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Health and Rehabilitation in a Psychosocial Context
A Ten Year Perspective

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Abstract

This thesis is a retrospective- and prospective study of 372 long-term sick listed individuals with diseases of the locomotor system that underwent vocational rehabilitation conducted by the Social Insurance Office in the County of Västernorrland during the 1990s. The outcome of commercial rehabilitation services financed by the Insurance was evaluated in terms of return to work, sickness benefit and disability pension after1, 3, and 10 years in relation to demographic data, Sense of Coherence, Perceived Health and a created index of potential psychosocial stress labelled Psychosocial Marker.

In Paper I, the Psychosocial Marker was introduced and the probands were followed up after 3 years. For men problems related to alcohol abuse dominated and for women problems related to their private life. Only one third of the markers were related to problems in working life. At the follow-up time the risk for a full disability pension was 2.5 (ns.) for men and 4.3 (sign.) for women who had a Psychosocial Marker.

In Paper II, outcome for the study group was evaluated I relation Sense of Coherence and Perceived Health. After three years, men who were granted disability pension had significantly lower Sense of Coherence compared with women whereas both men and women had a significantly lower Perceived Health. The differences were interpreted in terms lower mental health and coping ability for men and a higher social acceptance for disability pension in combination with less income reduction for women.

In Paper III, the study group was divided in two diagnostic groups one with a localized disorder of the low back and one with a generalized disorder in terms of cervical neck pain and/or a general pain syndrome. Men with a generalized disorder were found to be more often single and had a lower Sense of Coherence and women more often had a Psychosocial Marker and worse Perceived Health. At the 10-year follow-up, women with a generalized disorder more often had any kind of sickness benefit and/or disability pension.

In Paper IV, the study group was evaluated against all previous studied variables. After 10 years 52% of the men and 57% of the women were granted any kind of disability pension. Age above middle for the group and a low Perceived Health increased the risk for a full disability pension after 3 and 10 years for both men and women. Of the men, 82% with low Perceived Health and of the women, 82% with a Psychosocial Marker or low Perceived Health were on any kind of sickness benefit 10 years after rehabilitation. Altogether high age and low Perceived Health were the most important factors.

Conclusion: Outcome of rehabilitation is related to psychosocial factors in terms of Psychosocial Marker, Sense of Coherence and Perceived Health together with diagnosis, gender and age.

Keywords: Rehabilitation, psychosocial, Sense of Coherence, Perceived Health, long-term follow-up.

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Original papers

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II. Kaiser P-O, Mattsson B, Marklund S, Wimo A. Sense of coherence and vocational rehabilitation of persons with chronic musculoskeletal disorders – gender aspects. *Journal of Men's Health and Gender* 2006;3(4):373–78.

III. Kaiser P-O. Localized and generalized disorders of the locomotor system — psychosocial and gender aspects – A ten year follow-up of rehabilitation. *Disability and Rehabilitation*. In press

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To all my patients struggling for their health

Contents

Abbreviations **8**
Prologue **9**
Background **11**
Health and rehabilitation - definitions *11*
The Swedish Social Insurance System 1970 to 2006 ..... *16*
Evaluation of rehabilitation by the Social Insurance Office *17*
Setting of the study – The County Västernorrland *18*
Some basic concepts **19**
Psychosocial 'Marker' *19*
Sense of Coherence - Perceived Health *20*
Gender and vocational rehabilitation *22*
Localized and generalized disorders of the locomotor system *23*
Aim of this thesis **24**
Material and methods **24**
Study group *24*
Data collection and statistical methods *26*
In depth interviews *27*
Ethical considerations *28*
Results **28**
Paper I. *28*
Paper II *29*
Paper III. *30*
Paper IV *31*
Benefits 1 - 10 years after rehabilitation *31*
Background factors, DP and sickness benefits *32*
Background factors and odds ratio *33*
Discussion **33**
Comments of study group *33*
Comments on methods *34*
Comments of results *35*
On the Psychosocial Marker *35*

On Sense of Coherence and Perceived Health *37*
On gender aspects *38*
On the topographic nature of the diseases *39*
Who will get a disability pension? *40*
Disability pension after 10 years compared with other studies *42*
Conclusions **43**
Future research **45**
Epilogue **46**
Acknowledgements **47**
Sammanfattning **49**
Introduktion *49*
Arbete I *49*
Arbete II *49*
Arbete III *49*
Arbete IV *50*
Slutsats *50*
References **51**
Attachment **63**

Abbreviations

CVN - County of Västernorrland

DP - Disability pension

GD - Generalized disorder

LD - Localized disorder

OR - Odds ratio

PH - Perceived Health

PM - Psychosocial Marker

SB - Sickness benefit

SIO - Social Insurance Office

SOC - Sense of Coherence

VR - Vocational rehabilitation

Prologue

When I started to study medicine in 1970, I had an academic background in psychology on a bachelor level. I graduated from medical university 1975 and became a specialist of general practice in 1980. I have thus now been working in general practice for 30 years. During my professional career, I have met ten thousand patients with all sorts of traditional signs and symptoms of illness and diseases. For 15 years, I also worked part-time as a medical adviser for the Swedish Social Insurance Office (SIO), most of the time in a senior position. I have read and given statements on thousands of medical certificates concerning medical disability in connection with sickness benefit, work injury and disability pension (DP).

From this, I have learnt that there is sometimes a discrepancy between what the patients tell the doctor in the consultation room and what is presented to the SIO in the medical certificates. The consultation is, for natural reasons, a very private activity due to the close and mostly very confiding contact between the doctor and patient. In this setting, the patient chooses to talk about very personal matters, including family conflicts, concerning partner, children and parents, and how these affect performance at work, both in terms of Perceived Health and in terms of disease in the biomedical sense.

My feeling is that the work itself or conditions in the working environment are less often reported by the patient to be the prime reason for staying away from work. However, when shortcomings are communicated to the SIO by the patient herself* or by the physician, the focus tends to turn to working conditions rather than individual 'private' matters, making the work an arena for psychosocial and/or biomedical problems not necessarily depending on the work as such. This shift of focus might depend on a more or less conscious wish to adjust to the rules and regulations of the insurance system which only compensate for limitation in gainful work ability.

In the shorter perspective, this is of less importance since as long as the patient is on regular sick leave the focus should be to diagnose and treat the patient in a biomedical sense in order to restore working capacity as soon s possible. During this process, the SIO´s focus is primarily to secure that the medical condition and lack of work ability is relevant enough to justify the sickness benefit. However if the patient is not cured within reasonable time – say a couple of months – the patient might need not only prolonged medical rehabilitation but

* The patient will be referred to as 'she' if not specially noted in the context

also vocational rehabilitation. In this situation, the cause of the disease becomes increasingly important since experience shows that this affects the prognosis and thus also the outcome of the rehabilitation process.

It is a well-known fact, not least from general practice, that diseases never appear in isolation from the social context in which they take place as well as from the patient's individual capability to handle the medical stress. My personal interest, as well as the focus on this thesis is to illustrate in a theoretical framework of holistic medicine, how non-medical factors interact with the patient, the clinical process and the formal procedure at the SIO. A couple of 'indicators' are used to operationalize the questions in order to explore possible connections and to generate hypotheses for further research.

Of course, I would also be very happy if my findings become useful to facilitate the everyday work of my colleagues, and for the SIO to improve our patients'/clients' prospects of reclaiming their health. This must include biomedical factors as well as considering the patient's autonomy which requires a secure economic situation, either by a regular work or well motivated compensation from the National Social Insurance.

Background

This thesis focuses on the psychosocial aspects of clients being sick-listed for several months or more and for whom the SIO considered that they needed extra attention and support by services initiated and funded by the SIO in order to improve their rehabilitation. Thus, the thesis does not deal with sick listing as such but only when this process calls for formal procedures supporting vocational rehabilitation. It is written by a general practitioner engaged in holistic general practice. The intention is to make the clients less anonymous and more personal by introducing the patient-doctor view and by adding individual and relevant psychosocial information to the administrative data of the SIO. This is in line with the well known fact that the diagnosis as a concept only correlates very weakly with an individual's functional capacity and working ability unless personal and context-dependent information is added to the case. Such an attitude is also supported by the 'Back Pain, Neck Pain' report (65) from The Swedish Council on Technology Assessment in Health Care which summarizes the role of primary care as follows;

> *…interventions provided within primary care are the only ones needed by most patients with back problems. These studies also show that a primary care physician's most important task is not to intervene unnecessarily. Subjecting a patient to ineffective examinations and treatments carries the risk, e.g., that the patient's back problem can develop into a chronic, lifelong disorder. In primary care, the consultation itself offers a major opportunity to influence both the acute and the more long-term course of back problems. An essential aspect of the consultation is the involvement of the caregiver and the ability to work with and listen to the patient's perceptions on back pain, mainly how it impacts on daily life. The opportunity for the physician and the patient to arrive at a common understanding about the nature and course of back pain is of major importance for the prognosis and is highly dependent on a good patient-doctor relationship.*

Health and rehabilitation - definitions

From my experience and from a theoretical viewpoint, the foundation for every consultation is the individual's own perception of a condition that deviates from what she considers normal. This condition generates an uncertainty and discomfort within the individual who experiences an actual or potential threat to his well-being and integrity. When this tension reaches a certain level, the person seeks contact with medical care, which she believes can reduce the tension and consequently the personal threat. When this contact is established, the person turns into a patient and his description of the problems becomes an

anamnesis, which in turn initiates the clinical process which might lead to diagnosis and treatment.

Every communication between individuals is dependent on context both in respect to how the sender formulates the messages and how they are interpreted by the receiver. The patient always represents herself and should feel free how to present her problem to the doctor. The doctor, however, is trained to listen to the patient's story as a professional listener. This calls for a standardized and generally accepted professional theoretical framework in which the patient's problem is understood and interpreted. To define and to implement such a framework can be problematic in terms of universality and general acceptance, and our ancient masters have also been concerned with the matter. The following statement, when Socrates quotes the Thracian physician in Plato's Charmides (59), is probably the earliest documented description of such a framework in terms of holistic medicine;

> *You ought not to attempt to cure the eyes without the head, or the head without the body, so neither ought you to attempt to cure the body without the soul. This is the reason why the cure of many diseases is unknown to the physicians of Hellas, because they disregard the whole, which ought to be studied also, for the part can never be well unless the whole is well.*

It is therefore very reasonable to adopt a holistic approach as a starting point for a definition of health, especially in general practice. Any isolation from the whole of a human performance is likely to distort the full understanding of a person who is in good health or stricken by disease. A definition of health therefore by necessity has to be of global nature to be representative for a single person and for the circumstances in which she lives. Such an approach is represented by the Swedish professor of philosophy Lennart Nordenfeldt who defines health as (55);

> *A person is in a state of complete health if, and only if, this person is in a physical and mental state which is such that he or she is able to realise all his or her vital goals given a set of accepted circumstances.*

However, this thesis also deals with health in a more limited meaning when relating health to work in general and to the right of compensation from SIO in particular. The National Health Insurance Act (40, 66) does not define health but disease in the legal meaning by;

> *When assessing whether a 'disease' exists or not, it appears necessary to confirm the term to what is ordinary parlance and according to*

> *current medical opinion, may be regarded as such. With this starting point every abnormal physical or mental state that is not connected with normal life process may be regarded as a disease.*
>
> *Disturbances and physiological changes connected with natural ageing or with pregnancy and childbirth are clearly not to be regarded as disease, since they are bound up with the normal process of life.*
>
> *Sickness benefit is issued for a disease, which impairs the insured persons' working capacity with minimum a quarter. In forming this judgment, labour market related, economical, social and similar conditions should be disregarded.*

The definition of health by Nordenfeldt is a general one which very much leaves it to the individual to determine what her vital goals are and thus what health is. Health becomes a personal matter. Health, according to the National Insurance Act, refers to general parlance as well as current medical opinion to determine what disease is. However 'disturbances' due to natural ageing and pregnancy are excluded since they are an effect of normal life. Furthermore, when issuing sickness benefit, labour-market related, economic, social and similar conditions should be disregarded (40). Health in this sense becomes a legal issue.

Rehabilitation in this thesis has got two meanings. The general meaning represented by the definition by The National Board of Health and Welfare (Socialstyrelsen) who defines rehabilitation as (60);

> *All measures of medical, psychological, social and vocational kind intended to help the sick and injured to regain best possible functional ability for a normal life.*

The second definition is the one from The National Social Insurance Act which defines rehabilitation as (40);

> *Rehabilitation shall aim to restore to the one stricken with illness his/her working capacity and the requirements to support him/her-self by gainful occupation.*

The definition of rehabilitation by The National Board of Health and Welfare is a general one with a goal which is difficult to measure more than in relative terms. Focus is on improving the patients' functional ability to the best possible for leading a normal life, not to reach a certain generally accepted level although there may be several personal goals for the patient. The definition by The National Social Insurance Act however, is very much more precise since it

focuses on working capacity and supporting by gainful occupation, implying that rehabilitation has not been successful if the patient is unable to work in the sense that this work is gainful to an extent that the person can support herself.

A holistic view on health and human performance argues for an interdisciplinary, border-crossing and context-dependent approach. Different views on health and rehabilitation might lead to a goal, as well as a role conflict between the patients, the care system and the insurance system if not fully understood and accepted by all parties: in the worse a case power struggle between bodies with different objectives. This is also illustrated by the Danish philosopher Søren Kierkegaard in his famous: "The secret in the entire art of helping" (35);

> *If one is truly to succeed in leading a person to a specific place, one must first and foremost take care to find him where he is and begin there. Anyone who cannot do this is himself under a delusion if he thinks he is able to help someone else. In order truly to help someone else, I must understand more than he – but certainly first and foremost understand what he understands. If I do not do that, then my greater understanding does not help him at all. If I nevertheless want to assert my greater understanding, then it is because I am vain or proud, then basically instead of benefiting him I really want to be admired by him.*
>
> *But all true helping begins with a humbling. The helper must first humble himself under the person he wants to help and thereby understand that to help is not to dominate but to serve, that to help is not to be the most dominating but the most patient, that to help is a willingness for the time being to put up with being in the wrong and not understanding what the other understands.*

Socioeconomic factors - Psychosocial stress

In 1967 The Whitehall study started, including more than 10,000 British civil servants from London offices of 20 departments. The research group was led by Michael Marmot, professor of Epidemiology and Public Health at University College London. The study has become the landmark of prospective investigations on the connection between social grades and health in several aspects. In 1990 North et al (56) from the Whitehall study group, showed a strong inverse relationship between grade of employment, on basis of salary and absenteeism due to sickness. Several risk factors for higher sickness absence were also identified including health-related behaviours, work characteristics, low level of job satisfaction and adverse social circumstances outside work.

Many studies have confirmed this statement and in an extensive review of socio-economic differentials in health, published in 1990, D. R. Williams concludes (82);

> *Current research suggests that health behaviours, stress, social ties, and attitudinal orientations are critical links between social structure and health status. These psychosocial factors are linked more strongly to health status than is medical care and are related systematically to socio-economic status.*

In 1995 the results from the Whitehall study were confirmed (50) and a strong association between ill health and sickness absence, particularly for longer spells was shown. However, the new analysis showed that the magnitude of the association may have been underestimated before because of the strength of the association between grade of employment and sickness absence. It was now proposed that sickness absence can be used as an integrated measure of physical, psychological, and social functioning in studies of working populations.

In another study (8), socio-economic status was shown to make a large difference to the impact of illness, on the ability to remain in paid employment and this impact increases as unemployment rises. Data from the Whitehall study (29) showed that low socio-economic status was associated with poor health functioning acting both via, and independently of, disease. Furthermore, in a 10-year follow-up of 62,000 Norwegian individuals (37) it was concluded that even for a medically based DP, low socio-economic factors might be strong determinants when compared to medical factors alone and that these non-medical factors are usually not addressed by individual-based health rehabilitation programmes. Furthermore, profession, age ethnic origin and gender play a determining role. In Sweden, corresponding findings have been presented in several reports on the National Social Insurance system (13, 73, 78).

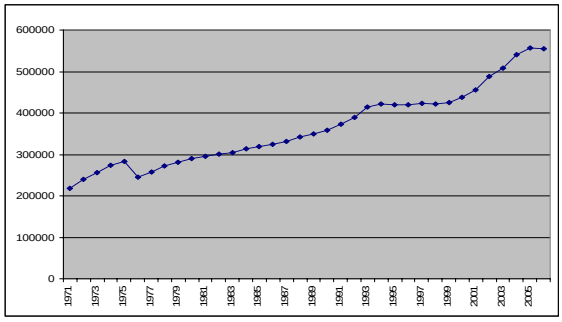
In 1997 Marmot proposed that there is a social gradient of rising mortality with decreasing socio-economic status (51). This was concluded after having brought together three large studies, complementarity in samples, measures, and design. This gradient was observed both with educational and occupational status and was not explained by parents' social status or lack of an intact family during childhood. It was also not accounted for by intelligence measured in school. Marmot suggested that indirect selection cannot account for inequalities in health. Possible mediators that link social position to physical and mental health include smoking and features of the psycho-social environment at work and outside.

Hence it is obvious that there is a connection between traditional socio-economic factors, health and sickness absences. This connection is very complex. The relevant factors are likely to intercorrelate, forming a weave of forces that interact with personal and context-dependent factors acting both over a short and long time. However, most data from this area of research are from large studies including several thousands of people, which is favourable for identifying possible relevant factors on a group level but less fruitful to explain how single individuals are affected by her 'local' socio-economic stressors due to simplified protocols and type 1 faults.

The Swedish Social Insurance System 1970 to 2006

The number of persons on sickness and activity compensation (earlier named disability pension) in Sweden has increased continually since 1970 (19). The increase is almost 160% from 1970 to 2005. The reasons for this increase are extremely complex and due to an interaction between a number of factors affecting working life on a macro and micro level. However, an increase of population can explain only a very small proportion since the rise in population over this time was only 12%. (69). Neither can a global deterioration of the health of the population, since the average length of life has increased by approximately ten years during the last 35 years (70)

Figure 1. The number of persons on sickness and activity compensation in Sweden 1970 – 2006



In order to control and compensate for the unwanted increase of people excluded from working life due to sickness, there have been a number of different changes in the regulations for the benefits, with a focus on economic, medical or labour market factors. For instance is the decrease in the level between 1976 and 1977 due to a lowering of the general retirement age from 67 to 65 years. None of

these measures have however, had a permanent effect on the increase. On the other hand, it is possible that without adjustment of the compensation system the increase would have been even greater. In the 1980s, there was a focus in the public debate in Sweden on vocational rehabilitation, which initiated an official rehabilitation commission. In 1980, the commission, led by the Ministry of Health and Social welfare presented their report (67). As one of the consequences of this report, the Swedish Social Insurance Office (SIO) was allowed to buy external rehabilitation services since 1990 in order to investigate the conditions for, and to promote vocational rehabilitation (VR).

Evaluation of rehabilitation by the Social Insurance Office

Sickness absenteeism and vocational rehabilitation (VR) in Sweden was evaluated in a report from the National Social Insurance Board of Sweden (49);

> *The outcome of this aspect of rehabilitation is poor in terms of return to work and one of the conclusions is: A number of risk factors may be present simultaneously and thus cause an even higher risk of sickness. An example of such a multiple syndrome of risk factors occurs when an individual has a psychiatric diagnosis, is unemployed, has a drinking problem and is living alone.This combination of factors not only leads to a higher probability of long-term sickness but also significantly more often to disability pension and lack of success in vocational rehabilitation.*

Furthermore, profession, age, ethnic origin and gender play a determining role (13, 73). All these findings were also reconfirmed in a recent review of Swedish insurance system (78).

The mechanisms behind exclusion from the labour market for ‘medical’ reasons are obviously very complex and multifactorial. It is therefore reasonable to adopt an interdisciplinary approach for the scientific evaluation of the rehabilitation process both from the clinical, as well as from the administrative point of view. An approach that supported this is well summarized in the statement below by Professor Tage S. Kristensen at the Danish National Research Centre for the Working Environment (39);

> *Traditional Occupational Health research has focused on the possible harmful exposures at work. Factors outside this limited paradigm of occupational exposure and health have been considered irrelevant or - at best - treated as ‘confounders’. This paradigm was useful during a period with specific and very noxious exposures at the work sites. Today the paradigm has turned into a limiting straitjacket.*

In order to understand the important factors influencing the health of the adult populations of the European societies, research has to be much broader and to be interdisciplinary. It is necessary to include the total life course, the life style of the individuals, the individual personality and coping potentials, the work-family interface, the gender and family roles, the structure and function of the labour market, the impact of the global economy, the health effects of the ambient environment, and the (new) class structure.

Setting of the study – The County Västernorrland

The probands of this thesis all live in the County of Västernorrland (CVN). CVN is located in the middle of Sweden and in the middle of the Nordic countries. The main industries are forestry, pulp and paper. However, other industries are growing like cluster formations in IT, banking and insurance, environmental engineering, crisis and conflict management and the rescue services. These clusters are increasingly supported by Mid-Sweden University, which supplies the needed research and training.

The population of CVN is about 244,000 inhabitants but has declined by approximately 10% since the year 1970. The greatest reduction has taken place in the age groups below 24 years. The greatest increase has been among those aged 80 years and over. CVN has a higher proportion of elderly and a lower proportion of young persons in its population than the national average. The lower proportion of young persons is principally the result of several years' migration deficit. The county has seven municipalities, Sundsvall is the biggest city with a population of 100,000 persons. Every tenth inhabitant in CVN is of foreign origin, defined as being born in another country and/ or having at least one parent born in another country compared with every fifth person in the nation. Furthermore, life expectancy is about average for the nation (17).

Sweden

County of Västernorrland

The average income is slightly below the national average for men but average for women. About 30% of the population is working in the agriculture, forestry and fishing industries compared with 20% for the nation. In 2005 9.4%, compared with 6.8% for the nation, of the men were unemployed or on underemployment schemes. For women the rate was 7.1% compared with 5.9% (17). The number of persons in CVN on sickness and activity compensation increased over the study period (1993 – 2004) from 13,655 to 14,548 that is 6.4% which is less compared with the whole nation where the increase was 24% over the same time period. (20).

Some basic concepts

In 1970 the former professor of social medicine Claes-Göran Westrin showed in his dissertation (80) that persons sick-listed for low back pain, compared to controls, significantly more often had children under 7 years of age, more often were divorced, associated with alcohol abuse for the men and that the controls were generally living in bigger blocks of flats. This dissertation is probably the first systematic study in Sweden of the relation between socio-economic factors and sick listing in a national insurance system.

This thesis tries to address these problems, although to limited extent, by an ambition to 'personalize' the interaction between the single individual and his/her life milieu by systematising scientific knowledge with tacit clinical knowledge and administrative data from the National Social Insurance. A number of possibly important factors for the outcome of rehabilitation will be used to illustrate the complexity of human performance in terms of working capacity and return to work after rehabilitation. These factors are general socio-economic and psychosocial status of the study population, and further, more personal factors including Psychosocial Marker (PM), Sense of Coherence (SOC), Perceived Health (PH) and the kind of disease. These factors will be related to administrative data from the regular sick register at the SIO in terms of SB and DP over a ten-year period.

Psychosocial 'Marker'

In this thesis a selected number of indicators of psychological and social stress related to the client are utilized to form a measurement called 'Psychosocial Marker'. PM is defined as any relevant psychosocial information about the person's life situation, not immediately related to the original set of medical problems. This information included reports of alcohol abuse, criminality and economic problems due to poor income and/or debts, serious disease and death in the family, and problems with child minding, unhappiness with job, conflict

with employer about performance and threat of or actual unemployment during rehabilitation. The concept of PM will be discussed further below in the method section.

Sense of Coherence - Perceived Health

In 1979 Aaron Antonovsky (4) presented the concept of Sense of Coherence (SOC) – a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that: 1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable (comprehensibility), 2) the resources are available to one to meet the demands posed by these stimuli (manageability) and 3) these demands are worthy of investment and engagement (meaningfulness). SOC is assumed to develop during childhood and young adulthood and is seen as a relatively stable trait from that period, showing only minor and temporary fluctuations when radical changes in life occur. Developing a scale of 29 questions to measure SOC operationalized the concept. The scale remained reliable when used cross-culturally and in several languages (5, 7, 16, 77).

It's important to point out that Antonovsky´s original meaning of SOC was salutogenic – that promoting health was the essential concept – not to explain disease as in the traditional pathogenic approach. Antonovsky suggested that a strong SOC is the prerequisite for successful management of a stress-released tension leading to movement towards the healthy end of the ease-dis-ease continuum. Furthermore, Antonovsky hypothesized that the stronger the SOC, the more likely will the individual be able to cope with life-stressor situations. The SOC represents a succinct formulation of a word view of the web of linkages between the person and his or her world (4).

In an expert report from 1999 the state and relevance of the SOC model is summarised (18). SOC is linked to an influence on the perception of stress and coping styles and can facilitate adoption to difficult situations. SOC also has a high negative correlation with anxiety and depression. The conclusions in the report are also confirmed by more recent studies which indicate that SOC is related to the degree of symptoms in response to work environmental strain.

For instance in a study of SOC among the unemployed and re-employed (89% men) after closure of a car assembly plant, it was found that the unemployed reported physical and psychological symptoms significantly more often as well as a weaker SOC but that unemployment had a rather low impact on symptoms in the presence of a strong SOC. Furthermore, SOC seemed to have a greater impact on psychological symptoms among unemployed compared with re-employed persons (26). In a study of employees of social-welfare and social-

insurance organizations (92% women), including psychometric as well as physiological variables, SOC interacted strongly with emotional job strain (pressure) but not with quantitative job strain (76). This was also shown in a Danish study of 2053 employees from different workplaces where people with high levels of SOC experienced fewer stress symptoms (2).

The literature on SOC and its relation to illness and disease is vast and indicates a potential for prediction of individual health and function. For instance SOC was consistently associated with developing neck-shoulder pain in a Finnish prospective study of 154 'healthy children' whereas traditional socio-economic factors did not (81). The SOC also had a very good predictive value on the outcome in a more than 5 years follow-up of anterior low-back fusion for a chronically painful low-back condition, as well in terms of reduced disability as in self-rated improvement (63). Furthermore, a strong relationship between a low SOC and mental and circulatory health problems was found in a ten-year follow-up of individuals aged between 25 and 75 years, participating in The Swedish Level of Living Survey (46).

The mechanisms through which SOC acts are complex as indicated by the findings in a study of 345 women and 361 men who participated in a psychological examination including rating of the SOC. Persons with high life satisfaction and competence had favourable work conditions and more personal resources and social support. Their coping strategies were primarily problem-focused, whereas those with less sense of well-being were emotion-focused (33). Furthermore, in a study of subjects with disability from some form of paralysis resulting either from spinal cord injury or cerebrovascular disease, SOC was found to be significantly related to disability adjustment for both the individuals with disability and their spouses, indicating that SOC is a personality factor that explains individual differences in coping with a disability, regardless of level of severity (61).

The term Perceived Health (PH) specifies a concept of health and a way of measuring it. The concept is important in measuring health, psychological well-being and health-relating quality of life. PH is clearly distinguished from medical health as evaluated by doctors. PH is the individual's own subjective feeling of well-being expressed by the individual herself usually on some form of scale responding to the question, how do you perceive your present (or for a certain time) health? An extensive and systematic review of the concept of PH revealed that a person's PH was found to be consistently correlated with a functional ability, number of medical diagnoses and physical and mental symptoms (22). Furthermore, predictors of future PH are baseline ratings of PH, self-esteem, social support and sense of coherence (28).

These finding were confirmed in a recent systematic review where SOC was strongly related to PH especially mental health, regardless of age, gender, ethnicity, nationality, and study design. SOC seems to be able to predict health by promoting resource, which strengthens resilience and develops a positive subjective state of health (16). Furthermore, in a population-based cohort study of 20,000 persons SOC was found be a potential marker of an individual's social stress-adaptive capacity and seemed also to predicted mortality (75).

High SOC has predicted positive outcome of vocational rehabilitation (VR) in a Swedish prospective study of persons undergoing rehabilitation (53). A tendency for persons with a low SOC for not returning to work after two years sick leave has been reported (27). A weak SOC in people of 50 years and younger increases the likelihood of being granted a disability pension (74).
Taken together it is very reasonable to include the concepts of SOC and PH in this thesis since both factors are of a very personal nature. SOC represents a global sustainable factor indicating the individual's health-promoting ability and resilience to negative stress on a long-term basis, whereas PH is more of an on-the-spot account of her very subjective feeling of present fitness.

Gender and vocational rehabilitation

Living conditions in general differ between men and women in terms of family responsibility and working conditions besides fundamental biological differences. As a consequence a gender perspective on research on health and rehabilitation is a necessity not the least when studying the influence of psychosocial stress on VR and DP.

This is also the meaning in the summary of the Swedish Research Council's Committee on Gender Research report: Mapping of the gender perspective (48);

> *Gender is a social and cultural construction. This means that gender is created through a continuous interplay between structural conditions and perceptions related to femininity and masculinity. Gender as a structure is an expression for how sex is tied to power, such as privileges in society for example.*
>
> *Furthermore, gender research problematizes relationships and dependence between men and women as individuals. Key concepts within gender research are construction, hierarchy (system of power), relation and social situation.*

Within the field of medicine, health and medical care it is particularly important to analyse the close interplay between biological gender and socio/culturally created gender, which means that the biological gender also needs to be problematized based on a societal perspective and a constructivist framework.

In this thesis all data are separately analysed in terms of gender. Not to do so is totally inadequate not only from a gender perspective as such but also from the very simple fact that there are no patients or clients who are a mixture of men and women (at least not in these research data). Although, usually obvious it is nevertheless often difficult to fully understand the mechanism behind the differences and their consequences. The aim of this thesis is to present the differences and to assign them plausible explanations in relation to the actual data and in relation to what is more or less consensus in the scientific community. Very much however will be left to the reader's interpretations and beliefs.

Localized and generalized disorders of the locomotor system

It is well known that back pain and related locomotor ailments are seldom isolated physical problems. These conditions are often associated with social, psychological, and workplace-related factors. Stress, worries and anxiety, and the patient's own perceptions of managing the problem, can have a decisive impact on the transition from acute to more chronic pain. The clear role of psychosocial factors in this respect suggests that such factors should be considered an integral part of back pain in relation to preventive efforts, both in the initial phase of treatment, and later during rehabilitation (36).

Widespread pain has a greater negative impact on the prognosis regarding duration of pain and working capacity, compared with localized neck-shoulder pain (3). In a community-based longitudinal study, subjects with localized low back pain presented healthier lifestyles than subjects with generalized back pain and the latter experienced a higher degree of pain measures. In this study, generalized back pain was not regarded as a different entity compared to localized low back pain. However, the generalization indicated a more severe condition and the dissemination was strongly associated with the socio-demographic background (31). Thus the outcome of VR seems to be related to the patient's psychosocial situation and gender as well as to the character of the pain, localized or more widespread.

The connection between the topographic nature of a pain and psychosocial factors is a comparatively undeveloped research field. At the same time there is much tacit knowledge that guides the doctor in clinical practice in a more or less

systematic way. It is therefore urgent to gain further knowledge of how the relationship between the nature of the pain and the psychosocial 'map' of the individual can be used to better understand and help the patient.

Aim of this thesis

A general aim in this thesis is to identify psychosocial and socio-economic factors and relate them to the outcome of rehabilitation, conducted by the National Social Insurance Office, of diseases of the locomotor system. In doing so it is important not only to discuss correlations on a cohort level but also on an individual level as in the traditional doctor-patient situation. Another aim is to study whether administrative data can be used to study clinical problems and, if so to assess the relevance of this information.

The specific aims were to:

- study whether the psychosocial 'marker' (PM) has any impact on the outcome of rehabilitation conducted by the Social Insurance Office (SIO). (Paper I)

- study the association of Sense of Coherence (SOC) and Perceived Health (PH) and the outcome of rehabilitation in patients with chronic musculoskeletal disorders. Could SOC and PH be related to the degree of disability pension (DP)? Are there gender differences? (Paper II)

- evaluate localized disorders (LD) and generalized disorders (GD) of the locomotor system to differences in gender, personal and psychosocial factors in relation to outcome 10 years after the rehabilitation was initiated. (Paper III)

- evaluate the outcome after one, two, three and 10 years of rehabilitation conducted by the Swedish SIO, in relation to socio-economic, psychosocial and gender aspects. (Paper IV)

Material and methods

Study group

The study group was compiled from a consecutively recorded database of all rehabilitation measures purchased by the SIO of CVN. On a routine basis these

cases were reported to the National Insurance Board of Sweden on a form (Attachment 1) registering the kind of diagnosis of the clients (8 groups) and the services which were offered (14 groups). Measures were taken when the sick spells were prolonged and there was a need to support the VR through further evaluation, education and vocational training of the patient/client. Usually these measures were initiated by the social insurance officer or the attending physician and less often by the client herself. The overall ambition for the individual was to return to his/her ordinary job or, at least, stay with the same employer. If this was not possible, rehabilitation should aim at a new assignment in another milieu or a new career (62). Thus, the initiative for a rehabilitation service was not a traditional clinical one in order to 'heal' the patient but to improve the process of return to work after medical care had completed the medical rehabilitation.

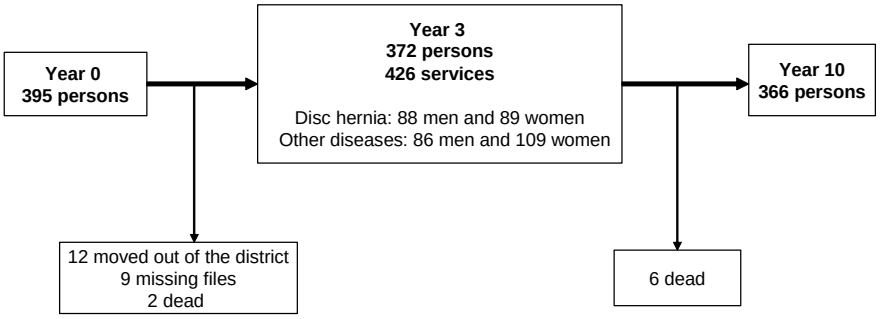
Rehabilitation services were provided by either public or private organizations and the local SIO were allowed to purchase services from any actor in the market. Commonly, a limited group of providers were contracted on a long-term basis. The rehabilitation activities commence within a couple of weeks of the formal decision and, at this point, everyone claimed compensation from the National Health Insurance based on their absence from work due to sickness. This rehabilitation process has been described by Selander et al (64).

From 1 January 1993 to 30 June 1994, the SIO in the County of Västernorrland in northern Sweden had 647 cases where external rehabilitation services were purchased. Of the 647 cases 29 cases (25 individuals) were lost because the individuals did not want to be registered in the database and two because of double registration, leaving 616 cases in the total population

Since diseases of the musculoskeletal system represent the majority of the cases (66%) only these were included in order to make the results more comparable to other data. However, the group, 'diseases of the joints and rheumatism' were excluded due to lack of data because this group was reserved for the comparatively infrequent 'true inflammatory' rheumatic disorders. Of the 616 cases 202 represented the diagnostic groups 'disc hernia' or 'back pain syndrome' and 224 the diagnostic group 'other diseases of the locomotor system' together a total of 426 cases to be included in the study. These 426 cases represented 372 individuals since some persons received more than one measure. Thirty-nine persons received two measures, six persons three and one person four measures. The classification of the patient in the different diagnostic groups was based on the diagnosis on the medical sickness benefit certificates and/or from special extended reports (Läkarutlåtande om hälsotillstånd) to the SIO when the sick episode was prolonged.

Of the 372 individuals, 174 men and 198 women, representing 426 cases of rehabilitation measures 23 individuals were lost in the follow-up after three years. Twelve files were not available because the clients had moved out of the district, two clients had died within follow-up period and nine files were missing, leaving 366 individuals and 403 measures to be analysed. At the ten-year follow-up another six individuals were lost because they had died in the meantime (Figure 2).

Figure 2. Probands and diagnosis



It is important to notice that in the first paper all 403 cases of purchase of rehabilitation measures, representing 372 individuals, were included. In paper II, III and IV the results are related to the first buy for every person. Thus in these three studies the number of cases are equal to the number of individuals.

Data collection and statistical methods

An officer at the SIO supplemented these data with information on the person's marital status, educational and socio-economic classification and employer, according to the Nordic standard occupational classification and the Swedish socio-economic classification systems (72). The different measures taken were grouped into four categories based on the coding of the official registration form. Evaluation of the client's professional skills and performance under controlled working conditions: codes 1, 2 and 3. Applied professional education: codes 5 and 6. Physical training: codes 7, 8 and 9. Unspecified: codes 10 -14. Family status was grouped into living alone or not, and educational level was grouped into basic compulsory 9-year school education or above. The clients were grouped by profession into blue-collar or white-collar, independent of education and the category of employer was either public or private employment, including self-employed persons.

The information about the PM were compiled by the author by reviewing the client's files at the SIO from one year preceding the day of decision for the rehabilitation measure. One year was chosen to ensure that the problems were still current and interfering with the person's well-being. This is also in accordance with the concept of crisis adaptation (14). The PM was registered as a categorical variable, present or not present, including a brief description of the problem. All the 403 measures were included in the analysis of the first study since every point at decision represents a new occasion to reconsider the rehabilitation strategy for the individual.

Approximately 2.5 years after the rehabilitation measure was initiated the subjects were asked to fill in a Swedish version of the original 29-item SOC form (6) administrated to them by mail together with an introductory letter. At the same time the subjects were asked to report perceived health (PH), by responding to the question; how do you experience your present health, on a 0 - 100 visual-analogue scale (54) with high values indicating bad health? Two reminders were sent out within a three-month period.

Follow-up data, reflecting the outcome of rehabilitation with respect to current compensation, were collected from the National Sickness Benefit Register via a standard procedure at the SIO computer terminal. Data were registered 1,2,3 and ten years after the formal decision was taken for each measure.

Data was registered in Excel and imported to and analysed in SPSS 8.0 and 10.0 (68). Variables were compared crosstablewise and tested for chi-square without the Yates correction for continuity. For final analysis, multiple logistic regressions were used, reducing data in Paper IV with the backward Wald model.

In depth interviews

In order to make a deeper analysis of the rehabilitation process to meet the patient and hears their voice, in depth interviews were made by the author during 1999 with eleven individuals from the study group, six women and five men, who all had been granted a full disability pension at the three year follow-up. The interviews lasted for approximately two hours and have all been transcribed. One has been coded as a preparation for analysis in the framework of grounded theory (24). So far there are no systematized results to present but a general impression is that every patient had her own story with extremely private features which credibly affected the rehabilitation process and the individual's potential return to work. This is also in line with one the starting points of this thesis.

Ethical considerations

All persons planned to be included in the study were informed by letter twice during 1995. The first letter, sent out at the beginning of 1995, gave general information that a study was planned and that their case was considered for inclusion in the study. In the second letter sent out at the end of 1995 the persons were more directly informed that the study had been approved by the Swedish Data Inspection Board (15) and that participation was voluntary. If they did not want to be included in the study, they were asked to inform me (the author) as the investigator via mail or by telephone. Such disapprovals were received by 29 individuals and they were then immediately excluded from the original SIO database. The study was also approved as a whole by the Research Ethical Committee of Umeå University (21).

Results

Paper I.

In Table 1 it appears that 63 PMs were identified, equivalent to 14.4% (n= 27) among the men and 16.7% (n=36) for the women subjects. Alcohol abuse was most common among men while private problems related to life dominated among women.

Table 1 Type of psychosocial marker (PM)

	Men		*Women*	
PM	*n*	%	*n*	%
Private related	8	30	27	75
Alcohol related	13	48	0	0
Work related	6	22	9	25
Total	27	100	36	100

The distribution of rehabilitation measures in relation to the presence of a PM or not, indicates that there are differences between men and women with respect to the measures taken. Educational activities were significantly more common for women with a PM compared to those without a PM. Women with a PM significantly more often claimed full disability pension compared to women without a PM. For men there was an increased number with a partial disability pension three years after a rehabilitation activity and fewer men without any

compensation at all. Men with a PM were significantly more often single and unemployed compared to those without a PM. Unemployment and single status were high among women with a PM compared to those without. Age, school education, profession and category of employer were evenly distributed among the groups.

In a logistic regression model for men, evaluating the relative risk of background factors to influence the PM is calculated. Among men, single status and public employment significantly increased, by approximately three times, the risk of having a PM. However, being unemployed, a blue-collar worker and only a compulsory school education did not increase the risk of a PM for men. For women, being single is the only solitary factor that significantly increased the risk of having a PM.

Another regression model was set up to analyse the relative risk of having a full disability pension three years after the start of the rehabilitation activity. For men, higher age implied a small significant increase of risk. Other factors including the PM did not significantly affect the risk of disability pension. For women however, the presence of a PM significantly increased the risk for disability pension by over four times (OR 4.3). The other factors did not affect the outcome of rehabilitation. When tested for partial disability pension, temporary disability pension or no compensation, there were no significant correlations.

Paper II

The response rate for the SOC questionnaire was 47% for men and 57% for women. For PH the response rate was 54% for men and 60% for woman. There were no significant differences, neither for men nor women, between those who were granted DP and those who were not. Furthermore, there were no significant differences in age between responders and non-responders, neither for men nor for women.

The mean score for SOC was 145, equal for both men (70-191) and women (77-186). For men who were granted DP the mean SOC was 136 (92-190) compared with 148 (70-191) for those who did not. Corresponding figures for women were 146 (77-186) versus 145 (80-104). For PH, the mean score was 52 (0-100) for men and 51(0-100) for women. For men who were granted DP three years after rehabilitation the mean score for PH was 56 (19-100) compared with 49 (0-98) for those who did not, for women 66 (21-100) versus 44 (0-100) (Table 2)

Table 2 Raw data for Sense of Coherence (SOC) and Perceived Health (PH) for men and women with or without disability pension (DP)

	SOC				PH			
	N	Range	Mean	SD	*N*	Range	Mean	SD
Total	195	70–191	145	27.2	213	0–100	51	26.2
Men	82	70–191	145	28.7	94	0–100	52	26.5
Women	113	77–186	145	26.1	119	0–100	51	26.2
DP–none								
Men	61	70–191	148	28.4	69	0–98	49	27.5
Women	79	80–104	145	26.0	82	0–100	44	26.7
DP–yes								
Men	21	92–190	136	28.3	25	19–100	56	21.8
Women	34	77–186	146	26.7	37	21–100	66	16.8

Both men and women who were granted DP were older than those who were not, but without any difference between the sexes. For neither men nor women were there any significant differences associated with the three sub-scales of SOC.

Men who were granted DP significantly more often scored SOC below the mean. For women there was no difference. Both men and women who were granted DP significantly more often scored PH above mean. In respect of the background factors, marital status, education, profession and employment status there were no significant differences, neither for men nor women, between the two groups who scored high or low respectively on SOC and PH. However there was a tendency for women who were unemployed at the beginning of rehabilitation to feel bad.

Paper III.

Mean age at the initiation of the rehabilitation was 42 years for men and 41 for women with no age difference between individuals with LD or GD for either sex. The response rate for SOC was 47% for men and 57% for women and for PH 54% for men and 60% for women with no difference in age between responders and the whole study group. LD and GD were equally frequent in both sexes. Men with GD were more often single (16.7% vs. 8.6%) and had a lower SOC (36.5% vs. 23.1%) compared with men with LD. Women with GD had more PMs (10.8% vs. 3.6%) and worse PH (33.6% vs. 17.6%) compared with women with LD. Otherwise there was no gender difference with respect to education, type of profession and employer.

Three and 10 years after the rehabilitation was initiated, for men there were no differences in SB or DP between LD and GD. Women with GD however, were more often on sick leave (28.7% vs. 16.1%) three years after the rehabilitation started. After 10 years women with GD significantly more often claimed a SB (41.5% vs. 25.6%) as well as a DP (33.8% vs. 19.4%) compared with women with LD (Table 3).

Table 3. Sick benefit (SB) and disability pension (DP) in relation to localized disease (LD) and generalized disease (GD) - n (%)

	Men ($n=174$)			Women ($n=198$)		
Factors	LD	GD	Sig.	LD	GD	Sig.
SB 3 years follow-up						
No	52 (29.9)	45 (25.9)	ns	57 (28.8)	52 (26.3)	*
Yes	36 (20.7)	41 (23.6)	ns	32 (16.2)	57 (28.8)	*
Missing	0 (0.0)			0 (0.0)		
DP 3 years follow-up						
No	64 (36.8)	61 (35.1)	ns	67 (33.8)	70 (35.3)	ns
Yes	24 (13.8)	25 (14.4)	ns	22 (11.1)	39 (20.0)	ns
Missing	0 (0.0)			0 (0.0)		
SB 10 years follow-up						
No	40 (23.0)	30 (17.2)	0.63	37 (18.7)	27 (13.6)	*
Yes	46 (26.4)	55 (31.6)	0.63	50 (25.3)	81 (40.1)	*
Missing	3 (1.7)			3 (1.5)		
DP 10 years follow-up						
No	46 (26.4)	39 (22.4)	ns	49 (24.7)	42 (21.2)	*
Yes	40 (23.0)	46 (26.4)	ns	38 (19.2)	66 (33.3)	*
Missing	3 (1.7)			3 (1.5)		

*$p < 0.05$.

A regression model of factors associated with having a GD compared with LD, showed that men with a low SOC had a significantly increased risk of having a GD (OR 3.54). The men also had a tendency to increased risk if they were unemployed when the rehabilitation started (OR 5.16 p=0.084). For women with only compulsory school education, the risk of having a GD was significantly increased (OR 2.68).

Paper IV.

The mean age of the probands was 41.9 (range 20-62) for men and 40.8 (range 19-59) for women at the start of rehabilitation. The response rate for the SOC questionnaire was 47% for men and 57% for women. For PH the response rate was 54% for men and 60% for woman. There were no significant differences in age between responders and non responders, either for men or women. Furthermore, there were no significant differences, either for men or women, between those who were granted DP and those who were not.

Benefits 1 - 10 years after rehabilitation

Individuals without compensation between first and third year after the start of the programme increased from 45% to 56% for men and from 47% to 55% for

women. Between the third and tenth year the rate decreased to 41% for men and 33% for women. Persons with full DP increased from 3% to 33% for men and from 7% to 39% for women. For partial DP corresponding figures were 5% to 18 % for men and 5% to 15% for women. Both full and partial SB decreased over the ten-year period for both men and women. After ten years 52% of the men and 57% of the women were granted some kind of DP (Table 4).

Table 4. Benefits (%) for men and women 1-10 years after rehabilitation started.
n = number of probands at 10-year follow-up

		1 year	2 year	3 year	10 year	n
Men	**No benefit**	45	55	56	41	70
	Disability pension					
	Full	3	8	10	33	56
	Partial	5	12	18	18	30
	Full temporary	2	1	1	1	2
	Partial temporary	1	2	2	0	0
	Sick benefit					
	Full	31	13	10	6	11
	Partial	14	9	2	1	2
	Lost to follow-up					3
Women	**No benefit**	47	52	55	33	64
	Disability pension					
	Full	7	10	13	39	75
	Partial	5	13	18	15	29
	Full temporary	3	4	5	2	4
	Partial temporary	2	6	2	1	1
	Sick benefit					
	Full	25	10	5	7	14
	Partial	12	6	3	4	8
	Lost to follow-up					3

Further analysis of the data showed that 82% of the men with low PH and women with a PM or a low PH had any kind of benefit 10 years after rehabilitation started and that there was no significant difference in outcome between the different measures offered.

Background factors, DP and sickness benefits

Among the studied background factors, the outcome of full DP was significantly correlated to age above average for the study group for both men and women. Low PH was significantly relevant for men at the ten-year follow-up and for women during the whole period. Having a more generalized disease was significantly correlated with a full DP after two years for men but for women over the whole period. Having a PM was significantly important for women over the whole period but not for men. SOC is significantly correlated to a full DP for men at follow-up after two or three years but for women there was no such relation. Age above average and bad PH for men and women were significantly correlated to any kind of benefit at the ten year follow-up. Having a basic education or a low SOC was correlated with the outcome for men and having a generalized disease or PM was relevant for women.

Background factors and odds ratio

The OR for having a full DP was correlated to age for both men and women. For men however having only a basic education strongly increased the risk for a full DP and for women having a PM and low PH. After ten years both age and PH were of importance for men as well as for women. Men with high age and low PH were strongly correlated with a benefit of any kind after three years for both men and women. After ten years PH was correlated to the presence of a benefit for both men and women. For men however, having a private employer was also correlated to a benefit and for women age and PH were factors which increased the risk of a benefit after three years.

Discussion

The main results in the first two studies from the 3-year follow-up indicate a connection between the presence of psychosocial problems and the outcome of VR for women. Furthermore, men who were granted DP significantly scored SOC lower than those who did not. For women there was no difference. Both men and women who were granted DP significantly more often scored PH above mean indicating a feeling of bad health.

The results from the last two studies with a ten-year follow-up showed that for men there was no difference between LD and GD in the outcome of rehabilitation after three and 10 years. Women with GD however, more often had a SB three and 10 years after rehabilitation started. After 10 years women with GD also more often had a DP. Finally, after ten years approximately fifty-five percent of the probands were granted any kind of DP and more than eighty percent of the men with a low PH and women with a PM or low PH were granted any kind of benefit.

Comments of study group

The selection of the diagnostic groups of musculoskeletal diseases are relevant since these represent the majority of cases who are subject to VR by the SIO and because there are overwhelming data indicating that psychosocial factors influence the outcome of VR for musculoskeletal disease (36, 38, 44, 45). It is important however, to notice the high degree of selection of the probands. Persons who were likely to return to work within a reasonable time were not being offered rehabilitation support by the SIO. Similarly, individuals who were seen to have a medical condition that not enables them to return to work of any kind were not offered rehabilitation support.

An indication of the relation between the total number of possible candidates for rehabilitation and the study group is given by relating the study group to the number of persons sick listed more than 30 days. From a yearly survey in February made by the SIO of CVN it is learnt that 1587 individuals were sick listed more than 30 days in February 1994 (20) for musculoskeletal diseases in accordance with above classification, compared with the 372 individuals in the study group compiled during 1993 and the first half of 1994. Although the groups are not fully comparable, the study group represents approximately 15% of the group of persons sick listed more than 30 days and with the same relation between men and women in both groups.

The group of individuals who were offered rehabilitation measures is a highly selected one, and probably less defined in the SIO system and likely to be complex in their nature which makes this cohort suitable for studies of the kind of problems addressed by this thesis. On the other hand it is also important to notice that the study group as such is not a selection but a total body of material with only limited fallout of 45 persons out of 417, leaving 89% of the ten year follow-up. This makes the study group highly representative for the SIO rehabilitants of CVN with a locomotor disease in 1993 and 1994. Furthermore, there was no difference in age between men and women in the study group which is important since age is the most powerful risk factor for sick leave and DP (49).

Comments on methods

The criterion validity of the PM is limited since the factor is a new one and not yet evaluated except for the present study. However the underlying concept of psychosocial stress is well established and supported by scientific data. The number of PMs is highly dependent on how complete the records were with respect to information about the client's psychosocial situation and the criteria for the information to be scored as a PM. During 1993-94 there were no instructions in the guidelines for insurance officers that specially urged systematic inquiry into, and recording of psychosocial data. Consequently, it was up to the officer alone to actively search for such information or to make a note when it was reported by an external source. To increase specificity and limit biases in the selection of data due to the single person technique only highly prominent psychosocial information was included, e.g. daughter with severe asthma hindering the client, responsibility for an aged mother, threat of losing the job and alcohol abuse reported by the social authorities, although this might have led to valuable information being lost. Therefore, it is likely that the number of PMs is incomplete and underestimated.

SOC was introduced 1979 (4) and SOC scale in 1987 (5). The concept of coping however was originally introduced by Lazarus and Folkman (43). Lazarus and

Folkman suggested that stress can be thought of as resulting from an “imbalance between demands and resources” or as occurring when “pressure exceeds one’s perceived ability to cope”. Stress management then is premised on the idea that stress is not a direct response to a stressor. Rather, one's resources and one's ability to cope mediate the stress response and are amenable to change, thus allowing stress to be controllable. Lazarus and Folkman’s interpretation of stress focuses on the transaction between people and their external environment.

Hence there are many similarities between the two concepts – coping focuses on the individual’s response to stress whereas SOC focuses on how the individual relates to stress. SOC was chosen for this study since this concept represents more of a personal property, a ‘trait’ suitable for the theoretical framework of the thesis and because there is overwhelming scientific support for the concept in general and for its application to the kind of data in this study. Furthermore, the SOC scale is reckoned to be sufficiently sound from the viewpoint of both validity and reliability (7, 16, 18). The concept of PH was used since it is a fairly uncontroversial concept, robust in its correlation with health and well documented in its operationalization with the VAS scale (22, 54).

The response-rate was rather low, yet on a level with comparable studies. The low figurers in our study probably related partly to the fact that the questionnaires were administered some two years after the rehabilitation activity had started. At that time most of the person’s rehabilitation had come to an end and they might have been less engaged in the rehabilitation process. There were no differences in age between responders and non-responders and between individuals granted DP or not. It gives an indication of figures without much distortion since age is the most critical variable affecting disability retirement (49). Furthermore, in an analysis of 175 studies of this kind the average response rate to questionnaires was 55.6 % (9). I therefore think the response-rate is acceptable and the data sufficiently representative for the study group.

Comments of results

In this section findings and considerations will be discussed in relation to the different concepts introduced in the papers constituting the thesis.

On the Psychosocial Marker

Age has earlier been shown to be the strongest factor promoting early retirement (49). In this study, there were no age differences between groups in relation to having a PM or not. Neither were there any differences for school education nor profession. This is notable since these factors reflect the individual’s socio-

economic status and thus are expected to influence the outcome of rehabilitation. However, for both men and women, singles were overrepresented for the persons with a PM, which confirms earlier data (49). This indicates that the PM might be less dependent on the traditional socio-economic status as measured through occupation, and more influenced by the client's current life situation including his or her private life. The relatively high odds ratio for the PM for women indicates that the factor is an independent and important contributor to the outcome of rehabilitation.

Data also show that work-related problems represent approximately less than one fourth of the PM's. Private and individual problems dominate, mainly alcohol abuse among men and factors related to private life among women. This is interesting since most studies stress work-related psychosocial factors as most important for the outcome of VR, without further studying and discussing individual factors and the private sphere, which might reflect the structure of the insurance system to compensate only for work-related income loss. This was also discussed in a recent paper (57) where five reasons for women not reporting their families as important were postulated: The women did not relate their illness and incapacity to work to circumstances at home, the women did not see any possibility to change the circumstances at home, the family was considered to be the private sphere where they did not want anyone else to bother, the involvement of their families was found so self evident that the women did not bother to mention it in the interviews and finally it was considered more socially correct to attribute their illness and incapacity to work to circumstances at the workplace.

How should the finding that PM is more important for female rehabilitation than for male be interpreted? It could be due to a lack of information about men. More likely, the gender differences reflect women's difficulties to remain in gainful employment because of the double responsibility for the private arena as well as for the professional. On the other hand, this is partly contrary to the fact that large gender difference in sickness absence might be overstated due to a lack of adjustment for income and income-related factors, since income and working conditions differ greatly for men and women (12). Another reasonable explanation for female overrepresentation is that the noted alcohol abuse by men represents a different coping strategy for stress, which is more compatible with work. However, since it is a well known fact that female alcohol abuse is more 'hidden' and less obvious compared with men it is possible that the difference at least is partly overestimated due to lack of information.

Whether the information of a PM, actually recorded in the file when the decision for certain rehabilitation measure was taken, influenced the rehabilitation strategy in terms of buying a certain rehabilitation service cannot be fully

determined. The occurrence of psychosocial factors may have had direct influence on the working capacity and rehabilitation possibilities of the client. On the other hand, their mentioning in the files may as such made it probable to get a disability pension some years later.
In this context, the information about the PM was not the result of an active and systematic intervention in the investigation work, but a result of standard procedures. Some of the evaluation activities included a sensitive survey of psychosocial problems but none specially focused on treating such problems. This indicates that the impact of the information of PM was limited in terms of guiding the aim and direction of measures taken, and also limits the possible bias from the insurance officers to suggest disability pension due to psychosocial reasons.

However, the data deviate in one respect. The presence of a PM in women correlates with an increased frequency of educational measures. This is remarkable since none of the identified problems primarily dealt with complaints about a lack of education. Neither was there a difference in formal education or age between the groups. This might reflect an unspoken intention to compensate medical and psychosocial problems with education in order to increase the competitive strength of the individuals.

On Sense of Coherence and Perceived Health

Men who were granted DP significantly scored SOC lower (136) than those who did not (148). For women there was no difference. Both men and women who were granted DP significantly more often scored PH above the mean indicating feeling of bad health. The overall SOC score – 145 – is lower compared with a healthy population. Healthy people score around 150 and unhealthy groups score around 140 or less (7, 41, 42). The study group thus represents a mixture of healthy and chronically ill persons but by selection, likely to be heterogeneous concerning working capacity and attitude to work. PH represents a global feeling of dysfunction, which is associated with the disability leading to pension independently of gender.

Since PH and SOC in paper II were measured at the time of follow-up it cannot be used to predict the outcome of VR. At that time some individuals were still in the rehabilitation process. It was possible that SOC was affected by whether the individual was granted DP or not. If so, from a theoretical point this would have led to a weaker SOC for those ‘stressed’ by not having received DP and a stronger SOC for those being granted DP which n turn would have increased the differences between the groups and made the SOC factor even more important. On the other hand, the findings in paper IV confirm that SOC has predictable capacity and a great number of studies indicate that SOC is stable over time for adult persons (7, 16, 18, 77). PH however was consistently correlated with a

functional ability, the number of medical diagnoses, physical and mental symptoms (22). It is therefore reasonable to assume that the person's feeling of not being well was a cause for pensioning rather than an effect of the disability retirement, whereas SOC was more related to the individual's coping style and thus a prerequisite for the rehabilitation.

On gender aspects

SOC shows a difference between men and women. Men with DP show low SOC whereas women who are granted DP have a normal SOC although both men and women feel equally unhealthy. Except for a tendency for women to be unemployed when rehabilitation started SOC and PH are not influenced by social status. A traditional socio-economic pathway is less probable as an explanation for the outcome of the difference between SOC and PH. Neither is age since there is no difference between the sexes. The sex difference could be attributed to differences in the SOC scale. Although there are some data on sex differences in subsets of scores of SOC (23) most reports indicate no such differences (16, 18).

The difference between men and women regarding distinction in SOC and DP is of interest. One cause of the gender difference may be a higher societal acceptance of musculoskeletal disorder among women. These complaints have sometimes been labelled as 'women's disorders' and the threshold among the staff in The National Social Insurance to accept a DP might be lower for women than men. Women with higher SOC will then more often than men be incorporated in the DP-group. The mentally more healthy women and women with a better coping facility will be in the DP group. This latter argument could also be related to the fact that women's networks are more related to private life whereas the men's networks are more associated with the professional role. A postulation could be that loss of work ability could even attract women to becoming a pensioner.

Another reason for the discrepancy, so far not earlier reported in this context, is the income disparity that exists between men and women in society. As a less salaried person during the working years, women find it easier to accept a DP with its relatively low economic benefit. For women the reduction from the salary during employment is of less difference than the corresponding difference among men. It might be easier for women to accept and take a step to DP. The financial gradient is weaker for women than for men. Data on the probands´ income are not available. However, at the time of the follow-up the average income in Sweden for women was 31% less than for men (71) and there is no reason to believe that the study population should differ in this respect from a general population, which justifies the assertion.

These suggestions are all supported by some recent Swedish studies. In a study of women sick-listed because of undefined, musculoskeletal pain disorders low-income jobs in fields threatened by redundancy such as cleaning care and service were frequent. The family rules for the studied women had a strong impact on organization and priorities in paid work. In a state of pain and sick leave, family orientation was strengthened and work aspirations declined. Social and personal recognition was sought in the unpaid duties at home, and economic refuge was found in 'the state as supporter' (32). Furthermore, there are indications (83) that long-term sick-listed women experiencing domestic strain would rather stay at home than return to work. Domestic strain involves inequities in the division of work and responsibilities and a lack of socio-emotional support at home.

These thoughts on the possible reasons for the gender variation are also supported by the findings in the first study of this thesis. The psychosocial stress factors for the women in that cohort were primarily private-related. In another study the reasons for women stopping work before the age of 65 are discussed (58). The rationale for early exit from the work force was interpreted as an effective ‘coping-mechanism’ in response to work and/or private-related stressor, in order to avoid life-threatening illness. Furthermore, in a study among patients who were admitted to hospital, those persons with musculoskeletal disorders, particularly women and semi- and unskilled manual workers, were also found to be vulnerable to leaving employment (30).

For men the situation is different. Men with low SOC have great difficulties staying in the labour market and are rejected because of a combination of bad physical and mental health, weak coping facility and lack of social support. In that perspective DP becomes a bad solution for men but a good one for women.

On the topographic nature of the diseases

The theoretical considerations, earlier presented in the section of basic concepts, for dividing the study group into LD and GD was shown to be fruitful and generated some interesting results. For men there was no difference between LD and GD in the outcome of rehabilitation after three and 10 years. Women with GD, however, more often had a SB 3 and 10 years after rehabilitation started. After 10 years' women with GD also more often had a DP. Thus GD is related to women in terms of outcome of rehabilitation and having a GD does not interfere with rehabilitation for men compared to women. As a consequence of the ‘administrative’ way of registering data the classification has limitations in terms of validity and specificity. On the other hand, in reference to the results, a more precise grouping is likely to have led to enhanced differences in outcome between the groups.

The findings are in line with previously mentioned, mainly Swedish, studies. Widespread pains compared to localized neck-shoulder pain, are more related to a doubtful prognosis regarding pain duration and working capacity (3) and individuals with generalized back pain also had a less healthy lifestyle and higher degree of pain than persons with localized back pain (31). Furthermore, an ability to undertake activities, quality of life and fitness on exercise was identified as important for returning to work after rehabilitation (47). PH and educational levels were also important prognostic factors for returning to work after five years (79).

There are gender differences concerning the outcome of rehabilitation. In men GD are not linked to the outcome of rehabilitation in contrast to women although both sexes report bad health. There might be different developments behind the process of returning to work for men and women. This gender difference could have a mixture of explanations and some questions arise. Are women more vulnerable than men? Is there a difference in health between the sexes? Are other external factors more influential on the GD condition for men? Is there a difference in working condition and social context between men and women?

Men with a GD were more often single, unemployed and had a low SOC. It corresponds to the fact that living on one's one is associated with general medical and psychosocial vulnerability for men (25). Furthermore, a weak SOC caused more symptoms and diseases due to an inadequate coping strategy for life events and thereby a higher consulting frequency (10). This is in line with the suggestion that SOC is a prerequisite for successful management of tensions leading to the healthy end of the ease-dis-ease continuum (4). SOC is also linked to an influence on the perception of stress and coping styles and can facilitate adaptation to difficult situations. Sense of Coherence has a high negative correlation with anxiety and depression (18). Thus, men with GD are related to a higher degree of anxiety and depression, negative coping style and difficulties in adapting to a tension-generating situation compared with men with LD.

Women with GD more often had psychosocial markers (PM), inferior PH and lower education. PH is correlated to functional ability, number of medical diagnosis, and physical and mental symptoms (22) and PM seems to negatively influence outcome of rehabilitation for women (Paper I). Thus GD women had an unsatisfactory general health and a heavier psychosocial load compared to LD women which in turn leads to an exit from work in line with what was discussed in the gender section.

Who will get a disability pension?

After ten years approximately 55% of the probands were granted any kind of DP. The risk of a full DP after ten years was associated with age and PH for both

men and women. At the three-year follow-up however, the risk of having a DP was also increased for men with low education and women with a PM. The factors: civil status, profession, unemployment, type of disease or SOC did not significantly relate to a full DP after 10 years.

Full DP after ten years is correlated to high age. This finding is quite expected since age is the most important factor behind any form of benefit and reflects the decreasing vitality of the ageing individual in combination with a general decreasing demand for elderly people on the labour market. Yet, the study group is only on average 51 years old at the ten-year follow-up which demonstrates the high vulnerability of the studied group.

The influence of PH is not relevant for men until late in the time period between work and DP whereas the influence of PH for women is relevant from the very beginning. For SOC the situation is different, SOC is important for men, but only in the second and third year and never for women. Since SOC is not only a way to measure health, especially mental health, but also reflects the ability to cope with new demands (Paper II), this may explain why SOC is of importance only in the middle of the rehabilitation process for men. In the long run however, the perception of unhealthiness takes over as the prime factor for a full DP. For women this is the case for the whole period.

Psychosocial stress identified as a PM is an important factor for a full DP not only up to the third year, in line with earlier findings (Paper I), but also at the 10-year follow-up. Having a generalized disease, as an expression of stress (Paper III) is associated with a full DP for men only in the middle of the rehabilitation process when the demands on the individual are at the highest. For the women there is a tendency for a connection to a generalized disease the first three years and a clear connection after 10 years, which might reflect the continuous tension they experience due to psychosocial stress not associated with the rehabilitation process itself.

If the background factors are related to any kind of compensation after 10 years, age and PH are still correlated with a benefit for both men and women. After 10 years more than eighty percent of the men with a low PH and women with a PM or low PH had any kind of a benefit. For men a low education or a low SOC is now associated with the outcome in terms of any kind of benefit which indicates that a low level of education, flaws in mental health and coping ability for men affect the possibilities of returning to work even in a long-term perspective. For women having a generalized disease is a strong factor for not being at work after ten years. Additionally there is a tendency among women for having a PM when rehabilitation was initiated. To be dependent on a benefit 10 years after rehabilitation is remarkable and very likely the entrance to a DP in the near

future in accordance with the extreme vulnerability of the members of the study group

Disability pension after 10 years compared with other studies

The rehabilitation measures seemed initially to be successful as more individuals without compensation were noted between the first and the third year. During the same period, however, DP increased for both sexes. After ten years the net outcome is negative. There were fewer people without compensation after 10 years than at the beginning of the rehabilitation and the individuals with any form of DP increased over the follow-up period.

The outcome of the rehabilitation process in this study can be compared to some recent Swedish studies in the same field. Approximately three years after rehabilitation was initiated, 53% of persons with musculoskeletal pain received any kind of DP (full, partial, permanent or temporary) and 48% had no compensation at all (1). In our study the corresponding figures for DP (any kind) were 31% for men and 38% for women and those persons with no compensation were 56% for men and 55% for women. In another Swedish study 36% of the men and 26% of the women had no compensation at all two years after rehabilitation had terminated (52).

The differences noticed between the three studies may have various causes. These studies represent three different counties in Sweden at different time periods. Dissimilarities are very likely to be present in the compositions of the populations in terms of gender, age, socio-economic status, medical status, unemployment in the area and the rules and regulations have also somewhat been changed during the time period. There might also be differences of principle in the application of rehabilitation measures by the SIO bodies between the three counties.

In a very recent Swedish population-based, prospective, cohort study of persons between 16 and 64 years, 11% of the men and 14% of the women were granted any kind of DP after 12 years (34). An 11-year follow-up of persons between 25 and 34 years on sick leave due to neck, shoulder, or back diagnoses resulted in any kind of DP in 14% of the men and 27% of the women (11). The number of persons with DP is thus less than in our study where 52% of the men and 57% of the women were granted a DP after 10 years.

The differences are probably due to an increasing selection effect. The population study includes every person independent of sick leave or not and healthy persons are included as well. The 11-year follow-up included all persons on sick leave with neck, shoulder, or back diagnoses. Our study was of persons with a diagnosis from the locomotor system who have been selected for

rehabilitation measures. It is reasonable to assume that our probands are negatively 'burdened' by age, bad health and psychosocial factors as a result of the selection process.

However, in this study the factors civil status and type of profession did not significantly relate to neither a full DP nor a benefit after 10 years. This is interesting since these factors are traditional socio-economic variables that appear to affect an individual's potential to keep up with the social competition. Perhaps these factors are not strong enough in relation to others to influence the performance in terms of rehabilitation and work. This is supported by the fact that after ten years only fewer than 20% of the men with a low PH and women with a PM were without any kind of benefit from the SIO. Thus more than 80% of the persons were dependent on some kind of benefit in these categories of rehabilitants.

Conclusions

- The Psychosocial Marker was found to be an important and independent factor to impact the outcome of rehabilitation in women.

- Women who received disability pension had higher Sense of Coherence than men who received disability pension. The gender difference might be related to a societal recognition of musculoskeletal disorder among women, leading to a more generous acceptance of disability pension. The income disparity between men and women with less income for women is probably also of importance. SOC might be a factor of value in the prediction of the rehabilitation process.

- The presence of generalized disorder of the loco motor system could be a reminder of the advisability to explore the patient's psychosocial conditions in order to improve medical as well as vocational rehabilitation.

- In different ways factors as age, education, psychosocial stress, Sense of Coherence and Perceived Health mediate the rehabilitation process in significant ways by affecting the manifestation of the disease itself and/or via the context in which the rehabilitation takes place, in combination with individual factors that acts over a long time. Age and Perceived Health seems to be the most important factors of them all.

Clinical implications

The interconnection between health and rehabilitation is apparently complex in terms of outcome of rehabilitation. In different ways factors as age, education, psychosocial stress (PM), SOC and PH mediate the process in significant ways by affecting the manifestation of the disease itself and/or via the context in which the rehabilitation takes place in combination with individual factors that act over a long time. This thesis has shown that patients/clients burdened by higher age, psychosocial stressors, low Sense of Coherence and a low Perceived Health are extremely vulnerable in the rehabilitation process and inclined to be dependent for a long time on sickness benefit or to become a disability pensioner.

The concept of PM represents a wide range of traditional psychosocial stress factors, known to influence an individual's performance in general. The strongly increased risk in terms of not returning to work, especially for women with a PM, indicates that the PM might be an important predictor which should be identified and if possible compensated for, in order to improve the outcome of rehabilitation. SOC in turn, may illustrate a potentially relevant individual factor in the process of VR that can be used to develop the rehabilitation process as well as working life into more flexible identities.

A person with a GD usually has a more 'diffuse' clinical picture and generalized disorders of the locomotion were associated with inferior PH, psychosocial stress and limited coping resources. These conditions might take part in a somatization process leading to a somatoform disorder with reduced working ability, SB and DP for women but not for men. For the clinical physician the presence of GD of the locomotor system could be a reminder of the advisability to explore the patient's psychosocial conditions in order to improve medical as well as VR.

Altogether these factors constitute a web that faces the individual and interacts with their characteristics in a way that is not always predictable and rational in terms of the rules and regulations that control the process from legal point of view. Nevertheless it seems reasonable to identify, as far as possible, on an individual level the relevant factors and to stimulate conditions that facilitate and compensate for obstacles in order to improve the outcome of VR.

This thesis has also shown that there is clinically relevant information in the administrative data of the files of the SIO in the relation to outcome of VR from regular clinical care of the patient. It might be relevant to complement the basis for decision on rehabilitation with evaluation of the person's resilience to stress in terms of Sense of Coherence, and her feeling of well-being in terms of

Perceived Health. Finally the importance of verifying data with an extended time of follow-up has been clearly illustrated.

Future research

Although relevant factors for the outcome of VR have been identified these are only part of the truth. There are many more likely factors, correlations and connections to be revealed in order to able define a specific critical profile for every individual for whom rehabilitation is undertaken. Furthermore, it is reasonable and desirable to intervene with these factors in a controlled way in order to improve VR. Finally, such efforts should be evaluated in a systematic way to validate the intervention, not only on a short-term basis but also over period of several years. Although this is a laborious task it is nonetheless very important to fulfil our overall obligation to improve the quality of life of our patients and clients.

Epilogue

Our ancient master Socrates focused on the individual as a whole and the doctors' need 'not to disregard the whole'. The more recent prophet Kierkegaard urged us that in order to "Lead a person to a specific place, one must first and foremost take care to find him where he is and begin there". The scientific community represented by Williams taught us that "psychosocial factors are linked more strongly to health status than is medical care and are related systematically to socio-economic status". Finally, Nordenfeldt declares that "A person is in a state of complete health … if he or she is able to realize all his or her vital goals given a set of accepted circumstances". My humble personal view is that a disease is an expression of uncompensated biomedical and psychosocial stress and to cure our patient we need always to perform our duties in the crossroads of natural sciences, social sciences and humanism.

The question is to what extent do we as doctors, or other caregivers, live up to this? The results from this thesis illustrate that there are shortcomings in terms of rehabilitation which needs to be addressed by a continuous dialogue between the patient, medical care and social care in order to gain a responsible administration and professional improvement of the human as well as the social capital of the our society. If my findings can contribute to this dialogue and help "the patients, struggling for their health", this would make me very happy, and feel that the writing of this thesis has been a worthwhile task.

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Per-Olof Kaiser

Sammanfattning

Introduktion

Avhandlingen är en retro- och prospektiv studie av 372 långtidssjukskrivna individer men sjukdomar i rörelseapparaten och som genomgått yrkesmässig rehabilitering ledd av Försäkringskassan i Västernorrland under 1990-talet. Utfallet av köp av rehabiliteringstjänster finansierade av Försäkringskassan utvärderades med avseende på återgång i arbete, sjukpenning och sjukersättning (Förtidspension) efter 1, 2, 3 och 10 år i relation till demografiska data, känsla av sammanhang (Sense of Coherence – SOC), upplevd hälsa (Perceived Health - PH) och ett skapat index för psykosocial stress benämnt psykosocial markör (Psychosocial Marker – PM).

Arbete I

Arbetet avser att belysa psykosocial problematiks betydelse för utfallet av rehabilitering av en grupp långtidssjukskrivna, med rygg och värk syndrom, för vilka Försäkringskassan köpt rehabiliteringstjänster. Begreppet ‘Psykosocial Marker’ introduceras som en markör för potentiell psykosocial stress inom ett år innan rehabiliteringen påbörjades. För män dominerade alkoholrelaterad problematik och för kvinnor problem relaterade till privatlivet. Endast ca en tredjedel berörde problem i arbetslivet. Vid uppföljning tre år senare var risken för en hel förtidspension 2,5 (ns.) för män och 4,3 ($p<0,05$) för kvinnor med psykosocial markör.

Arbete II

I detta arbete studerades samma studiegrupp som i arbete I med avseende på betydelsen SOC och PH för utfallet av rehabiliteringen. Vid uppföljningen tre år efter rehabiliteringen påbörjats framkom att män som erhållit förtidspension hade signifikant lägre SOC än de som inte pensionerats. För kvinnor var det emellertid inte någon sådan skillnad, trots att både män och kvinnor som erhållit förtidspension båda hade signifikant sämre PH. Skillnaden mellan könen kan bero på sämre mental hälsa och coping förmåga hos män och en högre social acceptans för att sjukpensionera kvinnor i kombination med att kvinnor har lägre inkomster och därmed förlorar mindre på att förtidspensioneras.

Arbete III

I detta arbete delades studiegruppen upp i två diagnosgrupper; de med lokaliserad sjukdom i ländryggen (LD) och de med halsryggsbesvär och/eller generell värkproblematik (GD). Grupperna jämfördes med avseende på kön, personliga och psykosociala faktorer 10 år efter rehabiliteringen. Män med GD var oftare ensamstående och hade lägre SOC. Kvinnor med GD hade fler PM och sämre PH. Kvinnor med GD var också oftare sjukskrivna tre år efter rehabiliteringen och hade oftare någon form av sjukersättning eller

förtidspension vid 10 års uppföljningen. Män med låg SOC och kvinnor med låg utbildning hade en ökad risk att ha en GD. En generaliserad sjukdomsbild var sålunda förenad med såväl ökad psykosocial belastning som ökad grad av sjukförmån.

Arbete IV

Syftet med detta arbete var att följa upp hela studiegruppen 1,2,3 och 10 år efter rehabiliteringen med avseende på samtliga tidigare studerade variabler. Efter 1 år hade 52% av männen och 57% av kvinnorna någon form av förtidspension. Hög ålder och låg PH ökade risken för hel förtidspension efter 3 och 10 år för såväl män som kvinnor. Vid 3 års uppföljningen hade också låg utbildning betydelse för hel förtidspension för män och förekomsten av PM för kvinnor. Faktorerna civilstånd, typ av yrke var dock ej relaterade till hel förtidspension efter 10 år. 82% av männen med låg PH och kvinnorna med PM eller låg PH hade någon form av sjukförmån 10 år efter att rehabiliteringen påbörjats. Sammanfattningsvis hade hög ålder och låg upplevd hälsa störst betydelse för utfallet av rehabiliteringen på lång sikt.

Slutsats

Avhandlingen har visat att det finns kliniskt relevant information i Försäkringskassan handlingar. PM, SOC, PH, diagnos, kön och ålder bildar en väv av faktorer som interagerar med Sjukförsäkringen och påverkar utfallet av yrkesmässig rehabilitering. Det är därför angeläget att komplettera Försäkringskassans beslutsunderlag med för individen specifik information Detta för att främja de stödjande egenskaperna och kompensera för hindren, för att därigenom underlätta för individen att återfå sin arbetsförmåga. Allmänläkaren har här ett mycket stort ansvar att medverka med sin kunskap, sin erfarenhet och sitt arbetssätt.

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Paper I

Paper II

Paper III

Paper IV

Attachment

FÖRSÄKRINGSKASSAN
Handläggare, telefonnummer

STATISTIKUNDERLAG
Köp av rehabiliteringstjänster

Blanketten skall fyllas i för varje av kassan betald rehabiliteringsåtgärd som avser en individ.
I det fall ett beslut omfattar köp av flera olika rehabiliteringsåtgärder som den försäkrade skall genomgå parallellt eller efter varandra, redovisas samtliga åtgärder som omfattas av beslutet på samma blankett.
I de fall försäkringskassan har årsplatser redovisas på denna blankett när del av en sådan plats utnyttjas för en bestämd individ.

Riksförsäkringsverket
Statistikenheten
103 51 STOCKHOLM

① Ange anmälningsdatum vid pågående sjukfall. Om rehabiliteringspenningen påbörjas utan tidigare sjukanmälningsdatum ange dess startdatum. Ifall sjukpenning övergår i rehabiliteringspenning behöver inte datum för det senare anges.

② Ange år, månad och dag då beslut togs i samförstånd med den försäkrade om att köpa den aktuella rehabiliteringsåtgärden.
Om rehabiliteringsåtgärden innebär att en årsplats utnyttjas skall datum för beslutet om att utnyttja platsen för den aktuella individen redovisas.
Om flera åtgärder ingår i beslutet anges datum för den första.

③ Ange kod (1–14) för typ av tjänst enligt nedanstående. Om flera åtgärder ingår i beslutet anges dessa i den ordning de skall genomföras.
1 Arbetslivstjänster hos AF/AMI
2 Konsulttjänster hos AF/AMI
3 Samhall
4 Arbetsträning köpt hos annan än AF/AMI eller Samhall
5 Utbildning/Omskolning och annat hos AMU-gruppen
6 Utbildningar köpta hos annan än AMU-gruppen
7 Rygginstituten (Sundsvall och Växjö)
8 Yrkesinriktad rehabilitering köpt av sjukvårdshuvudmannen
9 Tjänster av samma typ som i punkten ovan men köpta av privat producent
10 Konsultjänster köpta hos annan än AF/AMI
11 Kostnader för köp av kompletterande försäkringsskydd
12 Kostnader för resor som den försäkrade har med anledning av den rehabiliteringsåtgärd kassan köpt
13 Övriga merkostnader som den försäkrade haft under rehabiliteringen och som kassan ersatt
14 Övrigt

④ Ange kod (1–8) för huvudsakligt arbetshinder enligt nedanstående. Endast en av diagnosgrupperna skall anges
1 hjärt-, lung- och kärlsjukdom
2 hörsel- eller synskada
3 ledsjukdom och reumatism
4 diskbråck och ryggvärkssyndrom
5 övriga sjukdomar i rörelseorganen
6 annan fysisk sjukdom
7 psykisk sjukdom
8 socialmedicinsk handikapp

⑤ Ange den beräknade sammanlagda längden av åtgärden/erna i veckor. Åtgärder som pågår under ett helt år eller längre omräknas i veckor. Helår = 52 veckor.

⑥ Ange kostnaden för den/de aktuella rehabiliteringsåtgärden/erna. Om exakt kostnad inte kan anges, t.ex. när en årsplats utnyttjas för viss tid, görs en uppskattning. Beloppet avrundas till närmaste hundratal kronor.

Lk nr

Personnummer (år, mån, dag och nr)

AKTUELL SOCIALFÖRSÄKRINGSFÖRMÅN VID KÖPET

Sjukanmälningsdatum (år, mån, dag) ①

Sjukpenning ☐ 1/1 ☐ 3/4 ☐ 1/2 ☐ 1/4

Rehabiliteringspenning ☐ 1/1 ☐ 3/4 ☐ 1/2 ☐ 1/4

Sjukbidrag ☐ 1/1 ☐ 3/4 ☐ 1/2 ☐ 1/4

Förtidspension ☐ 1/1 ☐ 3/4 ☐ 1/2 ☐ 1/4

☐ Ej sjukanmäld (anges med kryss)

Datum för beslut om köp av aktuella rehabiliteringstjänster (år, mån, dag) ②

	Första	Andra	Tredje	Fjärde	Femte
Typ av tjänst/-er ③					
Huvudsakligt arbetshinder relaterat till typ av köpt tjänst ④					
Åtgärdens längd i veckor ⑤					
Beräknad kostnad för tjänsten ⑥					

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