

Individual Factors and GP Approach as Predictors for the Outcome of Rehabilitation Among Long-Term Sick Listed Cases

Kurt Rasmussen^{1,2} and Johan H. Andersen¹

There appears to be a lack of evidence concerning the effect of rehabilitation programmes for the long-term sick. More focus in this area would supplement an approach that has been directed toward process evaluation of rehabilitation programmes. It was the purpose of this study to shed light on individual factors and health care and social welfare-related factors, which play a role for the outcome of rehabilitation programmes. In connection with a participatory, action-oriented outpatient rehabilitation program, a questionnaire survey was performed among the programmes participants ("clients"). Questionnaires were completed before the rehabilitation programme's start, at the end of the 8-week programme, and at the 9-months follow-up. Among 389 clients, 271 (69.7%) participated in the study at baseline as well at the 9-months follow-up. The majority of 212 participants were on sick leave—66.6% for more than 1 year. The remainder had been transferred to receiving social benefits after having exceeded the time limit for being sick-listed. A plan of action for active rehabilitation, which was made at the end of the 8-week rehabilitation programme, was only poorly fulfilled after 9 months, 48% were still on sick leave or social benefits at this time. Individual background variables, as well as psychological well-being, mental health, pain level, and pain coping, seemed to have little effect on the outcome of rehabilitation, whilst clients' own evaluations of competence and ability of the involved health care professionals were found important for a positive outcome of the programme. Especially stable relations to a single General Practitioner (GP), who took good care of the patient in the form of giving good information about health and social possibilities, and an empathic attitude toward these hard-pressed clients, were important factors. The odds ratio for a nonbeneficial outcome of the rehabilitation programme, among those who had changed GP and reported poor case treatment by the GP, was 3.9 (95% CI; 1.3–11.9). Additional findings were an association between a desire to go on early retirement pension, higher age, and self-estimated poorer health at baseline, and actual status as pensioner 9 months after the programme. Predictors of a beneficial outcome from the 8-week rehabilitation programme included good and comprehensive care-taking in particular by the clients' GP. The presence of a high level of symptoms

¹Department of Occupational Medicine, Herning Hospital, DK-7400 Herning, Denmark.

²Correspondence should be directed to Kurt Rasmussen, Department of Occupational Medicine, Herning Hospital, DK-7400 Herning, Denmark; e-mail: heckra@ringamt.dk.

and complaints of pain and stress had no effect on the outcome of rehabilitation in this cohort.

KEY WORDS: vocational rehabilitation; sick leave; return-to-work; follow-up study.

INTRODUCTION

The Danish system of vocational rehabilitation after injuries or illnesses is based around social laws launched in 1960. Trends and tendencies in the labor market and social policies during the four decades following this indicate a period with hitherto unseen social changes, first and foremost the entrance of women to the labor market (1). Women especially have been employed in unskilled production jobs as well as in the service sector and at the same time often retain the main responsibility for housekeeping and the family, which means they have a double role to play in modern life.

The Danish occupational rehabilitation system was introduced in a period of full employment, where the greatest pressure was the need to extend the work force—a situation much like the present. Supply to today's labor market is less than the increasing numbers who are taking early retirement or retiring as old age pensioners. This is the case in Denmark as well as many other Western countries. We are now seeing public efforts to recruit to the workforce from the reserves of the population who are on official sick leave or under rehabilitation.

According to Danish social legislation (“the active law”), all people sick listed or unemployed should have an action-plan for return to the labor market. There is only modest knowledge concerning the factors that promote or hinder a positive effect of rehabilitation programs. Most of the literature on the effects of occupational rehabilitation programs focuses on evaluating the process of rehabilitation itself (2–4). Furthermore, few studies include control measurements, for example before and after measurements of client's social status and individual factors. A number of randomized studies have been performed involving intervention measures, physical and social activation programmes, or solution-focused follow-up by social services. A self-administered activity programme suffers from low feasibility and effectiveness, while doctor-based returning with personal counselling has a greater impact on the duration of sick leave return.

It is the aim of this paper to elucidate some of the many individual as well as “system” factors, which may play a role in the outcome of rehabilitation programmes that focused on active client involvement in the process of clarification of social and occupational competencies. The study was carried out as a questionnaire-based follow-up study with three measurements: before and immediately after an 8-week programme of vocational rehabilitation and at the 9- months follow-up.

METHODS

Study Population

The investigation took place during the first 3 years of a newly established vocational rehabilitation institution, servicing the county of Ringkoebing, Denmark, a region with

mixed industry and farming, and a population of 270,000 inhabitants. The purpose of this institution was evaluation of work ability during an 8-week programme, with light job training, physical activity, etc. (see below), and with the clients being responsible for their own social and occupational action plans. The study base was all 389 clients attending this rehabilitation institution during its three initial years. After referral from one of the 18 municipal social authorities in the county, clients underwent a newly designed rehabilitation program as “outpatients.” Referral was based on health evaluations from general practitioners and relevant medical specialities, mainly rheumatology, orthopaedic surgery, and occupational medicine. The criteria for acceptance was a judgement of good chances for returning to work, made by a medical doctor and a social worker and after a 1-day introductory visit by the client to the rehabilitation institution. Patients with major psychiatric disorders and mental retardation were excluded from the programme. Clients were either receiving social security benefits (84%), or being supported by income from a spouse (14%). The most prevalent diagnoses were musculoskeletal disorders (63%), including low-back pain, neck/shoulder disorders, whip lash, arthralgia, and fibromyalgia in descending occurrence, followed by injury-lesions (14%) and slight mental disorders (11%).

The classification of these mental disorders were 4 persons with minor depressive disease, 4 persons with slight mental reduction, 4 persons with sequela to chronic alcoholism, while the rest had minor anxiety disorders. Few of these clients (low back pain and injury lesions) had been through medical rehabilitation, which had ceased prior to this rehabilitation programme. Except some cases of occupational claims, there was no connection to the insurance system.

The rehabilitation institution had three project facilities: a kitchen project, where the clients were engaged in shopping, planning, and preparation of food. A textile repair shop, also with a small workshop for handicrafts, as well as a multimedia shop with computer and photographic equipment, where the clients could get basic IT-training and perform basic printing tasks. The concept was the use of participatory activities aimed at evaluating functional level in terms of social, physical as well as psychological functioning, and encouraging clients into activity.

Active participation was a key concept. Group sessions were performed, aiming at increasing coping ability in relation to stress, pain, and general distress related to receiving social benefits and thereby marginalized to the labor market. A multidisciplinary personnel group included backgrounds in pedagogics, ergonomics, physiotherapy, psychology, and a medical doctor.

The overall aim of the rehabilitation programme was return to full-time or part-time work, including flex job.

Questionnaires were posted to the home addresses of the clients on three separate occasions: immediately before start at the rehabilitation institution, at the end of an 8-week programme period, and 9 months later. Questionnaire 1 was returned at the start of the rehabilitation course, where the clients were highly motivated, giving a rate of participation of 75.5% without reminder, whilst the rate of participation in round 3 was 77.1% after two mailed reminders.

Three hundred and forty-three clients participated in at least one of the three questionnaire surveys, giving an overall participation rate of 81.2%. The analyses in this paper are based on responses to questionnaires 1 and 3, where 271 clients participated at follow-up (participation rate 69.7%). Information about nonresponders came from the visitation data.

These nonresponders were characterized as being younger, having disengaged appointment to the labor market, and estimated overall by the rehabilitation doctor as having better work ability.

Background Variables

Data on several individual explanatory characteristics were collected, including education, occupational history, and civil status. We also recorded the participant's biographies and overall experience with their counsellors in the social welfare system, as well as with their GP (General Practitioner).

Individual Characteristics

Health-related quality of life was assessed by the SF-36 health survey, covering eight health dimensions: physical functioning, role physical functioning, bodily pain, general health, vitality, social functioning, emotional role, and mental health (5). Pain coping was assessed by both positively and negatively formulated dimensions on a pain-behavior index based on a German scale (6). Examples of positive pain coping questions are "When I experience pain, . . . I often feel myself strong enough to handle them," "I am convinced I can get the pain under control," Examples of negative pain coping questions are "When I experience pain . . . they fill all my life," "I would rather be alone".

Outcome Measures

Clients' own overall experience of the benefit of the 8-week course were evaluated in the questionnaire on a 4-point scale, which in the analysis was dichotomized to "benefit for my present/future social status" or "indifferent or negative outcome for my present/future social status."

Allocation to early retirement pension is an additional outcome variable.

Statistical Analysis

Data analysis was performed using SPSS (version 7.5) and Stata (version 7.0). A number of individual and background variables, considered to be of interest in this client group, were analyzed by logistic regression and here presented with all terms retained in the model, independent of the magnitude of effect or level of significance, with the two outcome variables as defined above. Variables for multivariate analysis were chosen after criteria of plausibility according to the outcome parameters of interest. The results of univariate analysis are shown in the tables as well as the adjusted odds ratios.

RESULTS

Table I describes common background variables for all clients. In contrast to rehabilitation populations a decade or two ago, this study sample constitutes quite another gender composition with three quarters being female. At the start of the rehabilitation programme

Table I. Demographic Characteristics of the Study Population (*N* = 271)

	Men	Women	All
Sex (%)	23.5	76.5	100.0
Age [years (%)]			
0—36	36.1	24.1	27.0
37—42	9.8	27.7	23.4
43—48	24.6	25.1	25.4
=49	29.5	22.5	24.2
Mean (range)	41.2 (21–56)	42.0 (21–60)	41.8 (21–0)
Civil status (%)			
Married	59.7	83.6	77.9
Divorced/separated/widow	21.0	12.4	14.4
Always alone/living by parents	19.4	4.0	7.6
Education (%)			
Basic	87.9	86.0	86.1
High school	13.1	14.0	13.9
Occupation (%)			
Unskilled	51.5	59.9	57.9
Skilled	40.6	26.1	29.5
Other	7.9	14.0	12.6

212 persons (78.2%) were on sick leave (33.5% for between 1 and 12 months, 50.5% for 13–24 months, and 16.1% for more than 2 years). Another 39 persons (15.5%) were receiving social benefits or other support solutions. All participants were of ethnic Danish origin.

Table II describes bivariate associations between the individual social action plan at the end of the 8-week course made at the rehabilitation institution, and circumstances 9 months later in terms of social and employment status. Those whose plans involved an early retirement pension were to a fairly high degree (73.6%) actually receiving this 9 months later, while 20.7% of those with pension plans were currently receiving sickness benefit, and may well have been on their way to a pension. Surprisingly is the low occurrence of active outcomes of the rehabilitation: among those with an active plan for rehabilitation, 47.9% were still on sick leave or social benefits 9 months later.

In multivariate regression analyses, the effect of individual covariates on clients' own overall evaluation of their benefit of the 8-week rehabilitation were studied. We found traditional background variables, such as gender, age, level of schooling, and civil status to be of no importance in experiencing advantages from rehabilitation (Table III). The same holds for psychological well-being, mental health, global pain, and pain coping. Pain was a dominant complaint among the majority of these clients, but seemed, however, not to be an

Table II. The Social Action Plan and the Social Status at 9-Month Follow-Up

Action plan	Social status					Total
	Pension	Flex job	Full time work	Rehabilitation	Sick leave/social benefit	
Pension [<i>n</i> (%)]	103 (73.6)	6 (4.3)	1 (0.7)	1 (0.7)	29 (20.7)	140 (100)
Flex job [<i>n</i> (%)]	2 (9.1)	6 (27.3)	3 (13.6)	1 (4.5)	10 (45.5)	22 (100)
Full time work [<i>n</i> (%)]	4 (25.0)	2 (12.5)	2 (12.5)	0 (0.0)	8 (50)	16 (100)
Rehabilitation [<i>n</i> (%)]	10 (14.1)	6 (8.5)	9 (12.6)	12 (16.9)	34 (47.9)	71 (100)
Total	119	20	15	14	81	249

Table III. Individual Predictors for Nonbenefit of the Rehabilitation Programme
(*N* = 252)

Risk indicators/factors	OR		95% CI	<i>P</i> value
	Crude	Adjusted		
Female	1.2	1.2	0.7–2.3	0.54
Age (continuous)	0.99	0.98	0.95–1.0	0.35
Low school education	1.4	1.4	0.8–2.4	0.30
Living alone	0.9	0.9	0.4–1.6	0.66
Poor mental health	1.3	1.1	0.5–1.7	0.75
Pain (global)				
Light	1.0	1.0		
Medium	1.3	1.2	0.6–2.3	0.60
Severe	1.1	0.9	0.5–1.7	0.72
Negative pain coping	1.2	1.3	0.6–2.2	0.62

Note. The Hosmer–Lemeshow test of model fit: $p = 0.85$.

important predictor for not experiencing benefit from the programme. Pain is here reported on a 7 point Likert-scale, where only 11 persons reported no or very light pain.

In contrast to these other factors, clients' evaluations of the abilities of the health care systems were found to be of significant importance for the outcome of the programme. Especially a combination of a stable relation to the General Practitioner (no shift of doctors) and good care taking by the GP (see Table IV). The scale estimating "good care taking" included seven items about good and full information, giving attention and empathy. There was a fourfold increased risk of a poor outcome of the rehabilitation programme where there was a combination of poor case treatment by the GP and frequent shift of GP (OR = 4.0, 95% CI; 1.3–11.9).

Table V shows multivariate associations between individual factors and early retirement pension. As presumed, receiving a pension 9 months after rehabilitation was associated with higher age and also with poorer health measured by the SF-36 question about perceived general health at baseline (Table V). Aiming for a pension on entering the system seemed also to be related to this status as a resulting outcome. Therefore, when patients enter the system with a desire to obtain a pension, they have a highly significant chance of obtaining it. Other factors than desire are of course related to receiving pension.

Table IV. Factors of the Professional System Predicting *Nonbenefit* of the Rehabilitation Programme
(*N* = 252)

Risk factors	OR		95% CI	<i>P</i> value
	Crude	Adjusted		
Shift of GP OR poor case-treatment by GP	1.4	0.8	0.4–1.7	0.57
Shift of GP AND poor case-treatment by GP	2.8	3.9	1.3–11.9	0.02
Poor case-treatment by social welfare system	1.2	1.3	0.7–2.4	0.47
Female	1.2	1.0	0.3–2.2	0.57
Age (continuous)	1.0	0.99	0.96–2.2	0.52
Living alone	0.9	0.8	0.4–1.5	0.49
Low school education	1.4	1.3	0.8–2.3	0.30

Notes. GP = general practitioner; The model is adjusted for the following client factors: female gender, age, low school education, and living alone. The Hosmer–Lemeshow test of model fit: $p = 0.61$.

Table V. Predictors of Early Retirement Pension ($N = 248$)

Risk indicators/factors	OR		95% CI	P value
	Crude	Adjusted		
Female	1.5	1.4	0.7–2.8	0.37
Age (years)				
0–36	1.0	1.0		
37–42	1.8	1.4	0.5–3.1	0.45
43–48	3.9	3.0	1.4–6.8	0.01
=49	4.1	4.0	1.7–9.2	0.001
Low school education	1.3	0.9	0.5–1.6	0.64
Living alone	0.6	0.8	0.4–1.7	0.56
Global health				
Good	1.0	1.0		
Medium	4.0	2.8	1.1–10.3	0.005
Poor	6.8	4.0	1.5–10.3	0.005
Presumption of getting pension	2.4	2.1	1.2–3.9	0.01

Note. The Hosmer-Lemeshov test of model fit: $p = 0.27$.

DISCUSSION

Predictors of a beneficial outcome from the 8-week rehabilitation programme included good and comprehensive care taking especially by the General Practitioner, while the presence of a high level of symptoms and complaints at baseline was of no importance for the outcome of rehabilitation in this cohort. We found little evidence of an influence of individual factors, such as school education, marital status, and the most prevalent symptoms among all rehabilitation clients, or of having pain or poor mental health, which is probably in contrast to general presumption. Caretaking by the GP was more important than by the social worker. When frequent shifts of GP were combined with an unempathic attitude by the GP, it had a nonbeneficial affect on the long-term gains of this rehabilitation programme. Whether the effect of a supportive GP can be achieved *without* undergoing the rehabilitation program could not be elucidated from this study, where no control group outside the program was included. However, in general, this study adds evidence for a positive effect of patient-centeredness and positive approach in general practice consultations (7).

A number of limitations in the data must be mentioned. Referral to the rehabilitation unit came from 18 different municipalities and despite a central visitation team, standardized selection criteria in composition of the study population has probably not been applied, making selection a potential bias. Using solely questionnaire measurements of the many “soft” variables in play, in a study group of social welfare clients, make the data liable to information bias and confounding by other factors. Misclassification is however supposed to be of a nondifferential nature.

The strength of this study is the longitudinal design, where individual parameters at baseline can be studied in relation to social circumstances 9 months after completing a programme.

A number of studies have focused on factors associated with successful rehabilitation of the socially disadvantaged long-term sick (7–11). There are some methodological weaknesses as few studies are performed in a longitudinal design. However, two Swedish studies are of interest. Sandstroem and Esbjoernsson found that patients’ own attitudes to their capability to return to work had the strongest prognostic value for their actual returning to

work 1 year later (12). Melin followed a Swedish population sample, and showed that a high belief of return to work, high levels of sense of coherence, as well as a relatively high education level were important predictors for return to work (13).

Some results indicate the importance of motivational factors influencing clients' coping strategies. There seems to be conflicting results regarding personality characteristics and psychopathology (14,15).

Employers' attitudes to rehabilitation clients and degree of focus in the rehabilitation planning process are important for successful return to work. Recent Swedish qualitative research has pointed to the employer's growing interest in detecting needs for rehabilitation and taking early action (16).

There is an extensive literature coming from cross-sectional observational studies showing that good communication, continuity, and personal care are positively related to self-evaluated health (17,18). Randomized intervention studies with a patient-centred approach, and a focus on partnership, sharing power and responsibility, seem to reduce the length of sick leave and improve return to work rates, in light of a lack of long-term follow-up studies (19,20). A general weakness of these studies on doctor-patient relationships is the difficulty in measuring the nature, extent, and content of intervention, giving rise to shortcomings in external validity. This field should be investigated further in experimental study designs.

Danish institutions for social and occupational rehabilitation have traditionally been centred on testing and evaluating work-ability in different types of workshop-style situations, similar to real life production workshops. This approach has probably been based too strongly on assumptions about the resources of clients being stable and unmoveable over time. In our clinical experience as doctors, it is of fundamental importance to try to "meet the client where he/she is," and to create a form for plan for reaching a goal, including improving social capabilities and enabling clients to return to some form of work. Alternatively, clarification in relation to obtaining an early retirement pension can be important. We find these objectives to be feasible in an occupational rehabilitation setting, which is project based, with possibilities to create individual and flexible action plans. We do not pretend to have all the answers concerning the best way to reach these goals. We are dealing with a complicated field, but we hope this study can contribute to highlighting the importance of some main factors (that complaints of pain and stress are not the main predictors of outcome), and to strengthen the belief that other factors have an influence (a stable and understanding doctor as a counsellor when you slip on the social ladder and find yourself on long-term sick leave).

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