outcome of job training was 7.3%

reporting fully fit for work, whereas the corresponding outcome of local co-operation projects was nearly 70%.

Predominant economic sectors

Among the various categories of employee, workers from the manufacturing, steel and pulp & paper industries showed a higher frequency of full fitness for work and fewer full disability pensions than did those from medical and geriatric care.

Duration of sick-leave

The average duration of sick leave was longer for men than for women and at most offices men received more days of VR than women did. There were also great differences between the offices regarding duration of sick leave (Figure.4.)

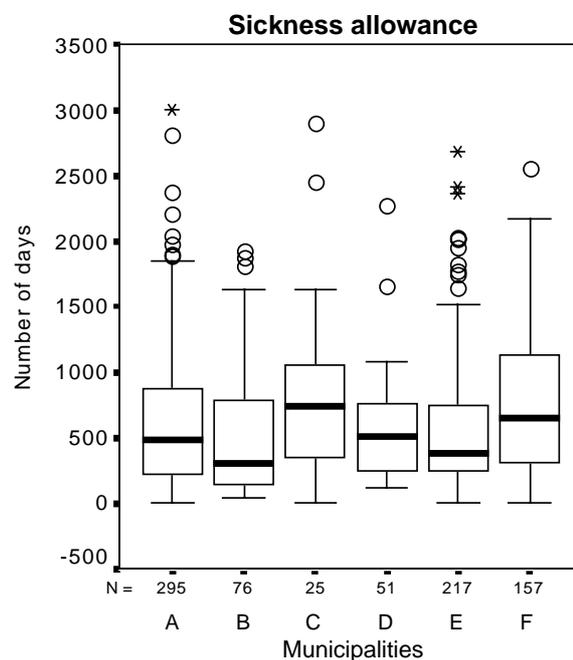


Figure 4. The bold horizontal lines of the boxes mark the median of the sample. The edges of each box, called hinges, mark the 25th and 75th percentiles. 50% of cases have values within the box. The length of the box (difference between the values of the hinges) is called the hspread and corresponds to the interquartile range. Cases that have values more than three hspreads below the lower hinge or above the upper hinge are marked by an asterisk (*) and called extreme values or “far-outside values”, while values between 1.5 and 3 hspreads outside the hinges are marked by an open circle (o) and called outliers or “outside values”. The whiskers (vertical lines extending up and down from each box) show the range of values that fall within 1.5 hspreads of the hinges. The letters A to F represent the different offices.

Diagnosis

Two diagnosis groups predominated for the entire study group, musculoskeletal disorders/pain conditions and psychiatric diseases and disorders. Although the percentages differed between the offices, the internal relation of the two major diagnosis groups was maintained.

DISABILITY PENSION (STUDY II)

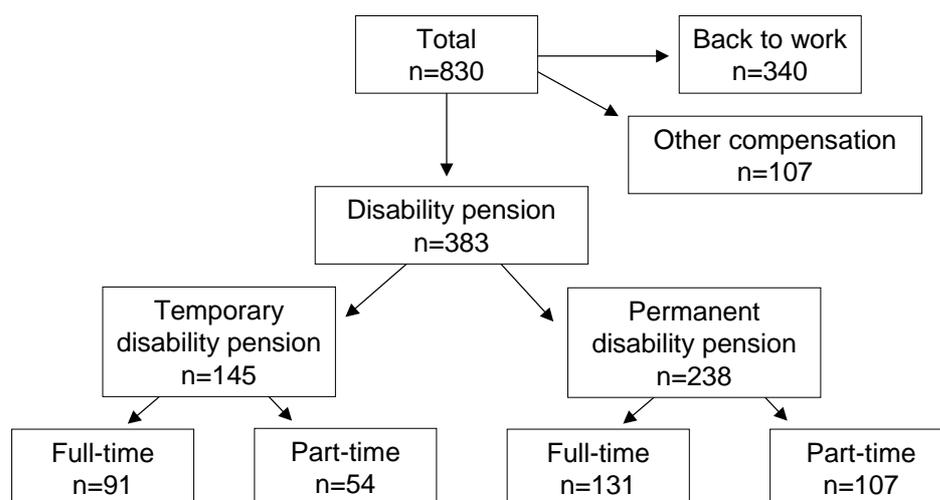


Figure 5. Distribution of types of disability pension among 830 client granted VR after completed VR.

Statutory provisions regulating rehabilitation and pensions

In Sweden, people aged 16-64 years whose working capacity is impaired by at least 25 % due to disease, injury or disability can be granted disability pension. If the impairment is not regarded as permanent, temporary pension is granted. Both types are granted through a decision by a municipal social insurance committee, and the allowance payments come to the same amount. In this study slightly over 46% (n=383) of all clients granted VR received in some form of disability pension allowance after completed VR (figure 5).

For the group Other compensation (top right in figure 5) the largest sub-group consisted of persons declared fully fit for work but receiving some kind of allowance for taking part in employment service activities (n=90). Those in this sub-group were either unemployed before being sick-listed or had become unemployed while sick-listed. The other sub-groups consisted of those with a maternity allowance (n=8) and those with a sickness allowance (n=9) (figure.5).

Differences between the groups

A comparison between clients declared fully fit for work and clients granted full pension allowance, permanent or temporary, showed significant differences with regard to age group, diagnosis, length of sick-listing and type of VR measure. The groups on full temporary or permanent disability pension differed only in respect of age ($p < 0.001$). The 'temporary' group were on average about 10 years younger than the 'permanent' group.

Factors for and against work resumption

Generally, time seemed to be important. Thus over 90% of the clients on disability pension allowance had had periods of sick-listing exceeding one year. The corresponding figure for the 'fully fit' was 35%.

Of the various VR measures studied, job training was followed by a high proportion of persons resuming work. The measure termed 'detailed investigation of remaining work ability' was followed by a high proportion of clients (76.3%) (n=136) who received some

type of pension allowance after closure of the VR case. Among those investigated, 44.1% had a sick-listing period exceeding two years. The corresponding figure for the job trainees was 28.8%. In the 'detailed investigation' group the predominant diagnosis was musculoskeletal disorders/pain (76.0%); while for the job trainees it was just below 50.0%. Regarding psychiatric diseases and disorders, the distribution was 4.5% for the investigation group and just over 22% for the job trainees, with a higher figure for unemployed clients than for employed.

Gender

The group of persons declared fully fit for work showed a significant gender difference at $p=0.015$ with regard to diagnoses. For the group granted full pensions there was a significance of $p=0.002$. Among clients with the diagnosis psychiatric diseases and disorders, more women (29.3%) than men (17.3%) were declared fully fit for work. For those with a full pension allowance musculoskeletal disorders/ pain was the predominant diagnosis, with 59.7% for women and 42.2% for men.

Employed vs. unemployed

The unemployed and employed differed significantly with regard to diagnosis, VR measure, length of sick-listing and VR outcome. The unemployed were younger and showed a higher proportion of psychiatric diseases and disorders than the employed among whom, on the other hand, musculoskeletal disorders/pain was more frequent. With respect to the proportions declared fully fit for work after VR, the difference between the groups was 5.7%, while for work resumption it was 23.6%. When an unemployed person was declared fully fit for work, the responsibility for further activities was generally transferred from the insurance office to the employment service. Thus, any allowances involved would not burden the social insurance system. Clients granted VR resulting in full disability pension were more frequent among the unemployed people, 41.4%, while for the employed the corresponding proportion was 22.1%. Partial pension allowances and part-time sick-listing were more frequent among the employed than among the unemployed. Part-time sick-listing was 2.8% for the unemployed and 9% for the employed. The predominant level of partial grant was 50%.

Changes in type of disability pension

Of clients on full temporary disability pensions, 39% had transferred to full permanent disability pensions within two years (upper section, figure 6). Partial allowances included, a majority of all temporary disability pensions were transformed into permanent disability pensions within two years, (middle section). Generally, there were hardly any work resumptions among those on temporary disability pension, the majority of all temporary disability pensions showing a negative trend as to work resumption. However, those on partial allowances showed a modest positive trend (lower section).

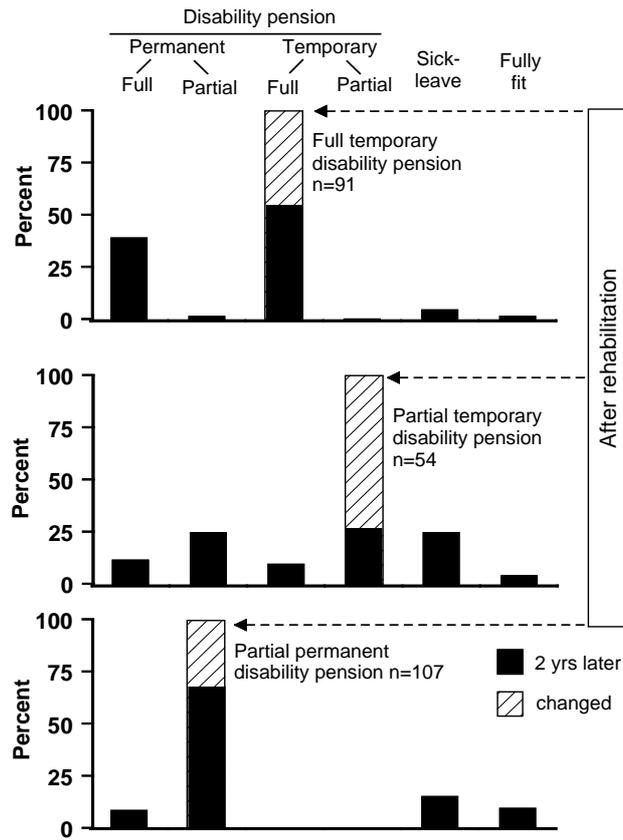


Figure 6. Changes in types of disability pension at end of VR period compared to two years later. Striped column sections indicate change to other statuses. Upper section: full temporary disability pension at end of VR. Middle section: partial temporary disability pension. Lower section: partial permanent disability pension.

OUTCOMES TWO YEARS AFTER REHABILITATION (STUDY III)

Outcome after two years

Immediately after completed VR 52.4% were fully fit for work. At the two-year follow-up, 37.4% still had full working capacity (Figure 7). Of those fully fit directly after VR, the major change after two years was relapse into sick-leave 17.1% (n=58 clients).

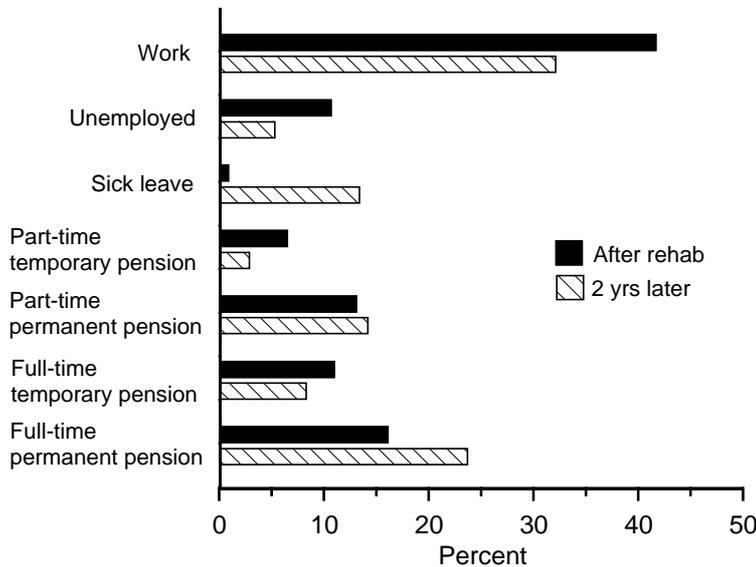


Figure 7. Health insurance status directly after VR and two years later.

Employed vs. unemployed

There was a significant difference in outcome between employed and unemployed clients immediately after rehabilitation ($p < 0.001$). The predominant outcome for the former was work resumption (47.6%). The situation for the latter was more diverse with 24.3% at work, 23.3% receiving measures in various employment service programmes and 22.3% on disability pension. At the two-year follow-up the difference was also significant ($p < 0.001$). The predominant outcome for the employed clients was still work resumption, but at a lower level, 34.6%. For the unemployed, the predominant outcome was now full disability pension (35.9%). One-fourth (24.8%) of the formerly unemployed were still at work, approximately the same proportion as immediately after completed VR.

Type of VR measure

There was a significant difference ($p < 0.001$) between employed and unemployed clients in type of VR measure chosen. The most common VR measures for employed people were job training (58.5%), detailed investigation (20.4%) and combined measures (11.3%). For the unemployed the corresponding figures were 33.5%, 25.7% and 25.7%.

Gender

No significant overall gender differences regarding choice of VR measure were demonstrated, but men studied as a VR measure more than women did. At the two-year follow-up, a larger proportion of men's temporary disability pensions had changed to permanent than women's had.

Age

There was a significant difference in age between clients who returned to full-time jobs and those who did not ($p < 0.001$). The average age of those in full-time work at the two-year follow-up was 43 years (SD 9.5) whilst the corresponding age of the part-timers was 50 years (SD 8.1), as was that of those who did not resume work at all.

Odds ratios for work resumption after VR and at the two-year follow-up

Table 5. Stepwise logistic regression analysis with odds ratios for work resumption after completed VR and confidence intervals for adjusted and unadjusted values of different factors. * Italics show reference value = odds ratio 1.0. FEV= Fraction of explained variance. (Model summary, Nagelkerke R square).

	Adjusted				Unadjusted			
	Odds ratio	95% CI	p-value	FEV %	Odds ratio	95% CI	p-value	FEV %
After completed rehab.				51.6				
Age								7.7
16-29	4.157	1.519-11.373	0.006		3.605	1.714-7.582	0.001	
30-39	4.998	2.734-9.134	<0.001		2.801	1.812-4.331	<0.001	
40-49	4.195	2.435-7.227	<0.001		2.398	1.597-3.599	<0.001	
60-64	0.771	0.253-2.346	ns		0.854	0.334-2.180	ns	
<i>50-59*</i>	<i>1.0</i>							
Rehabilitation measures								13.3
investigation	0.150	0.084-0.269	<0.001		0.158	0.101-0.248	<0.001	
combined	0.523	0.278-0.982	0.044		0.519	0.327-0.825	0.006	
study	1.422	0.562-3.598	ns		1.278	0.613-2.665	ns	
physical exercise	0.692	0.241-1.989	ns		0.426	0.194-0.936	0.034	
<i>job training*</i>	<i>1.0</i>							
Sick-leave period, days								36.9
1-90	1.200	0.351-4.104	ns		1.302	0.413-4.108	ns	
91-180	3.089	0.654-14.583	ns		4.375	0.976-19.602	ns	
366-730	0.130	0.065-0.262	<0.001		0.170	0.091-0.315	<0.001	
>731	0.022	0.011-0.046	<0.001		0.035	0.019-0.065	<0.001	
<i>181-365*</i>	<i>1.0</i>							
Employment								7.6
unemployed	0.422	0.197-0.902	0.026		0.261	0.145-0.470	<0.001	
public sector	0.667	0.319-1.391	ns		0.577	0.319-1.043	ns	
trade and construction	0.727	0.325-1.624	ns		0.400	0.211-0.759	0.005	
other	0.346	0.125-0.959	0.041		0.432	0.197-0.945	0.036	
<i>industry*</i>	<i>1.0</i>							

Table 6. Stepwise logistic regression analysis with odds ratios for work resumption two years after end of VR and confidence intervals for adjusted and unadjusted values of different factors. *Italics show reference value = odds ratio 1.0. FEV= Fraction of explained variance. (Model summary, Nagelkerke R square).

	Adjusted				Unadjusted			
	Odds ratio	95% CI	p-value	FEV %	Odds ratio	95% CI	p-value	FEV %
<i>After two years</i>				31.0				
Age								6.2
16-29	2.545	1.178-5.500	0.017		3.405	1.780-6.515	<0.001	
30-39	2.011	1.259-3.213	0.003		2.027	1.357-3.028	0.001	
40-49	2.063	1.325-3.212	0.001		1.776	1.208-2.610	0.003	
60-64	0.526	0.165-1.676	ns		0.667	0.232-1.916	ns	
<i>50-59*</i>	<i>1.0</i>							
Rehabilitation measures								8.3
investigation	0.245	0.144-0.418	<0.001		0.217	0.136-0.348	<0.001	
combined	0.631	0.380-1.049	ns		0.647	0.418-1.004	0.052	
study	1.367	0.670-2.787	ns		1.463	0.786-2.721	ns	
physical exercise	1.397	0.575-3.396	ns		0.774	0.375-1.599	ns	
<i>job training*</i>	<i>1.0</i>							
Sick-leave period, days								20.1
1-90	1.669	0.801-3.477	ns		1.528	0.764-3.053	ns	
91-180	1.109	0.598-2.056	ns		1.302	0.724-2.342	ns	
366-730	0.467	0.289-0.755	0.002		0.430	0.274-0.675	<0.001	
>731	0.103	0.061-0.175	<0.001		0.102	0.062-0.166	<0.001	
<i>181-365*</i>	<i>1.0</i>							
Employment								3.7
unemployed	0.627	0.345-1.142	ns		0.401	0.242-0.665	<0.001	
Public sector	0.563	0.324-0.978	0.041		0.528	0.325-0.858	0.010	
Trade and construction	0.999	0.532-1.875	ns		0.600	0.349-1.030	ns	
other	0.840	0.375-1.883	ns		0.744	0.370-1.494	ns	
<i>industry*</i>	<i>1.0</i>							

Age

Directly after completed VR, and using adjusted values, the odds for return to work among clients aged 16-29 years and 40-49 years would be 4.2 times those for clients aged 50-59 years (=reference chosen). The odds of return to work in clients aged 30-39 years would be five times the odds for positive outcome among clients aged 50-59 years (Table 5).

At the two-year follow-up, and using adjusted values, the corresponding ORs were 2.5, 2.1 and 2.0 (Table 6).

Detailed investigation

Directly after completed VR, and using adjusted values, the odds of return-to-work in clients selected for more detailed investigation as a VR measure would be 0.15 times those for clients who underwent job training (=reference chosen). The odds for return to work in clients who participated in combined rehabilitation measures would be 0.5 times those of clients given job training (Table 5).

At the two-year follow-up, and using adjusted values, the corresponding OR in clients selected for more detailed investigation was 0.24 times (Table 6).

Sick-leave period

Directly after completed VR, and using adjusted values, the odds for return to work in clients with a sick-leave period of 366-730 days would be 0.1 times those for clients with a sick-leave period of 181-365 days, the chosen reference. The odds of return-to-work in clients with a sick-leave period of more than 731 days would be 0.02 times those of clients with a sick-leave period of 181-365 days (Table 5).

At the two-year follow-up, and using adjusted values, the corresponding OR in clients with a sick-leave period of 366-730 days was 0.5 times that of clients with a sick-leave period of 181-365 days, while in clients with a sick-leave period of more than 731 days it was 0.1 (Table 6).

Employment

Directly after completed VR, and again using adjusted values, the odds of return-to-work in unemployed clients would be 0.4 times those of clients employed in the industry, the chosen reference (Table 5).

At the two-year follow-up, and using adjusted values, the corresponding OR in clients employed in the public sector was 0.6 times the odds of clients employed in industry (Table 6).

INTRA-COUNTY LOCAL DIFFERENCES (STUDY IV)

Return-to-work rate and social insurance status

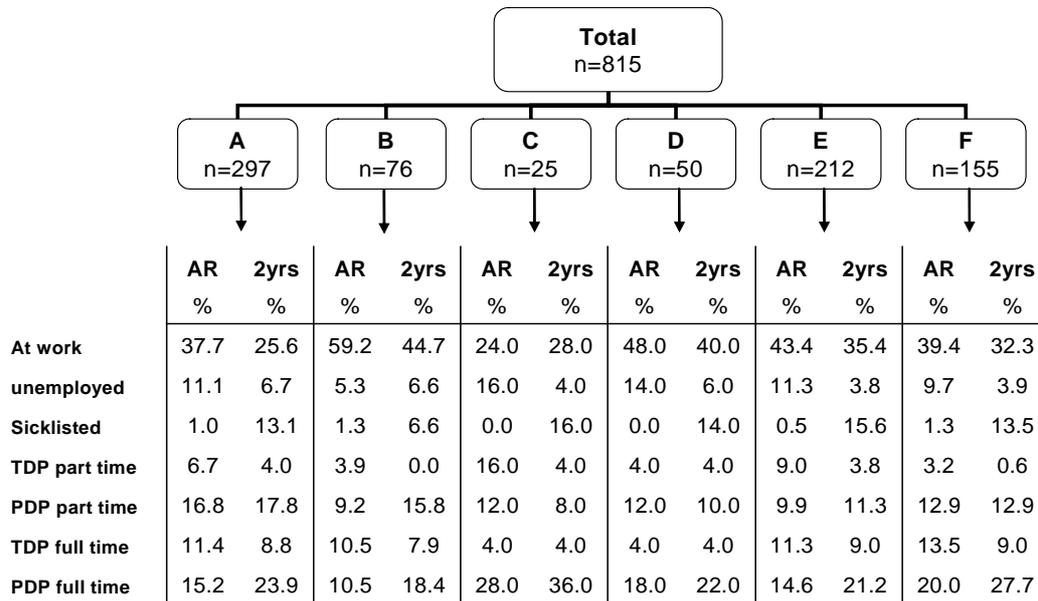


Figure 8. Proportions of clients working, work-ready but unemployed, sick-listed, and/or on disability pension. TDP= temporary disability pension, part-time and full-time. PDP= permanent disability pension, part-time and full-time. AR= After completed VR and 2yrs later at offices A-F.

The outcomes immediately after the VR period at the six offices (A-F) differed significantly ($p=0.025$). The differences had disappeared by the two-year follow-up. Office B showed the highest degree of work resumption (Figure 8), immediately after VR (59.2%) as well as at the two-year follow-up (44.7%). B was the office with the lowest rate of full-time permanent disability pension grants (10.5%). Office C showed the lowest rate (24%) of work resumption and the highest rate of full-time permanent disability pension grants (28%). For all offices, except C and D, the rate of full-time temporary pension grants declined from the completion of VR to the two-year follow-up, while full-time permanent disability pensions increased for all offices (Figure 8).

Employment

No statistically significant difference between the different offices was demonstrated with regard to type of employer or employment.

All the municipalities except C showed significant gender differences by type of employment. The men worked primarily in industry and the women in elderly care and medical care.

Differences between the six offices concerning case characteristics

There was no statistically significant difference between the offices terms of clients' gender, age distribution, employment or diagnosis.

There were statistically significant differences between the offices concerning sick-leave periods and VR measures chosen. Office B showed the second lowest figures (Table 7) for sick-listing exceeding two years (27.6%). That office used job training (76.3%) and studies (11.8%) more than the others did.

Office C had most sick-listing exceeding two years (54.2%) and the second highest proportion of detailed investigation as a VR measure (28%). Combined measures were unusual and, when used, were at the larger offices (A, E and F) (Table 7).

Table 7. Differences between the six local social insurance offices A-F with regard to the cases' gender, age, employment, sick-leave, diagnosis and VR measures received. Investigation = more detailed investigation.

	A n= 297		B n= 76		C n= 25		D n= 50		E n= 212		F n= 155		p
	n	%	n	%	n	%	n	%	n	%	n	%	
Gender													ns
Men	102	34.3	30	39.5	11	44.0	21	42.0	74	34.9	57	36.8	
Women	195	65.7	46	60.5	14	56.0	29	58.0	138	65.1	98	63.2	ns
Age													
16-29	18	6.1	3	3.9	3	12.0	3	6.0	9	4.2	15	9.7	
30-39	62	20.9	20	26.3	5	20.0	10	20.0	51	24.1	42	27.1	
40-49	100	33.7	23	30.3	9	36.0	16	32.0	57	26.9	42	27.1	
50-59	105	35.4	29	38.2	8	32.0	14	28.0	89	42.0	54	34.8	
60-64	12	4.0	1	1.3	0	0.0	7	14.0	6	2.8	2	1.3	
Employment													ns
Employed	216	72.7	66	86.8	19	76.0	37	74.0	159	75.0	112	72.3	
Unemployed	81	27.3	10	13.2	6	24.0	13	26.0	53	25.0	43	27.7	0.001
Sick-leave period, days													
1-90	32	11.0	12	15.8	3	12.5	0	0.0	11	5.2	9	5.8	
91-180	28	9.7	12	15.8	1	4.2	9	18.4	28	13.3	12	7.8	
181-365	64	22.1	17	22.4	3	12.5	7	14.3	60	28.4	25	16.2	
366-730	69	23.8	14	18.4	4	16.7	18	36.7	56	26.5	41	26.6	
>731	97	33.4	21	27.6	13	54.2	15	30.6	56	26.5	67	43.5	
Diagnosis													ns
Musculoskeletal disorders/pain	165	55.9	38	50.0	16	64.0	29	58.0	108	51.2	72	46.8	
Rheumatoid arthritis and arthrosis	28	9.5	3	3.9	1	4.0	2	4.0	11	5.2	15	9.7	
Psychiatric diseases and disorders	42	14.2	19	25.0	4	16.0	11	22.0	42	19.9	38	24.7	
Cardiovascular diseases	24	8.1	6	7.9	0	0.0	6	12.0	17	8.1	5	3.2	
Other	36	12.2	10	13.2	4	16.0	2	4.0	33	15.6	24	15.6	
Measures													<0.001
Job training	122	41.1	58	76.3	16	64.0	28	56.0	116	54.7	85	54.8	
Studies	23	7.7	9	11.8	1	4.0	2	4.0	7	3.3	13	8.4	
Physical exercise	17	5.7	0	0.0	1	4.0	10	20.0	6	2.8	2	1.3	
Combined measures	40	13.5	2	2.6	0	0.0	1	2.0	51	24.1	28	18.1	
Investigation	95	32.0	7	9.2	7	28.0	9	18.0	32	15.1	27	17.4	

Results of questionnaire section regarding SIOs' attitudes

The following eleven statements were given:

1. In my opinion sickness allowance should also be granted on social grounds such as sickness of a spouse or child.
2. Doctors should see and examine patients prior to any extension of a grant of sickness allowance.
3. Doctors are more inclined to grant sickness allowance to unemployed people due to the specific problems of this group.
4. A telephone contact is mostly sufficient for extending a doctor's certificate.
5. The patient's wishes are decisive for the doctor's standpoint regarding extension of sickness allowance.
6. Social-insurance sick-listing rules according to the legislation are generous.
7. Getting a grant for sickness allowance from a doctor is easy.
8. Many sick-listed clients are really capable of working.
9. When jobs are scarce, people tend to be more restrictive with calling in sick.
10. If only you are not too sick you can fight the illness (i.e. at work).
11. It is hard for an insurance officer to question the position of a treating physician.

No statistically significant differences were demonstrated for statements 2, 3, 6, 7, 8, 9 and 11.

There were, however, statistically significant differences for statements 4, 5 and 10, and a tendency towards significance ($p=0.056$) for statement 1. The latter is of particular interest since it indicates the attitude that there is room for accepting sickness allowance granted on social grounds, although this runs counter to the legal restriction to medical grounds only (Figure 9).

Statement 1: In my opinion sickness allowance should also be granted on social grounds such as sickness of a spouse or child.

A majority of the SIOs, 60%, did not agree that sickness allowance should be granted for social reasons. A comparison between the offices indicated different attitudes in this respect (Figure 9). Office B responded with 'disagree', whereas office C were hesitant or agreed.

Statement 4: A telephone contact is mostly sufficient for extending a doctor's certificate.

A majority of the SIOs, 66.7%, did not think that telephone contact was sufficient for extending a period of sickness allowance. None of the SIOs from offices B or E supported the statement, whereas all from office D did so.

Statement 5: The patient's wishes are decisive for the doctor's standpoint regarding extension of sickness allowance.

A majority of the SIOs, 66.7%, agreed that patients' wishes were important for physicians' decisions about prolongation of sickness allowance. Offices B, C and D agreed to the statement. Many from office A disagreed (Figure 9).

Statement 10 If only you are not too sick you can fight the illness (i.e. at work).

Here the distribution of SIOs varied greatly. A and B agreed to the statement, D disagreed, as did most from E. The office-F SIOs were fairly evenly distributed over all three categories ‘disagree’, ‘neither-nor’, and ‘agree’.

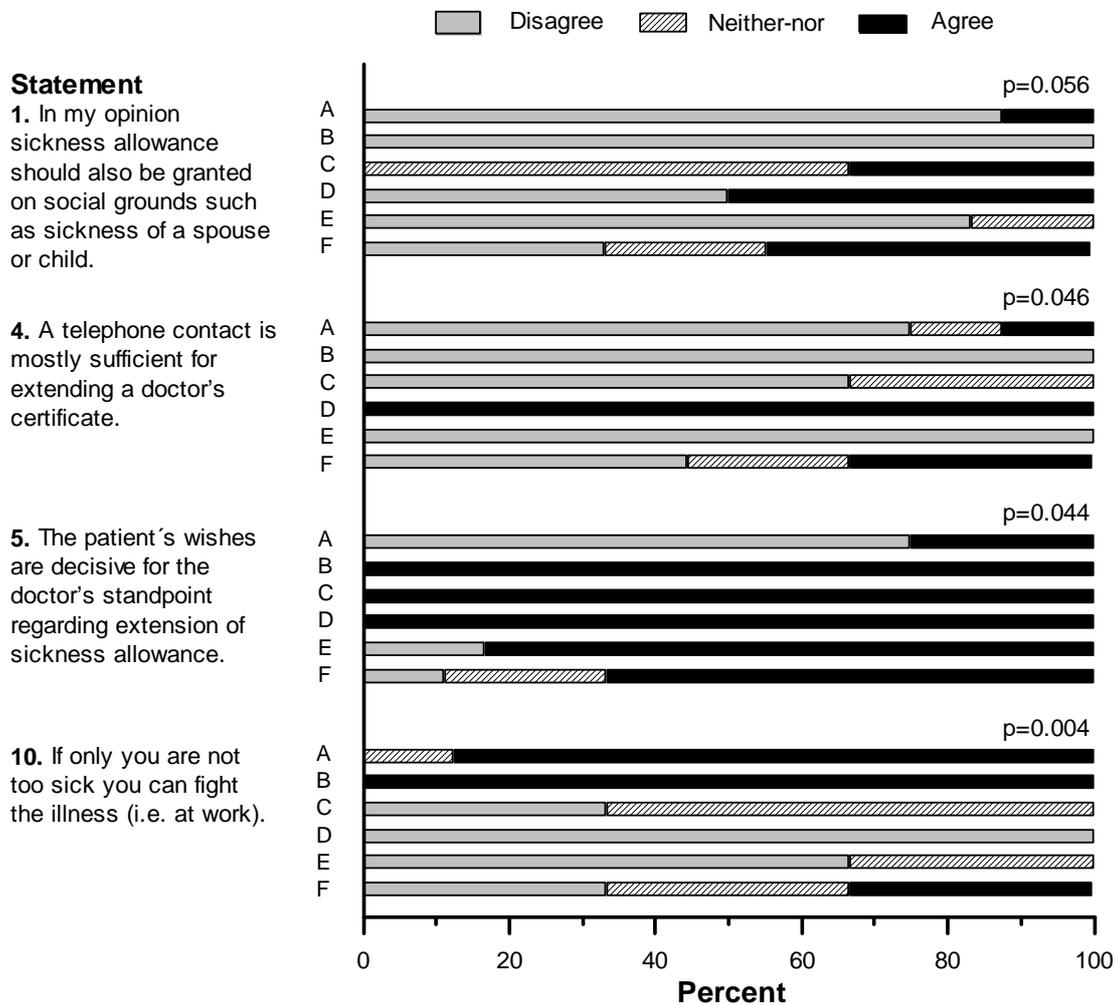


Figure 9. Distribution of responses among SIOs, from offices A-F, to the questionnaire about attitudes. Statements no 1, 4, 5 and 10.

SIOs’ views on the handling of rehabilitation cases.

In the second part of the questionnaire the following open questions were asked:

1. What criteria indicate that a client should receive VR?
2. What criteria indicate that a client should not be prioritised for VR?
3. What factor or factors do you consider have the greatest significance for a sick-listed client to return to work?
4. What is your objective in purchasing an investigation: what do you wish to achieve?
5. Please describe the co-operation between employers, employment office and health-and medical care units in VR matters.
6. Please describe a good employer/enterprise with regard to VR measures.
7. What do you think should be done to reduce sickness absence?
8. Please give examples of changes you think would improve or facilitate your work as a SIO
9. What proportion of VR cases do you think end with a decision on disability pension?
10. What do you think influences, and who decides, whether a client will get sickness allowance?

Summary of responses

Question 1

“What criteria indicate that a client should receive VR?”

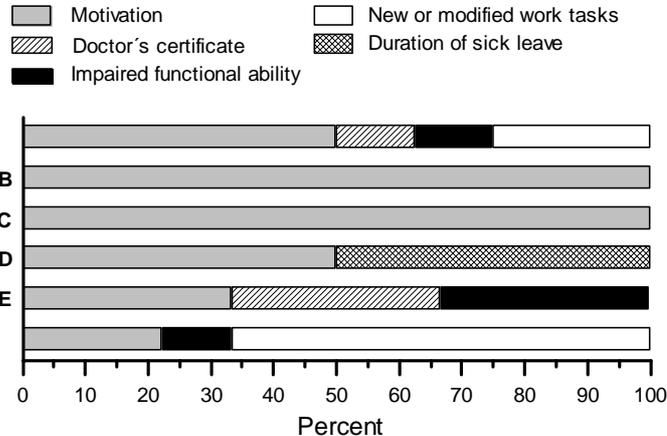


Figure 10. Responses to open question no 1 with regard to what SIOs thought indicated that a client was qualified for VR, offices A to F.

SIOs thought the client’s motivation and whether the doctor’s certificate indicated any need constituted the criteria for VR. The chances for the client to get new or modified work tasks were considered important. Thus, a difference in pattern was seen (Figure 10).

Question 2

“What criteria indicate that a client should not be prioritised for VR?”

Responses here included low client motivation, impaired function as a consequence of health condition, and age close to retirement pension.

Question 3

“What factor or factors do you consider have the greatest significance for a sick-listed client to return to work?”

The client’s own motivation, active support from the employer, and the employer’s desire to have the employee back.

Question 4

“What is your objective in purchasing an (detailed) investigation?”

Assessment of work capacity and creating a base for further planning of the case.

Question 5

“Please describe the co-operation between employers, employment office and health-and medical care units in VR matters”

Half of the SIOs considered that co-operation between the insurance office, employers, health care units and employment office varied from good to very poor. The lowest rating here was found regarding the employment office, where fewer than 40% of the SIOs rated co-operation as satisfactory. A cause of this was difficulties in transferring cases assessed capable of work and consequently available to the labour market.

Question 6

“Please describe a good employer/enterprise with regard to VR measures”

A supportive employer, open to opportunities, and with strong commitment to employees. SIOs thought it important that the employer keep in contact with the sick-listed person.

Question 7

“What do you think should be done to reduce sickness absence?”

The SIOs suggested a wide range of measures, indicating what rehabilitation actor they considered responsible. Within their own authority an increase of staff was considered necessary in order to establish contact with the case at an earlier stage. Improved co-operation with other VR actors was also considered important. The SIOs wished for greater responsibility and improved preventive work among employers and health-care units. Few SIOs mentioned that rehabilitation plans should be drawn up. Increased part-time sick-listing could contribute positively, and physicians should learn more about the social insurance system. Some SIOs thought that economic incentives could reduce sick-listing. Thus a variety of opinions was presented, mainly about VR actors other than the social insurance offices.

Question 8

“Please give examples of changes you think would improve or facilitate your work as a SIO!”

First among factors expected to facilitate and improve VR work was reduced workloads for the SIOs. The heavy workload was considered to hamper early contact with clients.

Question 9

“Please give your own estimation of the proportion of VR cases ending with disability pension.”

A majority of the SIOs estimated the proportion of disability pension cases to be about 20%, with a range from 10% to 50%. The actual figure was 46.2%.

Question 10

“What do you think influences, and who decides, whether a client will get sickness allowance?”

Twenty-eight of 30 SIOs were aware that the decision is a responsibility of the social insurance office. Eight thought that the patient’s and the physician’s views influenced the judgement.

DISCUSSION

GENERAL ASPECTS

The results of the four parts of the present study seem, in various ways, to indicate that two relatively discernable groups of clients are taking part in vocational rehabilitation. One consists of those with working ability and who need support and measures for finding their way back into working life. The other group is made up of those on their way out of the labour market due to impaired working capacity. Here, a great deal of the resources allocated to the purchase of VR measures are used instead for detailed investigations of work capacity. This could be one reason for poor outcomes regarding work resumption in clients undergoing detailed investigation instead of active VR measures: they may actually never have had any real potential for rehabilitation back to work!

One explanation of this may be the double role of SIOs. The rules could create contradictions in the processing of cases in need of rehabilitation, i.e. the objective of rehabilitation with respect to its definition and its application in accordance with the step-by-step model. Vocational rehabilitation should aim at recreating a client's working and self-maintenance capacity after he or she has recovered from disease or injury (Section 2, 1 para 1, Cha 22, Act (1962:381) on Public Social Insurance, AFL). Further, the rules of assessment, (Prop 2002/03:89), state that all possible ways of rehabilitation should be exhausted before a pension allowance is granted. This implies that two groups of clients will compete for the same, typically scarce, resources of purchased VR.

The starting point of this reasoning is that a majority of the rehabilitation clients who have received detailed investigation are unemployed and have the longest periods of sickness absence. These factors have turned out to be predictors of disability pension, while clients who have received job training are largely those in employment and with shorter periods of sick-leave; factors that are predictors of work resumption. This is in line with previous studies regarding duration of sick-leave (Biering-Sørensen et al. 1999, Marnetoft et al. 2001, Marnetoft and Selander 2002, Sorvaniemi et al. 2003, Gjesdal and Braberg, 2003, Gjesdal et al. 2004, Ahlgren et al. 2005) and regarding unemployment (Becker et al. 1998, Biering-Sørensen et al. 1999, Selander and Marnetoft 1999, Marnetoft et al. 2001).

The above studies indicate that the outcomes from the two groups vary between the offices. This in turn, when VR results are presented, will convey a distorted result where the true causes of the VR outcome may be found in the underlying and preceding selection of clients to VR measures. Further, this could imply that clients registered for VR do not necessarily have the goal of resuming work rather aim at being investigated for a decision to partial or full time pension allowance. For individual SIOs the goal of VR could be support for decisions regarding pension grants.

WORK-RESUMPTION AS AN OUTCOME MEASURE

The social insurance criterion for successful VR is that the client after completed VR (or as in the present study at a two-year follow-up) is not on sickness allowance or is on a smaller allowance than before VR. For unemployed clients the situation is not that obvious. The social-insurance database indicates whether the client has been declared fit for work, and whether he or she is receiving activity support from the employability office. This information indicates that the client is getting labour-market-policy measures from the County Labour Market Board (a different authority from the social insurance office). However, this is not the

same as being in wage-earning work only that the client's working ability is enough for an appropriate job.

In the questionnaire study of SIOs' attitudes (study IV) towards co-operation with different actors, the employment office got the lowest rating. The reason was difficulties in transferring cases that had been assessed capable of working and should be at the disposal of the labour market. This problem could be a result of lack of common goals and outlook between different authorities involved in VR (Lindqvist and Grape 1999, Gustafsson 2001, RFV 2001:1, Jakobsson et al. 2002 and 2005).

Since there are evidently two groups competing for the same resources, one problem in measuring successful rehabilitation in terms of work resumption is that the material studied does not consider how the actors' expectations may have affected the selection for rehabilitation. Since not all sick-listed clients get VR measures, selection becomes important for the interpretation of outcome (Eklund et al. 2005). If the limited resources are spent on cases with the most severe loss of working capacity, the results in return to work will be lower than if they are spent on clients with less severe reduction in working capacity. This makes the interpretation of the degree of success after VR complex (Gerner 2005). The problem could be avoided if all clients in need of VR could be granted this, and not only detailed investigation.

VR measures

The association between work resumption and job training corresponds to that in previous studies (Bendix et al. 1998, Marnetoft et al. 2001, Selander et al. 2002, Nordqvist et al. 2003, Franche et al. 2005). There is probably a problem in the lack of precision in the SIOs' choice of VR programmes. The choice of measure is, according to Haldorsen et al. (2002), critical for clients with poor return-to-work prognoses, whereas clients with good prospects did not seem so sensitive about the choice of VR for reaching the goal of work resumption. In the present study people with disparate problems seem to be approached with stereotype activities.

DIAGNOSIS

As only the diagnosis first stated as cause of the disability leading to working capacity (and thus the medical reason for sickness allowance) was recorded in the study, changes of diagnosis during sick-listing are not reflected. Thus there may have been concomitant diseases. Since diagnosis was not critical for outcome in any of the studies, possible deviances are not likely to have affected the conclusions.

It cannot be excluded that various diagnoses may have affected the SIOs' choices of VR measures or their selection for VR. Differences were identified by the municipal social insurance committee regarding decisions to grant disability pensions to clients with psychiatric diagnoses/disorders, and the SIOs saw those cases as most problematic (Edlund 2001). These aspects were not analysed in the present study.

EARLY START OF VOCATIONAL REHABILITATION

Numerous articles mention time as a factor for facilitating return to work. Notions differ as to what is meant here by ‘early’ or ‘late’. Several authors count a sickness absence of 90 days as a long one since this is the time when an additional doctors’ certificate is required. But whether the same ruling should constitute a limit between an early and a late start of rehabilitation is another matter. For instance it seems reasonable to consider the underlying diagnosis when determining when medical rehabilitation is becoming less intensive and when VR should take over. Swedish social health insurance lacks guidelines for the duration of allowances for different disorders (Löfvander 2001). However, previous studies seem to agree that clients contact SIOs at a late stage, and that there are undesirable lags in the sick-listing process (RFV 2004:8). Only half the clients on sick-leave exceeding one year have been in contact with the insurance office to discuss resuming work (Eklund et al. 2005). This is in line with the present findings, where SIOs (study IV) adduce their work situations as an obstacle to effective VR, particularly so with a backlog that impedes early starts on rehabilitation.

THE VOCATIONAL REHABILITATION ACTORS

Social insurance officers

Social insurance officer is not considered a profession in its own right and informal learning seems to be of great weight for processing cases at the offices (Edlund, 2001, Hagmyr, 2005). SIOs stress that the ability to listen and to apply a humanistic view are fundamental – indeed more important than formal training. At the same time Edlund (2001) describes a picture where SIOs are left to find their own ways and methods since they do not perceive a clearly formulated and operational scenario. This might be one explanation of the differences in attitude and a factor underlying local differences in both client selection and outcome figures after completed VR.

The questionnaire (study IV) completed by SIOs does not cover all possible aspects of the problem, but shows differences between SIOs with regard to values and reasoning about VR issues.

Seen in the light of Lipsky’s theory (Lipsky 1980) of street-level bureaucracy, the SIO’s role in developing practices such as rationing services could influence their appreciation of the current labour market situation and the client’s motivation. Selection as a tool could then function rationally in their professional choice of sick-listed clients for VR.

The client

The client’s own motivation was mentioned by a majority of the SIOs (study IV) as the most important factor for work resumption as well as a reason for gaining a high priority for VR. This is in line with several studies (Schechter, 1997, Bendix et al. 1998, Grahn et al. 2000, Marnetoft et al. 2001, Berglind and Gerner, 2002, Haldorsen et al. 2002, Selander et al. 2002, Watson and Duckett, 2000, Baril et al. 2003b, Melin and Fugl-Meyer, 2003, Borg et al. 2004, Schultz et al. 2004). Motivational factors can be health, self-confidence, relationship, and content (Gard and Sandberg, 1998).

The employer

The employer plays an important part in work resumption, according to the SIOs (study IV) e.g. in making clients feel welcome back to work. This presupposes effective communication between employer and employee during sick leave. Close to a quarter of clients on long-term absence did not feel welcome back to work (Heijbel et al. 2005). This is in line with previous studies (Sim, 1999, Friesen et al. 2001, Selander et al. 2002, Nordqvist et al. 2003, Gard and Söderberg, 2004, Schultz et al. 2004, Lotters et al. 2005).

Physicians

The physician may experience a dilemma when assessing work incapacity, duration of sick leave and interpreting sickness benefit legislation, and when supplying social interpretations of medical diagnoses (Timpka et al. 1995). According to Krause et al. (2001) interdisciplinary research needs to develop a comprehensive conceptual framework to determine return-to-work and where e.g. the social/behavioural, biomedical, and policy-analytical sciences need to contribute.

A majority of the SIOs in study IV stated that patients' wishes were important for physicians' decisions about prolonging sickness allowance. According to Arrelöv et al (2005) one explanation could be that physicians' sick-listing practice is influenced by local structural factors. However, Swedish physicians do not differ from physicians in other European countries regarding issuing medical certificates (Ds 2003:63). The physician is to make a statement of how the functional impairment and disabilities affect the client's level, duration, and prognosis regarding working capacity. The SIO assesses the client's right to compensation (SOU, 1996), but appears usually to accept the physician's recommendation (Hensing et al. 1997). The SIOs were aware of their responsibility for deciding about sickness benefits but the influence of clients and physicians was also mentioned (study IV).

SUMMARY OF RESULTS AND CONCLUSIONS

The overall aim of the work was to study the outcomes of decisions regarding possible VR measures in the social insurance offices of a Swedish county with regard to work resumption.

STUDY I

-- There were differences between municipalities in the county regarding type of VR measure provided and outcome: the proportions of clients fully-fit-for-work varied from 23% to 58% and those on full disability pension from 11% to 27%. Regardless of VR measure undergone, the frequency of VR ending in pension was high for all offices. The use of detailed investigation of working ability as a VR measure was not linked to any great proportion of people resuming work; more to full disability pension.

-- There were differences in the proportion of clients for whom VR was provided and in the kind of VR measures provided. Thus the most frequent VR measure, job training, showed local variations from 40% to 76%, and detailed investigation of residual working ability varied from 9% to 32%.

-- Municipality B had the largest proportion of psychiatric diseases and disorders (25%) and the lowest frequency of musculoskeletal disorders/pain (40%). Municipality C had the highest proportion of musculoskeletal disorders/pain (65%) and the lowest proportion of psychiatric diseases and disorders (15%).

-- More than any other VR measure, detailed investigation of working ability led to full disability pension. This inevitably raises the question of whether this VR measure is actually being used as a means of obtaining a medical basis for confirming the right to an allowance rather than as a measure for getting people back into the labour market.

The six offices are all situated in a geographical area characterised by high unemployment and much ill health. However there is a wide spread with respect to predominant type of business. Gender distribution was equal among those granted VR at all the six offices. The predominant diagnosis type at all the offices was musculoskeletal disorders/pain, with psychiatric diseases and disorders in second place. However, there was some variation in the proportions between the groups. There were great differences between the offices in their use of VR measures available through contracts arranged by the regional insurance office. VR outcomes also differed significantly between the offices in terms of work resumption.

STUDY II

-- It is hard to view financial and personnel resources as well invested/distributed with respect to outcome when 46.2% of clients granted VR move on to a pension! Instead of using allocated resources for active VR measures, significant time and economic resources are seemingly used for getting VR clients off their books by granting them pension grants. However, the issue is more complex and several factors require attention. Legal security demands that the client gets his or her case fully tried in the sense that all VR avenues are considered before a pension is granted.

-- Further, detailed investigation results give the lay members of the social insurance board a detailed basis for decision-making. On the other hand, the requirements of thorough detailed investigation may be so resource-consuming that there is nothing left for some individuals.

- The single most critical factor predicting disability pension as outcome is duration of sickness absence.
- The primary difference between clients on temporary disability pension as opposed to permanent, is age. The average age for temporary disability pension is 42 years and for permanent disability pension 51 years. This could reflect an inherent official resistance to granting a permanent allowance to a younger person.
- In a longer perspective the tool of temporary disability pension has not resulted in any significant level of work resumption. On the contrary, temporary disability pension tends to be an administrative step on the way from sick-listing to permanent disability pension.

The results indicate that temporary disability pension as such does not contribute to any degree of work resumption over a period of two years. Instead there is much transfer to permanent disability pension. The factor that distinguished those given temporary disability pension from those provided with permanent disability pension was age, clients going onto temporary disability pension being about ten years younger. Since 1 January 2003, new provisions covering sickness compensation and activity compensation have been incorporated into the National Insurance Act (ALF). Temporary disability pension has been replaced by activity compensation covering ages 19-29 and granted for 1-3 years. Those on temporary disability pension in this study were older than 29 years, so this new type of allowance had not been an alternative.

STUDY III

- At the outset of the study all the clients studied were receiving sick-leave allowance. After completed VR more than 50% were declared fully fit for work, i.e. were receiving no benefit from public health insurance (42% in work, 11% unemployed but available for a job).
- At the two-year follow-up, 37% had full working capacity (32% working and 5% unemployed but available for a job), giving a loss from the job market over two years of 15% of cases. This loss was mainly via new sick leave.
- Job training was the VR measure associated with higher work resumption. An essential factor predicting relapse (after two years) into sick leave or disability pension was the duration of sick-leave absence.
- Two differences between clients remaining at work and those who had left working life were high age and long sick leave. Clients selected for more detailed investigation also showed a low frequency of work resumption.
- The best opportunities (odds ratio) of remaining at work two years after completing VR were enjoyed by clients with short sickness absence, who had been selected for job training, were aged 16-29 years, and were employed in the industrial sector. So in a perspective longer than immediately after VR, clients off sick for a year or less, aged below 40 years and having job training as a VR measure had fairly good chances of work resumption as well as retention.

The results indicate the importance of an earlier start than on rehabilitation than at present. Where sick-leave exceeded one year the ratio of work resumption was very low, irrespective of diagnosis, gender, age, type of rehabilitation measure or profession.

STUDY IV

- Intra-county differences occurred in sick-leavers who took part in VR measures.
- The local social insurance offices with the highest and lowest outcomes in rates of work resumption and disability pension, respectively, selected clients for VR from different case categories. The differences in characteristics were manifest primarily as duration of sick-listing.
- The offices whose clients had long sickness absence, including processing time for VR, and which used much detailed investigation as a VR measure, showed higher rates of disability pension grants as the outcome of completed VR.
- SIOs from different local insurance offices lacked conformity in attitudes towards the social insurance system and its clients. Although not demonstrated here, this diversity in attitude may be one factor underlying local differences in client selection and in the outcome of vocational rehabilitation.

ACKNOWLEDGEMENTS

The work presented in this thesis was carried out at the Division of Rehabilitation Medicine, Department of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden. I wish to express my sincere gratitude and thanks to all those who in so many ways helped me in its realisation. In particular I would like to thank:

Associate Professor Kristina Schüldt, Division of Rehabilitation Medicine, Karolinska Institutet, my head tutor and co-author, for the period just before the half-time seminar and further, for advice and skilful scientific guidance,

Professor emeritus Jan Ekholm, my assistant tutor and co-author, former Head of the Division of Rehabilitation Medicine, Department of Public Health Sciences, Karolinska Institutet, (and formerly my head tutor), for professional support and guidance throughout the whole work,

Professor Alf Bergroth, Department of Health Science, Mid-Sweden University, my local tutor and co-author, head of the Centre for Studies on National Rehabilitation (CRF), for enthusiasm, support and advice through the whole of this work,

Professor Kristian Borg, Head of the Division of Rehabilitation Medicine, Department of Public Health Sciences, Karolinska Institutet, for providing research facilities, support and advice,

The regional social insurance office of the county, upon whose clients this study is based and whose local staff made invaluable efforts in helping me retrieve files and so kindly responded to the questionnaire. My thanks also go to their Statistics Department for aid with statistical issues,

Lisbet Broman, biomedical scientist, Division of Rehabilitation Medicine, Karolinska Institutet. With great patience and knowledge she has helped me transform abstract thoughts into concrete tables and figures with a professional layout. Many thanks for your tireless and valuable support,

Tim Crosfield for his proficiency in revising the English text and for his positive way of giving valuable advice for greater clarity,

Britta Eklund, administrator, Division of Rehabilitation Medicine, Karolinska Institutet. Many thanks for much support and help with paperwork and searching for addresses,

My supportive friends and colleagues at KI, Mid-Sweden University and ReBO for interesting discussions and friendship,

I thank my loving family, Magnus my husband and greatest support, and our children Björn, Erik and Johanna: thanks for accompanying me on this voyage despite its variable winds!

Financial support for the study is gratefully acknowledged from Mid-Sweden University, Karolinska Institutet and Professor Jan Ekholm's external research grants.

REFERENCES

1. Ahlgren, Å., Bergroth, A. & Ekholm, J. (2004) Work resumption or not after rehabilitation? A descriptive study from six social insurance offices. *Int J Rehabil Res*, 27, 171-180.(Study I of the thesis)
2. Ahlgren, Å., Broman, L., Bergroth, A. & Ekholm, J. (2005) Disability pension despite vocational rehabilitation? A study of cases from six social insurance offices of a county. *Int J Rehabil Res*, 28, 33-42. (Study II of the thesis)
3. Ahlgren, C. & Hammarström, A. (1999) Has increased focus on vocational rehabilitation led to an increase in young employees return to work after work-related disorders? *Scan J Public Health*, 27, 220-7.
4. Åhrberg, Y., Bergroth A. & Ekholm, J. (2002) *Med lust och längtan. Långtidssjukskrivna kvinnors återkomst till arbetslivet- en intervjustudie. I Ekholm, J., Bergroth A, Marnetoft SU, Schöldt, K., Jacobsson, B. et al: Hinder och framgångsfaktorer i rehabiliteringsprocessen. (in Swedish) (Hindrances and facilitating factors in the rehabilitation process). Östersund: CSF rapportserie 2002:1, Mitthögskolan, Karolinska institutet, Stockholms universitet, Göteborgs universitet, försäkringskassorna i Jämtlands och Stockholms län.*
5. Alexanderson, K., Borg, K.E. & Hensing, G. (2005) Sickness absence with low-back, shoulder, or neck diagnoses: An 11-years follow-up regarding gender differences in sickness absence and disability pension. *Work*, 25, 115-24.
6. AMS (1998-1999) Register for unemployed people. Arbetsmarknadsstyrelsen,
7. Anagnostes, C., Mayer, T.G & Gatchel, R.J. (2002) Effect of preinjury wage levels on socioeconomic outcomes of chronic disabled work-related spinal disorder patients. *The Spine Journal*, 2, 12-13.
8. Arrelöv, B., Borgquist, L., Ljungberg, D. & Svärdsudd, K. (2001) Do GPs sick-list patients to a lesser extent than other physician categories? A population-based study. *Fam Pract*, 18, 393-8.
9. Arrelöv, B., Borgquist, L., Ljungberg, D. & Svärdsudd, K. (2003) The influence of change of legislation concerning sickness absence on physicians' performance as certifiers. A population-based study. *Health policy*, 63, 259-68.
10. Arrelöv, B., Borgqvist, L. & Svärdsudd, K.F. (2005) Influence of local structural factors on physicians' sick-listing practice: a population-based study. *Eur J Public Health*, 15, 470-4.
11. Baril, R., Berthelette, D. & Massicotte, P. (2003a) Early return to work of injured workers: multidimensional patterns of individual and organizational factors. *Safety Science*, 41, 277-300.
12. Baril, R., Clarke, J., Friesen, M., Stock, S. & Cole, D. (2003b) Management of return-to-work programs for workers with musculoskeletal disorders: a qualitative study in three Canadian provinces. *Soc Sci Med*, 57, 2101-14.
13. Becker, N., Højsted, J., Sjøgren, P. & Eriksen, J. (1998) Sociodemographic predictors of treatment outcome in chronic non-malignant pain patients. Do patients receiving or applying for Disability Pension benefit from multidisciplinary pain treatment? *Pain*, 77, 279-87.
14. Bendix, A., Bendix, T. & Haestrup, C. (1998) Can It Be Predicted Which Patients With Chronic Low Back Pain Should Be Offered Tertiary Rehabilitation in a Functional Restoring Program? A Search for Demographic, Socioeconomic, and Physical Predictors. *Spine*, 23, 1775-83; discussion 1783-4.

15. Berglind, H. & Gerner, U. (2002) Motivation and return to work among the long-term sicklisted: an action theory perspective. *Disabil Rehabil*, 24, 719-26.
16. Biering-Sørensen, F., Lund, J., Høydalsmo, O.J., Darre, E.M., Deis, A., Kryger, P. & Florvall, C. (1999) Risk indicators of disability pension. A 15 year follow-up study. *Dan Med Bull*, 46, 258-62.
17. Bjurvald, M., Hogstedt, C., Marklund, S., Palmer, E. & Theorell T. (2005) Vad kan förklara den höga sjukfrånvaron? Försök till syntes. (in Swedish)(Possible Explanations to the High Numbers of Sick-listing? Attempt of a Synthesis). In: Marklund, S., Bjurvald, M., Hogstedt, C., Palmer, E. & Theorell, T. (Eds.): *Den höga sjukfrånvaron- problem och lösningar (in Swedish)(High Numbers of Sick-listing – Problems and Solutions)*. Stockholm, Arbetslivsinstitutet. pp 337-43.
18. Borg, K., Hensing, G. & Alexanderson, K. (2001) Predictive factors for disability pension – an 11-year follow up of young persons on sick leave due to neck, shoulder, or back diagnoses. *Scand J public Health*, 29, 104-12.
19. Borg, K., Hensing, G. & Alexanderson, K. (2004) Prediction of future low levels of sickness absence among young persons sick listed with back, neck, or shoulder diagnoses. *Work*, 23, 159-67.
20. Burström, B., Whitehead, M., Lindholm, C. & Diderichsen, F. (2000) Inequality in the social consequences of illness: How well do people with long-term illness fare in the British and Swedish labour market? *Int J Health Serv*, 30, 435-51.
21. Burström, B. & Fredlund, P. (2001) Self rated health: Is it as good a predictor of subsequent mortality among adults in lower as well as in higher social classes? *J Epidemiol Community Health*, 55, 836-40.
22. Carling, K. & Richardson, K. (2004) The relative efficiency of labour market programs: Swedish experience from the 1990s. *Labour Economics*, 11, 335-354.
23. Casso, G., Cachin, C., Van Melle, G. & Gerster, J.C. (2004) Return-to-work status 1 year after muscle reconditioning in chronic low back pain patients. *Joint Bone Spine*, 71, 136-9.
24. Claussen, B. & Nygård, J.F. (1994) Pasienter som star i fare for å falle ut av arbeidslivet (in Norwegian, English summary)(Patients who are in danger of being dropped from the labour-market. A study from family practice). *Tidsskr Nor Lægeforen*, 114, 1811-4.
25. Drew, D., Drebing, C.E., Van Ormar, A., Losardo, M., Krebs, C., Penk, W. & Rosenheck, R.A. (2001) Effects of disability compensation on participation in and outcomes of vocational rehabilitation. *Psychiatr Serv*, 52, 1479-84.
26. Ds 2002:49 *Den svenska sjukan – sjukfrånvaron i åtta länder. Rapport till Expertgruppen för studier i offentlig ekonomi (in Swedish)(The Swedish Illness- Sick-Leave in Eight Countries)*. Nyman, K., Bergendorff, S., Palmer, E. Stockholm: Finansdepartementet Regeringskansliet.
27. Ds 2003:63 *Den svenska sjukan II – regelverk och försäkringsmedicinska bedömningar i åtta länder (in Swedish, English summary)(The Swedish disease II – rules and regulations and assessments of working capacity in eight countries)*. (Group of authors: Mikaelsson B, Ekholm J, Kärrholm J, Murray R, Sandberg T, Söderberg J, Nyman K). Governmental report, Department of Health and Welfare. Socialdepartementet, Regeringskansliet. www.regeringen.se/propositioner/sou/pdf/remiss.pdf
28. Edlund, C. & Dahlgren, L. (2002) The physician's role in the vocational rehabilitation process. *Disabil Rehabil*, 24, 727-33.

29. Edlund, C. (2001) *Långtidssjukskrivna och deras medaktörer –en studie om sjukskrivning och rehabilitering. (in Swedish)(Long-term sick leavers and their co-actors –a study of sick listing and rehabilitation)* PhD Thesis. Department of Public Health and Clinical Medicine, Umeå, Sweden, Umeå University.
30. Eklund, M., Eriksson, S. & Fugl-Meyer A.R. (1991) Vocational rehabilitation in northern Sweden. II. Some psycho-socio-demographic predictors. *Scand J Rehabil Med*, 23, 73-82.
31. Eklund, M., Lindwall, U. & Marklund, S. (2005) Hur fungerar den arbetslivsinriktade rehabiliteringen? In Marklund, S., Bjurvald, M., Hogstedt, C., Palmer, E. & Theorell, T. (Eds.) *Den höga sjukfrånvaron- problem och lösningar (in Swedish)(High Numbers of Sick-listing – Problems and Solutions)*. Stockholm, Arbetslivsinstitutet.
32. Englund, L. & Svärdsudd, K. (2000) Sick-listing habits among general practitioners in a Swedish county. *Scand J Prim Health Care*, 18, 81-6.
33. Englund, L., Tibblin, G. & Svärdsudd, K. (2000b) Variations in sick-listing practice among male and female physicians of different specialities based on case vignettes. *Scand J Prim Health Care*, 18, 48-52.
34. Englund, L., Tibblin, G. & Svärdsudd, K. (2000a) Effects on physicians' sick-listing practice of an administrative reform narrowing sick-listing benefits. *Scand J Prim Health Care*, 18, 215-219.
35. Engström, L.G. & Eriksen, T. (2002) Can differences in benefit levels explain duration and outcome of sickness absence? *Disabil Rehabil*, 24, 713-8.
36. Fleten, N., Johnsen, R. & Førde, O. (2004) Length of sick leave – Why not ask the sick-listed? Sick-listed individuals predict their length of sick leave more accurately than professionals. *BMC Public Health*, 4, 46.
37. Flor, H., Fydrich, T. & Turk, D.C. (1992) Efficacy of multidisciplinary pain treatment centers: a meta-analytic review. *Pain*, 49, 221-30.
38. Franche, R.L., Cullen, K., Clark, J., Irvin, E., Sinclair, S. & Frank, J. (2005) Workplace-based return-to-work interventions: A systematic review of the quantitative literature. *J Occup Rehabil*, 15, 607-31.
39. Friesen, M.N, Yassi, A. & Cooper, J. (2001) Return-to-work: The importance of human interactions and organizational structures. *Work*, 17, 11-22.
40. Gard, G. & Sandberg, A.C. (1998) Motivating factors for return to work. *Physiother Res Int*, 3, 100-8.
41. Gard, G. & Söderberg, S. (2004) How can a work rehabilitation process be improved? –a qualitative study from the perspective of social insurance officers. *Disabil Rehabil*, 26, 299-305.
42. Gerfin, M., Lechner, M. & Steiger, H. (2005) Does subsidised temporary employment get the unemployed back to work? An econometric analysis of two different schemes. *Labour Economics*, In Press, Corrected Proof.
43. Gerner, U. (2005) *De sjukskrivna i rehabiliteringsprocessen - hinder och möjligheter. (in Swedish)(The persons on sick leave in the rehabilitation process - obstacles and possibilities)*. PhD thesis. Institutionen för socialt arbete, Stockholms universitet, Stockholm, Sweden.
44. Gjesdal, S. & Bratberg E. (2003) Diagnosis and duration of sickness absence as predictors for disability pension: Results from a three-year, multi-register based and prospective study. *Scand J Public Health*, 31, 246-54.

45. Gjesdal, S., Ringdal, P.R, Haug, K. & Maeland, J.G. (2004) Predictors of disability pension in long-term sickness absence: results from a population-based and prospective study in Norway 1994-1999. *Eur J Public Health*, 14, 398-405.
46. Grahn, B., Ekdahl, C. & Borgquist, L. (2000) Motivation as a predictor of changes in quality of life and working ability in multidisciplinary rehabilitation: A two-year follow-up of a prospective controlled study in patients with prolonged musculoskeletal disorders. *Disabil Rehabil*, 22, 639-54.
47. Grahn, B.E, Borgquist, L.A. & Ekdahl, C.S. (2004) Rehabilitation benefits highly motivated patients: A six-year prospective cost-effectiveness study. *Int J Technol Assess Health Care*, 20, 214-21.
48. Green-McKenzie, J., Rainer, S., Behrman, A. & Emmett, E. (2002) The effect of health care management initiative on reducing workers' compensation costs. *J Occup Environ Med*, 44, 1100-5.
49. Grossi, G., Soares, J., Ängeslevä, J. & Perski, A. (1999) Psychosocial correlates of long-term sick-leave among patients with musculoskeletal pain. *Pain*, 80, 607-19.
50. Haglund, B. & Rosén, M. (2003) Sjukskrivningstider efter hjärtinfarkt eller bröstcancer- finns det regionala skillnader. (in Swedish)(Sick-leave periods after cardiovascular disease or breast cancer – are there any regional differences?). Stockholm, Socialstyrelse.
51. Hagmyr, J. (2005) Informellt lärande – en utvecklingspotential hos Försäkringskassan och dess handläggare. (in Swedish)(Informal learning – potential of development for insurance offices and their officers). *FoU-rapport nr. 48*. Stockholm, Försäkringskassan.
52. Hall, S. (2001) *Det offentliga mötet (in Swedish)(The public meeting)*., Lund, Bokbox Förlag
53. Haldorsen, E.M., Grasdal, A.L., Skouen, J.S., Risa, A.E., Kronholm, K. & Ursin, H. (2002) Is there a right treatment for a particular patient group? Comparison of ordinary treatment, light multidisciplinary treatment, and extensive multidisciplinary treatment for long-term sick-listed employees with musculoskeletal pain. *Pain*, 95, 49-63.
54. Hansen, A., Edlund, C. & Bränholm, I.B. (2005) Significant resources needed for return to work after sick leave. *Work*, 25, 231-40.
55. Hansen, A., Edlund, C. & Henningsson, M. (2006) Factors relevant to a return to work: a multivariate approach. *Work*, 26. In press.
56. Hansen, A. (2005) *Sjukskrivnas resurser och hinder för återgång i arbete, viktiga faktorer för tidig bedömning (in Swedish)(Resources and obstacles for work re-entry among sick listed, the importance of early assessment)* PhD Thesis. Occupational therapy, Department of Public Health and Clinical Medicine. Umeå, Sweden, Umeå University.
57. Haugli, L., Steen, E., Laerum, E., Nygard, R. & Finset, A. (2001) Learning to have less pain-is it possible? A one-year follow-up study of the effects of a personal construct group learning programme on patients with chronic musculoskeletal pain. *Patient Educ Couns*, 45, 111-8.
58. Head, J., Kivimäki, M., Martikainen, P., Vahtera, J., Ferrie, J.E. & Marmot, M.G. (2006) Influence of change in psychosocial work characteristics on sickness absence: the Whitehall II study. *J Epidemiol Community Health*, 60, 55-61.
59. Heijbel, B., Josephson, M., Jensen, I. & Vingård, E. (2005) Employer, insurance, and health system response to long-term sick leave in the public sector: policy implications. *J Occup Rehabil*, 15, 167-76.

60. Hennessey, J.C. & Muller, L.S. (1995) The effect of vocational rehabilitation and work incentives on helping the disabled-worker beneficiary back to work. *Soc Secur Bull*, 58, 15-28.
61. Henrekson, M., Lantto, K. & Persson, M. (1992) *Bruk och missbruk av sjukförsäkringen. (in Swedish)(Use and abuse of the Social Insurance)*, SNS Förlag, Stockholm, Sweden.
62. Hensing, G., Alexanderson, K. & Timpka, T. (1997) Dilemmas in the daily work of social insurance officers. *Scandinavian Journal of Social Welfare*, 6, 301-9.
63. Hensing, G., Brage, S., Nygård, J.F., Sandanger, I. & Tellnes, G. (2000) Sickness absence with psychiatric disorders – an increased risk for marginalisation among men? *Soc Psychiatry Epidemiol*, 35, 335-40.
64. Hogstedt, C., Bjurvald, M., Marklund, S., Palme, E. & Theorell, T. (2004) *Den höga sjukfrånvaron – sanning och konsekvens (in Swedish). (The high sickness absence – truth and consequence)*. Arbetslivsinstitutet 2005, Stockholm, Sweden.
65. Holmgren, K. & Dahlin Ivanoff, S. (2004) Women on sickness absence – views of possibilities and obstacles for returning to work. A focus group study. *Disabil Rehabil*, 26, 213-22.
66. Höök, O., Grimby, G. (2001) *Rehabiliteringsmedicin – målsättning och organisation. (in Swedish)(Rehabilitation medicine – goal-setting and organisation)*. In: Höök, O. (Ed.) Rehabiliteringsmedicin (in Swedish)(Rehabilitation medicine). Stockholm, Liber AB.
67. Jakobsson, B., Bergroth, A., Schüldt, K. & Ekholm, J. (2005) Do systematic multiprofessional rehabilitation group meetings improve efficiency in vocational rehabilitation? *Work*, 24, 279-90.
68. Jakobsson, B., Schüldt Håård, U., Bergroth, A., Selander, J. & Ekholm, J. (2002) Improved cooperation in vocational rehabilitation with systematic rehabilitation group meetings. *Disabil Rehabil*, 24, 734-40.
69. Janssen, N., van den Heuvel, W.P.M., Beurskens, A.J.H.M., Nijhuis, F.J.N., Schröer, C.A.P. & Eijk, J.T.M. (2003) The Demand-Control-Support model as a predictor of return to work. *Int J Rehabil Res*, 26, 1-9.
70. Järholm, B. & Olofsson, C. (2002) *Försöringsmedicin. (in Swedish)(Insurance medicine)*, Lund:, Studentlitteratur.
71. Jensen, I.B. & Bodin L. (1998) multimodal cognitive-behavioural treatment for workers with chronic spinal pain: a matched cohort study with an 18-month follow-up. *Pain*, 76, 35-44.
72. Johansson, R. (1992) *Vid byråkratins gränser. Om handlingsfrihetens organisatoriska begränsningar*. PhD thesis (in Swedish)(On the border of bureaucracy). Arkiv, avhandlingsserie nr 39, Lund.
73. Johansson, U. & Bernspång B. (2001) Predicting return to work after brain injury using occupational therapy assessments. *Disabil Rehabil*, 23, 474-80.
74. Johansson, U. & Bernspång B. (2003) Life satisfaction related to work re-entry after brain injury: a longitudinal study. *Brain Inj*, 17, 991-1002.
75. Kerz, J., Werner, M. & Wesser, E. (1995) *vad vet vi om rehabilitering? Svensk rehabiliteringsforskning 1980-1993.*, Lund, Bokbox.
76. Krause, N., Dasinger, L.K. & Neuhauser, F. (1998) Modified Work and Return to Work: A Review of the Literature. *Journal of Occupational Rehabilitation*, 8, 113-139.

77. Krause, N., Frank, J., Dasinger, L., Sullivan, T. & Sinclair, S. (2001) Determinants of duration of disability and return-to-work after work-related injury and illness: Challenges for future research. *Am J Ind Med*, 40, 464-84.
78. Lindberg, P., Vingård, E., Josephson, M. & Alfredsson, L. (2005) Retaining the ability to work – associated factors at work*. *Eur J Public Health*.
79. Lindqvist, R. & Grape, O. (1999) Vocational rehabilitation of the socially disadvantaged long-term sick: inter-organizational co-operation between welfare state agencies. *Scand J Public Health*, 27, 5-10.
80. Lindqvist, R. (1995) Rehabiliteringens aktörer. In Marklund, S. (Ed.) *Rehabilitering i ett samhällsperspektiv. (in Swedish)(Rehabilitation in a social perspective)*. Lund, Studentlitteratur.
81. Lipsky, M. (1980) *Street level bureaucracy: Dilemmas of the individual in public service.*, New York, Russell Sage Foundation.
82. Lotters, F., Meering, W.J. & Burdorf, A. (2005) Reduced productivity after sickness absence due to musculoskeletal disorders and its relation to health outcomes. *Scand J Work Environ Health*, 31, 367-74.
83. Ludvigsen Enhage, P., Bergroth, A., Ekholm, J. & Schüldt, K. (2002) *Rehabiliteringsverksamhet- en administrativ hantering eller en fråga om återupprättelse? In: Ekholm J, Bergroth A, Selander J, Marnetoft SU, Schüldt K, Jakobsson B et al: Hinder och framgångsfaktorer i rehabiliteringsprocessen. (in Swedish)(Hindrances and facilitating factors in the rehabilitation process)*, Östersund, CSF rapportserie 2002:1, Mitthögskolan, Karolinska institutet, Stockholms universitet, Göteborgs Universitet, försäkringskassorna i Jämtlands och Stockholms län.
84. Lund, J. & Bjerkedal, T. (2001) Permanent impairments, disabilities and disability pensions related to accidents in Norway. *Accid Anal Prev*, 33, 19-30.
85. Lysgaard, A.P., Fonager, K. & Nielsen, C.V. (2005) Effect of financial compensation on vocational rehabilitation. *J Rehabil Med*, 37, 388-91.
86. Marhold, C., Linton, S.J. & Melin, L. (2001) A cognitive-behavioural return-to-work program: effects on pain patients with a history of long-term versus short-term sick leave. *Pain*, 91, 155-63.
87. Marklund, S (Ed.) (1995) *Rehabilitering i ett samhällsperspektiv (in Swedish)(Rehabilitation in a Social Perspective)* 2 ed. Studentlitteratur, Lund, Sweden.
88. Marklund, S., Bjurvald, M., Hogstedt, C., Palmer, & Theorell, T. (2005) *Den höga sjukfrånvaron – problem och lösningar. (in Swedish)(High Numbers of Sick-listing – Problems and Solutions)*. Arbetslivsinstitutet, Stockholm,.
89. Marnetoft, S-U. & Selander, J. (2002) Long-term effects of early versus delayed vocational rehabilitation – a four-year follow-up. *Disabil Rehabi*, 22, 741-5.
90. Marnetoft, S-U. & Selander, J. (2000) Multidisciplinary vocational rehabilitation focusing on work training and case management for unemployed sick-listed people. *Int J Rehabil Res*, 23, 271-9.
91. Marnetoft, S-U., Selander, J., Bergroth, A. & Ekholm, J. (1997) The unemployed sick-listed and their vocational rehabilitation. *Int J Rehabil Res*, 20, 245-253.
92. Marnetoft, S-U., Selander, J., Bergroth, A. & Ekholm, J. (2001) Factors associated with successful vocational rehabilitation in a Swedish rural area. *J Rehab Med*, 33, 71-78.

93. Mayer, T.G., Gatchel, R.J., Kishino, N., Keeley, J., Capra, P., Mayer, H., Barnett, J. & Mooney, V. (1985) Objective assessment of spine function following industrial injury. A prospective study with comparison group and one-year follow-up. *Spine*, 10, 482-93.
94. Mayer, T.G., Gatchel, R.J., Mayer, H., Kishino, N.D., Keeley, J. & Mooney, V. (1987) A prospective two-year study of functional restoration in industrial low back injury. An objective assessment procedure. *Jama*, 258, 1763-7.
95. Melchior, M., Niedhammer, I., Berkman, L.F. & Goldberg, M. (2003) Do psychosocial work factors and social relations exert independent effects on sickness absence? A six year prospective study of the GAZEL cohort. *J Epidemiol Community Health*, 57, 285-93.
96. Melin R. & Fugl-Meyer A.R. (2003) On prediction of vocational rehabilitation outcome at a Swedish employability institute. *J Rehabil Med*, 35, 284-9.
97. Nordqvist, C., Holmqvist, C. & Alexanderson, K. (2003) Views of laypersons on the role employers play in return to work when sick-listed. *J Occup Rehabil*, 13, 11-20.
98. Östlund, G., Cedersund, E., Alexandersson, K. & Hensing, G. (2001) "It was really nice to have someone" –Lay people with musculoskeletal disorders request supportive relationships in rehabilitation. *Scand J Public Health*, 29, 285-91.
99. Palmer, E. (2005) Sjukskrivning och förtidspension de närmaste åren. In Marklund, S., Bjurvald, M., Hogstedt, C., Palmer, E., Theorell, T.(Eds.) *Den höga sjukfrånvaron- problem och lösningar (in Swedish)(High Numbers of Sick-listing – Problems and Solutions)*. Stockholm, Arbetslivsinstitutet 2005 pp 17-38.
100. Pflingsten, M., Hildebrandt, J., Leibing, E., Franz, C. & Saur, P. (1997) Effectiveness of a multimodal treatment program for chronic low-back pain. *Pain*, 73, 77-85.
101. Ponzer, S., Hylén, U., Kusoffsky, A., Lauffs, M., Lonka, K., Mattiasson, A-C. & Nordström, G. (2004) Interprofessional training in the context of clinical practice: goals and students' perceptions on clinical education wards. *Med Educ*, 38, 727-36.
102. Prop (1989/1990:62) Regeringens proposition om insatser för aktiv rehabilitering och arbetslivsfondens verksamhet etc. (in Swedish)(Government bill regarding activities for active rehabilitation and the work of the Working Life Fund, etc).
103. Prop (1996/1997:28) Regeringens proposition om kriterier för rätt till ersättning i form av sjukpenning och förtidspension (in Swedish)(Government bill regarding criterion of right to allowance in form of sickness allowance and disability pension).
104. Prop (2002/03:89) Regeringens proposition om förändringar inom sjukförsäkringen för ökad hälsa i arbetslivet. (in Swedish)(Government bill on Amendments to the Public Health Insurance for improved vocational health). p46.
105. Proudfoot, J., Guest, D., Carson, J., Dunn, G. & Gray, J. (1997) Effect of cognitive-behavioural training on job-finding among long-term unemployed people. *Lancet*, 350, 96-100.
106. Rasmussen, C., Rechter, L., Schmidt, I., Hansen, V.K. & Therkelsen, K. (2001) The association of the involvement of financial compensation with the outcome of cervicobrachial pain that is treated conservatively. *Rheumatology (Oxford)*, 40, 552-4.
107. Reiso, H., Guldbrandsen, P. & Brage, S. (2004) Doctors' prediction of certified sickness absence. *Fam Pract*, 21, 192-8.
108. Reiso, H., Nygård, J., Brage, S., Guldbrandsen, P. & Tellners, G. (2001) Work ability and duration of certified sickness absence. *Scand J Public Health*, 29, 218-25.

109. Reiso, H., Nygård, J., Jørgensen, G., Holanger, R., Soldal, D. & Bruusgaard, D. (2003) Back to work: Predictors of return to work among patients with back disorders certified as sick. A two-years follow-up study. *Spine*, 28, 1468-73; discussion 1473-4.
110. RFV (1997:6) Risk–frisk–faktorer. Sjukskrivning och rehabilitering i Sverige. (in Swedish, English summary)(Risk–Healthy–Factors. Sicklisting and rehabilitation in Sweden.). In Marklund, S. (Ed.). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
111. RFV (1999) Sveriges officiella statistik och årsstatistik. (in Swedish)(Sweden’s official statistics). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
112. RFV (2001:1) SOCSAM – försök med politisk och finansiell samordning: en slutrapport – Finansiell samordning 2002:1. (in Swedish.)(experiment with financial and political co-ordination: a final report). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
113. RFV (2003:10) Arbetsförhållanden– orsak till sjukskrivning? (in Swedish)(Work conditions – a cause of sickness absence?). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
114. RFV (2003:16) Att förhindra och förkorta sjukfrånvaro – erfarenheter från fyra länder (in Swedish)(RFV analyses 2003:16. Preventing and mitigating sickness absence – experiences from four countries). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
115. RFV (2003:17) Sjuka kommuner? Skillnader i sjukfrånvaro mellan Sveriges kommuner år 2000. (in Swedish, English summary)(Differences in sickness absence between communities in Sweden). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
116. RFV (2004:2) Vägledning (in Swedish)(Insurance Office Guidelines). Stockholm, Riksförsäkringsverket.
117. RFV (2004:8) Långtidssjukskrivnas uppfattning om rehabiliterande åtgärder och insatser. (in Swedish, English summary)(Opinions of long term sic-listed about rehabilitation measures and efforts). Stockholm, Riksförsäkringsverket (National Social Insurance Board).
118. Roos, E., Burström, B., Saastamoinen, P. & Lahelma, E. (2005) A comparative study of the patterning of women’s health by family status and employment status in Finland and Sweden. *Soc Sci Med*, 60, 2443-51.
119. Salazar, M.K., Graham, K.Y. & Lantz, B. (1999) Evaluating case management services for injured workers. Use of a quality assessment model. *Aaohn J*, 47, 348-54.
120. SBU (2003) *Statens beredning för medicinsk utvärdering. Sjukskrivning- orsaker, konsekvenser och praxis. (in Swedish)(The Swedish Council on Technology Assessment in Health Care) 2003:167. (Sick-listing - reasons, consequences and praxis).* Stockholm, SBU: 176.
121. SCB (1998-19999) Statistiska Central Byrån, incapacity rate, Sweden.
122. Schechter, E.S. (1997) Work while receiving disability insurance benefits: Additional findings from the new beneficiary followup survey. *Soc Secur Bull*, 60, 3-17.
123. Schultz, I.Z., Crook, J., Meloche, G.R., Berkowitz, J., Milner, R., Zuberbier, O.A. & Meloche, W. (2004) Psychosocial factors predictive of occupational low back disability: towards development of a return-to-work model. *Pain*, 107, 77-85.
124. Selander, J. & Marnetoft, S.U. (2005) Case management in vocational rehabilitation: A case study with promising results. *Work*, 24, 297-304.

125. Selander, J. (1999) *Unemployed sick-leavers and vocational rehabilitation – a person-level study based on a national social insurance material*. PhD thesis. Department of rehabilitation Medicine. Stockholm, Sweden, Karolinska Institutet.
126. Selander, J., Marnetoft, S-U., Bergroth, A. & Ekholm, J. (2002) Return to work following vocational rehabilitation for neck, back and shoulder problems: risk factors reviewed. *Disabil Rehabil*, 24, 704-12.
127. SFS (1962) Lag (1962:381) om allmän försäkring, AFL. (in Swedish)(Act on Public Social Insurance). Socialdepartementet, (Ministry of Health and Social Affairs).
128. SFS (1977) Lag (1977:1160) om arbetsmiljö, AML. (in Swedish)(Act on Labour Environment). Näringsdepartementet, (Ministry of Industry and Communications).
129. SFS (1982a) Lag (1982:80) om anställningsskydd, LAS. (in Swedish)(Act on employment security). Näringsdepartementet, (Ministry of Industry and Communications).
130. SFS (1982b) Lag (1982:763) om hälso- och sjukvården, HSL. (in Swedish)(Act on Health and Medical care).
131. SFS (1991a) Förordning (1991:1321) om rehabiliteringsersättning. (in Swedish)(Regulation on rehabilitation allowance). Socialdepartementet (Ministry of Health and Social Affairs).
132. SFS (1991b) Lag (1991:1047) om sjuklön. (in Swedish) (Act on sickness allowance). Socialdepartementet (Ministry of Health and Social Affairs).
133. SFS (1995) Lag (1995:584) om föräldraledighet. (in Swedish)(Act on Parental Leave). Näringsdepartementet (Ministry of Industry and Communications).
134. Shaw, W.S. & Feuerstein, M. (2004) Generating workplace accommodations: lessons learned from the integrated case management study. *J Occup Rehabil*, 14, 207-16.
135. Sim, J. (1999) Improving return-to-work strategies in the United States disability programs, with analysis of program practices in Germany and Sweden. *Soc Secur Bull*, 62, 41-50.
136. Söderberg, E. & Alexanderson, K. (2003) Sickness certification practices of physicians: a review of the literature. *Scand J Public Health*, 31, 460-74.
137. Söderberg, E. & Alexanderson, K. (2005a) Gatekeepers in sickness insurance: a systematic review of the literature on practices of social insurance officers. *Health Soc Care Community*, 13, 211-23.
138. Sorvaniemi, M., Helenius, H. & Salokangas, R.K. (2003) Factors associated with being granted a pension among psychiatric outpatients with major depression. *J Affect Disord*, 75, 43-8.
139. SOU (1944) Socialvårdskommitténs betänkande VII: Utredning och förslag angående Lag om Allmän sjukförsäkring, AFL. (in Swedish)(Inquiry and consideration concerning the Act on National Insurance). Stockholm.
140. SOU (1995) Försäkringsskydd vid sjukdom – ett delbetänkande om rätten till ersättning och beräkning av inkomstunderlag under sjukpenningtid. (in Swedish)(Insurance cover at disease – a consideration on the entitlement to compensation and calculation of income qualifying during sickness allowance period). Stockholm, Socialdepartementet (Ministry of health and Social Affairs).
141. SOU (1996:85) En allmän och aktiv försäkring vid sjukdom och rehabilitering, Del 1. Slutbetänkande. (in Swedish)(A general and active insurance concerning diseases and rehabilitation). Stockholm, Socialdepartementet (Ministry of health and Social Affairs).

142. SOU (2000:78) Rehabilitering till arbete- en reform med individen i centrum. Slutbetänkande av Utredningen om den arbetslivsinriktade rehabiliteringen (in Swedish)(Rehabilitation back to work – a reform with the individual in the centre)., Stockholm, Socialdepartementet (Ministry of health and Social Affaires).
143. SOU (2002:5) En handlingsplan för ökad hälsa i arbetslivet. Slutbetänkande av Utredningen om den arbetslivsinriktade rehabiliteringen. (in Swedish)(An action plan for improved health in work life. Final report from the government commission on vocational rehabilitation). Stockholm, Socialdepartementet (Ministry of health and Social Affaires).
144. Strand, L.I., Ljunggren, A.E., Haldorsen, E.M. & Espehaug, B. (2001) The impact of physical function and pain on work status at 1- year follow-up in patients with back pain. *Spine*, 26, 800-8.
145. Tate, D.G. (1992) Workers' disability and return to work. *Am J Phys Med Rehabil*, 71, 92-6.
146. Timpka, T., Hensing, G. & Alexanderson, K. (1995) Dilemmas in sickness certification among Swedish physicians. *Eur J Public Health*, 5, 215-19.
147. Undén, A.L. & Elofsson, S. (2001) Health from the patient's point of view. How does it relate to the physician's judgement? *Fam Pract*, 18, 174-80.
148. Vahtera, J., Kivimäki, M., Forma, P., Wikstrom, J., Halmeenmaki, T., Linna, A. & Pentti, J. (2005) Organisational downsizing as a predictor of disability pension: the 10-town prospective cohort study. *J Epidemiol Community Health*, 59, 238-42.
149. van der Hulst, M., Vollenbroek-Hutten, M.M. & Ijzerman, M.J. (2005) A systematic review of sociodemographic, physical, and psychological predictors of multidisciplinary rehabilitation – or, back school treatment outcome in patients with chronic low back pain. *Spine*, 30, 813-25.
150. van Duijn, M., Lötters, F. & Burdorf, A. (2005) Influence of modified work on return to work for employees on sick leave due to musculoskeletal complaints. *J Rehabil Med*, 37, 172-9.
151. van Lierop, B. & Nijhuis, F. (2000) Assessment, education and placement: an integrated approach to vocational rehabilitation. *Int J Rehabil Res*, 23, 261-9.
152. Voss, M., Floderus, B. & Diderichsen, F. (2004) How do job characteristics, family situation, domestic work, and lifestyle factors relate to sickness absence? A study based on Sweden post. *J Occup Environ Med*, 46, 1134-43.
153. Waddell, G. & Burton, A. K. (2001) Occupational health guidelines for the management of low back pain at work: evidence review. *Occup. Med (Lond)*, 51, 124-35.
154. Watson, P., Booker, C., Moores, L. & Main, C. (2004) Returning the chronically unemployed with low back pain to employment. *Eur J Pain*, 8, 359-69.
155. Watson, R.L. & Duckett, D.A. (2000) Clinical management of a work rehabilitation program in a rural setting. *Journal of Back and Musculoskeletal Rehabilitation*, 14, 11-16.
156. Westerhäll, L. (1997) Rättsliga aspekter på arbetsförmåga på grund av sjukdom.(in Swedish)(Legal aspects of inability of work). *Socialmedicinsk tidskrift* nr 8-9, pp356-365.
157. Ydreborg, B.A. & Ekberg, K. (2004) disqualified for disability pension – a case/referent study. *Disabil Rehabil*, 26, 1079-86.