

SHORT COMMUNICATION

EFFECT OF FINANCIAL COMPENSATION ON VOCATIONAL REHABILITATION

Anne Pernille Lysgaard,^{1,3} Kirsten Fonager² and Claus V. Nielsen¹

From the ¹Unit of Social Medicine, Department of Public Health, Aarhus County, Aarhus, ²Department of Social Medicine, Aalborg Hospital, Aalborg and ³Center for Substance Abuse, Aarhus County, Aarhus, Denmark

Objective: To examine how financial compensation affects the outcome of vocational rehabilitation.

Design: A registry-based follow-up study.

Subjects: A total of 1397 rehabilitees discharged from the 5 local rehabilitation agencies in Aarhus County, Denmark from 1 July 2000 to 31 December 2001.

Methods: At submission demographic data was obtained as well as data on financial compensation, i.e. compensation for industrial injury, indemnity for off-duty injury and application for disability pension. Rehabilitation outcomes were recorded at discharge. Renouncing further attempts at rehabilitation was defined as a negative outcome; education, further rehabilitation or return-to-work on normal or less demanding terms were defined as a positive outcome. Rehabilitees with and without financial compensation were compared.

Results: Rehabilitees with involvement of financial compensation had an increased risk of a negative outcome compared with those without involvement of financial compensation. Adjustment for potential confounders did not change the association between financial compensation and negative outcome. The risk of a negative outcome rose with increasing age, with less than 1 year of labour market experience and with rented housing. Previous occupation as a skilled worker reduced the risk.

Conclusion: Financial compensation was associated with an increased risk of a negative vocational rehabilitation outcome.

Key words: vocational rehabilitation, financial compensation, industrial injury, off-duty injury, disability pension.

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Correspondence address: Anne P. Lysgaard, Center for Substance Abuse, Aarhus County, Valdemarsgade 19 V, DK-8000 Aarhus C, Denmark. E-mail: ply@mbc.aaa.dk

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INTRODUCTION

In Denmark the social security system in the municipalities is responsible for vocational rehabilitation. If the process of

rehabilitation does not succeed, however, the rehabilitees are admitted to local rehabilitation agencies in the county. The task for the local rehabilitation agencies is to assess the potential of the rehabilitees for return to work. If rehabilitation does not succeed, it is up to the municipality to assess an application for disability pension. The decision regarding settlement of claims for disability pension and compensation for industrial and off-duty injury usually awaits the process and result of vocational rehabilitation.

The vocational rehabilitation course lasts on average 5 months. It is organized by social workers and consists of a theoretical part including information on social legislation and sheltered workshops to assess the rehabilitees' capacity to work. Various different professionals may be involved during the course, e.g. physiotherapists, medical doctors and psychologists. The rehabilitee's income during the course is provided by the social security system, usually sickness benefit as a short-term provision for 1 year, but with the opportunity of extension.

The prospect of financial compensation is widely assumed to counteract vocational rehabilitation. One of the hypotheses is that any involvement of financial compensation causes the rehabilitee's attention to focus on compensation at the expense of her or his return to work. It is thus well known that claims for financial compensation are associated with poorer recovery and longer sickness absence (1–6). Furthermore, one study has found an association between elimination of compensation for pain and suffering and decreased incidence and improved prognosis of whiplash injury (7). In addition, an association between wage compensation and duration of work disability period was found for occupational back injuries among individuals with chronic but not with acute disability (8). These results support the theory that financial compensation counteracts vocational rehabilitation. However, the results of the few existing studies on the effect of financial compensation on vocational rehabilitation or return-to-work are conflicting. Thus, a disability benefit for veterans was found to be associated with poorer outcome of vocational rehabilitation (9) and return-to-work at high levels of payment (10). On the other hand, another study showed no association between receipt of workers' compensation and return-to-work (11).

The aim of this study was to examine how involvement of financial compensation affects the outcome of vocational rehabilitation.

METHODS

All rehabilitees discharged from the 5 local rehabilitation agencies in Aarhus County from 1 July 2000 to 31 December 2001 were included in this registry-based follow-up study. Data were collected routinely both at admission and on discharge. At the time of admission the registry records included data about involvement of financial compensation, which was either claims for compensation for industrial injury, for indemnity for off-duty injury or application for disability pension. Any kind of involvement was included, both unsettled and finalized claims. The records also included demographic data, i.e. gender, age, marital status, school attendance, education, previous job, labour market experience for at least 1 year and residence. Outcome was determined at the time of discharge on the basis of the registry data. Education, further rehabilitation or return-to-work was defined as a positive outcome. Rehabilitees discharged for any other reason, e.g. renouncing further attempts at rehabilitation, was defined as a negative outcome. Rehabilitees with and without involvement of financial compensation were compared.

A logistic regression model was used to evaluate the influence of financial compensation on vocational rehabilitation. In the multivariate model the odds ratio (OR) was adjusted for gender, age, marital status, children at home, school attendance, education, previous job, labour market experience and residence. The analyses were performed using SPSS version 10.1.

The study was approved by the Danish Data Protection Agency (record no. 2002-41-2259).

RESULTS

A total of 1603 rehabilitees were discharged from the local rehabilitation agencies during the study period. We excluded 206 rehabilitees (13%) from the analysis due to lack of information about involvement of financial compensation ($n = 181$) or outcome ($n = 28$), some of them lacked information about both. The 181 rehabilitees who lacked information about involvement of financial compensation did not differ considerably from the included rehabilitees in terms of gender, age or vocational rehabilitation outcome.

Among the remaining 1397 rehabilitees, financial compensation of at least one kind was involved in 425 (30%). Of these, 232 had claims for industrial injury, 109 for off-duty injury and 129 had applied for disability pension prior to the vocational rehabilitation course. Thus, 45 had involvement of more than one type of compensation. Rehabilitees with involvement of financial compensation differed from rehabilitees without involvement in the sense that they tended to be older and more often cohabiting, residential owners and previously in ordinary jobs (Table I).

Involvement of financial compensation increased the risk of having a negative outcome of vocational rehabilitation and the association did not change after adjusting for potential confounders (Table II). The risk of a negative outcome rose with age and declined with length of school attendance. The logistic regression analysis identified among other risk factors rented housing and less than 1 year of labour market experience.

Table I. Study population characteristics

| Variable | Involvement of financial compensation $n = 425$ (%) | No involvement of financial compensation $n = 972$ (%) |
|---|--|---|
| Gender | | |
| women | 234 (55) | 568 (58) |
| men | 191 (45) | 404 (42) |
| Age (years) | | |
| 17–30 | 69 (16) | 239 (25) |
| 31–50 | 250 (59) | 584 (60) |
| 50–62 | 106 (25) | 149 (15) |
| Marital status | | |
| single | 134 (32) | 364 (40) |
| cohabiting | 279 (68) | 548 (60) |
| Children at home | | |
| no children | 248 (60) | 553 (58) |
| have children | 166 (40) | 401 (42) |
| School attendance (years) | | |
| 0–9 | 246 (61) | 495 (53) |
| 10–16 | 155 (39) | 444 (47) |
| Education | | |
| no education | 290 (71) | 709 (75) |
| have education | 118 (29) | 242 (25) |
| Previous job | | |
| skilled worker* | 156 (40) | 263 (29) |
| unskilled worker | 178 (46) | 352 (39) |
| independent business | 29 (8) | 58 (6) |
| without ordinary job | 25 (6) | 240 (26) |
| At least 1 year of labour market experience | | |
| no experience | 46 (11) | 254 (27) |
| have experience | 371 (89) | 681 (73) |
| Residence | | |
| rented housing | 231 (57) | 693 (73) |
| owner-occupied | 177 (43) | 250 (27) |
| Vocational rehabilitation outcome | | |
| Negative | 283 (67) | 512 (53) |
| Positive | 142 (33) | 460 (47) |

* Includes a small proportion of wage earners.

However, gender, marital status, children at home and education were not independent risk factors.

Subgroup analyses of the various types of compensation, i.e. claims for compensation for industrial injury, for indemnity for off-duty injury and application for disability pension prior to the vocational rehabilitation course showed a similar tendency, and so did unsettled claims for the various types of compensation (data not shown).

DISCUSSION

The results indicate that any involvement of financial compensation for rehabilitees was associated with a poorer vocational rehabilitation outcome than absence of such compensation. The same tendency was seen for the different types of compensation and for unsettled claims; an observation that backs the decision to consider the 3 types of compensation and all stages of the process of claim collectively. Thus, the results support the hypotheses that any involvement of financial compensation

Table II. Crude and adjusted odds ratios (OR) for a negative vocational rehabilitation outcome

| Variable | Negative outcome | | Crude OR | Adjusted OR* | CI 95% |
|---|------------------|----|----------|--------------|---------|
| | n | % | | | |
| Financial compensation | | | | | |
| involvement | 283 | 67 | 1.8 | 1.9 | 1.4–2.6 |
| no involvement | 512 | 53 | 1 | | |
| Gender | | | | | |
| women | 512 | 56 | 1.0 | 1.0 | 0.8–1.3 |
| men | 371 | 56 | 1 | | |
| Age (years) | | | | | |
| 17–30 | 153 | 43 | 1 | | |
| 31–50 | 524 | 56 | 1.7 | 1.4 | 1.7–3.5 |
| 50–62 | 206 | 71 | 3.2 | 5.4 | 3.3–8.9 |
| Marital status | | | | | |
| single | 327 | 60 | 1.2 | 1.0 | 0.7–1.3 |
| cohabiting | 511 | 55 | 1 | | |
| Children at home | | | | | |
| no children | 506 | 57 | 1.1 | 1.0 | 0.8–1.4 |
| have children | 342 | 53 | 1 | | |
| School attendance (years) | | | | | |
| 0–9 | 515 | 62 | 1.7 | 1.6 | 1.2–2.1 |
| 10–16 | 327 | 48 | 1 | | |
| Education | | | | | |
| no education | 634 | 57 | 1.2 | 1.0 | 0.7–1.4 |
| have education | 207 | 52 | 1 | | |
| Previous job | | | | | |
| without ordinary job | 156 | 54 | 1.0 | 1.3 | 0.8–2.1 |
| independent business | 65 | 69 | 1.9 | 1.6 | 0.9–2.9 |
| unskilled worker | 358 | 60 | 1.3 | 1.3 | 0.9–1.9 |
| skilled worker | 258 | 54 | 1 | | |
| At least 1 year of labour market experience | | | | | |
| no experience | 190 | 57 | 1.0 | 1.6 | 1.1–2.5 |
| have experience | 663 | 57 | 1 | | |
| Residence | | | | | |
| rented housing | 588 | 57 | 1.1 | 1.6 | 1.2–2.3 |
| owner-occupied | 259 | 54 | 1 | | |

* Adjusted for other variables in the table.

causes the rehabilitee's attention to focus on compensation at the expense of her or his return to work.

The strength of this study lies in its relatively large size, the uniformly collected data and the completeness of data, since it is based on routinely obtained data, making misclassification of outcome unlikely.

The study might suffer from a minor bias owing to the exclusion of 206 rehabilitees on whom information about involvement of financial compensation and vocational rehabilitation outcome was not available. However, the excluded rehabilitees did not differ considerably from the study population in terms of gender, age or vocational rehabilitation outcome, so we consider such a bias to be negligent.

Our results corroborate those of 2 previous studies (9, 10), even if direct comparison is hampered by disparities in the study population. The present study population consists of a highly selected group of rehabilitees, the 2 previous studies also had

highly selected study groups, since they were conducted among male veterans.

In this study, age was found to be an independent risk factor, but gender and marital status were not. This was also found in a previous study (8) concerning financial compensation and duration of work disability.

Another study found no association between receipt of workers' compensation and return-to-work (11) for patients with low back pain, but this was a small study that did not include a vocational programme.

It could be argued that rehabilitees with involvement of financial compensation have a generally poorer condition, which will increase the risk of a negative outcome. We cannot rule out that this could be part of the explanation, since we had no information about the health condition of the rehabilitees. However, previous studies (1–6) have found an association between involvement of financial compensation and recovery among participants with equal degrees of disability among patients with neck or back disorders.

The increased risk of a negative outcome for vocational rehabilitation associated with involvement of financial compensation may, in theory, also be ascribed to the rehabilitee undergoing a personal crisis compelling him or her to focus on the more certain factor at the expense of the uncertain one, i.e. the prospect for compensation at the expense of ongoing rehabilitation. Such behaviour could, again, be shaped by other parties, for instance the family, the union, attorneys or medical specialists, whose actions may, for various reasons, contribute to keep the situation deadlocked. Furthermore, at the local rehabilitation agencies, the staff could more or less deliberately avoid discussing the issue with the rehabilitee due to a feeling of powerlessness that often surfaces when situations are deadlocked. In one study (10) the authors raised the issue that the compensation programme could be instrumental in creating barriers for a return to work on top of the existing physical and psychological barriers. They argued that disability benefits could reduce incentives or create conflicting incentives to participate in vocational rehabilitation or return to work. Raising the issue may help improve awareness of this barrier at the level of the local rehabilitation agencies, and it is suggested that such initiatives be launched as a minimum where settlement of financial compensation due to loss of working capacity requires participation in a vocational rehabilitation programme.

Further studies are needed to investigate a possible association between health condition and compensation, and to assess the influence of psychological factors.

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