

# Effect on work ability after team evaluation of functioning regarding pain, self-rated disability, and work ability assessment

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**Abstract:** To evaluate the effect of a 1–2 week multiprofessional team assessment, without a real rehabilitation effort, 60 patients suffering from long-standing pain and on long-lasting time on sick leave were studied. A questionnaire concerning their daily activities, quality of life, pain intensity, sick-leave level, and their work state was filled out by all patients before starting the assessment and at a 1-year follow-up. The results from the assessment period and the multiprofessional team decision of the patient's working ability were compared with the actual working rate after 1 year. The follow-up showed a significant reduction of sick leave and a higher level of activity ( $P < 0.001$ ). One year after the initial evaluation, 40% showed a reduction in sickness benefit level and 12% resumed full-time work. However, the team evaluation of the patient's work ability did not correlate to predict the actual outcome. The patient's pain intensity, life satisfaction, gender, age, ethnic background, and time absent from work before the start of the evaluation showed no correlation to reduction on time on sickness benefit level. These parameters could not be used as predictors in this study.

**Keywords:** health, multiprofessional team evaluation, long-standing pain

## Introduction

Long-standing pain and predominantly musculoskeletal pain play a major role in long-term sick leave and disability retirement, thereby causing increasing costs for the national insurance system. Many rehabilitation clinics offer multiprofessional rehabilitation programs with duration of 4–8 weeks daily training individually and in a group.<sup>1–3</sup> One study focusing on assessing working ability for patients with psychosomatic comorbidity recommended medical rehabilitation for 39% of the patients and a combination of medical and vocational rehabilitation for 26%.<sup>4</sup> This kind of rehabilitation is, however, offered to a very few number of patients suffering from long-standing pain and is considered expensive. However, recent studies have demonstrated that multiprofessional rehabilitation is cost-effective regarding return to work, alleviating pain, and reducing disability, even for patient who have been on sick leave for long periods of time.<sup>5–9</sup>

However, little or no evidence is at hand for the optimal duration of multiprofessional intervention regarding pain and disability reduction and return to work. One study has even demonstrated that a very short rehabilitation intervention has a positive effect on the impact of illness for patients with fibromyalgia.<sup>10</sup>

In Sweden, the local insurance offices have sent patients on sick leave to rehabilitation centres nationwide to assess their work ability. This assessment is done by a multiprofessional team and working ability is expressed as 0%, 25%, 50%, 75%,

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or 100% ability to work. Work ability is decided after the team has discussed and looked upon the biopsychosocial consequences of the patients' diagnoses.

The aim of this study is to evaluate the effect on physical functioning, pain intensity, and return to work after a short (1–2 weeks), multiprofessional team assessment, without a real rehabilitation effort, and compare the multiprofessional teams' decision of working ability to the result of actual working rate after 1 year.

## Materials and methods

### Patients

A total of 88 patients suffering from long-standing pain and on partial or full-time sick leave were participating in a 2-week assessment period at the Pain Unit at the Department of Rehabilitation Medicine at Huddinge University Hospital in 2002. The patients were sent to the rehabilitation unit from the local insurance office to determine working ability and rehabilitation needs. The assessment was carried through by a rehabilitation team in order to decide the patients' working ability with respect to the pain condition. The clinical aim was to establish diagnoses, prognosis and assessment of the patients' current disability status, working ability, and to recommend possible rehabilitation.

The team consisted of a specialist in rehabilitation medicine, a physiotherapist, an occupational therapist, and a trained social worker, who all made their individual assessment. A psychologist was included when requested. The assessment was based on clinical examination and interviews by each profession, as well as testing of physical fitness, accuracy, and endurance in a test situation with the occupational therapist. The total number of hours the team spent on each patient was approximately 20 hours. This included team conference and documentation. All patients filled out a structured questionnaire (see below) before starting the assessment period. The same questionnaire was sent to the patients 12 months after the assessment period. The characteristics of the patients are presented in Table 1.

Of the initial 88 patients, 60 (68%) filled out the questionnaire at the 1-year follow-up, leaving the dropout rate to 28 (32%). These patients did, however, not differ in duration of sick leave, gender, and age. All results are based on the 60 patients who filled out the questionnaire at the 1-year follow-up.

### Outcome measures

Before entering the evaluation, the patients filled out the questionnaires:

**Table 1** Patient characteristics

Patients at first assessment, n (%)	88 (100)
Patients at 1 y follow-up, n (%)	60 (68)
Dropout rate (%)	28 (32)
Women (1 y), n	40
Male (1 y), n	20
Non-Nordic origin, n	22
Age (y), mean (range)	46 (25–60)
Sick leave (mo), mean (range)	35 (7–132)
Sickness benefit covering	
25%, n (%) of working hours	0
50%, n (%)	3 (5)
75%, n (%)	1 (2)
100%, n (%)	56 (93)

The Disability Rating Index (DRI) consists of 12 questions concerning daily activities and how easily they are performed. For each of the 12 items, a visual analog scale (VAS) ranging from “without difficulty” (0) to “not possible” (100) was used. The answers give a possible total score from 0 to a maximum of 1200.<sup>11</sup>

The LiSat-11 is a quality-of-life instrument developed by Fugl-Meyer, and Fugl-Meyer consists of questions regarding the patients' estimation of satisfaction with life as a whole, as well as satisfaction in 10 specific domains: vocation, economy, leisure, contacts, sexual life, activities of daily living, family life, partner relationship, somatic and psychological health.<sup>12</sup>

The actual pain intensity was measured by means of the VAS from ‘no pain’ (0 mm) to ‘worst possible pain’ (100 mm). The pain intensity was recorded.

The data together with the results of the changes in sick-leave level were also recorded and were compared with the same parameters collected at the 1-year follow-up.

The following possibilities also used by the Swedish national social insurance system for different levels of sick leave were used: 100%, 75%, 50%, and 25%.

The study was conducted in accordance with the Helsinki Declaration and approved by the Ethics Committee of the Karolinska Institute (2007/1227-31/2).

### Assessment

The aim of the assessment was to predict work resumption, given in percent as 100, 75, 50, 25, or 0, working ability, and the patients' possibility to return to work with or without medical or vocational rehabilitation measures. In the final report, the team concluded the patient's work ability, based on the results from the team assessment. The report was discussed in detail with the patient before presenting the results to the national insurance office.

**Table 2** The team's prediction of the patient's level of work ability compared to the actual outcome after 1 year (n = 60)

	Team prediction	Actual outcome	P value
Part-time on sick leave (75%, 50%, 25%)	37	21	n.s
Full time on sick leave (100%)	22	32	n.s
Not on sick leave	1	7	n.s

## Follow-up

One year after completing the evaluation, the patients were contacted by mail and asked to fill out questionnaires: about their pain, activity, work situation, and level of sick leave.

## Statistics

Statistics were calculated by means of standard procedures. Descriptive analyses of demographic data for patients were performed using the  $\chi^2$  test. The McNemar test was used to evaluate if there were any significant individual differences at the follow-up compared with the data collected before the evaluation in respect of higher activity. The correlation coefficient was used for the nonparametric scales to calculate whether they were separated from 0 or not. In this study, a value of  $P < 0.05$  was considered significant.

## Results

The actual reduction of sick leave, 1 year after the multiprofessional team assessment about each patient's work ability, showed a significant reduction of sick leave and a higher level of activity, such as work or studies ( $P < 0.001$ ). Of 60 patients, 24 (40%) had a reduction in sickness benefit level 1 year after the initial evaluation. The main part of these patients went from full-time sick leave to part-time sick leave. Seven patients (12%) had resumed full-time work.

However, the team evaluation of the patients' work ability did not correlate to predict the actual outcome at the 1-year follow-up. It was not possible to predict the individual outcomes to characterize the patients who went back to work and the ones who did not or who went from a higher grade of sick leave to a lower grade (Table 2).

The DRI answers before the team evaluation was compared with the reduction of sick leave at the 1-year follow-up. The total DRI score for each patient had a range between 268 and 1125 before the evaluation and 96–1084 at the follow-up.

For each patient, an individual low DRI score (high level of activity) showed a significant correlation to a reduction of sick leave after 1 year ( $P = 0.038$ ). On the other hand, a high DRI score at the 1-year follow-up showed no correlation to reduction in sickness benefit level (Table 3).

Gender, age, ethnic background, and time absent from work, before the start of the evaluation, showed no correlation to reduction of time on sick-leave level either. Neither did the patient's pain intensity according to VAS or life satisfaction (LiSat). These parameters could not be used as predictors at the 1-year follow-up (Table 3).

## Discussion

In this study, the effects on the reduction of sick leave in patients suffering from long-term musculoskeletal pain were analyzed after a multiprofessional evaluation. The significance of this study is that the team evaluation itself without any rehabilitation efforts was shown to reduce the time on sick leave and increase the return-to-work rate. At the follow-up, it was not asked for what possible interventions had been initiated by the national insurance office, which could have an effect on the outcome, but none of the patients were referred to any rehabilitation program. All patients were "treated as usual" by their general practitioner.

There was also a positive correlation between a higher level of activity before the evaluation and the reduction of sick leave at the 1-year follow-up.

However, the team's conclusion of the patient's work ability based on the evaluation was not in accordance with the actual outcome and could not be used to predict the outcome for each patient after 1 year.

Of the 60 patients, 24 (40%) had a reduction in sickness benefit level 1 year after the initial evaluation. The main part of these patients went from full-time sick leave to part-time sick leave. Seven of the patients (12%) were back in full-time

**Table 3** Patients' characteristics in correlation to sick leave at the 1-year follow-up

Gender	n.s
Age	n.s
Ethnicity	n.s
Time absent from work	n.s
Pain (VAS)	n.s
LiSat	n.s
Reduction of sick leave	$P < 0.001$
DRI (before the evaluation)	$P = 0.038$
The team's conclusion	n.s

**Abbreviations:** VAS, visual analog scale; LiSat, life satisfaction; DRI, disability rating index.

work. From several studies, there are indications that absence of 3–4 months from work is a culmination point regarding the return-to-work rate. In this study, however, even patients on very long sick-leave periods (7–132 months) were back to work at the 1-year follow-up.

Out of the other investigated parameters in this study, only an initial low DRI correlated with the return-to-work rate and thus showed some prediction value. This indicates that individual pain intensity, age, ethnicity, time on sick leave, and LiSat before the evaluation have low value when using this assessment method in predicting the return-to-work rate of patients suffering from long-term pain. These have also been reported in previous studies.<sup>5–8</sup>

This study indicates that it is possible that an intensive and short multiprofessional intervention, after months or even years of persistent pain and absence from work, reduces sick-leave rate, despite the patients remaining pain problems.

One must consider the fact that other interventions were likely to have had an impact on the results. Other explanations, such as socioeconomic changes in the society, the possibility to have an evaluation at a University Hospital and other interventions might be found.<sup>2,6,13</sup>

This study was performed during socioeconomic stable conditions in Sweden.

With a short intervention like this, it is probably not possible to change the patients' coping strategy from inactive to more active. However, this was not the aim of the team evaluation but more to put the patients in a direction where return to work could be a positive change in life in spite of their ongoing pain situation. The outcome of this study may reflect the result of a situation where patients feel they are seen as individuals worth giving an evaluation and are not forgotten in the crowd, sick-listed for a long time, and out of work.

To have an effect on other parameters requires information, discussion, coaching, structured methodology, and often a multiprofessional rehabilitation program. Such extended multiprofessional rehabilitation programs for patients suffering from long-term pain conditions, where a structured biopsychosocial approach, including cognitive behavioral interventions and coping strategies, are shown to have a positive impact not only on the return-to-work rate but also on pain intensity, activity, and LiSat.<sup>2,14</sup>

The clinical effectiveness of such programmes has also been documented in earlier studies and systematic reviews.<sup>15–17</sup> This was not possible and not the aim of this short-time evaluation that could not compensate for a more extended program, but all patients ended with a recommendation for further steps in the way of work-related rehabilitation.

This study has methodological limitations, such as a lack of comparison groups, a high drop-out rate and a small number of participants. Furthermore, some of the patients in the evaluation were more or less forced by their local social insurance office to take part in the evaluation. Many patients have a long-term pain syndrome, where the pain is a minor problem compared with the consequences that it has caused.

In different studies, comparison groups have been found to have a return-to-work rate between 6% and 24%,<sup>18–20</sup> where patients have been given “treatment as usual” or a multiprofessional evaluation without following a rehabilitation program. The low return-to-work rate in the comparison groups, in accordance with other studies, shows a very low rehabilitation potential of patients who have been sick-listed for more than 3 months.<sup>18</sup>

Furthermore, different designs and methodologies make a relevant comparison difficult. In this study, 12% were back in full-time work after a year. This would be in accordance to the return-to-work rates when patients are given “treatment as usual”, but this study also shows a lower level of sick leave for 40% of the patients.

According to statistics from the Swedish National Social Insurance Agency from 2008, individuals on a time-restricted disability pension returned to work in less than 1% and most went on to permanent disability pension.

There was a significant correlation between the team's assessment of return to the actual outcome in respect of return to work, studies, and a lower level of patients on sick leave. The back-to-work rate is a common objective for multidisciplinary rehabilitation programs. The back-to-work rate varies a great deal in different studies. Chapman and coworkers reported 6%, whereas Roberts and Reinhardt, as well as Mayer and coworkers, reported a successful back-to-work rate slightly above 80%.<sup>19–21</sup>

In accordance to other studies, this study shows that the individual pain intensity (VAS) is not a predictor for return to work. Patients who estimated their pain on a very high level returned to work in the same extent as patients with lower initial pain intensity. Other and more complex explanations have to be further investigated.

## Disclosure

The authors declare no conflicts of interest.

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